### Kit components

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>US-121K</td>
<td>EPA Method 8270C Calibration Standards Kit</td>
</tr>
</tbody>
</table>

#### Components:

<table>
<thead>
<tr>
<th>Product code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>US-104N-1</td>
<td>Toxic Substances Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-106N-1</td>
<td>PAH Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-107N-1</td>
<td>Phenols Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-108N-1</td>
<td>Semi-Volatiles Internal Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-110-1</td>
<td>Ethers and Phthalates Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-111-1</td>
<td>Chlorinated Hydrocarbons Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-112B-1</td>
<td>Organochlorine Pesticides Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-113N-1</td>
<td>Nitrosamines Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-114-1</td>
<td>Base/Neutrals Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-115-1</td>
<td>Base/Neutrals Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-116N-1</td>
<td>PAH Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-117N-1</td>
<td>Phenols Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-118-1</td>
<td>Pesticides Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-119-1</td>
<td>Organophosphorous Pesticides Standard (1X1 mL)</td>
</tr>
<tr>
<td>US-120AN-1</td>
<td>Pyridines Standard (1X1 mL)</td>
</tr>
</tbody>
</table>
1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** Toxic Substances Standard (1X1 mL)
- **Part number:** US-104N-1
- **Relevant identified uses of the substance or mixture and uses advised against**
  Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** Agilent Technologies Manufacturing GmbH & Co. KG
  - Hewlett-Packard-Str. 8
  - 76337 Waldbronn
  - Germany
- **Further information obtainable from:**
  - Telephone: 0800 603 1000
  - pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(44)-870-8200418

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**

  - **GHS08 health hazard**
    
    | Carc. 1B | H350 | May cause cancer. |
    | STOT RE 2 | H373 | May cause damage to organs through prolonged or repeated exposure. |

  - **GHS07**
    
    | Acute Tox. 4 | H302 | Harmful if swallowed. |
    | Skin Irrit. 2 | H315 | Causes skin irritation. |
    | Eye Irrit. 2 | H319 | Causes serious eye irritation. |
    | STOT SE 3 | H335 | May cause respiratory irritation. |

- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
  The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**

  - **GHS07**
  - **GHS08**

- **Signal word** Danger
- **Hazard-determining components of labelling:**
  - dichloromethane
  - 4-chloroaniline
  - o-nitroaniline

(Contd. on page 2)
m-nitroaniline

- **Hazard statements**
  - H302 Harmful if swallowed.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H350 May cause cancer.
  - H335 May cause respiratory irritation.
  - H373 May cause damage to organs through prolonged or repeated exposure.

- **Precautionary statements**
  - P101 If medical advice is needed, have product container or label at hand.
  - P102 Keep out of reach of children.
  - P103 Read label before use.
  - P201 Obtain special instructions before use.
  - P202 Do not handle until all safety precautions have been read and understood.
  - P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  - P264 Wash thoroughly after handling.
  - P270 Do not eat, drink or smoke when using this product.
  - P271 Use only outdoors or in a well-ventilated area.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  - P330 Rinse mouth.
  - P302+P352 IF ON SKIN: Wash with plenty of water.
  - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P308+P313 IF exposed or concerned: Get medical advice/attention.
  - P321 Specific treatment (see on this label).
  - P314 Get medical advice/attention if you feel unwell.
  - P362+P364 Take off contaminated clothing and wash it before reuse.
  - P332+P313 If skin irritation occurs: Get medical advice/attention.
  - P337+P313 If eye irritation persists: Get medical advice/attention.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**
  Contains 4-chloroaniline, aniline. May produce an allergic reaction.

- **Other hazards**

- **Results of PBT and vPvB assessment**
  - PBT: Not applicable.
  - vPvB: Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterisation:** Mixtures
- **Description:** Mixture of substances listed below with nonhazardous additions.

#### Dangerous components:

- **CAS:** 75-09-2
- **EINECS:** 200-838-9
- **dichloromethane**
- **Carc. 2; H351; STOT RE 2; H373; Skin Irrit. 2; H315; Eye Irrit. 2; H319; STOT SE 3, H335**

- **98.794%**
4 First aid measures

- **Description of first aid measures**
  - **General information:**
    Immediately remove any clothing soiled by the product.
    Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
  - **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
  - **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
  - **After swallowing:** Call for a doctor immediately.

- **Information for doctor:**
  - **Most important symptoms and effects, both acute and delayed** No further relevant information available.
  - **Indication of any immediate medical attention and special treatment needed**
    No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
  - **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
  - **Special hazards arising from the substance or mixture**
    During heating or in case of fire poisonous gases are produced.
  - **Advice for firefighters**
  - **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device. 

(Contd. on page 4)
7 Handling and storage

Handling:

Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.

Information about fire - and explosion protection: Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep container tightly sealed.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.

Control parameters

Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Substance</th>
<th>WEL Short-term value</th>
<th>WEL Long-term value</th>
<th>BMGV, Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>706 mg/m³, 200 ppm</td>
<td>353 mg/m³, 100 ppm</td>
<td></td>
</tr>
<tr>
<td>62-53-3 aniline</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Substance</th>
<th>BMGV</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>30 ppm</td>
</tr>
</tbody>
</table>

Medium: end-tidal breath
Sampling time: post shift
Parameter: carbon monoxide

Additional information: The lists valid during the making were used as basis.
48.1.26
· Exposure controls
· Personal protective equipment:
· General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing
  Wash hands before breaks and at the end of work.
  Store protective clothing separately.
  Avoid contact with the eyes and skin.
· Respiratory protection:
  When used as intended with Agilent instruments the use of the product under normal laboratory conditions and
  with standard practices does not result in significant airborne exposures and therefore respiratory protection is not
  needed.
  Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved
  device equipment with appropriate organic or acid gas cartridge.
· Protection of hands:
  Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil
  thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct
  contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times
  exceeding 4 hrs. Supplier recommendations should be followed.
· Material of gloves
  For normal use:  nitrile rubber, 11-13 mil thickness
  For direct contact with the chemical:  butyl rubber, 12-15 mil thickness
· Penetration time of glove material
  For normal use:  nitrile rubber:  1 hour
  For direct contact with the chemical:  butyl rubber:  > 4 hours
· Eye protection:
  Safety glasses
  Tightly sealed goggles

9 Physical and chemical properties
· Information on basic physical and chemical properties
· General Information
· Appearance:
  · Form:  Fluid
  · Colour:  Colourless
· Odour:
  · Odour:  Like chlorine
  · Odour threshold:  Not determined.
· pH-value:
  · Not determined.
· Change in condition
  · Melting point/freezing point:  -95.1 °C
  · Initial boiling point and boiling range:  40 °C
· Flash point:
  · Not applicable.
· Flammability (solid, gas):
  · Not applicable.
48.1.26

· Ignition temperature: 605 °C
· Decomposition temperature: Not determined.
· Auto-ignition temperature: Product is not selfigniting.
· Explosive properties: Product does not present an explosion hazard.
· Explosion limits:
  Lower: 13 Vol %
  Upper: 22 Vol %
· Vapour pressure at 20 °C: 360 hPa
· Density at 20 °C: 1.29731 g/cm³
· Relative density Not determined.
· Vapour density Not determined.
· Evaporation rate Not determined.
· Solubility in / Miscibility with water at 20 °C: 20 g/l
· Partition coefficient: n-octanol/water: Not determined.
· Viscosity:
  Dynamic: Not determined.
  Kinematic: Not determined.
· Solvent content:
  Organic solvents: 98.9 %
  VOC (EC) 98.94 %
· Solids content: 0.8 %
· Other information No further relevant information available.

10 Stability and reactivity

· Reactivity No further relevant information available.
· Chemical stability
  · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
  · Possibility of hazardous reactions No dangerous reactions known.
  · Conditions to avoid No further relevant information available.
  · Incompatible materials: No further relevant information available.
  · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects
· Acute toxicity
  Harmful if swallowed.
· LD/LC50 values relevant for classification:
  ATE (Acute Toxicity Estimates)
  Oral LD50 1,584 mg/kg (rat)
Trade name: Toxic Substances Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Format</th>
<th>Hazard Category</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>Dermal LD50</td>
<td>59,105 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inhalative LC50/4 h</td>
<td>405 mg/L</td>
<td></td>
</tr>
<tr>
<td>88-74-4 o-nitroaniline</td>
<td>Oral LD50</td>
<td>1,600 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>99-09-2 m-nitroaniline</td>
<td>Oral LD50</td>
<td>535 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>100-01-6 p-nitroaniline</td>
<td>Oral LD50</td>
<td>750 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>106-47-8 4-chloroaniline</td>
<td>Oral LD50</td>
<td>310 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dermal LD50</td>
<td>3,200 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>62-53-3 aniline</td>
<td>Oral LD50</td>
<td>442 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dermal LD50</td>
<td>820 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inhalative LC50/4 h</td>
<td>175 mg/L (mouse)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.27 mg/L (rat)</td>
<td></td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **Skin corrosion/irritation**
    Causes skin irritation.
  - **Serious eye damage/irritation**
    Causes serious eye irritation.
  - **Respiratory or skin sensitisation**
    Based on available data, the classification criteria are not met.
  - **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
  - **Germ cell mutagenicity**
    Based on available data, the classification criteria are not met.
  - **Carcinogenicity**
    May cause cancer.
  - **Reproductive toxicity**
    Based on available data, the classification criteria are not met.
  - **STOT-single exposure**
    May cause respiratory irritation.
  - **STOT-repeated exposure**
    May cause damage to organs through prolonged or repeated exposure.
  - **Aspiration hazard**
    Based on available data, the classification criteria are not met.

### Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability**
    No further relevant information available.
  - **Behaviour in environmental systems:**
  - **Bioaccumulative potential**
    No further relevant information available.
  - **Mobility in soil**
    No further relevant information available.
Trade name: Toxic Substances Standard (1X1 mL)

- Additional ecological information:
- General notes:
  Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
  Do not allow product to reach ground water, water course or sewage system, even in small quantities.
  Danger to drinking water if even extremely small quantities leak into the ground.
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- Other adverse effects No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation
    Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- European waste catalogue
  - HP 4 Irritant - skin irritation and eye damage
  - HP 5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
  - HP 7 Carcinogenic

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- Not Regulated, De minimis Quantities
- UN-Number
  - ADR, IMDG, IATA UN1593
- UN proper shipping name
  - ADR 1593 DICHLOROMETHANE
  - IMDG, IATA DICHLOROMETHANE
- Transport hazard class(es)
  - ADR, IMDG, IATA

  - Class 6.1 Toxic substances.
  - Label 6.1

- Packing group
  - ADR, IMDG, IATA III
- Environmental hazards:
  - Not applicable.
- Special precautions for user
  - Warning: Toxic substances.
- Danger code (Kemler): 60
Trade name: Toxic Substances Standard (1X1 mL)

- EMS Number: F-A,S-A
- Segregation groups: Liquid halogenated hydrocarbons
- Stowage Category: A
- Transport in bulk according to Annex II of Marpol and the IBC Code: Not applicable.
- Transport/Additional information:
  - ADR
  - Limited quantities (LQ): 5L
  - Excepted quantities (EQ): Code: E1
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 1000 ml
  - Transport category: 2
  - Tunnel restriction code: E
  - IMDG
  - Limited quantities (LQ): 5L
  - Excepted quantities (EQ): Code: E1
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 1000 ml
- UN "Model Regulation": UN 1593 DICHLOROMETHANE, 6.1, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- Named dangerous substances - ANNEX I: None of the ingredients is listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII: Conditions of restriction: 3, 28, 43, 59
- National regulations:
- Information about limitation of use:
  Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- Relevant phrases
  - H301 Toxic if swallowed.
  - H311 Toxic in contact with skin.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H318 Causes serious eye damage.
  - H319 Causes serious eye irritation.
  - H331 Toxic if inhaled.
  - H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

- Department issuing SDS: Document Control / Regulatory
- Contact: regulatory@ultrasci.com
- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  Acute Tox. 3: Acute toxicity – Category 3
  Acute Tox. 4: Acute toxicity – Category 4
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Dam. 1: Serious eye damage/eye irritation – Category 1
  Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  Skin Sens. 1: Skin sensitisation – Category 1
  Muta. 2: Germ cell mutagenicity – Category 2
  Care. 1B: Carcinogenicity – Category 1B
  Care. 2: Carcinogenicity – Category 2
  STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
  STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
  Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
  Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
  Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
## 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** PAH Standard (1X1 mL)
- **Part number:** US-106N-1
- **Relevant identified uses of the substance or mixture and uses advised against**
  - Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    - Agilent Technologies Manufacturing GmbH & Co. KG
    - Hewlett-Packard-Str.8
    - 76337 Waldbronn
    - Germany
  - **Further information obtainable from:**
    - Telephone: 0800 603 1000
    - pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(44)-870-8200418

## 2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**

  - **GHS02 flame**
  - Flam. Liq. 2  H225 Highly flammable liquid and vapour.

  - **GHS06 skull and crossbones**
  - Acute Tox. 2  H310 Fatal in contact with skin.

  - **GHS08 health hazard**
  - Muta. 1B  H340 May cause genetic defects.
  - Carc. 1A  H350 May cause cancer.
  - STOT RE 1  H372 Causes damage to organs through prolonged or repeated exposure.
  - Asp. Tox. 1  H304 May be fatal if swallowed and enters airways.

  - **GHS09 environment**
  - Aquatic Acute 1  H400 Very toxic to aquatic life.
  - Aquatic Chronic 1  H410 Very toxic to aquatic life with long lasting effects.

  - **GHS07**
  - Skin Irrit. 2  H315 Causes skin irritation.
Trade name: PAH Standard (1X1 mL)

Eye Irrit. 2  H319  Causes serious eye irritation.
STOT SE 3  H335  May cause respiratory irritation.

- Label elements
- Labelling according to Regulation (EC) No 1272/2008
  The product is classified and labelled according to the CLP regulation.
- Hazard pictograms
  GHS02  GHS06  GHS08  GHS09

- Signal word  Danger
- Hazard-determining components of labelling:
  benzene
dichloromethane
benzo[a]pyrene
dibenz[a,h]anthracene
- Hazard statements
  H225 Highly flammable liquid and vapour.
  H310 Fatal in contact with skin.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H340 May cause genetic defects.
  H350 May cause cancer.
  H335 May cause respiratory irritation.
  H372 Causes damage to organs through prolonged or repeated exposure.
  H304 May be fatal if swallowed and enters airways.
  H410 Very toxic to aquatic life with long lasting effects.
- Precautionary statements
  P101  If medical advice is needed, have product container or label at hand.
P102  Keep out of reach of children.
P103  Read label before use.
P201  Obtain special instructions before use.
P202  Do not handle until all safety precautions have been read and understood.
P210  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240  Ground/bond container and receiving equipment.
P241  Use explosion-proof electrical/ventilating/lighting equipment.
P242  Use only non-sparking tools.
P243  Take precautionary measures against static discharge.
P260  Do not breathe dust/fume/gas/mist/vapours/spray.
P262  Do not get in eyes, on skin, or on clothing.
P264  Wash thoroughly after handling.
P270  Do not eat, drink or smoke when using this product.
P271  Use only outdoors or in a well-ventilated area.
P273  Avoid release to the environment.
P280  Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310  IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P321  Specific treatment (see on this label).
P331  Do NOT induce vomiting.
Trade name: PAH Standard (1X1 mL)

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P312 Call a POISON CENTER/doctor if you feel unwell.
P314 Get medical advice/attention if you feel unwell.
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.
P391 Collect spillage.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Additional information:
  Contains anthracene, phenanthrene, benzo[a]pyrene. May produce an allergic reaction.
- Other hazards
- Results of PBT and vPvB assessment

- PBT:
  120-12-7 anthracene
- vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.
- Dangerous components:

<table>
<thead>
<tr>
<th>CAS: 75-09-2</th>
<th>dichloromethane</th>
<th>58.52%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 200-838-9</td>
<td>Carc. 2; H351; STOT RE 2; H373; Skin Irrit. 2; H315; Eye Irrit. 2; H319; STOT SE 3; H335</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 71-43-2</th>
<th>benzene</th>
<th>38.572%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 200-753-7</td>
<td>Flam. Liq. 2; H225; Acute Tox. 1; H310; Muta. 1B; H340; Carc. 1A; H350; STOT RE 1; H372; Asp. Tox. 1; H304; Skin Irrit. 2; H315; Eye Irrit. 2; H319</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 86-73-7</th>
<th>fluorene</th>
<th>0.182%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 201-695-5</td>
<td>Aquatic Acute 1; H400; Aquatic Chronic 1; H410</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 120-12-7</th>
<th>anthracene</th>
<th>0.182%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 204-371-1</td>
<td>Aquatic Acute 1; H400; Aquatic Chronic 1; H410; Skin Irrit. 2; H315; Eye Irrit. 2; H319; Skin Sens. 1; H317; STOT SE 3; H335</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS: 85-01-8</th>
<th>phenanthrene</th>
<th>0.182%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 201-581-5</td>
<td>Aquatic Acute 1; H400; Acute Tox. 4; H302; Skin Irrit. 2; H315; Eye Irrit. 2; H319; Skin Sens. 1; H317; STOT SE 3; H335; Aquatic Chronic 4; H413</td>
<td></td>
</tr>
</tbody>
</table>
### Trade name: PAH Standard (1X1 mL)

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS</th>
<th>Substance</th>
<th>Hazards</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>206-44-0</td>
<td>205-912-4</td>
<td>fluoranthene</td>
<td>Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302;</td>
<td>0.182%</td>
</tr>
<tr>
<td>205-917-1</td>
<td>205-918-6</td>
<td>acenaphthene</td>
<td>Flam. Sol. 2, H228; Aquatic Acute 1, H400; Aquatic Chronic 1, H410;</td>
<td>0.182%</td>
</tr>
<tr>
<td>50-32-8</td>
<td>200-028-5</td>
<td>acenaphthylene</td>
<td>Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315;</td>
<td>0.182%</td>
</tr>
<tr>
<td>83-32-9</td>
<td>203-67-5</td>
<td>dibenz[a]anthracene</td>
<td>Carc. 1B, H350; Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
<td>0.182%</td>
</tr>
<tr>
<td>207-08-9</td>
<td>205-916-6</td>
<td>benzo[k]fluoranthene</td>
<td>Carc. 1B, H350; Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
<td>0.182%</td>
</tr>
<tr>
<td>205-99-2</td>
<td>205-911-9</td>
<td>benzo[e]acephenanthrylene</td>
<td>Carc. 1B, H350; Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
<td>0.182%</td>
</tr>
<tr>
<td>50-32-8</td>
<td>200-028-5</td>
<td>benzo[a]pyrene</td>
<td>Muta. 1B, H340; Carc. 1B, H350; Repr. 1B, H360FD; Aquatic Acute 1,</td>
<td>0.182%</td>
</tr>
<tr>
<td>206-44-0</td>
<td>205-912-4</td>
<td>fluoranthene</td>
<td>Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Sens. 1, H317</td>
<td>0.182%</td>
</tr>
<tr>
<td>191-24-2</td>
<td>205-883-8</td>
<td>benzo[ghi]perylene</td>
<td>Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
<td>0.182%</td>
</tr>
<tr>
<td>129-00-0</td>
<td>204-927-3</td>
<td>pyrene</td>
<td>Muta. 2, H341; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 4, H413</td>
<td>0.182%</td>
</tr>
<tr>
<td>91-20-3</td>
<td>202-049-5</td>
<td>naphthalene</td>
<td>Carc. 2, H351; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302</td>
<td>0.182%</td>
</tr>
</tbody>
</table>

*SVHC:
- 120-12-7 anthracene
- 85-01-8 phenanthrene
- 206-44-0 fluoranthene
- 218-01-9 chrysene
- 207-08-9 benzo[k]fluoranthene
- 50-32-8 benzo[a]pyrene
- 56-55-3 benzo[a]anthracene
- 191-24-2 benzo[ghi]perylene
- 129-00-0 pyrene

*Additional information:* For the wording of the listed hazard phrases refer to section 16.
4 First aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: If symptoms persist consult doctor.
- Information for doctor:
  Most important symptoms and effects, both acute and delayed: No further relevant information available.
  Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents:
  CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- For safety reasons unsuitable extinguishing agents: Water with full jet
- Special hazards arising from the substance or mixture
  During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
  Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Mount respiratory protective device.
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions:
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.
7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
  Prevent formation of aerosols.
- **Information about fire - and explosion protection:**
  Keep ignition sources away - Do not smoke.
  Protect against electrostatic charges.
  Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
  - **Requirements to be met by storerooms and receptacles:** Store in a cool location.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:**
    Keep container tightly sealed.
    Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**
  - **Ingredients with limit values that require monitoring at the workplace:**
    75-09-2 dichloromethane
      - WEL Short-term value: 706 mg/m³, 200 ppm
      - Long-term value: 353 mg/m³, 100 ppm
      - BMGV, Sk
    71-43-2 benzene
      - WEL Long-term value: 3.25 mg/m³, 1 ppm
      - Carc; Sk
  - **Ingredients with biological limit values:**
    75-09-2 dichloromethane
      - BMGV 30 ppm
        - Medium: end-tidal breath
        - Sampling time: post shift
        - Parameter: carbon monoxide
- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing
  Wash hands before breaks and at the end of work.
  Store protective clothing separately.
  Avoid contact with the eyes and skin.
### 48.1.26

- **Respiratory protection:**
  When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed. Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

- **Protection of hands:**
  Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

---

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **General Information**
    - **Appearance:**
      - **Form:** Fluid
      - **Colour:** According to product specification
    - **Odour:** Characteristic
    - **Odour threshold:** Not determined.
    - **pH-value:** Not determined.
  - **Change in condition**
    - **Melting point/freezing point:** Undetermined.
    - **Initial boiling point and boiling range:** 40 °C
  - **Flash point:** -11 °C
  - **Flammability (solid, gas):** Not applicable.
  - **Ignition temperature:** 555 °C
  - **Decomposition temperature:** Not determined.
  - **Auto-ignition temperature:** Product is not selfigniting.
  - **Explosion properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
  - **Explosion limits:**
    - **Lower:** 1.2 Vol %

(Contd. on page 6)
10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
  - **Possibility of hazardous reactions** No dangerous reactions known.
  - **Conditions to avoid** No further relevant information available.
  - **Incompatible materials:** No further relevant information available.
  - **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity**
    Fatal in contact with skin.

- **LD/LC50 values relevant for classification:**
  - **ATE (Acute Toxicity Estimates)**
    - Oral LD50 2,734 mg/kg (rat)
    - Dermal LD50 124 mg/kg
  - **75-09-2 dichloromethane**
    - Oral LD50 1,600 mg/kg (rat)
    - Dermal LD50 >2,000 mg/kg (rat)
    - Inhalative LC50/4 h 88 mg/L (rat)
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: PAH Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalative LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-43-2 benzene</td>
<td>3,340 mg/kg (rat)</td>
<td>48 mg/kg (mouse)</td>
<td>&gt;8,260 mg/kg (rabbit)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>9,980 mg/L (mouse)</td>
</tr>
<tr>
<td>85-01-8 phenanthrene</td>
<td>700 mg/kg (mouse)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>206-44-0 fluoranthene</td>
<td>2,000 mg/kg (rat)</td>
<td>3,180 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>83-32-9 acenaphthene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>208-96-8 acenaphthylene</td>
<td>1,760 mg/kg (mouse)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>129-00-0 pyrene</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>91-20-3 naphthalene</td>
<td>490 mg/kg (rat)</td>
<td>5,000 mg/kg (rat)</td>
<td>20,000 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
- **Skin corrosion/irritation**
  Causes skin irritation.
- **Serious eye damage/irritation**
  Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity**
  May cause genetic defects.
- **Carcinogenicity**
  May cause cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
  May cause respiratory irritation.
- **STOT-repeated exposure**
  Causes damage to organs through prolonged or repeated exposure.
- **Aspiration hazard**
  May be fatal if swallowed and enters airways.

12 Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
Trade name: PAH Standard (1X1 mL)

- Behaviour in environmental systems:
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.
- Ecotoxic effects:
- Remark: Very toxic for fish
- Additional ecological information:
- General notes:
  Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
  Do not allow product to reach ground water, water course or sewage system, even in small quantities.
  Danger to drinking water if even extremely small quantities leak into the ground.
  Also poisonous for fish and plankton in water bodies.
  Very toxic for aquatic organisms
- Results of PBT and vPvB assessment
  - PBT:
    120-12-7 anthracene
  - vPvB: Not applicable.
  - Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
- Recommendation:
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- European waste catalogue
  - HP 3 Flammable
  - HP 4 Irritant - skin irritation and eye damage
  - HP 5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
  - HP 6 Acute Toxicity
  - HP 7 Carcinogenic
  - HP 11 Mutagenic
  - HP 14 Ecotoxic

- Uncleaned packaging:
- Recommendation: Disposal must be made according to official regulations.

* 14 Transport information

- Not Regulated, De minimus Quantities
- UN-Number
- ADR, IMDG, IATA: UN1992
- UN proper shipping name
- ADR: 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE), ENVIRONMENTALLY HAZARDOUS
- IMDG: FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE, fluorene), MARINE POLLUTANT
<table>
<thead>
<tr>
<th><strong>IATA</strong></th>
<th>FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td></td>
</tr>
<tr>
<td>· Class</td>
<td>3 Flammable liquids.</td>
</tr>
<tr>
<td>· Label</td>
<td>3+6.1</td>
</tr>
<tr>
<td><strong>IMDG</strong></td>
<td></td>
</tr>
<tr>
<td>· Class</td>
<td>3 Flammable liquids.</td>
</tr>
<tr>
<td>· Label</td>
<td>3/6.1</td>
</tr>
<tr>
<td><strong>IATA</strong></td>
<td></td>
</tr>
<tr>
<td>· Class</td>
<td>3 Flammable liquids.</td>
</tr>
<tr>
<td>· Label</td>
<td>3 (6.1)</td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
<td></td>
</tr>
<tr>
<td>· ADR, IMDG, IATA</td>
<td>II</td>
</tr>
<tr>
<td><strong>Environmental hazards:</strong></td>
<td>Product contains environmentally hazardous substances: dibenz[a,h]anthracene</td>
</tr>
<tr>
<td>· Marine pollutant:</td>
<td>Symbol (fish and tree)</td>
</tr>
<tr>
<td>· Special marking (ADR):</td>
<td>Symbol (fish and tree)</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>Warning: Flammable liquids.</td>
</tr>
<tr>
<td>· Danger code (Kemler):</td>
<td>336</td>
</tr>
<tr>
<td>· EMS Number:</td>
<td>F-E,S-D</td>
</tr>
<tr>
<td>· Stowage Category</td>
<td>B</td>
</tr>
<tr>
<td>· Stowage Code</td>
<td>SW2 Clear of living quarters.</td>
</tr>
<tr>
<td><strong>Transport in bulk according to Annex II of Marpol and the IBC Code</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Transport/Additional information:</strong></td>
<td></td>
</tr>
<tr>
<td>· ADR</td>
<td></td>
</tr>
<tr>
<td>· Limited quantities (LQ)</td>
<td>1L</td>
</tr>
<tr>
<td>· Excepted quantities (EQ)</td>
<td>Code: E2</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td>Maximum net quantity per outer packaging: 500 ml</td>
</tr>
<tr>
<td>· Transport category</td>
<td>2</td>
</tr>
<tr>
<td>· Tunnel restriction code</td>
<td>D/E</td>
</tr>
</tbody>
</table>
Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 31.03.2019
Revision: 31.03.2019
Version number 3

Trade name: PAH Standard (1X1 mL)

48.1.26

· IMDG
· Limited quantities (LQ) 1L
· Exempted quantities (EQ) Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

· UN "Model Regulation":
UN 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE), 3 (6.1), II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture
· Directive 2012/18/EU
· Named dangerous substances - ANNEX I None of the ingredients is listed.
· Seveso category
H2 ACUTE TOXIC
E1 Hazardous to the Aquatic Environment
P5c FLAMMABLE LIQUIDS

· Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t
· Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t
· REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 5, 28, 29, 50a, 50c, 50d, 50

· Regulation (EU) No 649/2012 71-43-2 benzene Annex I Part 1

· National regulations:
· Additional classification according to Decree on Hazardous Materials, Annex II: Carcinogenic hazardous material group III (dangerous).
· Information about limitation of use: Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

· Other regulations, limitations and prohibitive regulations
· Substances of very high concern (SVHC) according to REACH, Article 57
120-12-7 anthracene
85-01-8 phenanthrene
206-44-0 fluoranthene
218-01-9 chrysene
207-08-9 benzo[k]fluoranthene
50-32-8 benzo[a]pyrene
56-55-3 benzo[a]anthracene
191-24-2 benzo[ghi]perylene
129-00-0 pyrene

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.
The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- Relevant phrases
  H225 Highly flammable liquid and vapour.
  H28 Flammable solid.
  H302 Harmful if swallowed.
  H304 May be fatal if swallowed and enters airways.
  H310 Fatal in contact with skin.
  H315 Causes skin irritation.
  H317 May cause an allergic skin reaction.
  H319 Causes serious eye irritation.
  H322 Harmful if inhaled.
  H332 May cause respiratory irritation.
  H335 May cause genetic defects.
  H341 Suspected of causing genetic defects.
  H340 May cause cancer.
  H350 May cause skin irritation.
  H360 May damage fertility. May damage the unborn child.
  H372 Causes damage to organs through prolonged or repeated exposure.
  H373 May cause damage to organs through prolonged or repeated exposure.
  H400 Very toxic to aquatic life.
  H410 Very toxic to aquatic life with long lasting effects.
  H413 May cause long lasting harmful effects to aquatic life.

- Department issuing SDS: Document Control / Regulatory
- Contact: regulatory@ultrasci.com
- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  SVHC: Substances of Very High Concern
  vPvB: very Persistent and very Bioaccumulative
  Flm. Liq. 2: Flammable liquids – Category 2
  Flm. Sol. 2: Flammable solids – Category 2
  Acute Tox. 4: Acute toxicity – Category 4
  Acute Tox. 1: Acute toxicity – Category 1
  Acute Tox. 2: Acute toxicity – Category 2
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  Skin Sens. 1: Skin sensitisation – Category 1
  Muta. 1B: Germ cell mutagenicity – Category 1B
  Muta. 2: Germ cell mutagenicity – Category 2
  Carc. 1A: Carcinogenicity – Category 1A
  Carc. 1B: Carcinogenicity – Category 1B
  Carc. 2: Carcinogenicity – Category 2
  Repr. 1B: Reproductive toxicity – Category 1B
  STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Trade name: PAH Standard (1X1 mL)

- STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
- STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
- Asp. Tox. 1: Aspiration hazard – Category 1
- Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
- Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
- Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4

* Data compared to the previous version altered.
1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**

- **Trade name**: Phenols Standard (1X1 mL)

- **Part number**: US-107N-1

- **Relevant identified uses of the substance or mixture and uses advised against**
  Reagents and Standards for Analytical Chemical Laboratory Use

- **Details of the supplier of the safety data sheet**

- **Manufacturer/Supplier**: Agilent Technologies Manufacturing GmbH & Co. KG
  Hewlett-Packard-Str. 8
  76337 Waldbronn
  Germany

- **Further information obtainable from**:
  Telephone: 0800 603 1000
  pdl-msds_author@agilent.com

- **Emergency telephone number**: CHEMTREC®: +(44)-870-8200418

2 Hazards identification

- **Classification of the substance or mixture**

- **Classification according to Regulation (EC) No 1272/2008**

  - GHS08 health hazard

  - Carc. 2  H351  Suspected of causing cancer.
  - STOT RE 2  H373  May cause damage to organs through prolonged or repeated exposure.

  - GHS07

  - Acute Tox. 4  H302  Harmful if swallowed.
  - Skin Irrit. 2  H315  Causes skin irritation.
  - Eye Irrit. 2  H319  Causes serious eye irritation.
  - STOT SE 3  H335  May cause respiratory irritation.

  - Aquatic Chronic 3  H412  Harmful to aquatic life with long lasting effects.

- **Label elements**

- **Labelling according to Regulation (EC) No 1272/2008**
  The product is classified and labelled according to the CLP regulation.

- **Hazard pictograms**

  - GHS07
  - GHS08

- **Signal word** Warning

- **Hazard-determining components of labelling**: dichloromethane
Trade name: Phenols Standard (1X1 mL)

DNOC
2,4-dinitrophenol
pentachlorophenol

· **Hazard statements**
  H302 Harmful if swallowed.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H351 Suspected of causing cancer.
  H335 May cause respiratory irritation.
  H373 May cause damage to organs through prolonged or repeated exposure.
  H412 Harmful to aquatic life with long lasting effects.

· **Precautionary statements**
  P101 If medical advice is needed, have product container or label at hand.
  P102 Keep out of reach of children.
  P103 Read label before use.
  P201 Obtain special instructions before use.
  P202 Do not handle until all safety precautions have been read and understood.
  P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  P264 Wash thoroughly after handling.
  P270 Do not eat, drink or smoke when using this product.
  P271 Use only outdoors or in a well-ventilated area.
  P273 Avoid release to the environment.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  P302+P352 IF ON SKIN: Wash with plenty of water.
  P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P308+P313 IF exposed or concerned: Get medical advice/attention.
  P314 Get medical advice/attention if you feel unwell.
  P362+P364 Take off contaminated clothing and wash it before reuse.
  P332+P313 If skin irritation occurs: Get medical advice/attention.
  P337+P313 If eye irritation persists: Get medical advice/attention.
  P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  P405 Store locked up.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Additional information:**
  Contains DNOC, chlorocresol. May produce an allergic reaction.

· **Other hazards**

· **Results of PBT and vPvB assessment**
  · **PBT:** Not applicable.
  · **vPvB:** Not applicable.

### 3 Composition/information on ingredients

· **Chemical characterisation:** Mixtures
· **Description:** Mixture of substances listed below with nonhazardous additions.
4 First aid measures

· Description of first aid measures
· General information:
  Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· After inhalation: In case of unconsciousness place patient stably in side position for transportation.
· After skin contact: Immediately wash with water and soap and rinse thoroughly.
· After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· After swallowing: Call for a doctor immediately.
· Information for doctor:
  · Most important symptoms and effects, both acute and delayed No further relevant information available.
### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**: Use fire extinguishing methods suitable to surrounding conditions.
- **Special hazards arising from the substance or mixture**
  During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment**: Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  Mount respiratory protective device.
- **Environmental precautions**:
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up**:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- **Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

### 7 Handling and storage

- **Handling**:
- **Precautions for safe handling**
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
  Prevent formation of aerosols.
- **Information about fire - and explosion protection**
  Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**:
  - **Requirements to be met by storerooms and receptacles**: No special requirements.
  - **Information about storage in one common storage facility**: Not required.
  - **Further information about storage conditions**: Keep container tightly sealed.
  - **Specific end use(s)**
    No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities**: No further data; see item 7.
### Control parameters

#### Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Substance</th>
<th>WEL Short-term value</th>
<th>Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>706 mg/m³, 200 ppm</td>
<td>353 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>108-95-2 phenol</td>
<td>16 mg/m³, 4 ppm</td>
<td>7.8 mg/m³, 2 ppm</td>
</tr>
</tbody>
</table>

#### Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Substance</th>
<th>BMGV Limit value</th>
<th>Medium</th>
<th>Sampling time</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>30 ppm</td>
<td>end-tidal breath</td>
<td>post shift</td>
<td>carbon monoxide</td>
</tr>
</tbody>
</table>

**Additional information:** The lists valid during the making were used as basis.

### Exposure controls

**Personal protective equipment:**

**General protective and hygienic measures:**
- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

**Respiratory protection:**
- When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
- Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

**Protection of hands:**
- Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

**Material of gloves**
- For normal use: nitrile rubber, 11-13 mil thickness
- For direct contact with the chemical: butyl rubber, 12-15 mil thickness

**Penetration time of glove material**
- For normal use: nitrile rubber: 1 hour
- For direct contact with the chemical: butyl rubber: > 4 hours

**Eye protection:**
- Safety glasses

(Contd. on page 6)
## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **Appearance:**
    - **Form:** Fluid
    - **Colour:** Colourless
  - **Odour:** Like chlorine
  - **Odour threshold:** Not determined.
  - **pH-value:** Not determined.

- **Change in condition**
  - **Melting point/freezing point:** -95.1 °C
  - **Initial boiling point and boiling range:** 40 °C

- **Flash point:** Not applicable.

- **Flammability (solid, gas):** Not applicable.

- **Ignition temperature:** 605 °C

- **Decomposition temperature:** Not determined.

- **Auto-ignition temperature:** Product is not selfigniting.

- **Explosive properties:** Product does not present an explosion hazard.

- **Explosion limits:**
  - **Lower:** 13 Vol %
  - **Upper:** 22 Vol %

- **Vapour pressure at 20 °C:** 360 hPa

- **Density at 20 °C:** 1.3 g/cm³
  - **Relative density:** Not determined.
  - **Vapour density:** Not determined.
  - **Evaporation rate:** Not determined.

- **Solubility in / Miscibility with water at 20 °C:** 20 g/l

- **Partition coefficient: n-octanol/water:** Not determined.

- **Viscosity:**
  - **Dynamic at 20 °C:** 0.43 mPas
  - **Kinematic:** Not determined.

- **Solvent content:**
  - **Organic solvents:** 98.5 %
  - **VOC (EC):** 98.49 %

- **Solids content:** 1.5 %
10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability:
  - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects

  - Acute toxicity
    Harmful if swallowed.

- LD/LC50 values relevant for classification:

  **ATE (Acute Toxicity Estimates)**

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50 (mg/kg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>1,062 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>27,000 mg/kg</td>
</tr>
<tr>
<td>Inhalative</td>
<td>249 mg/L</td>
</tr>
</tbody>
</table>

  **75-09-2 dichloromethane**

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50 (mg/kg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>1,600 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>&gt;2,000 mg/kg (rat)</td>
</tr>
<tr>
<td>Inhalative</td>
<td>88 mg/L (rat)</td>
</tr>
</tbody>
</table>

  **534-52-1 DNOC**

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50 (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>7 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>200 mg/kg (rat)</td>
</tr>
<tr>
<td></td>
<td>1,000 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

  **105-67-9 2,4-xyleneol**

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50 (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>3,200 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>1,040 mg/kg (rat)</td>
</tr>
</tbody>
</table>

  **51-28-5 2,4-dinitrophenol**

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50 (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>30 mg/kg (rat)</td>
</tr>
</tbody>
</table>

  **120-83-2 2,4-dichlorophenol**

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50 (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>47 mg/kg (rat)</td>
</tr>
</tbody>
</table>

  **87-86-5 pentachlorophenol**

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/LC50 (mg/kg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>27 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>96 mg/kg (rat)</td>
</tr>
<tr>
<td>Inhalative</td>
<td>555 mg/L (rat)</td>
</tr>
</tbody>
</table>
### Trade name: Phenols Standard (1X1 mL)

<table>
<thead>
<tr>
<th>88-06-2 2,4,6-trichlorophenol</th>
<th>59-50-7 chlorocresol</th>
<th>108-95-2 phenol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>Oral LD50</td>
<td>Oral LD50</td>
</tr>
<tr>
<td>820 mg/kg (rat)</td>
<td>1,830 mg/kg (rat)</td>
<td>282 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>Dermal LD50</td>
<td>Dermal LD50</td>
</tr>
<tr>
<td>&gt;2,000 mg/kg (rat)</td>
<td></td>
<td>660 mg/kg (rat)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>850 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - Skin corrosion/irritation
    Causes skin irritation.
  - Serious eye damage/irritation
    Causes serious eye irritation.
  - Respiratory or skin sensitisation
    Based on available data, the classification criteria are not met.

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
  - Germ cell mutagenicity
    Based on available data, the classification criteria are not met.
  - Carcinogenicity
    Suspected of causing cancer.

- **Reproductive toxicity**
  Based on available data, the classification criteria are not met.

- **STOT-single exposure**
  May cause respiratory irritation.

- **STOT-repeated exposure**
  May cause damage to organs through prolonged or repeated exposure.

- **Aspiration hazard**
  Based on available data, the classification criteria are not met.

### 12 Ecological information

- **Toxicity**
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.

- **Behaviour in environmental systems:**
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.

- **Ecotoxic Effects:**
  - Remark: Harmful to fish.

- **Additional ecological information:**
  - General notes:
    Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even small quantities leak into the ground.
    Harmful to aquatic organisms.

- **Results of PBT and vPvB assessment**
  - PBT: Not applicable.
  - vPvB: Not applicable.
  - Other adverse effects: No further relevant information available.
13 Disposal considerations

- Waste treatment methods
- Recommendation
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- European waste catalogue
  - HP 4  Irritant - skin irritation and eye damage
  - HP 5  Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
  - HP 7  Carcinogenic
  - HP 14 Ecotoxic

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- Not Regulated, De minimus Quantities

- UN-Number
  - ADR, IMDG, IATA UN1593

- UN proper shipping name
  - ADR
  - IMDG, IATA 1593 DICHLOROMETHANE

- Transport hazard class(es)
  - ADR, IMDG, IATA

  - Class 6.1 Toxic substances.
  - Label 6.1

- Packing group
  - ADR, IMDG, IATA III

- Environmental hazards:
  - Not applicable.

- Special precautions for user
  - Danger code (Kemler): Warning: Toxic substances.
  - EMS Number: 60 F-A,S-A
  - Segregation groups Liquid halogenated hydrocarbons
  - Stowage Category A

- Transport in bulk according to Annex II of Marpol and the IBC Code
  - Not applicable.
Transport/Additional information:

- **ADR**
  - Limited quantities (LQ) 5L
  - Excepted quantities (EQ) Code: E1
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 1000 ml

- **Transport category**
  - Tunnel restriction code E

- **IMDG**
  - Limited quantities (LQ) 5L
  - Excepted quantities (EQ) Code: E1
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 1000 ml

**UN "Model Regulation":** UN 1593 DICHLOROMETHANE, 6.1, III

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 22, 59

<table>
<thead>
<tr>
<th>Regulation (EU) No 649/2012</th>
<th>DNOC</th>
<th>Annex I Part 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>534-52-1</td>
<td>pentachlorophenol</td>
<td>Annex I Part 3</td>
</tr>
</tbody>
</table>

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Relevant phrases**
  - H300 Fatal if swallowed.
  - H301 Toxic if swallowed.
  - H302 Harmful if swallowed.
  - H310 Fatal in contact with skin.
  - H311 Toxic in contact with skin.
  - H312 Harmful in contact with skin.
  - H314 Causes severe skin burns and eye damage.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H318 Causes serious eye damage.
  - H319 Causes serious eye irritation.
  - H330 Fatal if inhaled.
  - H331 Toxic if inhaled.
Trade name: Phenols Standard (1X1 mL)

H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

· Department issuing SDS: Document Control / Regulatory
· Contact: regulatory@ultrasci.com
· Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  Acute Tox. 2: Acute toxicity – Category 2
  Acute Tox. 3: Acute toxicity – Category 3
  Acute Tox. 4: Acute toxicity – Category 4
  Acute Tox. 1: Acute toxicity – Category 1
  Skin Corr. 1B: Skin corrosion/irritation – Category 1B
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Dam. 1: Serious eye damage/eye irritation – Category 1
  Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  Skin Sens. 1: Skin sensitisation – Category 1
  Muta. 2: Germ cell mutagenicity – Category 2
  Carc. 2: Carcinogenicity – Category 2
  STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
  Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
  Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
  Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
  Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** Semi-Volatiles Internal Standard (1X1 mL)
- **Part number:** US-108N-1
- **Relevant identified uses of the substance or mixture and uses advised against**
  Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
  Agilent Technologies Manufacturing GmbH & Co. KG
  Hewlett-Packard-Str.8
  76337 Waldbronn
  Germany
- **Further information obtainable from:**
  Telephone: 0800 603 1000
  pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: +(44)-870-8200418

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**

  GHS08 health hazard
  Carc. 1B H350 May cause cancer.
  STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

  GHS07
  Acute Tox. 4 H302 Harmful if swallowed.
  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2 H319 Causes serious eye irritation.
  STOT SE 3 H335 May cause respiratory irritation.

  Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
  The product is classified and labelled according to the CLP regulation.

- **Hazard pictograms**

  GHS07  GHS08

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  dichloromethane

(Contd. on page 2)
chrysene-d12

- **Hazard statements**
  - H302 Harmful if swallowed.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H350 May cause cancer.
  - H335 May cause respiratory irritation.
  - H373 May cause damage to organs through prolonged or repeated exposure.
  - H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements**
  - P101 If medical advice is needed, have product container or label at hand.
  - P102 Keep out of reach of children.
  - P103 Read label before use.
  - P201 Obtain special instructions before use.
  - P202 Do not handle until all safety precautions have been read and understood.
  - P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  - P264 Wash thoroughly after handling.
  - P270 Do not eat, drink or smoke when using this product.
  - P271 Use only outdoors or in a well-ventilated area.
  - P273 Avoid release to the environment.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  - P330 Rinse mouth.
  - P302+P352 IF ON SKIN: Wash with plenty of water.
  - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P308+P313 IF exposed or concerned: Get medical advice/attention.
  - P321 Specific treatment (see on this label).
  - P314 Get medical advice/attention if you feel unwell.
  - P362+P364 Take off contaminated clothing and wash it before reuse.
  - P332+P313 If skin irritation occurs: Get medical advice/attention.
  - P337+P313 If eye irritation persists: Get medical advice/attention.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Other hazards**
- **Results of PBT and vPvB assessment**
  - PBT: Not applicable.
  - vPvB: Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterisation:** Mixtures
- **Description:** Mixture of substances listed below with nonhazardous additions.

#### Dangerous components:

<table>
<thead>
<tr>
<th>CAS: 75-09-2</th>
<th>dichloromethane</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 200-838-9</td>
<td>![Carc. 2; H351; STOT RE 2; H373; Skin Irrit. 2; H315; Eye Irrit. 2; H319; STOT SE 3; H335]</td>
</tr>
</tbody>
</table>

(Contd. on page 3)
4. First aid measures

- **Description of first aid measures**
- **General information**: Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation**: In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact**: Immediately wash with water and soap and rinse thoroughly.
- **After eye contact**: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing**: Call for a doctor immediately.
- **Information for doctor**:
  - **Most important symptoms and effects, both acute and delayed** No further relevant information available.
  - **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5. Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents**: Use fire extinguishing methods suitable to surrounding conditions.
- **Special hazards arising from the substance or mixture**
  During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment**: Mouth respiratory protective device.

6. Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device.
- **Environmental precautions**:
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
Trade name: Semi-Volatiles Internal Standard (1X1 mL)

Do not allow to enter sewers/surface or ground water.

- **Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.

- **Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

---

7 Handling and storage

- **Handling:**
  - **Precautions for safe handling**
    Ensure good ventilation/exhaustation at the workplace.
    Open and handle receptacle with care.
    Prevent formation of aerosols.
  - **Information about fire - and explosion protection:** Keep respiratory protective device available.
  - **Conditions for safe storage, including any incompatibilities**
    - **Storage:**
      - **Requirements to be met by storerooms and receptacles:** No special requirements.
      - **Information about storage in one common storage facility:** Not required.
      - **Further information about storage conditions:** Keep container tightly sealed.
      - **Specific end use(s)** No further relevant information available.

---

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

- **Control parameters**
  - **Ingredients with limit values that require monitoring at the workplace:**
    - **75-09-2 dichloromethane**
      - WEL Short-term value: 706 mg/m³, 200 ppm
      - Long-term value: 353 mg/m³, 100 ppm
      - BMGV, Sk
  
  - **Ingredients with biological limit values:**
    - **75-09-2 dichloromethane**
      - BMGV 30 ppm
      - Medium: end-tidal breath
      - Sampling time: post shift
      - Parameter: carbon monoxide

- **Additional information:** The lists valid during the making were used as basis.
48.1.26 Store protective clothing separately.
Avoid contact with the eyes and skin.

- Respiratory protection:
When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

- Protection of hands:
Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

- Material of gloves
For normal use: nitrile rubber, 11-13 mil thickness
For direct contact with the chemical: butyl rubber, 12-15 mil thickness

- Penetration time of glove material
For normal use: nitrile rubber: 1 hour
For direct contact with the chemical: butyl rubber: > 4 hours

- Eye protection:
Safety glasses
Tightly sealed goggles

9 Physical and chemical properties

- Information on basic physical and chemical properties
- General Information
- Appearance:
  Form: Fluid
  Colour: Colourless
- Odour: Like chlorine
- Odour threshold: Not determined.
- pH-value: Not determined.
- Change in condition
  Melting point/freezing point: -95.1 ºC
  Initial boiling point and boiling range: 40 ºC
- Flash point: Not applicable.
- Flammability (solid, gas): Not applicable.
- Ignition temperature: 605 ºC
- Decomposition temperature: Not determined.
- Auto-ignition temperature: Product is not selfigniting.
- Explosive properties: Product does not present an explosion hazard.
### Explosion limits:
- **Lower:** 13 Vol %
- **Upper:** 22 Vol %

### Vapour pressure at 20 °C:
- 360 hPa

### Density at 20 °C:
- 1.3 g/cm³

### Relative density
- Not determined.

### Vapour density
- Not determined.

### Evaporation rate
- Not determined.

### Solubility in / Miscibility with water at 20 °C:
- 20 g/l

### Partition coefficient: n-octanol/water:
- Not determined.

### Viscosity:
- Dynamic: Not determined.
- Kinematic: Not determined.

### Solvent content:
- **Organic solvents:** 98.2 %
- **VOC (EC):** 98.19 %

### Solids content:
- 1.8 %

### Other information
- No further relevant information available.

### 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
  - **Possibility of hazardous reactions** No dangerous reactions known.
  - **Conditions to avoid** No further relevant information available.
  - **Incompatible materials:** No further relevant information available.
  - **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity**
    - Harmful if swallowed.

- **LD/LC50 values relevant for classification:**
  - **ATE (Acute Toxicity Estimates):**
    - **Oral LD50:** 1,629 mg/kg (rat)
  - **75-09-2 dichloromethane**
    - **Oral LD50:** 1,600 mg/kg (rat)
    - **Dermal LD50:** >2,000 mg/kg (rat)
    - **Inhalative LC50/4 h:** 88 mg/L (rat)
**Trade name:** Semi-Volatiles Internal Standard (1X1 mL)

- **Primary irritant effect:**
  - Skin corrosion/irritation
    Causes skin irritation.
  - **Serious eye damage/irritation**
    Causes serious eye irritation.
  - **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
  - **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
  - Germ cell mutagenicity Based on available data, the classification criteria are not met.
  - **Carcinogenicity**
    May cause cancer.
  - Reproductive toxicity Based on available data, the classification criteria are not met.
  - **STOT-single exposure**
    May cause respiratory irritation.
  - **STOT-repeated exposure**
    May cause damage to organs through prolonged or repeated exposure.
  - **Aspiration hazard** Based on available data, the classification criteria are not met.

### 12 Ecological information

- **Toxicity**
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability No further relevant information available.
  - Behaviour in environmental systems:
    - Bioaccumulative potential No further relevant information available.
    - Mobility in soil No further relevant information available.
  - Ecotoxicological effects:
    - Remark: Harmful to fish
  - **Additional ecological information:**
  - General notes:
    Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even small quantities leak into the ground.
    Harmful to aquatic organisms
  - **Results of PBT and vPvB assessment**
    - PBT: Not applicable.
    - vPvB: Not applicable.
  - **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.

**European waste catalogue**

<table>
<thead>
<tr>
<th>HP 4</th>
<th>Irritant - skin irritation and eye damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 5</td>
<td>Specific Target Organ Toxicity (STOT)/Aspiration Toxicity</td>
</tr>
<tr>
<td>HP 7</td>
<td>Carcinogenic</td>
</tr>
<tr>
<td>HP 14</td>
<td>Ecotoxic</td>
</tr>
</tbody>
</table>

(Contd. on page 8)
Trade name: Semi-Volatiles Internal Standard (1X1 mL)

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- Not Regulated, De minimus Quantities

<table>
<thead>
<tr>
<th>UN-Number</th>
<th>ADR, IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN1593</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UN proper shipping name</th>
<th>ADR</th>
<th>IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1593 DICHLOROMETHANE</td>
<td></td>
<td>DICHLOROMETHANE</td>
</tr>
</tbody>
</table>

- Transport hazard class(es)
  - ADR, IMDG, IATA

<table>
<thead>
<tr>
<th>Class</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>6.1</td>
</tr>
</tbody>
</table>

- Environmental hazards:
  - Not applicable.

<table>
<thead>
<tr>
<th>Special precautions for user</th>
<th>Danger code (Kemler):</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F-A,S-A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Segregation groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid halogenated hydrocarbons</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stowage Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
</tbody>
</table>

- Transport in bulk according to Annex II of Marpol and the IBC Code
  - Not applicable.

- Transport/Additional information:

<table>
<thead>
<tr>
<th>ADR</th>
<th>IMDG</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Limited quantities (LQ)</th>
<th>Excepted quantities (EQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5L</td>
<td>Code: E1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transport category</th>
<th>Tunnel restriction code</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>E</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Limited quantities (LQ)</th>
<th>Excepted quantities (EQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5L</td>
<td>Code: E1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maximum net quantity per inner packaging</th>
<th>Maximum net quantity per outer packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 ml</td>
<td>1000 ml</td>
</tr>
<tr>
<td>Code: E1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Maximum net quantity per outer packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 ml</td>
</tr>
</tbody>
</table>

(Contd. of page 7)
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 59, 72

- National regulations:
  - Additional classification according to Decree on Hazardous Materials, Annex II:
    Carcinogenic hazardous material group III (dangerous).

- Information about limitation of use:
  Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

- Other regulations, limitations and prohibitive regulations
  - Substances of very high concern (SVHC) according to REACH, Article 57
    1719-03-5 chrysene-d12
  - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- Relevant phrases
  H302 Harmful if swallowed.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H335 May cause respiratory irritation.
  H341 Suspected of causing genetic defects.
  H350 May cause cancer.
  H351 Suspected of causing cancer.
  H373 May cause damage to organs through prolonged or repeated exposure.
  H400 Very toxic to aquatic life.
  H410 Very toxic to aquatic life with long lasting effects.
  H413 May cause long lasting harmful effects to aquatic life.

- Department issuing SDS: Document Control / Regulatory
- Contact: regulatory@ultrasci.com

- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
Trade name: Semi-Volatiles Internal Standard (1X1 mL)

LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 1B: Carcinogenicity – Category 1B
Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4

* Data compared to the previous version altered.
1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
  - **Trade name:** Ethers and Phthalates Standard (1X1 mL)
  - **Part number:** US-110-1

- **Relevant identified uses of the substance or mixture and uses advised against**
  - Reagents and Standards for Analytical Chemical Laboratory Use

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** Agilent Technologies Manufacturing GmbH & Co. KG
    Hewlett-Packard-Str.8
    76337 Waldbronn
    Germany
  - **Further information obtainable from:**
    Telephone: 0800 603 1000
    pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(44)-870-8200418

2 Hazards identification

- **Classification of the substance or mixture**
  - **Classification according to Regulation (EC) No 1272/2008**
    - GHS08 health hazard
    - Carc. 2 H351 Suspected of causing cancer.
    - STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
    - GHS07

    - Acute Tox. 4 H302 Harmful if swallowed.
    - Skin Irrit. 2 H315 Causes skin irritation.
    - Eye Irrit. 2 H319 Causes serious eye irritation.
    - STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008**
    - The product is classified and labelled according to the CLP regulation.
  - **Hazard pictograms**
    - GHS07 GHS08

- **Signal word** Warning

- **Hazard-determining components of labelling:**
  - dichloromethane
  - bis(2-chloroethyl) ether
  - bis(2-chloroethoxy)methane

(Contd. on page 2)
Trade name: Ethers and Phthalates Standard (1X1 mL)

- **Hazard statements**
  - H302 Harmful if swallowed.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H351 Suspected of causing cancer.
  - H335 May cause respiratory irritation.
  - H373 May cause damage to organs through prolonged or repeated exposure.

- **Precautionary statements**
  - P101 If medical advice is needed, have product container or label at hand.
  - P102 Keep out of reach of children.
  - P103 Read label before use.
  - P201 Obtain special instructions before use.
  - P202 Do not handle until all safety precautions have been read and understood.
  - P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  - P264 Wash thoroughly after handling.
  - P270 Do not eat, drink or smoke when using this product.
  - P271 Use only outdoors or in a well-ventilated area.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  - P330 Rinse mouth.
  - P302+P352 IF ON SKIN: Wash with plenty of water.
  - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P308+P313 IF exposed or concerned: Get medical advice/attention.
  - P321 Specific treatment (see on this label).
  - P314 Get medical advice/attention if you feel unwell.
  - P362+P364 Take off contaminated clothing and wash it before reuse.
  - P332+P313 If skin irritation occurs: Get medical advice/attention.
  - P337+P313 If eye irritation persists: Get medical advice/attention.
  - P403+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P305+P313+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P362 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

- **Additional information:**
  - Contains 4-bromophenyl phenyl ether, 4-chlorophenyl phenyl ether. May produce an allergic reaction.

- **Other hazards**

- **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterisation: Mixtures**
  - **Description:** Mixture of substances listed below with nonhazardous additions.
  - **Dangerous components:**

<table>
<thead>
<tr>
<th>CAS: 75-09-2</th>
<th>dichloromethane</th>
<th>98.341%</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 200-838-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>☢️ Carc. 2; H351; STOT RE 2; H333; ☸️ Skin Irrit. 2; H315; Eye Irrit. 2; H319; STOT SE 3, H335</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
48.1.26

CAS: 111-91-1  EINECS: 203-920-2  bis(2-chloroethoxy)methane  
Acute Tox. 3, H301; STOT RE 2, H373  0.151%

CAS: 111-44-4  EINECS: 203-870-1  bis(2-chloroethyl) ether  
Flam. Liq. 3, H226; Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; Carc. 2, H351  0.151%

CAS: 101-55-3  EINECS: 202-952-4  4-bromophenyl phenyl ether  
Acute Tox. 4, H302; Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 4, H413  0.151%

CAS: 7005-72-3  EINECS: 230-281-7  4-chlorophenyl phenyl ether  
Acute Tox. 4, H302; Eye Irrit. 2, H319; Skin Sens. 1, H317; Aquatic Chronic 4, H413  0.151%

CAS: 117-84-0  EINECS: 204-214-7  dioctyl phthalate  
Repr. 2, H361; Aquatic Chronic 4, H413  0.151%

CAS: 84-74-2  EINECS: 201-557-4  dibutyl phthalate  
Repr. 1B, H360Df; Aquatic Acute 1, H400; Acute Tox. 4, H332  0.151%

CAS: 117-81-7  EINECS: 204-211-0  di-(2-ethylhexyl) phthalate  
Repr. 1B, H360FD  0.151%

CAS: 85-68-7  EINECS: 201-622-7  BBP  
Acute Tox. 3, H331; Repr. 1B, H360Df; Aquatic Acute 1, H400; Aquatic Chronic 1, H410  0.151%

SVHC
- 84-74-2 dibutyl phthalate
- 117-81-7 di-(2-ethylhexyl) phthalate
- 85-68-7 BBP

Additional information: For the wording of the listed hazard phrases refer to section 16.

4 First aid measures

- Description of first aid measures
- General information: Immediately remove any clothing soiled by the product. Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: Call for a doctor immediately.
- Information for doctor:
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
Trade name: Ethers and Phthalates Standard (1X1 mL)

· **Special hazards arising from the substance or mixture**
  During heating or in case of fire poisonous gases are produced.
· **Advice for firefighters**
  · **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
  Mount respiratory protective device.
· **Environmental precautions:** Do not allow to enter sewers/surface or ground water.
· **Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
· **Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

### 7 Handling and storage

· **Handling:**
  · **Precautions for safe handling**
    Ensure good ventilation/exhaustion at the workplace.
    Open and handle receptacle with care.
    Prevent formation of aerosols.
  · **Information about fire - and explosion protection:** Keep respiratory protective device available.
· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
  · **Requirements to be met by storerooms and receptacles:** No special requirements.
  · **Information about storage in one common storage facility:** Not required.
  · **Further information about storage conditions:** Keep container tightly sealed.
· **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.
· **Control parameters**
  · **Ingredients with limit values that require monitoring at the workplace:**
    | 75-09-2 dichloromethane |
    |-------------------------|
    | WEL Short-term value: 706 mg/m³, 200 ppm |
    | Long-term value: 353 mg/m³, 100 ppm |
    | BMGV, Sk |
    | 84-74-2 dibutyl phthalate |
    | WEL Short-term value: 10 mg/m³ |
    | Long-term value: 5 mg/m³ |
117-81-7 di-(2-ethylhexyl) phthalate

WEL

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Short-term value</th>
<th>Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>117-81-7</td>
<td>10 mg/m³</td>
<td>5 mg/m³</td>
</tr>
</tbody>
</table>

85-68-7 BBP

WEL

Long-term value: 5 mg/m³

Ingredients with biological limit values:

75-09-2 dichloromethane

BMGV 30 ppm

<table>
<thead>
<tr>
<th>Medium:</th>
<th>Sampling time:</th>
<th>Parameter:</th>
</tr>
</thead>
<tbody>
<tr>
<td>end-tidal breath</td>
<td>post shift</td>
<td>carbon monoxide</td>
</tr>
</tbody>
</table>

Additional information: The lists valid during the making were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.

Respiratory protection:

When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

Protection of hands:

Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

Material of gloves

For normal use: nitrile rubber, 11-13 mil thickness
For direct contact with the chemical: butyl rubber, 12-15 mil thickness

Penetration time of glove material

For normal use: nitrile rubber: 1 hour
For direct contact with the chemical: butyl rubber: > 4 hours

Eye protection:

Safety glasses

Tightly sealed goggles
9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
    - Appearance:
      - Form: Fluid
      - Colour: Colourless
    - Odour: Like chlorine
    - Odour threshold: Not determined.
  - pH-value: Not determined.
  - Change in condition
    - Melting point/freezing point: -95.1 °C
    - Initial boiling point and boiling range: 40 °C
  - Flash point: Not applicable.
  - Flammability (solid, gas): Not applicable.
  - Ignition temperature: 605 °C
  - Decomposition temperature: Not determined.
  - Auto-ignition temperature: Product is not selfigniting.
  - Explosive properties: Product does not present an explosion hazard.
  - Explosion limits:
    - Lower: 13 Vol %
    - Upper: 22 Vol %
  - Vapour pressure at 20 °C: 360 hPa
  - Density at 20 °C: 1.3 g/cm³
  - Relative density: Not determined.
  - Vapour density: Not determined.
  - Evaporation rate: Not determined.
  - Solubility in / Miscibility with water at 20 °C: 20 g/l
  - Partition coefficient: n-octanol/water: Not determined.
  - Viscosity:
    - Dynamic: Not determined.
    - Kinematic: Not determined.
  - Solvent content:
    - Organic solvents: 98.3 %
    - VOC (EC) 98.34 %
  - Solids content: 0.3 %
  - Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
· Chemical stability
• Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
• Possibility of hazardous reactions No dangerous reactions known.
• Conditions to avoid No further relevant information available.
• Incompatible materials: No further relevant information available.
• Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects
• Acute toxicity
  Harmful if swallowed.

· LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE (Acute Toxicity Estimates)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>1,520 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>59,682 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h</td>
<td>&gt;4,443 mg/L ( rat)</td>
<td></td>
</tr>
</tbody>
</table>

75-09-2 dichloromethane

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>1,600 mg/kg ( rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>&gt;2,000 mg/kg ( rat)</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h</td>
<td>88 mg/L ( rat)</td>
<td></td>
</tr>
</tbody>
</table>

111-91-1 bis(2-chloroethoxy)methane

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>65 mg/kg ( rat)</td>
<td></td>
</tr>
</tbody>
</table>

111-44-4 bis(2-chloroethyl) ether

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>75 mg/kg ( rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>90 mg/kg ( rabbit)</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h</td>
<td>330 mg/L ( rat)</td>
<td></td>
</tr>
</tbody>
</table>

117-84-0 diocetyl phthalate

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>47,000 mg/kg ( rat)</td>
<td></td>
</tr>
</tbody>
</table>

84-74-2 dibutyl phthalate

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>6,300 mg/kg ( rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>&gt;4,000 mg/kg ( rabbit)</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h</td>
<td>15.68 mg/L ( rat)</td>
<td></td>
</tr>
</tbody>
</table>

117-81-7 di-(2-ethylhexyl) phthalate

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>&gt;20,000 mg/kg ( rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>4,000 mg/kg ( rat)</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h</td>
<td>25,000 mg/kg ( rabbit)</td>
<td></td>
</tr>
</tbody>
</table>

85-68-7 BBP

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>2,330 mg/kg ( rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>6,700 mg/kg ( rabbit)</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h</td>
<td>&gt;6.7 mg/L ( rat)</td>
<td></td>
</tr>
</tbody>
</table>
Trade name: Ethers and Phthalates Standard (1X1 mL)

- Primary irritant effect:
  - Skin corrosion/irritation
    Causes skin irritation.
  - Serious eye damage/irritation
    Causes serious eye irritation.
  - Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
  - Germ cell mutagenicity Based on available data, the classification criteria are not met.
  - Carcinogenicity
    Suspected of causing cancer.
- Reproductive toxicity Based on available data, the classification criteria are not met.
  - STOT-single exposure
    May cause respiratory irritation.
  - STOT-repeated exposure
    May cause damage to organs through prolonged or repeated exposure.
  - Aspiration hazard Based on available data, the classification criteria are not met.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability No further relevant information available.
- Behaviour in environmental systems:
  - Bioaccumulative potential No further relevant information available.
  - Mobility in soil No further relevant information available.
- Additional ecological information:
  - General notes:
    Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even small quantities leak into the ground.
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
  - Other adverse effects No further relevant information available.

13 Disposal considerations

- Waste treatment methods
- Recommendation
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- European waste catalogue
  - HP 4 Irritant - skin irritation and eye damage
  - HP 5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
  - HP 7 Carcinogenic
Trade name: Ethers and Phthalates Standard (1X1 mL)

- Uncleaned packaging:
- Recommendation: Disposal must be made according to official regulations.

## 14 Transport information

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Not Regulated, De minimus Quantities</strong></td>
<td></td>
</tr>
<tr>
<td><strong>UN-Number</strong></td>
<td>UN1593</td>
</tr>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
<td></td>
</tr>
<tr>
<td><strong>UN proper shipping name</strong></td>
<td>1593 DICHLOROMETHANE</td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>DICHLOROMETHANE</td>
</tr>
<tr>
<td><strong>IMDG, IATA</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td>Class 6.1 Toxic substances.</td>
</tr>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
<td>Label 6.1</td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Label</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
<td>ADR, IMDG, IATA III</td>
</tr>
<tr>
<td><strong>ADR, IMDG, IATA</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Environmental hazards:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>Warning: Toxic substances.</td>
</tr>
<tr>
<td><strong>Danger code (Kemler):</strong></td>
<td>60</td>
</tr>
<tr>
<td><strong>EMS Number:</strong></td>
<td>F-A,S-A</td>
</tr>
<tr>
<td><strong>Segregation groups</strong></td>
<td>Liquid halogenated hydrocarbons</td>
</tr>
<tr>
<td><strong>Stowage Category</strong></td>
<td>A</td>
</tr>
<tr>
<td><strong>Transport in bulk according to Annex II of Marpol and the IBC Code</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Transport/Additional information:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>ADR</strong></td>
<td>ADR</td>
</tr>
<tr>
<td><strong>Limited quantities (LQ)</strong></td>
<td>5L Code: E1</td>
</tr>
<tr>
<td><strong>Excerpted quantities (EQ)</strong></td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td></td>
<td>Maximum net quantity per outer packaging: 1000 ml</td>
</tr>
<tr>
<td><strong>Transport category</strong></td>
<td>2</td>
</tr>
<tr>
<td><strong>Tunnel restriction code</strong></td>
<td>E</td>
</tr>
<tr>
<td><strong>IMDG</strong></td>
<td>IMDG</td>
</tr>
<tr>
<td><strong>Limited quantities (LQ)</strong></td>
<td>5L Code: E1</td>
</tr>
<tr>
<td><strong>Excerpted quantities (EQ)</strong></td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td></td>
<td>Maximum net quantity per outer packaging: 1000 ml</td>
</tr>
</tbody>
</table>
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.

- LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)
  - 84-74-2 dibutyl phthalate
  - 117-81-7 di-(2-ethylhexyl) phthalate
  - 85-68-7 BBP

- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 51a, 51b, 51c, 59
  - Regulation (EU) No 649/2012
    - 85-68-7 BBP

- National regulations:
- Other regulations, limitations and prohibitive regulations

- Substances of very high concern (SVHC) according to REACH, Article 57
  - 84-74-2 dibutyl phthalate
  - 117-81-7 di-(2-ethylhexyl) phthalate
  - 85-68-7 BBP

- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- Relevant phrases
  - H226 Flammable liquid and vapour.
  - H300 Fatal if swallowed.
  - H301 Toxic if swallowed.
  - H302 Harmful if swallowed.
  - H310 Fatal in contact with skin.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H319 Causes serious eye irritation.
  - H330 Fatal if inhaled.
  - H331 Toxic if inhaled.
  - H332 Harmful if inhaled.
  - H335 May cause respiratory irritation.
  - H351 Suspected of causing cancer.
  - H360Df May damage the unborn child. Suspected of damaging fertility.
  - H360DF May damage fertility. May damage the unborn child.
  - H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H413 May cause long lasting harmful effects to aquatic life.

- Department issuing SDS: Document Control / Regulatory
- Contact: regulatory@ultrasci.com
- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  SVHC: Substances of Very High Concern
  vPvB: very Persistent and very Bioaccumulative
  Flam. Liq. 3: Flammable liquids – Category 3
  Acute Tox. 2: Acute toxicity – Category 2
  Acute Tox. 3: Acute toxicity – Category 3
  Acute Tox. 4: Acute toxicity – Category 4
  Acute Tox. 1: Acute toxicity – Category 1
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  Skin Sens. 1: Skin sensitisation – Category 1
  Carc. 2: Carcinogenicity – Category 2
  Repr. 1B: Reproductive toxicity – Category 1B
  Repr. 2: Reproductive toxicity – Category 2
  STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
  Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
  Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
  Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4
1 Identification of the substance/mixture and of the company/undertaking

- Product identifier
- Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)
- Part number: US-111-1
- Relevant identified uses of the substance or mixture and uses advised against
  Reagents and Standards for Analytical Chemical Laboratory Use

Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
  Agilent Technologies Manufacturing GmbH & Co. KG
  Hewlett-Packard-Str.8
  76337 Waldbronn
  Germany
- Further information obtainable from:
  Telephone: 0800 603 1000
  pdl-msds_author@agilent.com
- Emergency telephone number: CHEMTREC®: +(44)-870-8200418

2 Hazards identification

- Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008
  - GHS08 health hazard
    Carc. 1B H350 May cause cancer.
    STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

  - GHS07
    Acute Tox. 4 H302 Harmful if swallowed.
    Skin Irrit. 2 H315 Causes skin irritation.
    Eye Irrit. 2 H319 Causes serious eye irritation.
    STOT SE 3 H335 May cause respiratory irritation.
  - Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- Label elements
- Labelling according to Regulation (EC) No 1272/2008
  The product is classified and labelled according to the CLP regulation.
- Hazard pictograms
  - GHS07
  - GHS08

- Signal word Danger
- Hazard-determining components of labelling:
  dichloromethane
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H350 May cause cancer.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P202 Do not breathe dust/fume/gas/mist/vapours/spray.
P260 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P321 Specific treatment (see on this label).
P314 Get medical advice/attention if you feel unwell.
P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Results of PBT and vPvB assessment

PBT:

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>87-68-3</td>
<td>hexachlorobuta-1,3-diene</td>
</tr>
<tr>
<td>120-82-1</td>
<td>1,2,4-trichlorobenzene</td>
</tr>
</tbody>
</table>

vPvB:

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>87-68-3</td>
<td>hexachlorobuta-1,3-diene</td>
</tr>
</tbody>
</table>
3 Composition/information on ingredients

- **Chemical characterisation:** Mixtures
- **Description:** Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>EINECS</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>dichloromethane</td>
<td>75-09-2</td>
<td>200-838-9</td>
<td>98.0396%</td>
</tr>
<tr>
<td>1,2-dichlorobenzene</td>
<td>95-50-1</td>
<td>202-425-9</td>
<td>0.151%</td>
</tr>
<tr>
<td>1,4-dichlorobenzene</td>
<td>106-46-7</td>
<td>203-400-5</td>
<td>0.151%</td>
</tr>
<tr>
<td>hexachlorobenzene</td>
<td>118-74-1</td>
<td>204-273-9</td>
<td>0.151%</td>
</tr>
<tr>
<td>hexachlorobutadiene</td>
<td>95-94-3</td>
<td>202-466-2</td>
<td>0.151%</td>
</tr>
</tbody>
</table>

- **Dangerous components:**

  - **Chemical characterisation:** Mixtures
  - **Description:** Mixture of substances listed below with nonhazardous additions.

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First aid measures

- **Description of first aid measures**
- **General information:**
  
  Immediately remove any clothing soiled by the product.
48.1.26

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- **After inhalation**: In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact**: Immediately wash with water and soap and rinse thoroughly.
- **After eye contact**: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing**: Call for a doctor immediately.

**Information for doctor**:

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 **Firefighting measures**

- **Extinguishing media**
- **Suitable extinguishing agents**: Use fire extinguishing methods suitable to surrounding conditions.
- **Special hazards arising from the substance or mixture**
  During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment**: Mouth respiratory protective device.

6 **Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device.
- **Environmental precautions**:
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up**:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- **Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 **Handling and storage**

- **Handling**:
- **Precautions for safe handling**
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
  Prevent formation of aerosols.
- **Information about fire - and explosion protection**: Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**:
- **Requirements to be met by storerooms and receptacles**: No special requirements.
- **Information about storage in one common storage facility**: Not required.
8 Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

- Control parameters

- Ingredients with limit values that require monitoring at the workplace:

  75-09-2 dichloromethane
  
  WEL: Short-term value: 706 mg/m³, 200 ppm
  Long-term value: 353 mg/m³, 100 ppm
  BMGV, Sk

  95-50-1 1,2-dichlorobenzene
  
  WEL: Short-term value: 306 mg/m³, 50 ppm
  Long-term value: 153 mg/m³, 25 ppm
  Sk

  106-46-7 1,4-dichlorobenzene
  
  WEL: Short-term value: 60 mg/m³, 10 ppm
  Long-term value: 12 mg/m³, 2 ppm
  Sk

  120-82-1 1,2,4-trichlorobenzene
  
  WEL: Short-term value: 5 ppm
  Long-term value: 1 ppm
  Sk

- Ingredients with biological limit values:

  75-09-2 dichloromethane
  
  BMGV: 30 ppm
  Medium: end-tidal breath
  Sampling time: post shift
  Parameter: carbon monoxide

- Additional information: The lists valid during the making were used as basis.

- Exposure controls

- Personal protective equipment:

- General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing
  Wash hands before breaks and at the end of work.
  Store protective clothing separately.
  Avoid contact with the eyes and skin.

- Respiratory protection:
  When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
  Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

- Protection of hands:
  Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct
Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

- Contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

  - **Material of gloves**
    - For normal use: nitrile rubber, 11-13 mil thickness
    - For direct contact with the chemical: butyl rubber, 12-15 mil thickness

  - **Penetration time of glove material**
    - For normal use: nitrile rubber: 1 hour
    - For direct contact with the chemical: butyl rubber: > 4 hours

  - **Eye protection:**
    - Safety glasses
    - Tightly sealed goggles

---

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

  - **General Information**
    - **Appearance:**
      - **Form:** Fluid
      - **Colour:** Colourless
      - **Odour:** Like chlorine
      - **Odour threshold:** Not determined.

  - **pH-value:** Not determined.

  - **Change in condition**
    - **Melting point/freezing point:** -95.1 °C
    - **Initial boiling point and boiling range:** 40 °C

  - **Flash point:** Not applicable.

  - **Flammability (solid, gas):** Not applicable.

  - **Ignition temperature:** 605 °C

  - **Decomposition temperature:** Not determined.

  - **Auto-ignition temperature:** Product is not selfigniting.

  - **Explosive properties:** Product does not present an explosion hazard.

  - **Explosion limits:**
    - **Lower:** 13 Vol %
    - **Upper:** 22 Vol %

  - **Vapour pressure at 20 °C:** 360 hPa

- **Density at 20 °C:** 1.3 g/cm³
- **Relative density:** Not determined.
- **Vapour density:** Not determined.
- **Evaporation rate:** Not determined.
Safety data sheet
according to 1907/2006/EC, Article 31

Printing date: 31.03.2019
Version number: 3
Revision: 31.03.2019

Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

- Solubility in / Miscibility with water at 20 °C: 20 g/l
- Partition coefficient: n-octanol/water: Not determined.
- Viscosity:
  - Dynamic: Not determined.
  - Kinematic: Not determined.
- Solvent content:
  - Organic solvents: 98.5 %
  - VOC (EC): 98.49 %
- Solids content: 0.9 %
- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability:
  - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
  - Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
  - Acute toxicity: Harmful if swallowed.
  - LD/LC50 values relevant for classification:
    ATE (Acute Toxicity Estimates)
    | Route      | LD50     | LC50/4 h   |
    |------------|----------|------------|
    | Oral       | LD50     | 1,584 mg/kg (rat) |
    | Dermal     | LD50     | 53,801 mg/kg  |
    | Inhalative | LC50/4 h | 1,326 mg/L (rat) |
    75-09-2 dichloromethane
    | Oral       | LD50     | 1,600 mg/kg (rat) |
    | Dermal     | LD50     | >2,000 mg/kg  |
    | Inhalative | LC50/4 h | 88 mg/L (rat)  |
    95-50-1 1,2-dichlorobenzene
    | Oral       | LD50     | 500 mg/kg (rat) |
    | Dermal     | LD50     | >10,000 mg/kg (rabbit) |
    106-46-7 1,4-dichlorobenzene
    | Oral       | LD50     | >2,000 mg/kg (rat) |
    | Dermal     | LD50     | >2,000 mg/kg (rat) |
### 48.1.26

<table>
<thead>
<tr>
<th>Substance</th>
<th>Inhalative LC50/4 h</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>118-74-1 hexachlorobenzene</td>
<td>7.07 mg/L (rat)</td>
<td>10,000 mg/kg (rat)</td>
<td>82 mg/kg (rat)</td>
</tr>
<tr>
<td>87-68-3 hexachlorobuta-1,3-diene</td>
<td>3,600 mg/L (rat)</td>
<td>100 mg/kg (rabbit)</td>
<td>370 mg/L (mouse)</td>
</tr>
<tr>
<td>77-47-4 hexachlorocyclopentadiene</td>
<td>2 mg/L (rat)</td>
<td>315 mg/kg (rat)</td>
<td>2 mg/L (rabbit)</td>
</tr>
<tr>
<td>67-72-1 hexachloroethane</td>
<td></td>
<td>32,000 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>608-93-5 pentachlorobenzene</td>
<td></td>
<td>1,080 mg/kg (rat)</td>
<td>1,500 mg/kg (rat)</td>
</tr>
</tbody>
</table>

**Primary irritant effect:**
- Skin corrosion/irritation
  - Causes skin irritation.
- Serious eye damage/irritation
  - Causes serious eye irritation.
- Respiratory or skin sensitisation
  - Based on available data, the classification criteria are not met.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
- Germ cell mutagenicity
  - Based on available data, the classification criteria are not met.
- Carcinogenicity
  - May cause cancer.
- Reproductive toxicity
  - Based on available data, the classification criteria are not met.
- STOT-single exposure
  - May cause respiratory irritation.
- STOT-repeated exposure
  - May cause damage to organs through prolonged or repeated exposure.
- Aspiration hazard
  - Based on available data, the classification criteria are not met.

### 12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

- Behaviour in environmental systems:
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.
- Ecotoxic effects:
  - Remark: Harmful to fish
- Additional ecological information:
  - General notes:
    Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
    Do not allow product to reach ground water, water course or sewage system, even in small quantities.
    Danger to drinking water if even extremely small quantities leak into the ground.
    Harmful to aquatic organisms
  - Results of PBT and vPvB assessment
    - PBT:
      87-68-3 hexachlorobuta-1,3-diene
      120-82-1 1,2,4-trichlorobenzene
    - vPvB:
      87-68-3 hexachlorobuta-1,3-diene
  - Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation
    Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- European waste catalogue
  - HP 4 Irritant - skin irritation and eye damage
  - HP 5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
  - HP 7 Carcinogenic
  - HP 14 Ecotoxic
- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- Not Regulated, De minimus Quantities
- UN-Number
  - ADR, IMDG, IATA
  - UN1593
- UN proper shipping name
  - ADR
  - 1593 DICHLOROMETHANE
  - IMDG, IATA
  - DICHLOOROMETHANE

(Contd. on page 10)
### Transport hazard class(es)
- ADR, IMDG, IATA

<table>
<thead>
<tr>
<th>Class</th>
<th>6.1 Toxic substances.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label</td>
<td>6.1</td>
</tr>
</tbody>
</table>

### Packing group
- ADR, IMDG, IATA
- Packing group: III

### Environmental hazards:
- Not applicable.

### Special precautions for user
- Warning: Toxic substances.
- Danger code (Kemler): 60
- EMS Number: F-A,S-A
- Segregation groups: Liquid halogenated hydrocarbons
- Stowage Category: A

### Transport in bulk according to Annex II of Marpol and the IBC Code
- Not applicable.

### Transport/Additional information:

<table>
<thead>
<tr>
<th>ADR</th>
<th>Limited quantities (LQ)</th>
<th>Code: E1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum net quantity per outer packaging: 1000 ml</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMDG</th>
<th>Limited quantities (LQ)</th>
<th>Code: E1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum net quantity per outer packaging: 1000 ml</td>
<td></td>
</tr>
</tbody>
</table>

### UN "Model Regulation":
- UN 1593 DICHLOROMETHANE, 6.1, III

### 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I: None of the ingredients is listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII: Conditions of restriction: 3, 28, 41, 49, 59, 64

<table>
<thead>
<tr>
<th>Regulation (EU) No 649/2012</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>118-74-1 hexachlorobenzene</td>
<td>Annex I Part 3</td>
</tr>
<tr>
<td></td>
<td>Annex V Part I</td>
</tr>
<tr>
<td>87-68-3 hexachlorobuta-1,3-diene</td>
<td>Annex V Part 1</td>
</tr>
</tbody>
</table>
### 48.1.26

| 67-72-1 hexachloroethane | Annex I Part 1 |
| 608-93-5 pentachlorobenzene | Annex V Part 1 |
| 76-01-7 pentachloroethane | Annex I Part 1 |
| 120-82-1 1,2,4-trichlorobenzene | Annex I Part 1 |

- **National regulations:**
  - Additional classification according to Decree on Hazardous Materials, Annex II:
    - Carcinogenic hazardous material group III (dangerous).

- **Information about limitation of use:**
  - Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Relevant phrases**
  - H228 Flammable solid.
  - H301 Toxic if swallowed.
  - H302 Harmful if swallowed.
  - H310 Fatal in contact with skin.
  - H311 Toxic in contact with skin.
  - H314 Causes severe skin burns and eye damage.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H330 Fatal if inhaled.
  - H332 Harmful if inhaled.
  - H335 May cause respiratory irritation.
  - H350 May cause cancer.
  - H351 Suspected of causing cancer.
  - H372 Causes damage to organs through prolonged or repeated exposure.
  - H373 May cause damage to organs through prolonged or repeated exposure.
  - H400 Very toxic to aquatic life.
  - H410 Very toxic to aquatic life with long lasting effects.
  - H411 Toxic to aquatic life with long lasting effects.

- **Department issuing SDS:** Document Control / Regulatory

- **Contact:** regulatory@ultrasci.com

- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative

(Contd. on page 12)
Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

(Contd. of page 11)

Flam. Sol. 1: Flammable solids – Category 1
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 2: Acute toxicity – Category 2
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Carc. 1B: Carcinogenicity – Category 1B
Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3
1 Identification of the substance/mixture and of the company/undertaking

· Product identifier
· Trade name: Organochlorine Pesticides Standard (1X1 mL)
· Part number: US-112B-1
· Relevant identified uses of the substance or mixture and uses advised against
  Reagents and Standards for Analytical Chemical Laboratory Use
· Details of the supplier of the safety data sheet
· Manufacturer/Supplier:
  Agilent Technologies Manufacturing GmbH & Co. KG
  Hewlett-Packard-Str.8
  76337 Waldbronn
  Germany
· Further information obtainable from:
  Telephone: 0800 603 1000
  pdl-msds_author@agilent.com
· Emergency telephone number: CHEMTREC®: +44-870-8200418

2 Hazards identification

· Classification of the substance or mixture
· Classification according to Regulation (EC) No 1272/2008

GHS02 flame
Flam. Liq. 2 H225 Highly flammable liquid and vapour.

GHS06 skull and crossbones
Acute Tox. 3 H311 Toxic in contact with skin.

GHS09 environment
Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

GHS07
Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H332 Harmful if inhaled.
Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H336 May cause drowsiness or dizziness.

Label elements
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
**Hazard pictograms**

GHS02 GHS06 GHS09

- **Signal word** Danger
- **Hazard-determining components of labelling:**
  acetone  
  endosulfan sulfate  
  dieldrin (ISO)  
  endosulfan I

- **Hazard statements**
  H225 Highly flammable liquid and vapour.
  H302+H332 Harmful if swallowed or if inhaled.
  H311 Toxic in contact with skin.
  H319 Causes serious eye irritation.
  H336 May cause drowsiness or dizziness.
  H411 Toxic to aquatic life with long lasting effects.

- **Precautionary statements**
  P101 If medical advice is needed, have product container or label at hand.
  P102 Keep out of reach of children.
  P103 Read label before use.
  P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  P240 Ground/bond container and receiving equipment.
  P241 Use explosion-proof electrical/ventilating/lighting equipment.
  P242 Use only non-sparking tools.
  P243 Take precautionary measures against static discharge.
  P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
  P264 Wash thoroughly after handling.
  P270 Do not eat, drink or smoke when using this product.
  P271 Use only outdoors or in a well-ventilated area.
  P273 Avoid release to the environment.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P321 Specific treatment (see on this label).
  P330 Rinse mouth.
  P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
  P337+P313 If eye irritation persists: Get medical advice/attention.
  P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.
  P391 Collect spillage.
  P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  P403+P235 Store in a well-ventilated place. Keep cool.
  P405 Store locked up.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
### 3 Composition/information on ingredients

#### Chemical characterisation: Mixtures

#### Description: Mixtures of substances listed below with nonhazardous additions.

#### Dangerous components:

| CAS: 67-64-1 | acetone | 95.702% |
| EINECS: 200-662-2 | | |
| CAS: 72-54-8 | TDE | 0.253% |
| EINECS: 200-783-0 | Acute Tox. 3; H301; Acute Tox. 3; H311; Carc. 2; H351; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H312 | |
| CAS: 50-29-3 | DDT (common name not adopted by ISO) | 0.253% |
| EINECS: 200-024-3 | Acute Tox. 3; H301; Acute Tox. 3; H311; Carc. 2, H351; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 | |
| CAS: 72-55-9 | 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene | 0.253% |
| EINECS: 200-784-6 | Carc. 2, H351; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302 | |
| CAS: 60-57-1 | dieldrin (ISO) | 0.253% |
| EINECS: 200-484-5 | Acute Tox. 3; H301; Acute Tox. 1, H310; Carc. 2, H351; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 | |
| CAS: 72-20-8 | endrin (ISO) | 0.253% |
| EINECS: 200-775-7 | Acute Tox. 2; H300; Acute Tox. 3; H311; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 | |
| CAS: 959-98-8 | endosulfan I | 0.253% |
| | Acute Tox. 3; H301; Acute Tox. 3; H311; Acute Tox. 2, H330; Aquatic Acute 1, H400; Aquatic Chronic 4, H413 | |
| CAS: 33213-65-9 | endosulfan II | 0.253% |
| EINECS: 200-776-8 | Acute Tox. 3; H301; Aquatic Acute 1, H400; Aquatic Chronic 4, H413 | |
| CAS: 1031-07-8 | endosulfan sulfate | 0.253% |
| | Acute Tox. 1; H300; Acute Tox. 1, H310; Acute Tox. 1, H330; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 | |
| CAS: 76-44-8 | heptachlor (ISO) | 0.253% |
| EINECS: 200-962-3 | Acute Tox. 3; H301; Acute Tox. 3; H311; Carc. 2, H351; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 | |
| CAS: 319-84-6 | alpha-BHC (alpha-HCH) | 0.253% |
| EINECS: 206-270-8 | Acute Tox. 3; H301; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H312 | |
| CAS: 1024-57-3 | heptachlor epoxide - isomer B | 0.253% |
| EINECS: 213-831-0 | Acute Tox. 3; H301; Carc. 2, H351; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 | |
| CAS: 319-85-7 | (1alpha,2ß,3alpha,4ß,5alpha,6ß)-1,2,3,4,5,6-hexachlorocyclohexane | 0.253% |
| EINECS: 206-271-3 | Carc. 2, H351; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H312 | |

(Contd. on page 4)
Trade name: Organochlorine Pesticides Standard (1X1 mL)

| CAS: 319-86-8 | delta-BHC (delta-HCH) | Acute Tox. 3, H301; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H312 | 0.253% |
| CAS: 58-89-9 | γ -HCH or γ -BHC | Acute Tox. 3, H301; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H312; Acute Tox. 4, H332; Lact., H362 | 0.253% |
| CAS: 72-43-5 | methoxychlor | Carc. 2, H351; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332 | 0.253% |
| CAS: 309-00-2 | aldrin (ISO) | Acute Tox. 3, H301; Acute Tox. 3, H311; Carc. 2, H351; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 | 0.253% |

* Additional information: For the wording of the listed hazard phrases refer to section 16.

### 4 First aid measures

- **Description of first aid measures**
- **General information:**
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**
  Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
  In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
  Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
  Call for a doctor immediately.
- **Information for doctor:**
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
  CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.
6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.

- Environmental precautions:
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to enter sewers/ surface or ground water.

- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.

- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Prevent formation of aerosols.
  - Information about fire - and explosion protection:
    Keep ignition sources away - Do not smoke.
    Protect against electrostatic charges.

- Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and receptacles: Store in a cool location.
    - Information about storage in one common storage facility: Not required.
    - Further information about storage conditions:
      Keep container tightly sealed.
      Store in cool, dry conditions in well sealed receptacles.
  - Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

- Control parameters

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1 acetone</td>
<td>Short-term value: 3620 mg/m³, 1500 ppm&lt;br&gt;Long-term value: 1210 mg/m³, 500 ppm</td>
</tr>
</tbody>
</table>

- Additional information: The lists valid during the making were used as basis.
• **Exposure controls**

• **Personal protective equipment:**

• **General protective and hygienic measures:**
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing.
  - Wash hands before breaks and at the end of work.
  - Store protective clothing separately.
  - Avoid contact with the eyes.
  - Avoid contact with the eyes and skin.

• **Respiratory protection:**
  - When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
  - Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

• **Protection of hands:**
  - Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

• **Material of gloves**
  - For normal use: nitrile rubber, 11-13 mil thickness
  - For direct contact with the chemical: butyl rubber, 12-15 mil thickness

• **Penetration time of glove material**
  - For normal use: nitrile rubber: 1 hour
  - For direct contact with the chemical: butyl rubber: > 4 hours

• **Eye protection:**
  - Tightly sealed goggles

---

**9 Physical and chemical properties**

- **Information on basic physical and chemical properties**
- **General Information**
  - **Appearance:**
    - Form: Fluid
    - Colour: Colourless
    - Odour: Characteristic
    - Odour threshold: Not determined.
  - **pH-value:** Not determined.

- **Change in condition**
  - Melting point/freezing point: -94.7 °C
  - Initial boiling point and boiling range: 55.8-56.6 °C

- **Flash point:** -17 °C

- **Flammability (solid, gas):** Not applicable.
## 48.1.26

- **Ignition temperature:** 465 °C
- **Decomposition temperature:** Not determined.
- **Auto-ignition temperature:** Product is not selfigniting.

### Explosion properties

- Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
  - **Explosion limits:**
    - Lower: 2.6 Vol %
    - Upper: 13 Vol %
  - **Vapour pressure at 20 °C:** 245.3 hPa
  - **Density at 20 °C:** 0.791 g/cm³
  - **Relative density** Not determined.
  - **Vapour density** Not determined.
  - **Evaporation rate** Not determined.
- **Solubility in / Miscibility with water:** Not miscible or difficult to mix.
- **Partition coefficient: n-octanol/water:** Not determined.
- **Viscosity:**
  - Dynamic at 20 °C: 32 mPas
  - Kinematic: Not determined.
- **Solvent content:**
  - Organic solvents: 96.0 %
  - VOC (EC): 95.96 %
- **Solids content:** 4.3 %
- **Other information** No further relevant information available.

## 10 Stability and reactivity

### Reactivity
No further relevant information available.

### Chemical stability

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.

### Incompatible materials
No further relevant information available.

### Hazardous decomposition products
No dangerous decomposition products known.

## 11 Toxicological information

### Information on toxicological effects

### Acute toxicity
Harmful if swallowed or if inhaled.
Toxic in contact with skin.

(Contd. on page 8)
Trade name: Organochlorine Pesticides Standard (1X1 mL)

### LD/LC50 values relevant for classification:

#### ATE (Acute Toxicity Estimates)

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>671 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>993 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>18 mg/L</td>
<td></td>
</tr>
</tbody>
</table>

#### 67-64-1 acetone

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>5,800 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>20,000 mg/kg (rabbit)</td>
<td></td>
</tr>
</tbody>
</table>

#### 72-54-8 TDE

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dermal</td>
<td>1,200 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

#### 50-29-3 DDT (common name not adopted by ISO)

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>87 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>2,510 mg/kg (rat)</td>
<td>300 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

#### 72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichloroethylene

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>880 mg/kg (rat)</td>
</tr>
</tbody>
</table>

#### 60-57-1 dieldrin (ISO)

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>38 mg/kg (mouse)</td>
<td>38 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>10 mg/kg (rat)</td>
<td>250 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

#### 72-20-8 endrin (ISO)

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>3 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>60 mg/kg (rabbit)</td>
<td></td>
</tr>
</tbody>
</table>

#### 959-98-8 endosulfan I

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>76 mg/kg (rat)</td>
</tr>
</tbody>
</table>

#### 33213-65-9 endosulfan II

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>240 mg/kg (rat)</td>
</tr>
</tbody>
</table>

#### 1031-07-8 endosulfan sulfate

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>18 mg/kg (rat)</td>
</tr>
</tbody>
</table>

#### 76-44-8 heptachlor (ISO)

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>40 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>119 mg/kg (rat)</td>
<td></td>
</tr>
</tbody>
</table>

#### 319-84-6 alpha-BHC (alpha-HCH)

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>177 mg/kg (rat)</td>
</tr>
</tbody>
</table>

#### 1024-57-3 heptachlor epoxide - isomer B

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>15 mg/kg (rat)</td>
</tr>
</tbody>
</table>

#### 319-85-7 (1(alpha,2B,3alpha,4B,5alpha,6B)-1,2,3,4,5,6-hexachlorocyclohexane

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>6,000 mg/kg (rat)</td>
</tr>
</tbody>
</table>
Trade name: Organochlorine Pesticides Standard (1X1 mL)

<table>
<thead>
<tr>
<th>319-86-8 delta-BHC (delta-HCH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>1,000 mg/kg (rat)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>58-89-9 γ-HCH or γ-BHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>88 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>900 mg/kg (rat)</td>
</tr>
<tr>
<td>Inhalative LC50/4 h</td>
</tr>
<tr>
<td>1,560 mg/L (rat)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>72-43-5 methoxychlor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>1,855 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>6,000 mg/kg (rat)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>309-00-2 aldrin (ISO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>39 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
<tr>
<td>98 mg/kg (rat)</td>
</tr>
<tr>
<td>15 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - Skin corrosion/irritation: Based on available data, the classification criteria are not met.
  - Serious eye damage/irritation: Causes serious eye irritation.
  - Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.
  - CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
  - Germ cell mutagenicity: Based on available data, the classification criteria are not met.
  - Carcinogenicity: Based on available data, the classification criteria are not met.
  - Reproductive toxicity: Based on available data, the classification criteria are not met.
  - STOT-single exposure: May cause drowsiness or dizziness.
  - STOT-repeated exposure: Based on available data, the classification criteria are not met.
  - Aspiration hazard: Based on available data, the classification criteria are not met.

12 Ecological information

- Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Behaviour in environmental systems:
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.
- Ecotoxic effects:
- Remark: Toxic for fish.
- Additional ecological information:
- General notes:
  - Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
  - Do not allow product to reach ground water, water course or sewage system.
  - Danger to drinking water if even small quantities leak into the ground.
  - Also poisonous for fish and plankton in water bodies.
  - Toxic for aquatic organisms.
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.
### 13 Disposal considerations

**Waste treatment methods**
- **Recommendation**: Must not be disposed together with household garbage. Do not allow product to reach sewage system.

**European waste catalogue**

<table>
<thead>
<tr>
<th>HP 3</th>
<th>Flammable</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 4</td>
<td>Irritant - skin irritation and eye damage</td>
</tr>
<tr>
<td>HP 5</td>
<td>Specific Target Organ Toxicity (STOT)/Aspiration Toxicity</td>
</tr>
<tr>
<td>HP 6</td>
<td>Acute Toxicity</td>
</tr>
<tr>
<td>HP 14</td>
<td>Ecotoxic</td>
</tr>
</tbody>
</table>

- **Uncleaned packaging:**
  - **Recommendation**: Disposal must be made according to official regulations.

### 14 Transport information

- **Not Regulated, De minimus Quantities**

- **UN-Number**
  - ADR, IMDG, IATA: UN1090

- **UN proper shipping name**
  - ADR: 1090 ACETONE solution, ENVIRONMENTALLY HAZARDOUS
  - IMDG: ACETONE solution, MARINE POLLUTANT
  - IATA: ACETONE solution

- **Transport hazard class(es)**

  - **ADR, IMDG**
    - **Class**: 3 Flammable liquids.
    - **Label**: 3

  - **IATA**
    - **Class**: 3 Flammable liquids.
    - **Label**: 3
Trade name: Organochlorine Pesticides Standard (1X1 mL)

- Packing group
  - ADR, IMDG, IATA: II

- Environmental hazards:
  - Product contains environmentally hazardous substances: aldrin (ISO), γ -HCH or γ -BHC
  - Marine pollutant:
  - Special marking (ADR):
    - Symbol (fish and tree)

- Special precautions for user
  - Warning: Flammable liquids.
  - Danger code (Kemler): 33
  - EMS Number: F-E,S-D
  - Stowage Category: B

- Transport in bulk according to Annex II of Marpol and the IBC Code
  - Not applicable.

- Transport/Additional information:
  - ADR
    - Limited quantities (LQ): 1L
    - Excepted quantities (EQ): Code: E2
      - Maximum net quantity per inner packaging: 30 ml
      - Maximum net quantity per outer packaging: 500 ml
  - Transport category: 2
  - Tunnel restriction code: D/E

- IMDG
  - Limited quantities (LQ): 1L
  - Excepted quantities (EQ): Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml

- UN "Model Regulation":
  - UN 1090 ACETONE SOLUTION, 3, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I: None of the ingredients is listed.
  - Seveso category
    - E2 Hazardous to the Aquatic Environment
    - P5c FLAMMABLE LIQUIDS
  - Qualifying quantity (tonnes) for the application of lower-tier requirements: 200 t
  - Qualifying quantity (tonnes) for the application of upper-tier requirements: 500 t
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

- Regulation (EU) No 649/2012

<table>
<thead>
<tr>
<th>Code</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-29-3</td>
<td>DDT (common name not adopted by ISO)</td>
</tr>
<tr>
<td>60-57-1</td>
<td>dieldrin (ISO)</td>
</tr>
</tbody>
</table>

Annex I Part 3
Annex V Part 1
### Trade name: Organochlorine Pesticides Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Endrin (ISO)</th>
<th>Annex V Part 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heptachlor (ISO)</td>
<td>Annex I Part 3</td>
</tr>
<tr>
<td>Alpha-BHC (alpha-HCH)</td>
<td>Annex V Part 1</td>
</tr>
<tr>
<td>Hexachlorocyclohexane</td>
<td>Annex I Part 3</td>
</tr>
<tr>
<td>Gamma-HCH or Gamma-BHC</td>
<td>Annex V Part 1</td>
</tr>
<tr>
<td>Aldrin (ISO)</td>
<td>Annex I Part 3</td>
</tr>
</tbody>
</table>

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Relevant phrases**
  - H225 Highly flammable liquid and vapour.
  - H300 Fatal if swallowed.
  - H301 Toxic if swallowed.
  - H302 Harmful if swallowed.
  - H310 Fatal in contact with skin.
  - H311 Toxic in contact with skin.
  - H312 Harmful in contact with skin.
  - H319 Causes serious eye irritation.
  - H330 Fatal if inhaled.
  - H332 Harmful if inhaled.
  - H336 May cause drowsiness or dizziness.
  - H351 Suspected of causing cancer.
  - H362 May cause harm to breast-fed children.
  - H372 Causes damage to organs through prolonged or repeated exposure.
  - H373 May cause damage to organs through prolonged or repeated exposure.
  - H400 Very toxic to aquatic life.
  - H410 Very toxic to aquatic life with long lasting effects.
  - H413 May cause long lasting harmful effects to aquatic life.

- **Department issuing SDS:** Document Control / Regulatory

- **Contact:** regulatory@ultrasci.com

- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Flam. Liq. 2: Flammable liquids – Category 2
  - Acute Tox. 2: Acute toxicity – Category 2

(Contd. on page 13)
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 1: Acute toxicity – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Carc. 2: Carcinogenicity – Category 2
Lact.: Reproductive toxicity – effects on or via lactation
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2
Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4

* Data compared to the previous version altered.
# 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
  - **Trade name:** Nitrosamines Standard (1X1 mL)
  - **Part number:** US-113N-1
- **Relevant identified uses of the substance or mixture and uses advised against**
  - Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    - Agilent Technologies Manufacturing GmbH & Co. KG
    - Hewlett-Packard-Str.8
    - 76337 Waldbronn
    - Germany
  - **Further information obtainable from:**
    - Telephone: 0800 603 1000
    - pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(44)-870-8200418

# 2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
  - GHS08 health hazard
  - Carc. 1A H350 May cause cancer.
  - STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
  - GHS07
  - Acute Tox. 4 H302 Harmful if swallowed.
  - Skin Irrit. 2 H315 Causes skin irritation.
  - Eye Irrit. 2 H319 Causes serious eye irritation.
  - STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
  - The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**
  - GHS07
  - GHS08

- **Signal word** Danger
- **Hazard-determining components of labelling:**
  - dichloromethane
  - dimethylnitrosoamine
  - diethylnitrosoamine

(Contd. on page 2)
Trade name: Nitrosamines Standard (1X1 mL)

N-nitrosomorpholine

**Hazard statements**
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H350 May cause cancer.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements**
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P321 Specific treatment (see on this label).
P314 Get medical advice/attention if you feel unwell.
P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards**

**Results of PBT and vPvB assessment**

**PBT**: Not applicable.

**vPvB**: Not applicable.

### 3 Composition/information on ingredients

**Chemical characterisation**: Mixtures

**Description**: Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>CAS: 75-09-2</th>
<th>dichloromethane</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 200-838-9</td>
<td>🌾 Carc. 2; H351; STOT RE 2; H373; 🌾 Skin Irrit. 2; H315; Eye Irrit. 2; H319; STOT SE 3, H335</td>
</tr>
</tbody>
</table>

GB
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: Nitrosamines Standard (1X1 mL)

<table>
<thead>
<tr>
<th>CAS</th>
<th>Chemical Name</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>621-64-7</td>
<td>Nitrosodipropylamine</td>
<td>0.151%</td>
</tr>
<tr>
<td>210-698-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59-89-2</td>
<td>N-nitrosomorpholine</td>
<td>0.151%</td>
</tr>
<tr>
<td>10595-95-6</td>
<td>N-Nitrosomethyleneurea</td>
<td>0.151%</td>
</tr>
<tr>
<td>930-55-2</td>
<td>1-nitrosopyrrolidine</td>
<td>0.151%</td>
</tr>
<tr>
<td>213-218-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55-18-5</td>
<td>Diethylnitrosamine</td>
<td>0.151%</td>
</tr>
<tr>
<td>200-226-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62-75-9</td>
<td>Dimethylnitrosamine</td>
<td>0.151%</td>
</tr>
<tr>
<td>200-549-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100-75-4</td>
<td>1-nitrosopiperidine</td>
<td>0.151%</td>
</tr>
<tr>
<td>202-886-6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional information: For the wording of the listed hazard phrases refer to section 16.

4 First aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: Call for a doctor immediately.
- Information for doctor:
  Most important symptoms and effects, both acute and delayed: No further relevant information available.
  Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- Special hazards arising from the substance or mixture
  During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
- Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Mount respiratory protective device.
7 Handling and storage

- Handling:
- Precautions for safe handling
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
  Prevent formation of aerosols.
- Information about fire - and explosion protection: Keep respiratory protective device available.
- Conditions for safe storage, including any incompatibilities
  Storage:
  Requirements to be met by storerooms and receptacles: No special requirements.
  Information about storage in one common storage facility: Not required.
  Further information about storage conditions: Keep container tightly sealed.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

- Control parameters
  Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>75-09-2 dichloromethane</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL</td>
</tr>
<tr>
<td>Short-term value: 706 mg/m³, 200 ppm</td>
</tr>
<tr>
<td>Long-term value: 353 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>BMGV, Sk</td>
</tr>
</tbody>
</table>

  Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>75-09-2 dichloromethane</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMGV 30 ppm</td>
</tr>
<tr>
<td>Medium: end-tidal breath</td>
</tr>
<tr>
<td>Sampling time: post shift</td>
</tr>
<tr>
<td>Parameter: carbon monoxide</td>
</tr>
</tbody>
</table>

- Additional information: The lists valid during the making were used as basis.

- Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing
  Wash hands before breaks and at the end of work.
48.1.26 Store protective clothing separately.
Avoid contact with the eyes and skin.

- **Respiratory protection:**
  When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
  Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

- **Protection of hands:**
  Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

- **Material of gloves**
  For normal use: nitrile rubber, 11-13 mil thickness
  For direct contact with the chemical: butyl rubber, 12-15 mil thickness

- **Penetration time of glove material**
  For normal use: nitrile rubber: 1 hour
  For direct contact with the chemical: butyl rubber: > 4 hours

- **Eye protection:**
  Safety glasses

  Tightly sealed goggles

---

**9 Physical and chemical properties**

- **Information on basic physical and chemical properties**
  **General Information**
  **Appearance:**
  - Form: Fluid
  - Colour: Colourless
  - Odour: Like chlorine
  - Odour threshold: Not determined.

- **pH-value:** Not determined.

- **Change in condition**
  - Melting point/freezing point: -95.1 °C
  - Initial boiling point and boiling range: 40 °C

- **Flash point:** Not applicable.

- **Flammability (solid, gas):** Not applicable.

- **Ignition temperature:** 605 °C

- **Decomposition temperature:** Not determined.

- **Auto-ignition temperature:** Product is not selfigniting.

- **Explosive properties:** Product does not present an explosion hazard.
Explosion limits:
- Lower: 13 Vol %
- Upper: 22 Vol %

Vapour pressure at 20 °C: 360 hPa

Density at 20 °C: 1.3 g/cm³
Relative density: Not determined.
Vapour density: Not determined.
Evaporation rate: Not determined.

Solubility in / Miscibility with water at 20 °C: 20 g/l
Partition coefficient: n-octanol/water: Not determined.

Viscosity:
- Dynamic: Not determined.
- Kinematic: Not determined.

Solvent content:
- Organic solvents: 98.6 %
- VOC (EC): 98.64 %
Solids content: 0.3 %
Other information: No further relevant information available.

10 Stability and reactivity
- Reactivity: No further relevant information available.
- Chemical stability
  - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information
- Information on toxicological effects
  - Acute toxicity
    Harmful if swallowed.
- LD/LC50 values relevant for classification:
  ATE (Acute Toxicity Estimates)
  - Oral LD50: 1,441 mg/kg (rat)

75-09-2 dichloromethane
- Oral LD50: 1,600 mg/kg (rat)
- Dermal LD50: >2,000 mg/kg (rat)
- Inhalative LC50/4 h: 88 mg/L (rat)
## 48.1.26

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>LD50</th>
<th>(mg/kg)</th>
<th>(rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>621-64-7 nitrosodipropylamine</td>
<td>Oral</td>
<td>480</td>
<td></td>
</tr>
<tr>
<td>59-89-2 N-nitrosomorpholine</td>
<td>Oral</td>
<td>282</td>
<td></td>
</tr>
<tr>
<td>10595-95-6 N-Nitrosomethylethylamine</td>
<td>Oral</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td>930-55-2 1-nitrosopyrrolidine</td>
<td>Oral</td>
<td>900</td>
<td></td>
</tr>
<tr>
<td>55-18-5 diethylnitrosoamine</td>
<td>Oral</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td>62-75-9 dimethylnitrosoamine</td>
<td>Oral</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inhalative</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>100-75-4 1-nitrosopiperidinem</td>
<td>Oral</td>
<td>200</td>
<td></td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - Skin corrosion/irritation:
    - Causes skin irritation.
  - Serious eye damage/irritation:
    - Causes serious eye irritation.
  - Respiratory or skin sensitisation:
    - Based on available data, the classification criteria are not met.
  - CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):
  - Germ cell mutagenicity:
    - Based on available data, the classification criteria are not met.
  - Carcinogenicity:
    - May cause cancer.
  - Reproductive toxicity:
    - Based on available data, the classification criteria are not met.
  - STOT-single exposure:
    - May cause respiratory irritation.
  - STOT-repeated exposure:
    - May cause damage to organs through prolonged or repeated exposure.
  - Aspiration hazard:
    - Based on available data, the classification criteria are not met.

## 12 Ecological information

- **Toxicity:**
- Aquatic toxicity:
  - No further relevant information available.
- Persistence and degradability:
  - No further relevant information available.
- Behaviour in environmental systems:
  - Bioaccumulative potential:
    - No further relevant information available.
  - Mobility in soil:
    - No further relevant information available.
- Additional ecological information:
  - General notes:
    - Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.
    - Do not allow product to reach ground water, water course or sewage system.
    - Danger to drinking water if even small quantities leak into the ground.
  - Results of PBT and vPvB assessment:
  - PBT:
    - Not applicable.
13 Disposal considerations

- Waste treatment methods
  - Recommendation
    Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- European waste catalogue
  
  - HP 4  Irritant - skin irritation and eye damage
  - HP 5  Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
  - HP 7  Carcinogenic

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- Not Regulated, De minimus Quantities

- UN-Number
  
  - ADR, IMDG, IATA  UN1593

- UN proper shipping name
  
  - ADR  1593 DICHLOROMETHANE
  - IMDG, IATA  DICHLOROMETHANE

- Transport hazard class(es)
  
  - ADR, IMDG, IATA

  - Class  6.1 Toxic substances.
  - Label  6.1

- Packing group
  
  - ADR, IMDG, IATA  III

- Environmental hazards:
  
  - Not applicable.

- Special precautions for user
  
  - Warning: Toxic substances.

- Danger code (Kemler):
  
  - 60

- EMS Number:
  
  - F-A,S-A

- Segregation groups
  
  - Liquid halogenated hydrocarbons

- Stowage Category
  
  - A

- Transport in bulk according to Annex II of Marpol and the IBC Code
  
  - Not applicable.
Trade name: Nitrosamines Standard (1X1 mL)

- Transport/Additional information:
  - ADR
  - Limited quantities (LQ) 5L
  - Excepted quantities (EQ) Code: E1
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 1000 ml
  - Transport category 2
  - Tunnel restriction code E
  - IMDG
    - Limited quantities (LQ) 5L
    - Excepted quantities (EQ) Code: E1
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 1000 ml
  - UN "Model Regulation": UN 1593 DICHLOROMETHANE, 6.1, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 28, 59
- National regulations:
  - Additional classification according to Decree on Hazardous Materials, Annex II: Carcinogenic hazardous material group III (dangerous).
  - Information about limitation of use:
    Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.
  - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- Relevant phrases
  H301 Toxic if swallowed.
  H302 Harmful if swallowed.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H330 Fatal if inhaled.
  H335 May cause respiratory irritation.
  H350 May cause cancer.
  H351 Suspected of causing cancer.
  H372 Causes damage to organs through prolonged or repeated exposure.
  H373 May cause damage to organs through prolonged or repeated exposure.
  H411 Toxic to aquatic life with long lasting effects.
Safety data sheet
giving 1907/2006/EC, Article 31

Printing date 31.03.2019 Version number 3 Revision: 31.03.2019

Trade name: Nitrosamines Standard (1X1 mL)

- **Department issuing SDS:** Document Control / Regulatory
- **Contact:** regulatory@ultrasci.com
- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Acute Tox. 3: Acute toxicity – Category 3
  - Acute Tox. 4: Acute toxicity – Category 4
  - Acute Tox. 2: Acute toxicity – Category 2
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  - Care. 1A: Carcinogenicity – Category 1A
  - Care. 1B: Carcinogenicity – Category 1B
  - Care. 2: Carcinogenicity – Category 2
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  - STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
  - STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
  - Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

- * **Data compared to the previous version altered.**
1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**

- **Trade name:** Base/Neutrals Standard (1X1 mL)
- **Part number:** US-114-1
- **Relevant identified uses of the substance or mixture and uses advised against**
  - Reagents and Standards for Analytical Chemical Laboratory Use

2 Hazards identification

- **Classification according to Regulation (EC) No 1272/2008**
  - **GHS08 health hazard**
    - Carc. 1A H350 May cause cancer.
    - STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

- **GHS07**
  - Acute Tox. 4 H302 Harmful if swallowed.
  - Skin Irrit. 2 H315 Causes skin irritation.
  - Eye Irrit. 2 H319 Causes serious eye irritation.
  - STOT SE 3 H335 May cause respiratory irritation.

- **Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.**

- **Label elements**
  - **Labelling according to Regulation (EC) No 1272/2008**
    - The product is classified and labelled according to the CLP regulation.
  - **Hazard pictograms**
    - GHS07 GHS08

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  - dichloromethane
48.1.26
diphenylamine
5-nitro-o-toluidine
o-toluidine

· Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H350 May cause cancer.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements
P101 If medical advice is needed, have product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of water.
P303 Rinse mouth.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P321 Specific treatment (see on this label).
P314 Get medical advice/attention if you feel unwell.
P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Additional information:
Contains 4-dimethylaminoazobenzene, 3,3’-dichlorobenzidine, p-phenylenediamine. May produce an allergic reaction.

· Other hazards

· Results of PBT and vPvB assessment
· PBT: Not applicable.
· vPvB: Not applicable.

* 3 Composition/information on ingredients

· Chemical characterisation: Mixtures
· Description: Mixture of substances listed below with nonhazardous additions.
### Dangerous components:

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS</th>
<th>Trade name</th>
<th>% Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>200-838-9</td>
<td>dichloromethane</td>
<td>98.0396%</td>
</tr>
<tr>
<td>53-96-3</td>
<td>200-188-6</td>
<td>2-acetylaminofluorene</td>
<td>0.151%</td>
</tr>
<tr>
<td>60-11-7</td>
<td>200-455-7</td>
<td>4-dimethylaminoazobenzene</td>
<td>0.151%</td>
</tr>
<tr>
<td>91-94-1</td>
<td>202-109-0</td>
<td>3,3′-dichlorobenzidine</td>
<td>0.151%</td>
</tr>
<tr>
<td>119-93-7</td>
<td>204-358-0</td>
<td>4,4′-bi-o-toluidine</td>
<td>0.151%</td>
</tr>
<tr>
<td>122-09-8</td>
<td>204-522-1</td>
<td>alpha, alpha-dimethylphenylethylamine</td>
<td>0.151%</td>
</tr>
<tr>
<td>122-39-4</td>
<td>204-539-4</td>
<td>diphenylamine</td>
<td>0.151%</td>
</tr>
<tr>
<td>134-32-7</td>
<td>205-138-7</td>
<td>1-naphthylamine</td>
<td>0.151%</td>
</tr>
<tr>
<td>91-59-8</td>
<td>202-080-4</td>
<td>2-naphthylamine</td>
<td>0.151%</td>
</tr>
<tr>
<td>99-55-8</td>
<td>202-765-8</td>
<td>5-nitro-o-toluidine</td>
<td>0.151%</td>
</tr>
<tr>
<td>106-50-3</td>
<td>203-404-7</td>
<td>p-phenylenediamine</td>
<td>0.151%</td>
</tr>
<tr>
<td>62-44-2</td>
<td>200-533-0</td>
<td>phenacetin</td>
<td>0.151%</td>
</tr>
<tr>
<td>95-53-4</td>
<td>202-429-0</td>
<td>o-toluidine</td>
<td>0.151%</td>
</tr>
<tr>
<td>92-67-1</td>
<td>202-177-1</td>
<td>4-aminobiphenyl</td>
<td>0.151%</td>
</tr>
</tbody>
</table>

### SVHC

- 95-53-4 o-toluidine
- 92-67-1 4-aminobiphenyl

### Additional information:

- For the wording of the listed hazard phrases refer to section 16.
4 First aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: Call for a doctor immediately.
- Information for doctor:
  - Most important symptoms and effects, both acute and delayed: No further relevant information available.
  - Indication of any immediate medical attention and special treatment needed: No further relevant information available.

5 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- Special hazards arising from the substance or mixture
  During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
  - Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures: Mount respiratory protective device.
- Environmental precautions:
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Open and handle receptacle with care.
    Prevent formation of aerosols.
Trade name: Base/Neutrals Standard (1X1 mL)

- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
  - **Storage:**
    - **Requirements to be met by storerooms and receptacles:** No special requirements.
    - **Information about storage in one common storage facility:** Not required.
    - **Further information about storage conditions:** Keep container tightly sealed.
    - **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.

#### Control parameters

- **Ingredients with limit values that require monitoring at the workplace:**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>WEL</th>
<th>Long-term value</th>
<th>Medium</th>
<th>Sampling time</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>Short-term value: 706 mg/m³, 200 ppm</td>
<td>Long-term value: 353 mg/m³, 100 ppm</td>
<td>end-tidal breath</td>
<td>post shift</td>
<td>carbon monoxide</td>
</tr>
<tr>
<td>122-39-4 diphenylamine</td>
<td>Short-term value: 20 mg/m³</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95-53-4 o-toluidine</td>
<td>Long-term value: 0.89 mg/m³, 0.2 ppm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Ingredients with biological limit values:**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>BMGV</th>
<th>Medium</th>
<th>Sampling time</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>30 ppm</td>
<td>end-tidal breath</td>
<td>post shift</td>
<td>carbon monoxide</td>
</tr>
</tbody>
</table>

- **Additional information:** The lists valid during the making were used as basis.

#### Exposure controls

- **Personal protective equipment:**
  - **General protective and hygienic measures:**
    - Keep away from foodstuffs, beverages and feed.
    - Immediately remove all soiled and contaminated clothing.
    - Wash hands before breaks and at the end of work.
    - Store protective clothing separately.
    - Avoid contact with the eyes and skin.
  - **Respiratory protection:**
    - When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
    - Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.
  - **Protection of hands:**
    - Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times.
Trade name: Base/Neutrals Standard (1X1 mL)

- Exceeding 4 hrs. Supplier recommendations should be followed.

**Material of gloves**
- For normal use: nitrile rubber, 11-13 mil thickness
- For direct contact with the chemical: butyl rubber, 12-15 mil thickness

**Penetration time of glove material**
- For normal use: nitrile rubber: 1 hour
- For direct contact with the chemical: butyl rubber: > 4 hours

**Eye protection:**
- Safety glasses
- Tightly sealed goggles

---

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  - **General Information**
    - **Appearance:**
      - Form: Fluid
      - Colour: Colourless
      - Odour: Like chlorine
      - Odour threshold: Not determined.
      - **pH-value:** Not determined.
  - **Change in condition**
    - Melting point/freezing point: -95.1 °C
    - Initial boiling point and boiling range: 40 °C
  - **Flash point:** Not applicable.
  - **Flammability (solid, gas):** Not applicable.
  - **Ignition temperature:** 605 °C
  - **Decomposition temperature:** Not determined.
  - **Auto-ignition temperature:** Product is not selfigniting.
  - **Explosive properties:** Product does not present an explosion hazard.
  - **Explosion limits:**
    - Lower: 13 Vol %
    - Upper: 22 Vol %
  - **Vapour pressure at 20 °C:** 360 hPa
  - **Density at 20 °C:** 1.3 g/cm³
  - **Relative density**
  - **Vapour density**
  - **Evaporation rate**
  - **Solubility in / Miscibility with water at 20 °C:** 20 g/l
Partition coefficient: n-octanol/water: Not determined.
Viscosity:
- Dynamic: Not determined.
- Kinematic: Not determined.
Solvent content:
- Organic solvents: 98.2 %
- VOC (EC): 98.19 %
Solids content: 1.4 %
Other information: No further relevant information available.

10 Stability and reactivity

Reactivity: No further relevant information available.
Chemical stability:
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects:
Acute toxicity: Harmful if swallowed.

LD/LC50 values relevant for classification:
ATE (Acute Toxicity Estimates)
- Oral LD50 1,499 mg/kg
- Dermal LD50 54,190 mg/kg
- Inhalative LC50/4 h 33.8 mg/L

75-09-2 dichloromethane
- Oral LD50 1,600 mg/kg (rat)
- Dermal LD50 >2,000 mg/kg (rat)
- Inhalative LC50/4 h 88 mg/L (rat)

53-96-3 2-acetylaminofluorene
- Oral LD50 850 mg/kg (mouse)

60-11-7 4-dimethylaminoazobenzene
- Oral LD50 200 mg/kg (rat)

91-94-1 3,3’-dichlorobenzidine
- Oral LD50 4,740 mg/kg (rat)

119-93-7 4,4’-bi-o-toluidine
- Oral LD50 404 mg/kg (rat)
### 12.1 Acute Toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>122-09-8 alpha,alpha-dimethylphenethylamine</td>
<td>Oral</td>
<td>154 mg/kg (mouse)</td>
</tr>
<tr>
<td>122-39-4 diphenylamine</td>
<td>Oral</td>
<td>1,120 mg/kg (rat)</td>
</tr>
<tr>
<td>134-32-7 1-naphthylamine</td>
<td>Oral</td>
<td>680 mg/kg (rat)</td>
</tr>
<tr>
<td></td>
<td>Dermal</td>
<td>447 mg/kg (rat)</td>
</tr>
<tr>
<td></td>
<td>Inhalative</td>
<td>0.056 mg/L (rat)</td>
</tr>
<tr>
<td>91-59-8 2-naphthylamine</td>
<td>Oral</td>
<td>727 mg/kg (rat)</td>
</tr>
<tr>
<td>106-50-3 p-phenylenediamine</td>
<td>Oral</td>
<td>80 mg/kg (rat)</td>
</tr>
<tr>
<td></td>
<td>Inhalative</td>
<td>0.92 mg/L (rat)</td>
</tr>
<tr>
<td>62-44-2 phenacetin</td>
<td>Oral</td>
<td>1,650 mg/kg (rat)</td>
</tr>
<tr>
<td>95-53-4 o-toluidine</td>
<td>Oral</td>
<td>900 mg/kg (rat)</td>
</tr>
<tr>
<td></td>
<td>Dermal</td>
<td>3,244 mg/kg (rabbit)</td>
</tr>
<tr>
<td></td>
<td>Inhalative</td>
<td>862 mg/L (rat)</td>
</tr>
</tbody>
</table>

#### Primary irritant effect:
- **Skin corrosion/irritation**: Causes skin irritation.
- **Serious eye damage/irritation**: Causes serious eye irritation.
- **Respiratory or skin sensitisation**: Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity**: Based on available data, the classification criteria are not met.
- **Carcinogenicity**: May cause cancer.
- **Reproductive toxicity**: Based on available data, the classification criteria are not met.
- **STOT-single exposure**: May cause respiratory irritation.
- **STOT-repeated exposure**: May cause damage to organs through prolonged or repeated exposure.
- **Aspiration hazard**: Based on available data, the classification criteria are not met.

### 12 Ecological information

- **Toxicity**
  - **Aquatic toxicity**: No further relevant information available.
  - **Persistence and degradability**: No further relevant information available.
- **Behaviour in environmental systems**:
  - **Bioaccumulative potential**: No further relevant information available.
  - **Mobility in soil**: No further relevant information available.
Trade name: Base/Neutrals Standard (1X1 mL)

- Ecotoxical effects:
- Remark: Harmful to fish
- Additional ecological information:
- General notes:
  Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
  Do not allow product to reach ground water, water course or sewage system, even in small quantities.
  Danger to drinking water if even extremely small quantities leak into the ground.
  Harmful to aquatic organisms
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
  - Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
- Recommendations
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- European waste catalogue
  - HP 4 Irritant - skin irritation and eye damage
  - HP 5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
  - HP 7 Carcinogenic
  - HP 14 Ecotoxic

- Uncleaned packaging:
  - Recommendations: Disposal must be made according to official regulations.

14 Transport information

- Not Regulated, De minimus Quantities

- UN-Number
  - ADR, IMDG, IATA
    UN1593

- UN proper shipping name
  - ADR
    1593 DICHLOROMETHANE
  - IMDG, IATA
    DICHLOROMETHANE

- Transport hazard class(es)
  - ADR, IMDG, IATA

- Class
  - 6.1 Toxic substances.

- Label
  - 6.1
### Trade name: Base/Neutrals Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Packing group</th>
<th>ADR, IMDG, IATA</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental hazards:</td>
<td>Not applicable.</td>
<td></td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Warning: Toxic substances.</td>
<td></td>
</tr>
<tr>
<td>Danger code (Kemler):</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>EMS Number:</td>
<td>F-A,S-A</td>
<td></td>
</tr>
<tr>
<td>Segregation groups</td>
<td>Liquid halogenated hydrocarbons</td>
<td></td>
</tr>
<tr>
<td>Stowage Category</td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>

#### Transport in bulk according to Annex II of Marpol and the IBC Code

- Transport/Additional information:
  - ADR
    - Limited quantities (LQ) | 5L |
    - Excepted quantities (EQ) | Code: E1 |
    - Maximum net quantity per inner packaging: 30 ml |
    - Maximum net quantity per outer packaging: 1000 ml |
  - Transport category | 2 |
  - Tunnel restriction code | E |
  - IMDG
    - Limited quantities (LQ) | 5L |
    - Excepted quantities (EQ) | Code: E1 |
    - Maximum net quantity per inner packaging: 30 ml |
    - Maximum net quantity per outer packaging: 1000 ml |

- UN "Model Regulation": UN 1593 DICHLOROMETHANE, 6.1, III

### 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 9d, 12, 28, 43, 59

#### Regulation (EU) No 649/2012

<table>
<thead>
<tr>
<th>Code</th>
<th>Name</th>
<th>Annex I Part 1</th>
<th>Annex I Part 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>91-94-1</td>
<td>3,3'-dichlorobenzidine</td>
<td>Annex I Part 1</td>
<td>Annex I Part 2</td>
</tr>
<tr>
<td>119-93-7</td>
<td>4,4'-bi-o-toluidine</td>
<td>Annex I Part 1</td>
<td>Annex I Part 2</td>
</tr>
<tr>
<td>91-59-8</td>
<td>2-naphthylamine</td>
<td>Annex I Part 1</td>
<td>Annex I Part 2</td>
</tr>
<tr>
<td>92-67-1</td>
<td>4-aminobiphenyl</td>
<td>Annex I Part 1</td>
<td>Annex I Part 2</td>
</tr>
</tbody>
</table>
Trade name: Base/Neutrals Standard (1X1 mL)

- National regulations:
  - Additional classification according to Decree on Hazardous Materials, Annex II:
    Carcinogenic hazardous material group III (dangerous).

- Information about limitation of use:
  Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

- Other regulations, limitations and prohibitive regulations
  - Substances of very high concern (SVHC) according to REACH, Article 57
    | Substance | Chemical Names |
    |-----------|---------------|
    | 95-53-4   | o-toluidine   |
    | 92-67-1   | 4-aminobiphenyl |
  - Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- Relevant phrases
  H301 Toxic if swallowed.
  H302 Harmful if swallowed.
  H311 Toxic in contact with skin.
  H312 Harmful in contact with skin.
  H315 Causes skin irritation.
  H317 May cause an allergic skin reaction.
  H319 Causes serious eye irritation.
  H330 Fatal if inhaled.
  H331 Toxic if inhaled.
  H332 Harmful if inhaled.
  H335 May cause respiratory irritation.
  H350 May cause cancer.
  H351 Suspected of causing cancer.
  H373 May cause damage to organs through prolonged or repeated exposure.
  H400 Very toxic to aquatic life.
  H410 Very toxic to aquatic life with long lasting effects.
  H411 Toxic to aquatic life with long lasting effects.
  H412 Harmful to aquatic life with long lasting effects.

- Department issuing SDS: Document Control / Regulatory
- Contact: regulatory@ultrasci.com
- Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  SVHC: Substances of Very High Concern
**Trade name: Base/Neutrals Standard (1X1 mL)**

vPvB: very Persistent and very Bioaccumulative  
Acute Toxic. 3: Acute toxicity – Category 3  
Acute Toxic. 4: Acute toxicity – Category 4  
Acute Toxic. 2: Acute toxicity – Category 2  
Skin Irrit. 2: Skin corrosion/irritation – Category 2  
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2  
Skin Sens. 1: Skin sensitisation – Category 1  
Carc. 1A: Carcinogenicity – Category 1A  
Carc. 1B: Carcinogenicity – Category 1B  
Carc. 2: Carcinogenicity – Category 2  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2  
Aquatic Toxic. 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1  
Aquatic Toxic. 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2  
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3  

* Data compared to the previous version altered.
1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** Base/Neutrals Standard (1X1 mL)
- **Part number:** US-115-1
- **Relevant identified uses of the substance or mixture and uses advised against**
  - Reagents and Standards for Analytical Chemical Laboratory Use

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**

  GHS08 health hazard
  
  Muta. 1A  H340  May cause genetic defects.
  Carc. 1B  H350  May cause cancer.
  STOT RE 2 H373  May cause damage to organs through prolonged or repeated exposure.

  GHS07
  
  Acute Tox. 4  H302  Harmful if swallowed.
  Acute Tox. 4  H312  Harmful in contact with skin.
  Skin Irrit. 2  H315  Causes skin irritation.
  Eye Irrit. 2 H319  Causes serious eye irritation.
  STOT SE 3  H335  May cause respiratory irritation.
  Aquatic Chronic 3  H412  Harmful to aquatic life with long lasting effects.

- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
  - The product is classified and labelled according to the CLP regulation.

- **Hazard pictograms**

  GHS07  GHS08
Trade name: Base/Neutrals Standard (1X1 mL)

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  - dichloromethane
  - 1,3-dinitrobenzene
  - 1,3,5-trinitrobenzene
  - 2,4-dinitrotoluene

- **Hazard statements**
  - H302+H312 Harmful if swallowed or in contact with skin.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H340 May cause genetic defects.
  - H350 May cause cancer.
  - H335 May cause respiratory irritation.
  - H373 May cause damage to organs through prolonged or repeated exposure.
  - H412 Harmful to aquatic life with long lasting effects.

- **Precautionary statements**
  - P101 If medical advice is needed, have product container or label at hand.
  - P102 Keep out of reach of children.
  - P103 Read label before use.
  - P201 Obtain special instructions before use.
  - P202 Do not handle until all safety precautions have been read and understood.
  - P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  - P264 Wash thoroughly after handling.
  - P270 Do not eat, drink or smoke when using this product.
  - P271 Use only outdoors or in a well-ventilated area.
  - P273 Avoid release to the environment.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  - P302+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P308+P313 IF exposed or concerned: Get medical advice/attention.
  - P314 Specific treatment (see on this label).
  - P316 Get medical advice/attention if you feel unwell.
  - P362+P364 Take off contaminated clothing and wash it before reuse.
  - P332+P313 If skin irritation occurs: Get medical advice/attention.
  - P337+P313 If eye irritation persists: Get medical advice/attention.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**
  - Contains 1,4-naphthoquinone, quintozene (ISO). May produce an allergic reaction.

- **Other hazards**
  - **Results of PBT and vPvB assessment**
    - PBT: Not applicable.
    - vPvB: Not applicable.
## 3 Composition/information on ingredients

### Chemical characterisation: Mixtures

**Description:** Mixture of substances listed below with nonhazardous additions.

### Dangerous components:

<table>
<thead>
<tr>
<th>CAS:</th>
<th>EINECS:</th>
<th>Chemical characterisation</th>
<th>Description</th>
<th>Dangerous components</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>200-838-9</td>
<td>dichloromethane</td>
<td></td>
<td>98.0396%</td>
</tr>
<tr>
<td>62-50-0</td>
<td>200-536-7</td>
<td>ethyl methanesulfonate</td>
<td>Carc. 2, H351; STOT RE 2, H373; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</td>
<td>0.151%</td>
</tr>
<tr>
<td>66-27-3</td>
<td>200-625-0</td>
<td>methyl methanesulfonate</td>
<td>Acute Tox. 3, H301; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</td>
<td>0.151%</td>
</tr>
<tr>
<td>99-65-0</td>
<td>202-776-8</td>
<td>1,3-dinitrobenzene</td>
<td>Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
<td>0.151%</td>
</tr>
<tr>
<td>121-14-2</td>
<td>204-450-0</td>
<td>2,4-dinitrotoluene</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Muta. 2, H341; Carc. 1B, H350; Repr. 2, H361f; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
<td>0.151%</td>
</tr>
<tr>
<td>606-20-2</td>
<td>210-106-0</td>
<td>2,6-dinitrotoluene</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Muta. 2, H341; Carc. 1B, H350; Repr. 2, H361f; STOT RE 2, H373; Aquatic Chronic 3, H412</td>
<td>0.151%</td>
</tr>
<tr>
<td>130-15-4</td>
<td>204-977-6</td>
<td>1,4-naphthoquinone</td>
<td>Acute Tox. 3, H301; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335</td>
<td>0.151%</td>
</tr>
<tr>
<td>98-95-3</td>
<td>202-716-0</td>
<td>nitrobenzene</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Carc. 2, H351; Repr. 1B, H360f; STOT RE 1, H372; Aquatic Chronic 3, H412</td>
<td>0.151%</td>
</tr>
<tr>
<td>82-68-8</td>
<td>201-435-0</td>
<td>quintozene (ISO)</td>
<td>Resp. Sens. 1, H334; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Skin Sens. 1, H317</td>
<td>0.151%</td>
</tr>
<tr>
<td>99-35-4</td>
<td>202-752-7</td>
<td>1,3,5-trinitrobenzene</td>
<td>Expl. 1.1, H201; Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; STOT RE 2, H373; Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
<td>0.151%</td>
</tr>
<tr>
<td>94-59-7</td>
<td>202-345-4</td>
<td>safrole</td>
<td>Muta. 2, H341; Carc. 1B, H350; Acute Tox. 4, H302</td>
<td>0.151%</td>
</tr>
<tr>
<td>78-59-1</td>
<td>201-126-0</td>
<td>3,5,5-trimethylcyclohex-2-enone</td>
<td>Carc. 2, H351; Acute Tox. 4, H302; Acute Tox. 4, H312; Eye Irrit. 2, H319; STOT SE 3, H335</td>
<td>0.151%</td>
</tr>
</tbody>
</table>

### SVHC

- 121-14-2 2,4-dinitrotoluene
- 98-95-3 nitrobenzene
Trade name: Base/Neutrals Standard (1X1 mL)

4 First aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: Call for a doctor immediately.
- Information for doctor:
  No further relevant information available.

5 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- Special hazards arising from the substance or mixture
  During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
  Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Mount respiratory protective device.
- Environmental precautions:
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.
7 Handling and storage

· Handling:
· Precautions for safe handling
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
  Prevent formation of aerosols.
· Information about fire - and explosion protection: Keep respiratory protective device available.
· Conditions for safe storage, including any incompatibilities
· Storage:
  · Requirements to be met by storerooms and receptacles: No special requirements.
  · Information about storage in one common storage facility: Not required.
· Further information about storage conditions: Keep container tightly sealed.
· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical facilities: No further data; see item 7.
· Control parameters

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td></td>
</tr>
<tr>
<td>WEL</td>
<td>Short-term: 706 mg/m³, 200 ppm</td>
</tr>
<tr>
<td></td>
<td>Long-term: 353 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>BMGV, Sk</td>
<td></td>
</tr>
<tr>
<td>98-95-3 nitrobenzene</td>
<td></td>
</tr>
<tr>
<td>WEL</td>
<td>Long-term: 1 mg/m³, 0.2 ppm</td>
</tr>
<tr>
<td>Sk</td>
<td></td>
</tr>
<tr>
<td>78-59-1 3,5,5-trimethylcyclohex-2-enone</td>
<td>Short-term: 29 mg/m³, 5 ppm</td>
</tr>
</tbody>
</table>

· Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Limit value</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td></td>
</tr>
<tr>
<td>BMGV</td>
<td>30 ppm</td>
</tr>
<tr>
<td>Medium: end-tidal breath</td>
<td></td>
</tr>
<tr>
<td>Sampling time: post shift</td>
<td></td>
</tr>
<tr>
<td>Parameter: carbon monoxide</td>
<td></td>
</tr>
</tbody>
</table>

· Additional information: The lists valid during the making were used as basis.

· Exposure controls
· Personal protective equipment:
  · General protective and hygienic measures:
    Keep away from foodstuffs, beverages and feed.
    Immediately remove all soiled and contaminated clothing
    Wash hands before breaks and at the end of work.
    Store protective clothing separately.
    Avoid contact with the eyes and skin.
  · Respiratory protection:
    When used as intended with Agilent instruments the use of the product under normal laboratory conditions and
    with standard practices does not result in significant airborne exposures and therefore respiratory protection is not
needed.
Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved
device equipment with appropriate organic or acid gas cartridge.

- **Protection of hands:**
  Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil
  thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct
  contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times
  exceeding 4 hrs. Supplier recommendations should be followed.

- **Material of gloves**
  - For normal use: nitrile rubber, 11-13 mil thickness
  - For direct contact with the chemical: butyl rubber, 12-15 mil thickness

- **Penetration time of glove material**
  - For normal use: nitrile rubber: 1 hour
  - For direct contact with the chemical: butyl rubber: > 4 hours

- **Eye protection:**
  - Safety glasses
  - Tightly sealed goggles

---

### 9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Information on basic physical and chemical properties</th>
<th>General Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td></td>
</tr>
<tr>
<td>Form: Fluid</td>
<td></td>
</tr>
<tr>
<td>Colour: Colourless</td>
<td></td>
</tr>
<tr>
<td>Odour: Like chlorine</td>
<td></td>
</tr>
<tr>
<td>Odour threshold: Not determined.</td>
<td></td>
</tr>
<tr>
<td>pH-value: Not determined.</td>
<td></td>
</tr>
</tbody>
</table>

- **Change in condition**
  - Melting point/freezing point: -95.1 °C
  - Initial boiling point and boiling range: 40 °C

- **Flash point:** Not applicable.
- **Flammability (solid, gas):** Not applicable.
- **Ignition temperature:** 605 °C
- **Decomposition temperature:** Not determined.
- **Auto-ignition temperature:** Product is not selfigniting.
- **Explosive properties:** Product does not present an explosion hazard.
- **Explosion limits:**
  - Lower: 13 Vol %
  - Upper: 22 Vol %
- **Vapour pressure at 20 °C:** 360 hPa
48.1.26

· Density at 20 °C: 1.3 g/cm³
· Relative density: Not determined.
· Vapour density: Not determined.
· Evaporation rate: Not determined.

· Solubility in / Miscibility with water at 20 °C: 20 g/l
· Partition coefficient: n-octanol/water: Not determined.

· Viscosity:
  Dynamic at 20 °C: 0.43 mPas
  Kinematic: Not determined.

· Solvent content:
  Organic solvents: 98.3 %
  VOC (EC): 98.34 %

· Solids content: 1.1 %
· Other information:
  No further relevant information available.

10 Stability and reactivity

· Reactivity: No further relevant information available.
· Chemical stability:
  Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
· Possibility of hazardous reactions: No dangerous reactions known.
· Conditions to avoid: No further relevant information available.
· Incompatible materials: No further relevant information available.
· Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects:
· Acute toxicity:
  Harmful if swallowed or in contact with skin.

· LD/LC50 values relevant for classification:

  ATE (Acute Toxicity Estimates)

  Oral LD50 1,495 mg/kg (rat)
  Dermal LD50 1,631 mg/kg
  Inhalative LC50/4 h 142 mg/L

  75-09-2 dichloromethane

  Oral LD50 1,600 mg/kg (rat)
  Dermal LD50 >2,000 mg/kg (rat)
  Inhalative LC50/4 h 88 mg/L (rat)

  62-50-0 ethyl methanesulfonate

  Oral LD50 470 mg/kg (mouse)
<table>
<thead>
<tr>
<th>Substance Code</th>
<th>Substance Name</th>
<th>Route</th>
<th>LD50</th>
<th>LD50 (rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>66-27-3</td>
<td>methyl methanesulfonate</td>
<td>Oral</td>
<td>225 mg/kg</td>
<td>225 mg/kg</td>
</tr>
<tr>
<td>99-65-0</td>
<td>1,3-dinitrobenzene</td>
<td>Oral</td>
<td>83 mg/kg</td>
<td>83 mg/kg</td>
</tr>
<tr>
<td>121-14-2</td>
<td>2,4-dinitrotoluene</td>
<td>Oral</td>
<td>268 mg/kg</td>
<td>268 mg/kg</td>
</tr>
<tr>
<td>606-20-2</td>
<td>2,6-dinitrotoluene</td>
<td>Oral</td>
<td>177 mg/kg</td>
<td>177 mg/kg</td>
</tr>
<tr>
<td>130-15-4</td>
<td>1,4-naphthoquinone</td>
<td>Oral</td>
<td>190 mg/kg</td>
<td>190 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalative</td>
<td>46 mg/L</td>
<td>46 mg/L</td>
</tr>
<tr>
<td>98-95-3</td>
<td>nitrobenzene</td>
<td>Oral</td>
<td>390 mg/kg</td>
<td>390 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>2,100 mg/kg</td>
<td>2,100 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalative</td>
<td>556 mg/L</td>
<td>556 mg/L</td>
</tr>
<tr>
<td>82-68-8</td>
<td>quintozene (ISO)</td>
<td>Oral</td>
<td>1,100 mg/kg</td>
<td>1,100 mg/kg</td>
</tr>
<tr>
<td>99-35-4</td>
<td>1,3,5-trinitrobenzene</td>
<td>Oral</td>
<td>275 mg/kg</td>
<td>275 mg/kg</td>
</tr>
<tr>
<td>78-59-1</td>
<td>3,5,5-trimethylcyclohex-2-enone</td>
<td>Oral</td>
<td>1,870 mg/kg</td>
<td>1,870 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dermal</td>
<td>1,200 mg/kg</td>
<td>1,200 mg/kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inhalative</td>
<td>7,000 mg/L</td>
<td>7,000 mg/L</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **Skin corrosion/irritation**
    Causes skin irritation.
  - **Serious eye damage/irritation**
    Causes serious eye irritation.
  - **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
  - **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
  - **Germ cell mutagenicity**
    May cause genetic defects.
  - **Carcinogenicity**
    May cause cancer.
  - **Reproductive toxicity** Based on available data, the classification criteria are not met.
  - **STOT-single exposure**
    May cause respiratory irritation.
  - **STOT-repeated exposure**
    May cause damage to organs through prolonged or repeated exposure.
  - **Aspiration hazard** Based on available data, the classification criteria are not met.
12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxic effects:**
  - **Remark:** Harmful to fish
  - **Additional ecological information:**
    - **General notes:**
      Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
      Do not allow product to reach ground water, water course or sewage system, even in small quantities.
      Danger to drinking water if even extremely small quantities leak into the ground.
      Harmful to aquatic organisms
  - **Results of PBT and vPvB assessment**
    - **PBT:** Not applicable.
    - **vPvB:** Not applicable.
  - **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.

<table>
<thead>
<tr>
<th>European waste catalogue</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 4 Irritant - skin irritation and eye damage</td>
</tr>
<tr>
<td>HP 5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity</td>
</tr>
<tr>
<td>HP 6 Acute Toxicity</td>
</tr>
<tr>
<td>HP 7 Carcinogenic</td>
</tr>
<tr>
<td>HP 11 Mutagenic</td>
</tr>
<tr>
<td>HP 14 Ecotoxic</td>
</tr>
</tbody>
</table>

- **Uncleaned packaging:**
  - **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **Not Regulated, De minimus Quantities**
- **UN-Number** UN1593
- **ADR, IMDG, IATA**
- **UN proper shipping name**
  - **ADR** 1593 DICHLOROMETHANE
  - **IMDG** DICHLOROMETHANE, MARINE POLLUTANT
### Trade name: Base/Neutrals Standard (1X1 mL)

<table>
<thead>
<tr>
<th>IATA</th>
<th>DICHLOOROMETHANE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport hazard class(es)</td>
<td></td>
</tr>
<tr>
<td>ADR, IATA</td>
<td></td>
</tr>
<tr>
<td>· Class</td>
<td>6.1 Toxic substances.</td>
</tr>
<tr>
<td>· Label</td>
<td>6.1</td>
</tr>
<tr>
<td>IMDG</td>
<td></td>
</tr>
<tr>
<td>· Class</td>
<td>6.1 Toxic substances.</td>
</tr>
<tr>
<td>· Label</td>
<td>6.1</td>
</tr>
<tr>
<td>Packing group</td>
<td>III</td>
</tr>
<tr>
<td>ADR, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td></td>
</tr>
<tr>
<td>Marine pollutant:</td>
<td>Symbol (fish and tree)</td>
</tr>
<tr>
<td>Special precautions for user</td>
<td>Warning: Toxic substances.</td>
</tr>
<tr>
<td>Danger code (Kemler):</td>
<td>60</td>
</tr>
<tr>
<td>EMS Number:</td>
<td>F-A,S-A</td>
</tr>
<tr>
<td>Segregation groups</td>
<td>Liquid halogenated hydrocarbons</td>
</tr>
<tr>
<td>Stowage Category</td>
<td>A</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of Marpol and the IBC Code</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Transport/Additional information:</td>
<td></td>
</tr>
<tr>
<td>ADR</td>
<td></td>
</tr>
<tr>
<td>· Limited quantities (LQ)</td>
<td>5L</td>
</tr>
<tr>
<td>· Excepted quantities (EQ)</td>
<td>Code: E1</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td></td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 1000 ml</td>
<td></td>
</tr>
<tr>
<td>· Transport category</td>
<td>2</td>
</tr>
<tr>
<td>· Tunnel restriction code</td>
<td>E</td>
</tr>
<tr>
<td>IMDG</td>
<td></td>
</tr>
<tr>
<td>· Limited quantities (LQ)</td>
<td>5L</td>
</tr>
<tr>
<td>· Excepted quantities (EQ)</td>
<td>Code: E1</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td></td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 1000 ml</td>
<td></td>
</tr>
<tr>
<td>UN &quot;Model Regulation&quot;:</td>
<td>UN 1593 DICHLOOROMETHANE, 6.1, III</td>
</tr>
</tbody>
</table>

(Contd. on page 11)
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)
    | Substance Code | Substance Name | Sunset date |
    |----------------|----------------|-------------|
    | 121-14-2       | 2,4-dinitrotoluene | 2015-08-21 |

- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 28, 59

- Regulation (EU) No 649/2012
<table>
<thead>
<tr>
<th>Substance Code</th>
<th>Substance Name</th>
<th>Annex</th>
</tr>
</thead>
<tbody>
<tr>
<td>82-68-8</td>
<td>quintozene (ISO)</td>
<td>Annex I Part 1, Annex I Part 2</td>
</tr>
</tbody>
</table>

- National regulations:
  - Additional classification according to Decree on Hazardous Materials, Annex II:
    Carcinogenic hazardous material group III (dangerous).

- Information about limitation of use:
  Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

- Other regulations, limitations and prohibitive regulations
  - Substances of very high concern (SVHC) according to REACH, Article 57
    | Substance Code | Substance Name |
    |----------------|----------------|
    | 121-14-2       | 2,4-dinitrotoluene |
    | 98-95-3        | nitrobenzene |

- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- Relevant phrases
  - H201 Explosive; mass explosion hazard.
  - H300 Fatal if swallowed.
  - H301 Toxic if swallowed.
  - H302 Harmful if swallowed.
  - H310 Fatal in contact with skin.
  - H311 Toxic in contact with skin.
  - H312 Harmful in contact with skin.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H319 Causes serious eye irritation.
  - H330 Fatal if inhaled.
  - H331 Toxic if inhaled.
  - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - H335 May cause respiratory irritation.
  - H340 May cause genetic defects.
  - H341 Suspected of causing genetic defects.
  - H350 May cause cancer.
  - H351 Suspected of causing cancer.
H360F May damage fertility.
H361F Suspected of damaging fertility.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

**Department issuing SDS:** Document Control / Regulatory

**Contact:** regulatory@ultrasci.com

**Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative
Expl. 1.1: Explosives – Division 1.1
Acute Tox. 2: Acute toxicity – Category 2
Acute Tox. 3: Acute toxicity – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Acute Tox. 1: Acute toxicity – Category 1
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 1A: Germ cell mutagenicity – Category 1A
Muta. 2: Germ cell mutagenicity – Category 2
Care. 1B: Carcinogenicity – Category 1B
Care. 2: Carcinogenicity – Category 2
Repr. 1B: Reproductive toxicity – Category 1B
Repr. 2: Reproductive toxicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

* Data compared to the previous version altered.
1 Identification of the substance/mixture and of the company/undertaking

- Product identifier
  - Trade name: PAH Standard (1X1 mL)
  - Part number: US-116N-1
  - Relevant identified uses of the substance or mixture and uses advised against
    Reagents and Standards for Analytical Chemical Laboratory Use

- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:
    Agilent Technologies Manufacturing GmbH & Co. KG
    Hewlett-Packard-Str.8
    76337 Waldbronn
    Germany

- Further information obtainable from:
  Telephone: 0800 603 1000
  pdl-msds_author@agilent.com
  - Emergency telephone number: CHEMTREC®: +(44)-870-8200418

2 Hazards identification

- Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008
  - GHS02 flame
  Flam. Liq. 2  H225  Highly flammable liquid and vapour.
  - GHS06 skull and crossbones
  Acute Tox. 2  H310  Fatal in contact with skin.
  - GHS08 health hazard
  Muta. 1B  H340  May cause genetic defects.
  Carc. 1A  H350  May cause cancer.
  STOT RE 1  H372  Causes damage to organs through prolonged or repeated exposure.
  Asp. Tox. 1  H304  May be fatal if swallowed and enters airways.
  - GHS07
  Skin Irrit. 2  H315  Causes skin irritation.
  Eye Irrit. 2  H319  Causes serious eye irritation.
  STOT SE 3  H335  May cause respiratory irritation.

- Label elements
- Labelling according to Regulation (EC) No 1272/2008
  The product is classified and labelled according to the CLP regulation.

(Contd. on page 2)
### Trade name: PAH Standard (1X1 mL)

<table>
<thead>
<tr>
<th>· <strong>Hazard pictograms</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="GHS02" /></td>
</tr>
</tbody>
</table>

| · **Signal word** Danger |

**Hazard-determining components of labelling:**
- benzene
- dichloromethane
- 3-methylcholanthrene
- 7,12-dimethylbenz[a]anthracene

**Hazard statements**
- H225 Highly flammable liquid and vapour.
- H310 Fatal in contact with skin.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H335 May cause respiratory irritation.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H304 May be fatal if swallowed and enters airways.

**Precautionary statements**

| P101 | If medical advice is needed, have product container or label at hand. |
| P102 | Keep out of reach of children. |
| P103 | Read label before use. |
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ventilating/lighting equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P262 | Do not get in eyes, on skin, or on clothing. |
| P264 | Wash thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P301+P310 | IF SWALLOWED: Immediately call a POISON CENTER/doctor. |
| P321 | Specific treatment (see on this label). |
| P331 | Do NOT induce vomiting. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308+P313 | IF exposed or concerned: Get medical advice/attention. |
| P312 | Call a POISON CENTER/doctor if you feel unwell. |
| P314 | Get medical advice/attention if you feel unwell. |
| P361+P364 | Take off immediately all contaminated clothing and wash it before reuse. |

(Contd. of page 1)
Trade name: PAH Standard (1X1 mL)

P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards
Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients
- Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS</th>
<th>EINECS</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>benzene</td>
<td>71-43-2</td>
<td>200-753-7</td>
<td>49.818%</td>
</tr>
<tr>
<td>dichloromethane</td>
<td>75-09-2</td>
<td>200-838-9</td>
<td>49.818%</td>
</tr>
<tr>
<td>3-methylcholanthrene</td>
<td>56-49-5</td>
<td>200-276-4</td>
<td>0.182%</td>
</tr>
<tr>
<td>7,12-dimethylbenz[a]anthracene</td>
<td>57-97-6</td>
<td>200-359-5</td>
<td>0.182%</td>
</tr>
</tbody>
</table>

Additional information: For the wording of the listed hazard phrases refer to section 16.

4 First aid measures
- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: If symptoms persist consult doctor.
- Information for doctor:
  Most important symptoms and effects, both acute and delayed No further relevant information available.
5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
  - CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
  - During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
  - **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Mount respiratory protective device.
  - Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
  - **Precautions for safe handling**
    - Ensure good ventilation/exhaustion at the workplace.
    - Open and handle receptacle with care.
    - Prevent formation of aerosols.
  - **Information about fire - and explosion protection:**
    - Keep ignition sources away - Do not smoke.
    - Protect against electrostatic charges.
    - Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
  - **Storage:**
    - **Requirements to be met by storerooms and receptacles:** Store in a cool location.
    - **Information about storage in one common storage facility:** Not required.
    - **Further information about storage conditions:**
      - Keep container tightly sealed.
      - Store in cool, dry conditions in well sealed receptacles.
Trade name: PAH Standard (1X1 mL)

- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

- Control parameters

- Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Substance</th>
<th>WEL Long-term value</th>
<th>Carc; Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-43-2 benzene</td>
<td>3.25 mg/m³, 1 ppm</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance</th>
<th>WEL Short-term value</th>
<th>BMGV, Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>706 mg/m³, 200 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>353 mg/m³, 100 ppm</td>
<td></td>
</tr>
</tbody>
</table>

- Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Substance</th>
<th>BMGV 30 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>Medium: end-tidal breath</td>
</tr>
</tbody>
</table>

- Additional information: The lists valid during the making were used as basis.

- Exposure controls

- Personal protective equipment:

<table>
<thead>
<tr>
<th>General protective and hygienic measures:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep away from foodstuffs, beverages and feed.</td>
</tr>
<tr>
<td>Immediately remove all soiled and contaminated clothing</td>
</tr>
<tr>
<td>Wash hands before breaks and at the end of work.</td>
</tr>
<tr>
<td>Store protective clothing separately.</td>
</tr>
<tr>
<td>Avoid contact with the eyes and skin.</td>
</tr>
</tbody>
</table>

- Respiratory protection:

When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.

Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

- Protection of hands:

Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

- Material of gloves

<table>
<thead>
<tr>
<th>Normal use</th>
<th>Butyl rubber, 11-13 mil thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct contact</td>
<td>Butyl rubber, 12-15 mil thickness</td>
</tr>
</tbody>
</table>

- Penetration time of glove material

<table>
<thead>
<tr>
<th>Normal use</th>
<th>Butyl rubber: 1 hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct contact</td>
<td>Butyl rubber: &gt; 4 hours</td>
</tr>
</tbody>
</table>

(Contd. on page 6)
### 9 Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>Fluid</td>
</tr>
<tr>
<td>Colour</td>
<td>According to product specification</td>
</tr>
<tr>
<td>Odour</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined</td>
</tr>
<tr>
<td>pH-value</td>
<td>Not determined</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Undetermined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>40 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>-11 °C</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>555 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not determined</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Product is not selfigniting</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Product is not explosive. However, formation of explosive air/vapour mixtures are possible.</td>
</tr>
<tr>
<td>Explosion limits</td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>1.2 Vol %</td>
</tr>
<tr>
<td>Upper</td>
<td>22 Vol %</td>
</tr>
<tr>
<td>Vapour pressure at 20 °C</td>
<td>360 hPa</td>
</tr>
<tr>
<td>Density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Relative density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Not determined</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not determined</td>
</tr>
<tr>
<td>Solubility in / Miscibility with water</td>
<td>Not miscible or difficult to mix</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not determined</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not determined</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined</td>
</tr>
<tr>
<td>Solvent content</td>
<td></td>
</tr>
<tr>
<td>Organic solvents</td>
<td>99.6 %</td>
</tr>
</tbody>
</table>
48.1.26

VOC (EC) 99.64 %
Solids content: 0.4 %
· Other information No further relevant information available.

10 Stability and reactivity

· Reactivity No further relevant information available.
· Chemical stability
· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
· Possibility of hazardous reactions No dangerous reactions known.
· Conditions to avoid No further relevant information available.
· Incompatible materials: No further relevant information available.
· Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Information on toxicological effects
· Acute toxicity
Fatal in contact with skin.
· LD/LC50 values relevant for classification:
ATE (Acute Toxicity Estimates)

<table>
<thead>
<tr>
<th></th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-43-2 benzene</td>
<td>3,212 mg/kg (rat)</td>
<td>96.4 mg/kg</td>
</tr>
<tr>
<td>75-09-2 dichloromethane</td>
<td>3,340 mg/kg (rat)</td>
<td>48 mg/kg (mouse)</td>
</tr>
<tr>
<td></td>
<td>&gt;8,260 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>57-97-6 7,12-dimethylbenz[a]anthracene</td>
<td>1,600 mg/kg (rat)</td>
<td>88 mg/L (rat)</td>
</tr>
</tbody>
</table>

· Primary irritant effect:
· Skin corrosion/irritation
Causes skin irritation.
· Serious eye damage/irritation
Causes serious eye irritation.
· Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
· Germ cell mutagenicity
May cause genetic defects.
· **Carcinogenicity**
  May cause cancer.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure**
  May cause respiratory irritation.
· **STOT-repeated exposure**
  Causes damage to organs through prolonged or repeated exposure.
· **Aspiration hazard**
  May be fatal if swallowed and enters airways.

### 12 Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
  Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
  Do not allow product to reach ground water, water course or sewage system, even in small quantities.
  Danger to drinking water if even extremely small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **European waste catalogue**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 3</td>
<td>Flammable</td>
</tr>
<tr>
<td>HP 4</td>
<td>Irritant - skin irritation and eye damage</td>
</tr>
<tr>
<td>HP 5</td>
<td>Specific Target Organ Toxicity (STOT)/Aspiration Toxicity</td>
</tr>
<tr>
<td>HP 6</td>
<td>Acute Toxicity</td>
</tr>
<tr>
<td>HP 7</td>
<td>Carcinogenic</td>
</tr>
<tr>
<td>HP 11</td>
<td>Mutagenic</td>
</tr>
</tbody>
</table>

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
# Transport information

- **Not Regulated, De minimus Quantities**

- **UN-Number**
  - ADR, IMDG, IATA UN1992

- **UN proper shipping name**
  - ADR 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE)
  - IMDG, IATA FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE)

- **Transport hazard class(es)**

  - **ADR**
    - Class 3 Flammable liquids.
    - Label 3+6.1

  - **IMDG**
    - Class 3 Flammable liquids.
    - Label 3/6.1

  - **IATA**
    - Class 3 Flammable liquids.
    - Label 3 (6.1)

- **Packing group**
  - ADR, IMDG, IATA II

- **Environmental hazards:**
  - Not applicable.

- **Special precautions for user**
  - Warning: Flammable liquids.
  - 336

- **EMS Number:**
  - F-E,S-D

- **Stowage Category**
  - B

- **Stowage Code**
  - SW2 Clear of living quarters.

- **Transport in bulk according to Annex II of Marpol and the IBC Code**
  - Not applicable.
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - Seveso category
    - H2 ACUTE TOXIC
    - P5c FLAMMABLE LIQUIDS
  - Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t
  - Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 5, 28, 29, 59, 72


- National regulations:

- Additional classification according to Decree on Hazardous Materials, Annex II:
  Carcinogenic hazardous material group III (dangerous).

- Information about limitation of use:
  Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.
  Exceptions can be made by the authorities in certain cases.

- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation.
No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- Relevant phrases
  - H225 Highly flammable liquid and vapour.
  - H302 Harmful if swallowed.
  - H304 May be fatal if swallowed and enters airways.
H310 Fatal in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H340 May cause genetic defects.
H350 May cause cancer.
H351 Suspected of causing cancer.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H413 May cause long lasting harmful effects to aquatic life.

- Department issuing SDS: Document Control / Regulatory
- Contact: regulatory@ultrasci.com
- Abbreviations and acronyms:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - Flam. Liq. 2: Flammable liquids – Category 2
  - Acute Tox. 4: Acute toxicity – Category 4
  - Acute Tox. 1: Acute toxicity – Category 1
  - Acute Tox. 2: Acute toxicity – Category 2
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  - Muta. 1B: Germ cell mutagenicity – Category 1B
  - Care. 1A: Carcinogenicity – Category 1A
  - Care. 2: Carcinogenicity – Category 2
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  - STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
  - STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
  - Asp. Tox. 1: Aspiration hazard – Category 1
  - Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4
1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** Phenols Standard (1X1 mL)
- **Part number:** US-117N-1
- **Relevant identified uses of the substance or mixture and uses advised against**
  Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    Agilent Technologies Manufacturing GmbH & Co. KG
    Hewlett-Packard-Str.8
    76337 Waldbronn
    Germany
  - **Further information obtainable from:**
    Telephone: 0800 603 1000
    pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(44)-870-8200418

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**

  ![](image)

  **GHS08** health hazard

  - **Carc. 2** H351 Suspected of causing cancer.
  - **STOT RE 2** H373 May cause damage to organs through prolonged or repeated exposure.

  ![](image)

  **GHS07**

  - **Acute Tox. 4** H302 Harmful if swallowed.
  - **Skin Irrit. 2** H315 Causes skin irritation.
  - **Eye Irrit. 2** H319 Causes serious eye irritation.
  - **STOT SE 3** H335 May cause respiratory irritation.

  - **Aquatic Chronic 3** H412 Harmful to aquatic life with long lasting effects.

- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
  The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**

  ![](image)

  **GHS07**  **GHS08**

- **Signal word** Warning
- **Hazard-determining components of labelling:**
  dichloromethane
Trade name: Phenols Standard (1X1 mL)

- Hazard statements
  - H302 Harmful if swallowed.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H351 Suspected of causing cancer.
  - H335 May cause respiratory irritation.
  - H373 May cause damage to organs through prolonged or repeated exposure.
  - H412 Harmful to aquatic life with long lasting effects.

- Precautionary statements
  - P101 If medical advice is needed, have product container or label at hand.
  - P102 Keep out of reach of children.
  - P103 Read label before use.
  - P201 Obtain special instructions before use.
  - P202 Do not handle until all safety precautions have been read and understood.
  - P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  - P264 Wash thoroughly after handling.
  - P270 Do not eat, drink or smoke when using this product.
  - P271 Use only outdoors or in a well-ventilated area.
  - P273 Avoid release to the environment.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  - P330 Rinse mouth.
  - P302+P352 IF ON SKIN: Wash with plenty of water.
  - P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P308+P313 IF exposed or concerned: Get medical advice/attention.
  - P321 Specific treatment (see on this label).
  - P314 Get medical advice/attention if you feel unwell.
  - P362+P364 Take off contaminated clothing and wash it before reuse.
  - P332+P313 If skin irritation occurs: Get medical advice/attention.
  - P337+P313 If eye irritation persists: Get medical advice/attention.
  - P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Other hazards
- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

3 Composition/information on ingredients
- Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.
Trade name: Phenols Standard (1X1 mL)

48.1.26

· Dangerous components:

| CAS: 75-09-2 | dichloromethane | 98.794% |
| EINECS: 200-838-9 | | |
| | Carc. 2, H351; STOT RE 2, H373; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335 | |

| CAS: 95-48-7 | o-cresol | 0.151% |
| EINECS: 202-423-8 | | |
| | Acute Tox. 3, H301; Acute Tox. 3, H311; Skin Corr. 1B, H314 | |

| CAS: 108-39-4 | m-cresol | 0.151% |
| EINECS: 203-577-9 | | |
| | Acute Tox. 3, H301; Acute Tox. 3, H311; Skin Corr. 1B, H314 | |

| CAS: 106-44-5 | p-cresol | 0.151% |
| EINECS: 203-398-6 | | |
| | Acute Tox. 3, H301; Acute Tox. 3, H311; Skin Corr. 1B, H314 | |

| CAS: 70-30-4 | 2,2'-methylenebis-(3,4,6-trichlorophenol) | 0.151% |
| EINECS: 200-733-8 | | |
| | Acute Tox. 3, H301; Acute Tox. 3, H311; Aquatic Acute 1, H400; Aquatic Chronic 1, H410 | |

| CAS: 58-90-2 | 2,3,4,6-tetrachlorophenol | 0.151% |
| EINECS: 200-402-8 | | |
| | Acute Tox. 3, H301; Acute Tox. 3, H311; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; Eye Irrit. 2, H319 | |

| CAS: 95-95-4 | 2,4,5-trichlorophenol | 0.151% |
| EINECS: 202-467-8 | | |
| | Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319 | |

| CAS: 88-85-7 | dinoseb | 0.151% |
| EINECS: 201-861-7 | | |
| | Acute Tox. 3, H301; Acute Tox. 3, H311; Brp. 1B, H360Df; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Eye Irrit. 2, H319 | |

· SVHC

88-85-7 dinoseb

· Additional information: For the wording of the listed hazard phrases refer to section 16.

4 First aid measures

· Description of first aid measures

· General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation: In case of unconsciousness place patient stably in side position for transportation.

· After skin contact: Immediately wash with water and soap and rinse thoroughly.

· After eye contact:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing: Call for a doctor immediately.

· Information for doctor:
  · Most important symptoms and effects, both acute and delayed No further relevant information available.
  · Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Firefighting measures

· Extinguishing media

· Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
6 Accidental release measures

- Special hazards arising from the substance or mixture
  During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
  - Protective equipment: Mouth respiratory protective device.

- Personal precautions, protective equipment and emergency procedures
  Mount respiratory protective device.
- Environmental precautions:
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to enter sewers/surface or ground water.
- Methods and material for containment and cleaning up:
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

- Handling:
  - Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Open and handle receptacle with care.
    Prevent formation of aerosols.
  - Information about fire - and explosion protection: Keep respiratory protective device available.
  - Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and receptacles: No special requirements.
    - Information about storage in one common storage facility: Not required.
    - Further information about storage conditions: Keep container tightly sealed.
  - Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.
- Control parameters
  - Ingredients with limit values that require monitoring at the workplace:
    75-09-2 dichloromethane
    | WEL | Short-term value: 706 mg/m³, 200 ppm |
    | Long-term value: 353 mg/m³, 100 ppm |
    | BMGV, Sk |
Ingredients with biological limit values:

75-09-2 dichloromethane

- BMGV: 30 ppm
- Medium: end-tidal breath
- Sampling time: post shift
- Parameter: carbon monoxide

Additional information: The lists valid during the making were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

Respiratory protection:

- When used as intended with Agilent instruments, the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
- Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

Protection of hands:

- Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1 hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

Material of gloves:

- For normal use: nitrile rubber, 11-13 mil thickness
- For direct contact with the chemical: butyl rubber, 12-15 mil thickness

Penetration time of glove material:

- For normal use: nitrile rubber: 1 hour
- For direct contact with the chemical: butyl rubber: > 4 hours

Eye protection:

- Safety glasses
- Tightly sealed goggles

Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
    - Appearance: Fluid
    - Colour: Colourless
    - Odour: Like chlorine
    - Odour threshold: Not determined.
### 48.1.26 · pH-value:
Not determined.

### Change in condition

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/freezing point</td>
<td>-95.1 °C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>40 °C</td>
</tr>
</tbody>
</table>

### Flash point:
Not applicable.

### Flammability (solid, gas):
Not applicable.

### Ignition temperature:
605 °C

### Decomposition temperature:
Not determined.

### Auto-ignition temperature:
Product is not selfigniting.

### Explosive properties:
Product does not present an explosion hazard.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower explosion limits</td>
<td>13 Vol %</td>
</tr>
<tr>
<td>Upper explosion limits</td>
<td>22 Vol %</td>
</tr>
</tbody>
</table>

### Vapour pressure at 20 °C:
360 hPa

### Density at 20 °C:
1.3 g/cm³

### Relative density
Not determined.

### Vapour density
Not determined.

### Evaporation rate
Not determined.

### Solubility in / Miscibility with water at 20 °C:
20 g/l

### Partition coefficient: n-octanol/water:
Not determined.

### Viscosity:

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Kinematic</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

### Solvent content:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic solvents</td>
<td>99.1 %</td>
</tr>
<tr>
<td>VOC (EC)</td>
<td>99.10 %</td>
</tr>
</tbody>
</table>

### Solids content:
1.1 %

### Other information
No further relevant information available.

### 10 Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td>Chemical stability</td>
<td></td>
</tr>
<tr>
<td>Thermal decomposition / conditions to be avoided</td>
<td>No decomposition if used according to specifications.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>No dangerous reactions known.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>No further relevant information available.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>No dangerous decomposition products known.</td>
</tr>
</tbody>
</table>
11 Toxicological information

- Information on toxicological effects
- Acute toxicity
  Harmful if swallowed.

- LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th>ATE (Acute Toxicity Estimates)</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorinated phenols</td>
<td></td>
<td></td>
</tr>
<tr>
<td>75-09-2 dichloromethane</td>
<td>1,360 mg/kg (rat)</td>
<td>40,492 mg/kg</td>
</tr>
<tr>
<td>95-48-7 o-cresol</td>
<td>1,600 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>108-39-4 m-cresol</td>
<td>121 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>106-44-5 p-cresol</td>
<td>207 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>70-30-4 2,2'-methylenebis-(3,4,6-tri-chlorophenol)</td>
<td>242 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>58-90-2 2,3,4,6-tetrachlorophenol</td>
<td>60 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>88-85-7 dinoseb</td>
<td>27 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>820 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>207.5 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>301 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2,050 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>340 mg/L (rat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>140 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>250 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>301 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2,050 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,600 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2,000 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>88 mg/L (rat)</td>
<td></td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - Skin corrosion/irritation
    Causes skin irritation.
  - Serious eye damage/irritation
    Causes serious eye irritation.
  - Respiratory or skin sensitisation
    Based on available data, the classification criteria are not met.
  - CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
  - Germ cell mutagenicity
    Based on available data, the classification criteria are not met.
  - Carcinogenicity
    Suspected of causing cancer.
  - Reproductive toxicity
    Based on available data, the classification criteria are not met.
Trade name: Phenols Standard (1X1 mL)

- STOT-single exposure
  May cause respiratory irritation.
- STOT-repeated exposure
  May cause damage to organs through prolonged or repeated exposure.
- Aspiration hazard Based on available data, the classification criteria are not met.

### 12 Ecological information

- **Toxicity**
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
- **Behaviour in environmental systems:**
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
  - Ecotoxic effects:
    - Remark: Harmful to fish
  - Additional ecological information:
  - General notes:
    Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even small quantities leak into the ground.
    Harmful to aquatic organisms
    - Results of PBT and vPvB assessment
      - PBT: Not applicable.
      - vPvB: Not applicable.
    - Other adverse effects: No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation**
    Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **European waste catalogue**
<table>
<thead>
<tr>
<th>HP</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 4</td>
<td>Irritant - skin irritation and eye damage</td>
</tr>
<tr>
<td>HP 5</td>
<td>Specific Target Organ Toxicity (STOT)/Aspiration Toxicity</td>
</tr>
<tr>
<td>HP 7</td>
<td>Carcinogenic</td>
</tr>
<tr>
<td>HP 14</td>
<td>Ecotoxic</td>
</tr>
</tbody>
</table>
- **Uncleaned packaging:**
  - **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **Not Regulated, De minimus Quantities**
### Trade name: Phenols Standard (1x1 mL)

| · UN-Number | UN1593 |
| · ADR, IMDG, IATA |  |
| · UN proper shipping name | 1593 DICHLOROMETHANE |
| · ADR | DICHLOROMETHANE |
| · IMDG, IATA |  |

#### Transport hazard class(es)
- **ADR, IMDG, IATA**

| · Class | 6.1 Toxic substances. |
| · Label | 6.1 |

#### Packing group
- **ADR, IMDG, IATA**

| · Packing group | III |

#### Environmental hazards:
- **Not applicable.**

#### Special precautions for user
- **Warning:** Toxic substances.
- **Danger code (Kemler):** 60
- **EMS Number:** F-A,S-A
- **Segregation groups:** Liquid halogenated hydrocarbons
- **Stowage Category:** A

#### Transport in bulk according to Annex II of Marpol and the IBC Code
- **Not applicable.**

#### Transport/Additional information:

| · ADR |  |
| · Limited quantities (LQ) | 5L |
| · Excepted quantities (EQ) | Code: E1 |
| | Maximum net quantity per inner packaging: 30 ml |
| | Maximum net quantity per outer packaging: 1000 ml |

| · Transport category | 2 |
| · Tunnel restriction code | E |

| · IMDG |  |
| · Limited quantities (LQ) | 5L |
| · Excepted quantities (EQ) | Code: E1 |
| | Maximum net quantity per inner packaging: 30 ml |
| | Maximum net quantity per outer packaging: 1000 ml |

| · UN "Model Regulation": | UN 1593 DICHLOROMETHANE, 6.1, III |

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
Trade name: Phenols Standard (1X1 mL)

- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 59

- **Regulation (EU) No 649/2012**

<table>
<thead>
<tr>
<th>88-85-7</th>
<th>dinoseb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annex I Part 1</td>
<td>Annex I Part 3</td>
</tr>
</tbody>
</table>

- **National regulations:**

- **Other regulations, limitations and prohibitive regulations**

<table>
<thead>
<tr>
<th>88-85-7</th>
<th>dinoseb</th>
</tr>
</thead>
</table>

- **Substances of very high concern (SVHC) according to REACH, Article 57**

<table>
<thead>
<tr>
<th>88-85-7</th>
<th>dinoseb</th>
</tr>
</thead>
</table>

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Relevant phrases**
  - H301 Toxic if swallowed.
  - H302 Harmful if swallowed.
  - H311 Toxic in contact with skin.
  - H314 Causes severe skin burns and eye damage.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H335 May cause respiratory irritation.
  - H351 Suspected of causing cancer.
  - H360Df May damage the unborn child. Suspected of damaging fertility.
  - H373 May cause damage to organs through prolonged or repeated exposure.
  - H400 Very toxic to aquatic life.
  - H410 Very toxic to aquatic life with long lasting effects.

- **Department issuing SDS:** Document Control / Regulatory

- **Contact:** regulatory@ultrasci.com

- **Abbreviations and acronyms:**
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - SVHC: Substances of Very High Concern
  - vPvB: very Persistent and very Bioaccumulative
  - Acute Tox. 3: Acute toxicity – Category 3
  - Acute Tox. 4: Acute toxicity – Category 4
  - Skin Corr. 1B: Skin corrosion/irritation – Category 1B
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  - Carc. 2: Carcinogenicity – Category 2
  - Repr. 1B: Reproductive toxicity – Category 1B
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  - STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

GB
1 Identification of the substance/mixture and of the company/undertaking

· Product identifier
  · Trade name: Pesticides Standard (1X1 mL)
  · Part number: US-118-1

· Relevant identified uses of the substance or mixture and uses advised against
  Reagents and Standards for Analytical Chemical Laboratory Use

· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier:
    Agilent Technologies Manufacturing GmbH & Co. KG
    Hewlett-Packard-Str.8
    76337 Waldbronn
    Germany
  · Further information obtainable from:
    Telephone: 0800 603 1000
    pdl-msds_author@agilent.com
  · Emergency telephone number: CHEMTREC®: + (44)-870-8200418

2 Hazards identification

· Classification of the substance or mixture
  · Classification according to Regulation (EC) No 1272/2008
    GHS08 health hazard
    Care. 2 H351 Suspected of causing cancer.
    STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

    GHS09 environment
    Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

    GHS07
    Acute Tox. 4 H302 Harmful if swallowed.
    Skin Irrit. 2 H315 Causes skin irritation.
    Eye Irrit. 2 H319 Causes serious eye irritation.
    STOT SE 3 H335 May cause respiratory irritation.

· Label elements
  · Labelling according to Regulation (EC) No 1272/2008
    The product is classified and labelled according to the CLP regulation.
  · Hazard pictograms
    GHS07 GHS08 GHS09
### Signal word Warning

### Hazard-determining components of labelling:
- dichloromethane
- isodrin
- chlordecone (ISO)

### Hazard statements
- **H302** Harmful if swallowed.
- **H315** Causes skin irritation.
- **H319** Causes serious eye irritation.
- **H351** Suspected of causing cancer.
- **H335** May cause respiratory irritation.
- **H373** May cause damage to organs through prolonged or repeated exposure.
- **H411** Toxic to aquatic life with long lasting effects.

### Precautionary statements
- **P101** If medical advice is needed, have product container or label at hand.
- **P102** Keep out of reach of children.
- **P103** Read label before use.
- **P201** Obtain special instructions before use.
- **P202** Do not handle until all safety precautions have been read and understood.
- **P260** Do not breathe dust/fume/gas/mist/vapours/spray.
- **P264** Wash thoroughly after handling.
- **P270** Do not eat, drink or smoke when using this product.
- **P271** Use only outdoors or in a well-ventilated area.
- **P273** Avoid release to the environment.
- **P280** Wear protective gloves/protective clothing/eye protection/face protection.
- **P301+P312** IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
- **P330** Rinse mouth.
- **P302+P352** IF ON SKIN: Wash with plenty of water.
- **P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- **P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P308+P313** IF exposed or concerned: Get medical advice/attention.
- **P321** Specific treatment (see on this label).
- **P314** Get medical advice/attention if you feel unwell.
- **P362+P364** Take off contaminated clothing and wash it before reuse.
- **P332+P313** If skin irritation occurs: Get medical advice/attention.
- **P337+P313** If eye irritation persists: Get medical advice/attention.
- **P391** Collect spillage.
- **P403+P233** Store in a well-ventilated place. Keep container tightly closed.
- **P405** Store locked up.
- **P501** Dispose of contents/container in accordance with local/regional/national/international regulations.

### Other hazards

### Results of PBT and vPvB assessment
- **PBT**: Not applicable.
- **vPvB**: Not applicable.
3 Composition/information on ingredients

- Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

**Dangerous components:**

<table>
<thead>
<tr>
<th>CAS:</th>
<th>EINECS:</th>
<th>Chemical</th>
<th>Amount in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>200-838-9</td>
<td>dichloromethane</td>
<td>99.095%</td>
</tr>
<tr>
<td>510-15-6</td>
<td>208-110-2</td>
<td>chlorobenzilate (ISO)</td>
<td>0.151%</td>
</tr>
<tr>
<td>143-50-0</td>
<td>205-601-3</td>
<td>chlordecone (ISO)</td>
<td>0.151%</td>
</tr>
<tr>
<td>140-57-8</td>
<td>200-838-9</td>
<td>aramite</td>
<td>0.151%</td>
</tr>
<tr>
<td>465-73-6</td>
<td>207-366-2</td>
<td>isodrin</td>
<td>0.151%</td>
</tr>
<tr>
<td>23950-58-5</td>
<td>245-951-4</td>
<td>propyzamide (ISO)</td>
<td>0.151%</td>
</tr>
<tr>
<td>2303-16-4</td>
<td>218-961-1</td>
<td>di-allate (ISO)</td>
<td>0.151%</td>
</tr>
</tbody>
</table>

- Additional information: For the wording of the listed hazard phrases refer to section 16.

4 First aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact:
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing:
  Call for a doctor immediately.
- Information for doctor:
  Most important symptoms and effects, both acute and delayed: No further relevant information available.
  Indication of any immediate medical attention and special treatment needed:
  No further relevant information available.

5 Firefighting measures

- Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Mount respiratory protective device.

· **Environmental precautions:**
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to enter sewers/surface or ground water.

· **Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.

· **Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
  · **Precautions for safe handling**
    Ensure good ventilation/exhaustion at the workplace.
    Open and handle receptacle with care.
    Prevent formation of aerosols.

· **Information about fire - and explosion protection:** Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**
  · **Requirements to be met by storerooms and receptacles:** No special requirements.
  · **Information about storage in one common storage facility:** Not required.
  · **Further information about storage conditions:** Keep container tightly sealed.

· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**
  
<table>
<thead>
<tr>
<th>75-09-2 dichloromethane</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>BMGV, Sk</td>
</tr>
</tbody>
</table>
Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Compound</th>
<th>Limit Value</th>
<th>Medium</th>
<th>Sampling Time</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>30 ppm</td>
<td>end-tidal breath</td>
<td>post shift</td>
<td>carbon monoxide</td>
</tr>
</tbody>
</table>

Additional information: The lists valid during the making were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.

Respiratory protection:

When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.

Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

Protection of hands:

Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

Material of gloves

For normal use: nitrile rubber, 11-13 mil thickness
For direct contact with the chemical: butyl rubber, 12-15 mil thickness

Penetration time of glove material

For normal use: nitrile rubber: 1 hour
For direct contact with the chemical: butyl rubber: > 4 hours

Eye protection:

Safety glasses

Tightly sealed goggles

Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Fluid
Colour: Colourless
Odour: Like chlorine
Odour threshold: Not determined.
Trade name: Pesticides Standard (1X1 mL)

- **pH-value:** Not determined.

- **Change in condition**
  - Melting point/freezing point: -95.1 °C
  - Initial boiling point and boiling range: 40 °C

- **Flash point:** Not applicable.

- **Flammability (solid, gas):** Not applicable.

- **Ignition temperature:** 605 °C

- **Decomposition temperature:** Not determined.

- **Auto-ignition temperature:** Product is not self-igniting.

- **Explosive properties:** Product does not present an explosion hazard.

- **Explosion limits:**
  - Lower: 13 Vol %
  - Upper: 22 Vol %

- **Vapour pressure at 20 °C:** 360 hPa

- **Density at 20 °C:** 1.3 g/cm³

- **Vapour density**: Not determined.

- **Evaporation rate**: Not determined.

- **Solubility in / Miscibility with water at 20 °C:** 20 g/l

- **Partition coefficient: n-octanol/water:** Not determined.

- **Viscosity:**
  - Dynamic: Not determined.
  - Kinematic: Not determined.

- **Solvent content:**
  - Organic solvents: 99.1 %
  - VOC (EC): 99.10 %

- **Solids content:** 0.5 %

- **Other information**
  - No further relevant information available.

---

**10 Stability and reactivity**

- **Reactivity**
  - No further relevant information available.

- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

- **Possibility of hazardous reactions**
  - No dangerous reactions known.

- **Conditions to avoid**
  - No further relevant information available.

- **Incompatible materials:**
  - No further relevant information available.

- **Hazardous decomposition products:**
  - No dangerous decomposition products known.
### 11 Toxicological information

#### Information on toxicological effects

#### Acute toxicity

Harmful if swallowed.

#### LD/LC50 values relevant for classification:

**ATE (Acute Toxicity Estimates)**

<table>
<thead>
<tr>
<th></th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalative LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>1,175 mg/kg (rat)</td>
<td>14,299 mg/kg</td>
<td>332 mg/L</td>
</tr>
<tr>
<td>Chlorobenzilate ISO</td>
<td>1,600 mg/kg (rat)</td>
<td>&gt;2,000 mg/kg (rat)</td>
<td>88 mg/L (rat)</td>
</tr>
<tr>
<td>Chlordecone ISO</td>
<td>700 mg/kg (rat)</td>
<td>&gt;1,000 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>Aramite</td>
<td>3,900 mg/kg (rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isodrin</td>
<td>7 mg/kg (rat)</td>
<td>23 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Propyzamide ISO</td>
<td>3,350 mg/kg (rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Di-allate ISO</td>
<td>395 mg/kg (rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Primary irritant effect:

- **Skin corrosion/irritation**
  - Causes skin irritation.
- **Serious eye damage/irritation**
  - Causes serious eye irritation.
- **Respiratory or skin sensitisation**
  - Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity**
  - Based on available data, the classification criteria are not met.
- **Carcinogenicity**
  - Suspected of causing cancer.
- **Reproductive toxicity**
  - Based on available data, the classification criteria are not met.
- **STOT-single exposure**
  - May cause respiratory irritation.
- **STOT-repeated exposure**
  - May cause damage to organs through prolonged or repeated exposure.
12 Ecological information

- Toxicity
  - Aquatic toxicity:
    - 23950-58-5 propyzamide (ISO)
      - LC50 (96h) - for fish: 72 mg/L/96h (Oncorhynchus mykiss (rainbow trout))
    - Persistence and degradability: No further relevant information available.
  - Behaviour in environmental systems:
  - Bioaccumulative potential: No further relevant information available.
  - Mobility in soil: No further relevant information available.
  - Ecotoxic effects:
    - Remark: Toxic for fish
  - Additional ecological information:
    - General notes:
      - Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
      - Do not allow product to reach ground water, water course or sewage system.
      - Danger to drinking water if even small quantities leak into the ground.
      - Also poisonous for fish and plankton in water bodies.
      - Toxic for aquatic organisms
    - Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
  - Other adverse effects: No further relevant information available.

13 Disposal considerations

- Waste treatment methods
  - Recommendation:
    - Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- European waste catalogue
  - HP 4 Irritant - skin irritation and eye damage
  - HP 5 Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
  - HP 7 Carcinogenic
  - HP 14 Ecotoxic

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

14 Transport information

- Not Regulated, De minimus Quantities
UN-Number | UN1593
---|---
ADR, IMDG, IATA | UN1593

UN proper shipping name:
ADR | 1593 DICHLOROMETHANE, ENVIRONMENTALLY HAZARDOUS
IMDG | DICHLOROMETHANE, MARINE POLLUTANT
IATA | DICHLOROMETHANE

Transport hazard class(es)
ADR, IMDG

Class | 6.1 Toxic substances.
Label | 6.1

IATA

Class | 6.1 Toxic substances.
Label | 6.1

Packing group
ADR, IMDG, IATA

Class | III
Label | 6.1

Environmental hazards:
Product contains environmentally hazardous substances:
di-allate (ISO), isodrin

Marine pollutant:
Symbol (fish and tree)

Special marking (ADR):
Symbol (fish and tree)

Special precautions for user
Warning: Toxic substances.

Danger code (Kemler):
60

EMS Number:
F-A,S-A

Segregation groups
Liquid halogenated hydrocarbons

Stowage Category
A

Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable.

Transport/Additional information:

ADR

Limited quantities (LQ) | 5L
Code: E1

Excepted quantities (EQ)
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

Transport category | 2

Tunnel restriction code | E
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - Seveso category E2 Hazardous to the Aquatic Environment
  - Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t
  - Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 59

- Regulation (EU) No 649/2012
  - Annex I Part 1
  - Annex I Part 3
  - Annex V Part 1

- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- Relevant phrases
  - H300 Fatal if swallowed.
  - H301 Toxic if swallowed.
  - H302 Harmful if swallowed.
  - H310 Fatal in contact with skin.
  - H311 Toxic in contact with skin.
  - H312 Harmful in contact with skin.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H330 Fatal if inhaled.
  - H335 May cause respiratory irritation.
  - H351 Suspected of causing cancer.
  - H373 May cause damage to organs through prolonged or repeated exposure.
  - H400 Very toxic to aquatic life.
  - H410 Very toxic to aquatic life with long lasting effects.

- Department issuing SDS: Document Control / Regulatory
- Contact: regulatory@ultrasci.com
- Abbreviations and acronyms:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMDG</td>
<td>International Maritime Code for Dangerous Goods</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>GHS</td>
<td>Globally Harmonised System of Classification and Labelling of Chemicals</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (division of the American Chemical Society)</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compounds (USA, EU)</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal concentration, 50 percent</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal dose, 50 percent</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>Acute Tox. 2</td>
<td>Acute toxicity – Category 2</td>
</tr>
<tr>
<td>Acute Tox. 3</td>
<td>Acute toxicity – Category 3</td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>Acute toxicity – Category 4</td>
</tr>
<tr>
<td>Acute Tox. 1</td>
<td>Acute toxicity – Category 1</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation – Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation – Category 2</td>
</tr>
<tr>
<td>Carc. 2</td>
<td>Carcinogenicity – Category 2</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) – Category 3</td>
</tr>
<tr>
<td>STOT RE 2</td>
<td>Specific target organ toxicity (repeated exposure) – Category 2</td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
<td>Hazardous to the aquatic environment - acute aquatic hazard – Category 1</td>
</tr>
<tr>
<td>Aquatic Chronic 1</td>
<td>Hazardous to the aquatic environment - long-term aquatic hazard – Category 1</td>
</tr>
<tr>
<td>Aquatic Chronic 2</td>
<td>Hazardous to the aquatic environment - long-term aquatic hazard – Category 2</td>
</tr>
</tbody>
</table>

- * Data compared to the previous version altered.*
1 Identification of the substance/mixture and of the company/undertaking

- Product identifier
  - Trade name: Organophosphorous Pesticides Standard (1X1 mL)
  - Part number: US-119-1

- Relevant identified uses of the substance or mixture and uses advised against
  - Reagents and Standards for Analytical Chemical Laboratory Use

- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:
    - Agilent Technologies Manufacturing GmbH & Co. KG
    - Hewlett-Packard-Str.8
    - 76337 Waldbronn
    - Germany
  - Further information obtainable from:
    - Telephone: 0800 603 1000
    - pdl-msds_author@agilent.com
    - Emergency telephone number: CHEMTREC®: +(44)-870-8200418

2 Hazards identification

- Classification of the substance or mixture
  - Classification according to Regulation (EC) No 1272/2008
    - GHS06 skull and crossbones
      - Acute Tox. 3 H301 Toxic if swallowed.
      - Acute Tox. 3 H311 Toxic in contact with skin.
    - GHS08 health hazard
      - Carc. 2 H351 Suspected of causing cancer.
      - STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
    - GHS09 environment
      - Aquatic Acute 1 H400 Very toxic to aquatic life.
      - Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.
  - GHS07
    - Skin Irrit. 2 H315 Causes skin irritation.
    - Eye Irrit. 2 H319 Causes serious eye irritation.
    - STOT SE 3 H335 May cause respiratory irritation.

- Label elements
  - Labelling according to Regulation (EC) No 1272/2008
    - The product is classified and labelled according to the CLP regulation.
Trade name: Organophosphorous Pesticides Standard (1X1 mL)

· Hazard pictograms

   ![](image)
   GHS06  GHS08  GHS09

· Signal word Danger

· Hazard-determining components of labelling:
  dichloromethane
  O,O-diethyl O-pyrazin-2-yl phosphorothioate
  parathion -methyl (ISO)
  sulfotep (ISO)

· Hazard statements
  H301+H311 Toxic if swallowed or in contact with skin.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H351 Suspected of causing cancer.
  H335 May cause respiratory irritation.
  H373 May cause damage to organs through prolonged or repeated exposure.
  H410 Very toxic to aquatic life with long lasting effects.

· Precautionary statements
  P101 If medical advice is needed, have product container or label at hand.
  P102 Keep out of reach of children.
  P103 Read label before use.
  P201 Obtain special instructions before use.
  P202 Do not handle until all safety precautions have been read and understood.
  P260 Do not breathe dust/fume/gas/mist/vapours/spray.
  P264 Wash thoroughly after handling.
  P270 Do not eat, drink or smoke when using this product.
  P271 Use only outdoors or in a well-ventilated area.
  P273 Avoid release to the environment.
  P280 Wear protective gloves/protective clothing/eye protection/face protection.
  P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
  P321 Specific treatment (see on this label).
  P332+P313 If skin irritation occurs: Get medical advice/attention.
  P337+P313 If eye irritation persists: Get medical advice/attention.
  P391 Collect spillage.
  P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  P405 Store locked up.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 3)
Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 31.03.2019
Version number 3
Revision: 31.03.2019

Trade name: Organophosphorous Pesticides Standard (1X1 mL)

- Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

| CAS: 75-09-2 | dichloromethane | 98.643% |
| EINECS: 200-838-9 | | |

| CAS: 297-97-2 | O,O-diethyl O-pyrazin-2-yl phosphorothioate | 0.151% |
| EINECS: 206-049-6 | | |

| CAS: 52-85-7 | famphur | 0.151% |
| EINECS: 200-154-0 | | |

| CAS: 3689-24-5 | sulfotep (ISO) | 0.151% |
| EINECS: 222-995-2 | | |

| CAS: 126-68-1 | O,O,O-triethyl phosphorothioate | 0.151% |
| EINECS: 204-797-8 | | |

| CAS: 298-00-0 | parathion -methyl (ISO) | 0.151% |
| EINECS: 206-050-1 | | |

| CAS: 298-04-4 | disulfoton | 0.151% |
| EINECS: 206-054-3 | | |

| CAS: 56-38-2 | parathion (ISO) | 0.151% |
| EINECS: 200-271-7 | | |

| CAS: 298-02-2 | phorate (ISO) | 0.151% |
| EINECS: 206-052-2 | | |

- Additional information: For the wording of the listed hazard phrases refer to section 16.

4 First aid measures

- Description of first aid measures
- General information:
  Immediately remove any clothing soiled by the product.
  Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  In case of irregular breathing or respiratory arrest provide artificial respiration.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
Trade name: Organophosphorous Pesticides Standard (1X1 mL)

- **After eye contact:**
  Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Do not induce vomiting; call for medical help immediately.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
  No further relevant information available.

### 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **Special hazards arising from the substance or mixture**
  During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
  - **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  Mount respiratory protective device.
- **Environmental precautions:**
  Do not allow product to reach sewage system or any water course.
  Inform respective authorities in case of seepage into water course or sewage system.
  Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
  Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- **Reference to other sections**
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
  Ensure good ventilation/exhaustion at the workplace.
  Open and handle receptacle with care.
  Prevent formation of aerosols.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
  - **Requirements to be met by storerooms and receptacles:** No special requirements.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:** Keep container tightly sealed.
8 Exposure controls/personal protection

· Additional information about design of technical facilities: No further data; see item 7.

· Control parameters

· Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Compound</th>
<th>WEL Short-term value</th>
<th>200 ppm</th>
<th>Long-term value</th>
<th>100 ppm</th>
<th>BMGV, Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>706 mg/m³</td>
<td>353 mg/m³</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compound</th>
<th>WEL Long-term value</th>
<th>100 ppm</th>
<th>BMGV, Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>30 ppm</td>
<td>Medium: end-tidal breath</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compound</th>
<th>Sk Long-term value</th>
<th>100 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>0.1 mg/m³</td>
<td>0.05 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compound</th>
<th>Sk Long-term value</th>
<th>100 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>3689-24-5 sulfotep (ISO)</td>
<td>0.2 mg/m³</td>
<td>0.05 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compound</th>
<th>Sk Long-term value</th>
<th>100 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>298-02-2 phorate (ISO)</td>
<td>0.05 mg/m³</td>
<td>0.05 mg/m³</td>
</tr>
</tbody>
</table>

· Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>Compound</th>
<th>BMGV</th>
<th>30 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>Medium: end-tidal breath</td>
<td></td>
</tr>
</tbody>
</table>

· Additional information: The lists valid during the making were used as basis.

· Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep away from</td>
<td>foodstuffs, beverages and feed.</td>
</tr>
<tr>
<td>immediately</td>
<td>remove all soiled and contaminated clothing</td>
</tr>
<tr>
<td>Wash hands</td>
<td>before breaks and at the end of work.</td>
</tr>
<tr>
<td>Store</td>
<td>protective clothing separately.</td>
</tr>
<tr>
<td>Avoid contact</td>
<td>with the eyes and skin.</td>
</tr>
</tbody>
</table>

· Respiratory protection:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>When used as</td>
<td>intended with Agilent instruments the use of</td>
</tr>
<tr>
<td>intended with</td>
<td>the product under normal laboratory conditions</td>
</tr>
<tr>
<td>standard</td>
<td>and with standard practices does not result</td>
</tr>
<tr>
<td>practices</td>
<td>in significant airborne exposures and therefore</td>
</tr>
<tr>
<td>does not</td>
<td>respiratory protection is not needed.</td>
</tr>
<tr>
<td>Under an</td>
<td>emergency condition where a respirator is</td>
</tr>
<tr>
<td>emergency</td>
<td>deemed necessary, use a NIOSH or equivalent</td>
</tr>
<tr>
<td>condition</td>
<td>approved device equipment with appropriate</td>
</tr>
<tr>
<td>when a</td>
<td>organic or acid gas cartridge.</td>
</tr>
</tbody>
</table>

· Protection of hands:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Although not</td>
<td>recommended for constant contact with the</td>
</tr>
<tr>
<td>recommended</td>
<td>chemicals or for clean up, nitrile gloves</td>
</tr>
<tr>
<td>for constant</td>
<td>11-13mil thickness are recommended for normal</td>
</tr>
<tr>
<td>contact with</td>
<td>use. The breakthrough time is 1hr. For</td>
</tr>
<tr>
<td>the chemicals</td>
<td>cleaning a spill where there is direct</td>
</tr>
<tr>
<td>or for clean</td>
<td>contact of the chemical, butyl rubber gloves</td>
</tr>
<tr>
<td>clean up</td>
<td>are recommended 12-15mil thickness with</td>
</tr>
<tr>
<td>nitrile gloves</td>
<td>breakthrough times exceeding 4 hrs. Supplier</td>
</tr>
<tr>
<td>11-13mil</td>
<td>recommendations should be followed.</td>
</tr>
</tbody>
</table>

· Material of gloves:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>For normal use</td>
<td>nitrile rubber, 11-13 mil thickness</td>
</tr>
<tr>
<td>For direct</td>
<td>contact with the chemical: butyl rubber, 12-15mil thickness</td>
</tr>
</tbody>
</table>
### 9 Physical and chemical properties

**· Information on basic physical and chemical properties**

**· General Information**

**· Appearance:**
- **Form:** Fluid
- **Colour:** Colourless
- **Odour:** Like chlorine
- **Odour threshold:** Not determined.

**· pH-value:** Not determined.

**· Change in condition**
- **Melting point/freezing point:** -95.1 °C
- **Initial boiling point and boiling range:** 40 °C

**· Flash point:** Not applicable.

**· Flammability (solid, gas):** Not applicable.

**· Ignition temperature:** 605 °C

**· Decomposition temperature:** Not determined.

**· Auto-ignition temperature:** Product is not selfigniting.

**· Explosive properties:** Product does not present an explosion hazard.

**· Explosion limits:**
- **Lower:** 13 Vol %
- **Upper:** 22 Vol %

**· Vapour pressure at 20 °C:** 360 hPa

**· Density at 20 °C:** 1.3 g/cm³

**· Relative density:** Not determined.

**· Vapour density:** Not determined.

**· Evaporation rate:** Not determined.

**· Solubility in / Miscibility with water at 20 °C:** 20 g/l

**· Partition coefficient: n-octanol/water:** Not determined.

**· Viscosity:**
- **Dynamic:** Not determined.
Trade name: Organophosphorous Pesticides Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Kinematic:</th>
<th>Not determined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Solvent content:</td>
<td></td>
</tr>
<tr>
<td>Organic solvents:</td>
<td>99.1 %</td>
</tr>
<tr>
<td>VOC (EC)</td>
<td>99.10 %</td>
</tr>
<tr>
<td>· Solids content:</td>
<td>0.5 %</td>
</tr>
<tr>
<td>· Other information</td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity: Toxic if swallowed or in contact with skin.
- LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th>ATE (Acute Toxicity Estimates)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
<tr>
<td>Inhalative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>75-09-2 dichloromethane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
<tr>
<td>Inhalative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>297-97-2 O,O-diethyl O-pyrazin-2-yl phosphorothioate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>52-85-7 famphur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3689-24-5 sulfotep (ISO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Dermal</td>
</tr>
<tr>
<td>Inhalative</td>
</tr>
</tbody>
</table>
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: Organophosphorous Pesticides Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Compound</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>298-00-0 parathion -methyl (ISO)</td>
<td>6.01 mg/kg (rat)</td>
<td>67 mg/kg (rat)</td>
</tr>
<tr>
<td>298-04-4 disulfoton</td>
<td>2 mg/kg (rat)</td>
<td>20 mg/kg (rat)</td>
</tr>
<tr>
<td>56-38-2 parathion (ISO)</td>
<td>2 mg/kg (rat)</td>
<td>6.8 mg/kg (rat)</td>
</tr>
<tr>
<td>298-02-2 phorate (ISO)</td>
<td>1.6 mg/kg (rat)</td>
<td>2.5 mg/kg (rat)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **Skin corrosion/irritation**
    Causes skin irritation.
  - **Serious eye damage/irritation**
    Causes serious eye irritation.
  - **Respiratory or skin sensitisation**
    Based on available data, the classification criteria are not met.
  - **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
    Based on available data, the classification criteria are not met.
  - **Germ cell mutagenicity**
    Based on available data, the classification criteria are not met.
  - **Carcinogenicity**
    Suspected of causing cancer.
  - **Reproductive toxicity**
    Based on available data, the classification criteria are not met.
  - **STOT-single exposure**
    May cause respiratory irritation.
  - **STOT-repeated exposure**
    May cause damage to organs through prolonged or repeated exposure.
  - **Aspiration hazard**
    Based on available data, the classification criteria are not met.

**12 Ecological information**

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
  - **Behaviour in environmental systems:**
    - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.
  - **Ecotoxic effects:**
    - **Remark:** Very toxic for fish
  - **Additional ecological information:**
  - **General notes:**
    Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
    Do not allow product to reach ground water, water course or sewage system.
    Danger to drinking water if even small quantities leak into the ground.
    Also poisonous for fish and plankton in water bodies.
    Very toxic for aquatic organisms

(Contd. on page 9)
13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- **European waste catalogue**
  - HP 4  Irritant - skin irritation and eye damage
  - HP 5  Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
  - HP 6  Acute Toxicity
  - HP 7  Carcinogenic
  - HP 14  Ecotoxic

- **Uncleaned packaging:**
  - **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **Not Regulated, De minimus Quantities**

- **UN-Number**
  - ADR, IMDG, IATA
  - UN1593

- **UN proper shipping name**
  - ADR
  - 1593 DICHLOROMETHANE, ENVIRONMENTALLY HAZARDOUS
  - IMDG
  - DICHLOROMETHANE, MARINE POLLUTANT
  - IATA
  - DICHLOROMETHANE

- **Transport hazard class(es)**
  - ADR, IMDG
    - Class 6.1 Toxic substances.
    - Label 6.1
# IATA

<table>
<thead>
<tr>
<th>Class</th>
<th>6.1 Toxic substances.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label</td>
<td>6.1</td>
</tr>
</tbody>
</table>

## Packing group

### ADR, IMDG, IATA

- Packing group: III

### Environmental hazards:

- Marine pollutant: Symbol (fish and tree)
- Special marking (ADR): Symbol (fish and tree)

### Special precautions for use

- Warning: Toxic substances. 60
- EMS Number: F-A,S-A
- Segregation groups: Liquid halogenated hydrocarbons A

### Transport in bulk according to Annex II of Marpol and the IBC Code

- Not applicable.

## Transport/Additional information:

**ADR**
- Limited quantities (LQ): 5L
- Excepted quantities (EQ): Code: E1
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 1000 ml

**Transport category**
- 2

**Tunnel restriction code**
- E

**IMDG**
- Limited quantities (LQ): 5L
- Excepted quantities (EQ): Code: E1
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 1000 ml

## UN "Model Regulation"

- UN 1593 DICHLOROMETHANE, 6.1, III, ENVIRONMENTALLY HAZARDOUS

### 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- Seveso category E1 Hazardous to the Aquatic Environment
- Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 59

(Contd. on page 11)
Trade name: Organophosphorous Pesticides Standard (1X1 mL)

- **Regulation (EU) No 649/2012**
  
<table>
<thead>
<tr>
<th>298-00-0</th>
<th>parathion -methyl (ISO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>56-38-2</td>
<td>parathion (ISO)</td>
</tr>
</tbody>
</table>

- **Chemical safety assessment**: A Chemical Safety Assessment has not been carried out.

### 16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Relevant phrases**
  
  H226 Flammable liquid and vapour.
  H300 Fatal if swallowed.
  H302 Harmful if swallowed.
  H310 Fatal in contact with skin.
  H311 Toxic in contact with skin.
  H312 Harmful in contact with skin.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H330 Fatal if inhaled.
  H335 May cause respiratory irritation.
  H351 Suspected of causing cancer.
  H372 Causes damage to organs through prolonged or repeated exposure.
  H373 May cause damage to organs through prolonged or repeated exposure.
  H400 Very toxic to aquatic life.
  H410 Very toxic to aquatic life with long lasting effects.

- **Department issuing SDS**: Document Control / Regulatory
- **Contact**: regulatory@ultrasci.com

- **Abbreviations and acronyms**:
  
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  Flam. Liq. 3: Flammable liquids – Category 3
  Acute Tox. 2: Acute toxicity – Category 2
  Acute Tox. 1: Acute toxicity – Category 1
  Acute Tox. 3: Acute toxicity – Category 3
  Acute Tox. 4: Acute toxicity – Category 4
  Skin Irrit. 2: Skin corrosion/irritation – Category 2
  Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  Care. 2: Carcinogenicity – Category 2
  STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

(Contd. of page 10)
<table>
<thead>
<tr>
<th>Trade name: Organophosphorous Pesticides Standard (1X1 mL)</th>
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</thead>
<tbody>
<tr>
<td>STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2</td>
</tr>
<tr>
<td>Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1</td>
</tr>
<tr>
<td>Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1</td>
</tr>
</tbody>
</table>
1 Identification of the substance/mixture and of the company/undertaking

- Product identifier
  - Trade name: Pyridines Standard (1X1 mL)
  - Part number: US-120AN-1
  - Relevant identified uses of the substance or mixture and uses advised against
    Reagents and Standards for Analytical Chemical Laboratory Use

- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:
    Agilent Technologies Manufacturing GmbH & Co. KG
    Hewlett-Packard-Str. 8
    76337 Waldbronn
    Germany

- Further information obtainable from:
  - Telephone: 0800 603 1000
  - pdl-msds_author@agilent.com
  - Emergency telephone number: CHEMTREC®: +(44)-870-8200418

2 Hazards identification

- Classification of the substance or mixture
  - Classification according to Regulation (EC) No 1272/2008

  ![GHS02 flame]
  Flam. Liq. 2  H225  Highly flammable liquid and vapour.

  ![GHS08 health hazard]
  Carc. 1A  H350  May cause cancer.

  ![GHS07]
  Eye Irrit. 2  H319  Causes serious eye irritation.
  STOT SE 3  H336  May cause drowsiness or dizziness.

- Label elements
  - Labelling according to Regulation (EC) No 1272/2008
    The product is classified and labelled according to the CLP regulation.

- Hazard pictograms
  - GHS02
  - GHS07
  - GHS08

- Signal word Danger

- Hazard-determining components of labelling:
  - acetone

(Contd. on page 2)
Safety data sheet  
according to 1907/2006/EC, Article 31  

Trade name: Pyridines Standard (1X1 mL)  

4-Nitroquinoline-1-oxide  

- Hazard statements  
  H225 Highly flammable liquid and vapour.  
  H319 Causes serious eye irritation.  
  H350 May cause cancer.  
  H336 May cause drowsiness or dizziness.  

- Precautionary statements  
  P101 If medical advice is needed, have product container or label at hand.  
  P102 Keep out of reach of children.  
  P103 Read label before use.  
  P201 Obtain special instructions before use.  
  P202 Do not handle until all safety precautions have been read and understood.  
  P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
  P240 Ground/bond container and receiving equipment.  
  P241 Use explosion-proof electrical/ventilating/lighting equipment.  
  P242 Use only non-sparking tools.  
  P243 Take precautionary measures against static discharge.  
  P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
  P264 Wash thoroughly after handling.  
  P271 Use only outdoors or in a well-ventilated area.  
  P280 Wear protective gloves/protective clothing/eye protection/face protection.  
  P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
  P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
  P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
  P308+P313 IF exposed or concerned: Get medical advice/attention.  
  P312 Call a POISON CENTER/doctor if you feel unwell.  
  P337+P313 If eye irritation persists: Get medical advice/attention.  
  P370+P378 In case of fire: Use for extinction: CO2, powder or water spray.  
  P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
  P403+P235 Store in a well-ventilated place. Keep cool.  
  P405 Store locked up.  
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.  

- Other hazards  
- Results of PBT and vPvB assessment  
  - PBT: Not applicable.  
  - vPvB: Not applicable.  

3 Composition/information on ingredients  

- Chemical characterisation: Mixtures  
- Description: Mixture of substances listed below with nonhazardous additions.  

| CAS: 67-64-1 | acetone | 98.9888%  
| CAS: 56-57-5 | 4-Nitroquinoline-1-oxide | 0.253%  

(Contd. on page 3)
4 First aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
  - **Most important symptoms and effects, both acute and delayed** No further relevant information available.
  - **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
  - CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
  - Ensure good ventilation/exhaustion at the workplace.
  - Open and handle receptacle with care.
  - Prevent formation of aerosols.
48.1.26

· Information about fire - and explosion protection:
  Keep ignition sources away - Do not smoke.
  Protect against electrostatic charges.
  Keep respiratory protective device available.

· Conditions for safe storage, including any incompatibilities

· Storage:
  · Requirements to be met by storerooms and receptacles: Store in a cool location.
  · Information about storage in one common storage facility: Not required.

· Further information about storage conditions:
  Keep container tightly sealed.
  Store in cool, dry conditions in well sealed receptacles.

· Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

· Additional information about design of technical facilities: No further data; see item 7.

· Control parameters

· Ingredients with limit values that require monitoring at the workplace:

  67-64-1 acetone
  
<table>
<thead>
<tr>
<th>WEL</th>
<th>Short-term value: 3620 mg/m³, 1500 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long-term value: 1210 mg/m³, 500 ppm</td>
</tr>
</tbody>
</table>

· Additional information: The lists valid during the making were used as basis.

· Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing
  Wash hands before breaks and at the end of work.
  Store protective clothing separately.
  Avoid contact with the eyes.
  Avoid contact with the eyes and skin.

· Respiratory protection:
  When used as intended with Agilent instruments the use of the product under normal laboratory conditions and with standard practices does not result in significant airborne exposures and therefore respiratory protection is not needed.
  Under an emergency condition where a respirator is deemed necessary, use a NIOSH or equivalent approved device equipment with appropriate organic or acid gas cartridge.

· Protection of hands:
  Although not recommended for constant contact with the chemicals or for clean up, nitrile gloves 11-13mil thickness are recommended for normal use. The breakthrough time is 1hr. For cleaning a spill where there is direct contact of the chemical, butyl rubber gloves are recommended 12-15mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

· Material of gloves
  For normal use: nitrile rubber, 11-13 mil thickness
  For direct contact with the chemical: butyl rubber, 12-15 mil thickness

· Penetration time of glove material
  For normal use: nitrile rubber: 1 hour
  For direct contact with the chemical: butyl rubber: > 4 hours

(Contd. on page 5)
**9 Physical and chemical properties**

- **Information on basic physical and chemical properties**
  - **General Information**
  - **Appearance:**
    - Form: Fluid
    - Colour: Colourless
  - Odour: Characteristic
  - Odour threshold: Not determined.
  - **pH-value:** Not determined.

- **Change in condition**
  - Melting point/freezing point: -94.7 °C
  - Initial boiling point and boiling range: 55.8-56.6 °C
- **Flash point:** -17 °C
- **Flammability (solid, gas):** Not applicable.
- **Ignition temperature:** 465 °C
- **Decomposition temperature:** Not determined.
- **Auto-ignition temperature:** Product is not selfigniting.
- **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
- **Explosion limits:**
  - Lower: 2.6 Vol %
  - Upper: 13 Vol %
- **Vapour pressure at 20 °C:** 245.3 hPa
- **Density at 20 °C:** 0.791 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not determined.
- **Evaporation rate** Not determined.

- **Solubility in / Miscibility with water:** Not miscible or difficult to mix.
- **Partition coefficient: n-octanol/water:** Not determined.
- **Viscosity:**
  - Dynamic at 20 °C: 32 mPas
  - Kinematic: Not determined.
- **Solvent content:**
  - Organic solvents: 99.2 %

(Contd. on page 6)
10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
  - **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
  - **Possibility of hazardous reactions** No dangerous reactions known.
  - **Conditions to avoid** No further relevant information available.
  - **Incompatible materials:** No further relevant information available.
  - **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
  - **Acute toxicity** Based on available data, the classification criteria are not met.
  - **LD/LC50 values relevant for classification:**
    - **67-64-1 acetone**
      - Oral LD50 5,800 mg/kg (rat)
      - Dermal LD50 20,000 mg/kg (rabbit)
  - **Primary irritant effect:**
    - **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
    - **Serious eye damage/irritation** Causes serious eye irritation.
    - **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
    - **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
    - **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
    - **Carcinogenicity**
      - May cause cancer.
    - **Reproductive toxicity** Based on available data, the classification criteria are not met.
    - **STOT-single exposure**
      - May cause drowsiness or dizziness.
    - **STOT-repeated exposure** Based on available data, the classification criteria are not met.
    - **Aspiration hazard** Based on available data, the classification criteria are not met.

12 Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.
Trade name: Pyridines Standard (1X1 mL)

- **Additional ecological information:**
- **General notes:**
  Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
  Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
  - **PBT:** Not applicable.
  - **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
  - **Recommendation**
    Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **European waste catalogue**
  - HP 3  Flammable
  - HP 4  Irritant - skin irritation and eye damage
  - HP 5  Specific Target Organ Toxicity (STOT)/Aspiration Toxicity
  - HP 7  Carcinogenic

- **Uncleaned packaging:**
  - **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- **Not Regulated, De minimis Quantities**
- **UN-Number**
  - ADR, IMDG, IATA: UN1090
- **UN proper shipping name**
  - ADR: 1090 ACETONE
  - IMDG, IATA: ACETONE

- **Transport hazard class(es)**
  - ADR, IMDG, IATA

  - **Class:** 3 Flammable liquids.
  - **Label:** 3

- **Packing group**
  - ADR, IMDG, IATA: II

- **Environmental hazards:** Not applicable.

- **Special precautions for user**
  - Warning: Flammable liquids.
### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I None of the ingredients is listed.
  - Seveso category P5c FLAMMABLE LIQUIDS
  - Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t
  - Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t
  - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

- **National regulations:**
  - Additional classification according to Decree on Hazardous Materials, Annex II: Carcinogenic hazardous material group III (dangerous).

- **Information about limitation of use:**
  - Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

The information contained in this document is based on Agilent’s state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Relevant phrases**
  - H225 Highly flammable liquid and vapour.
  - H319 Causes serious eye irritation.
  - H336 May cause drowsiness or dizziness.
### Safety data sheet according to 1907/2006/EC, Article 31

**Trade name:** Pyridines Standard (1X1 mL)

<table>
<thead>
<tr>
<th>H350 May cause cancer.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Department issuing SDS:</strong> Document Control / Regulatory</td>
</tr>
<tr>
<td><strong>Contact:</strong> <a href="mailto:regulatory@ultrasci.com">regulatory@ultrasci.com</a></td>
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</tr>
<tr>
<td>STOT SE 3: Specific target organ toxicity (single exposure) – Category 3</td>
</tr>
<tr>
<td>* Data compared to the previous version altered.</td>
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</tbody>
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