<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

· 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 Australia Pty Ltd
  679 Springvale Road
  Mulgrave
  Victoria 3170, Australia
· Further information obtainable from:
  Telephone: 1800 802 402
  e-mail: pdl-msds_author@agilent.com
· Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

· Classification of the substance or mixture
  health hazard
  Carc. 1B H350 May cause cancer.
  STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.
  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. 2A H319 Causes serious eye irritation.
  STOT SE 3 H335 May cause respiratory irritation.

· Label elements
  · GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).
  · 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**
- Harmful if swallowed.
- Harmful in contact with skin.
- Causes skin irritation.
- Causes serious eye irritation.
- May cause cancer.
- May cause respiratory irritation.
- May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements**
- If medical advice is needed, have product container or label at hand.
- Keep out of reach of children.
- Read label before use.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Use personal protective equipment as required.
- IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
- Rinse mouth.
- IF ON SKIN: Wash with plenty of water.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF exposed or concerned: Get medical advice/attention.
- Get medical advice/attention if you feel unwell.
- Specific measures (see on this label).
- If skin irritation occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- Take off contaminated clothing and wash before reuse.
- Wash contaminated clothing before reuse.
- Store in a well-ventilated place. Keep container tightly closed.
- Store locked up.
- 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 and Information on Ingredients

**Chemical characterisation**: Mixtures

**Description**: Mixture of substances listed below with nonhazardous additions.
Trade name: Toxic Substances Standard (1X1 mL)

- **Dangerous components:**
  - 75-09-2 dichloromethane
    - STOT RE 2, H373; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335
    - 98.794%
  - 106-47-8 4-chloroaniline
    - Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Carc. 1B, H350;
    - Skin Sens. 1, H317
    - 0.151%
  - 62-53-3 aniline
    - Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Muta. 2, H341; Carc. 2, H351; STOT RE 1, H372; Eye Dam. 1, H318; Skin Sens. 1, H317; Flam. Liq. 4, H227
    - 0.151%

- **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 Fire Fighting 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 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.
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 and 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>NES Long-term value</th>
<th>WES Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>174 mg/m³, 50 ppm</td>
<td>174 mg/m³, 50 ppm</td>
</tr>
<tr>
<td></td>
<td>Sk</td>
<td>Sk</td>
</tr>
<tr>
<td>62-53-3 aniline</td>
<td>7.6 mg/m³, 2 ppm</td>
<td>7.6 mg/m³, 2 ppm</td>
</tr>
<tr>
<td></td>
<td>Sk, Sen</td>
<td>Sk, Sen</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.
9 Physical and Chemical Properties

- Information on basic physical and chemical properties
- General Information
  - Appearance:
    - Form: Fluid
    - Colour: Colourless
  - Odour:
    - 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: 1.29731 g/cm³
- Relative density: Not determined.
- Vapour density: Not determined.
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
  · LD/LC50 values relevant for classification:

    | ATE (Acute Toxicity Estimates) | Oral | LD50   | 1,584 mg/kg (rat) |
    | Dermal | LD50   | >1,956 mg/kg |
    | Inhalative | LC50/4 h | >71.1 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) |

106-47-8 4-chloroaniline

| Oral | LD50   | 310 mg/kg (rat) |
| Dermal | LD50   | 3,200 mg/kg (rat) |

62-53-3 aniline

| Oral | LD50   | 442 mg/kg (rat) |
| Dermal | LD50   | 820 mg/kg (rabbit) |
Trade name: Toxic Substances Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Inhalative</th>
<th>LC50/4 h</th>
<th>175 mg/L (mouse)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>3.27 mg/L (rat)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - Skin corrosion/irritation: Irritant to skin and mucous membranes.
  - Serious eye damage/irritation: Irritating effect.
  - Respiratory or skin sensitisation: No sensitising effects known.
- **Additional toxicological information:**
  The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
  - Harmful
  - Irritant
  - CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
    - Carc. 1B

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

### 14 Transport information

- **Not Regulated, De minimus Quantities**
- **UN-Number**
  - ADG, IMDG, IATA: UN1593

(Contd. of page 8)
Trade name: Toxic Substances Standard (1X1 mL)

- UN proper shipping name
  - ADG
  - IMDG, IATA

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

  - Class
    - 6.1 Toxic substances.
  - Label
    - 6.1
  - Packing group
    - ADG, IMDG, IATA
    - III

- Environmental hazards:
  - Not applicable.

- Special precautions for user
  - Warning: Toxic substances.
  - 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:

  - ADG
    - 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

  - 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
  - Australian Inventory of Chemical Substances
    - All ingredients are listed.
  - Standard for the Uniform Scheduling of Medicines and Poisons
    - 75-09-2 dichloromethane
      - S5
      - (Contd. on page 9)
Trade name: Toxic Substances Standard (1X1 mL)

106-47-8 4-chloroaniline S7
62-53-3 aniline S6

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.

- 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
  H227 Combustible liquid.
  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.

- 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
  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. 4: Flammable liquids – Category 4
  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. 2A: Serious eye damage/eye irritation – Category 2A
  Skin Sens. 1: Skin sensitisation – Category 1
  Muta. 2: Germ cell mutagenicity – Category 2
  Carc. 1B: Carcinogenicity – Category 1B
Trade name: Toxic Substances Standard (1X1 mL)

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

(Contd. of page 9)
1 Identification

· 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 Australia Pty Ltd
    679 Springvale Road
    Mulgrave
    Victoria 3170, Australia

  · Further information obtainable from:
    Telephone: 1800 802 402
    e-mail: pdl-msds_author@agilent.com

  · Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

· Classification of the substance or mixture

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

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

  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.

  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2A H319 Causes serious eye irritation.
  STOT SE 3 H335 May cause respiratory irritation.

· Label elements
  · GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).
Hazard pictograms

GHS02  GHS06  GHS08

Signal word: Danger

Hazard-determining components of labelling:
- benzene
- dichloromethane
- benzo[a]pyrene
- dibenzo[a,h]anthracene

Hazard statements
- Highly flammable liquid and vapour.
- Fatal in contact with skin.
- Causes skin irritation.
- Causes serious eye irritation.
- May cause genetic defects.
- May cause cancer.
- May cause respiratory irritation.
- Causes damage to organs through prolonged or repeated exposure.
- May be fatal if swallowed and enters airways.

Precautionary statements
- If medical advice is needed, have product container or label at hand.
- Keep out of reach of children.
- Read label before use.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting equipment.
- Use only non-sparking tools.
- Take precautionary measures against static discharge.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Do not get in eyes, on skin, or on clothing.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Use personal protective equipment as required.
- IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- Do NOT induce vomiting.
- IF ON SKIN: Gently wash with plenty of soap and water.
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- IF exposed or concerned: Get medical advice/attention.
- Call a POISON CENTER/doctor if you feel unwell.
- Get medical advice/attention if you feel unwell.
- Specific measures (see on this label).
Trade name: PAH Standard (1X1 mL)

If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
Wash contaminated clothing before reuse.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

Results of PBT and vPvB assessment

- PBT:
  120-12-7 anthracene

- vPvB: Not applicable.

3 Composition and Information on Ingredients

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

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>58.52%</td>
</tr>
<tr>
<td>71-43-2 benzene</td>
<td>38.572%</td>
</tr>
<tr>
<td>120-12-7 anthracene</td>
<td>0.182%</td>
</tr>
<tr>
<td>85-01-8 phenanthrene</td>
<td>0.182%</td>
</tr>
<tr>
<td>206-44-0 fluoroanthene</td>
<td>0.182%</td>
</tr>
<tr>
<td>53-70-3 dibenz[a,h]anthracene</td>
<td>0.182%</td>
</tr>
<tr>
<td>218-01-9 chrysene</td>
<td>0.182%</td>
</tr>
<tr>
<td>207-08-9 benzo[k]fluoranthene</td>
<td>0.182%</td>
</tr>
<tr>
<td>205-99-2 benz[a]acephenanthrylene</td>
<td>0.182%</td>
</tr>
<tr>
<td>50-32-8 benzo[a]pyrene</td>
<td>0.182%</td>
</tr>
<tr>
<td>56-55-3 benz[a]anthracene</td>
<td>0.182%</td>
</tr>
<tr>
<td>191-24-2 benzo[ghi]perylene</td>
<td>0.182%</td>
</tr>
</tbody>
</table>

(Contd. of page 2)
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 Fire Fighting 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 and 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
    NES Long-term value: 174 mg/m³, 50 ppm
    Sk
48.1.26 WES Long-term value: 174 mg/m³, 50 ppm

Sk

71-43-2 benzene

NES Long-term value: 3.2 mg/m³, 1 ppm
WES Long-term value: 3.2 mg/m³, 1 ppm

91-20-3 naphthalene

NES Short-term value: 79 mg/m³, 15 ppm
Long-term value: 52 mg/m³, 10 ppm
WES Short-term value: 79 mg/m³, 15 ppm
Long-term value: 52 mg/m³, 10 ppm

· 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:
  Tightly sealed goggles

(Contd. of page 7)
### 9 Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>· Information on basic physical and chemical properties</strong></td>
<td></td>
</tr>
<tr>
<td><strong>· General Information</strong></td>
<td></td>
</tr>
<tr>
<td><strong>· Appearance:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Form:</strong></td>
<td>Fluid</td>
</tr>
<tr>
<td><strong>Colour:</strong></td>
<td>According to product specification</td>
</tr>
<tr>
<td><strong>Odour:</strong></td>
<td>Characteristic</td>
</tr>
<tr>
<td><strong>Odour threshold:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>pH-value:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Change in condition</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Melting point/freezing point:</strong></td>
<td>Undetermined.</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range:</strong></td>
<td>40 °C</td>
</tr>
<tr>
<td><strong>· Flash point:</strong></td>
<td>-11 °C</td>
</tr>
<tr>
<td><strong>· Flammability (solid, gas):</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>· Ignition temperature:</strong></td>
<td>555 °C</td>
</tr>
<tr>
<td><strong>· Decomposition temperature:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Auto-ignition temperature:</strong></td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td><strong>· Explosive properties:</strong></td>
<td>Product is not explosive. However, formation of explosive air/vapour</td>
</tr>
<tr>
<td><strong>· Explosion limits:</strong></td>
<td>mixtures are possible.</td>
</tr>
<tr>
<td><strong>· Vapour pressure at 20 °C:</strong></td>
<td>360 hPa</td>
</tr>
<tr>
<td><strong>· Density:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Relative density</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Vapour density</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Evaporation rate</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Solubility in / Miscibility with water:</strong></td>
<td>Not miscible or difficult to mix.</td>
</tr>
<tr>
<td><strong>· Partition coefficient: n-octanol/water:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Viscosity:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Dynamic:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Kinematic:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>· Solvent content:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Organic solvents:</strong></td>
<td>97.1 %</td>
</tr>
<tr>
<td><strong>VOC (EC)</strong></td>
<td>97.09 %</td>
</tr>
<tr>
<td><strong>Solids content:</strong></td>
<td>2.9 %</td>
</tr>
<tr>
<td><strong>Other information</strong></td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

### 10 Stability and Reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>· Reactivity</strong></td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>
11 Toxicological Information

- Information on toxicological effects
- Acute toxicity

- LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th></th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalative LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>2,078 mg/kg (rat)</td>
<td>&gt;120 mg/kg</td>
<td>150 mg/L (rat)</td>
</tr>
<tr>
<td>71-43-2 benzene</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>85-01-8 phenanthrene</td>
<td>3,340 mg/kg (rat)</td>
<td>48 mg/kg (mouse)</td>
<td>9,980 mg/L (mouse)</td>
</tr>
<tr>
<td>206-44-0 fluoranthene</td>
<td>700 mg/kg (mouse)</td>
<td>2,000 mg/kg (rat)</td>
<td>3,180 mg/kg (rabbit)</td>
</tr>
<tr>
<td>208-96-8 acenaphthylene</td>
<td>1,760 mg/kg (mouse)</td>
<td>2,700 mg/kg (rat)</td>
<td>170 mg/L (rat)</td>
</tr>
<tr>
<td>129-00-0 pyrene</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 Irritant to skin and mucous membranes.
- Serious eye damage/irritation Irritating effect.
- Respiratory or skin sensitisation No sensitising effects known.
Trade name: PAH Standard (1X1 mL)

(Contd. of page 8)

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

* 14 Transport information

- Not Regulated, De minimus Quantities
- UN-Number
  - ADG, IMDG, IATA: UN1992
  - UN proper shipping name
    - ADG: 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE), ENVIRONMENTALLY HAZARDOUS
    - IMDG: FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE, fluorene), MARINE POLLUTANT
## IATA

### Transport hazard class(es)

- **ADG**

  - **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

- **ADG, IMDG, IATA**: II

### Environmental hazards:

- **Product contains environmentally hazardous substances**: dibenz[a,h]anthracene
- **Marine pollutant**: Symbol (fish and tree)
- **Special marking (ADG)**: Symbol (fish and tree)

### Special precautions for user

- **Warning**: Flammable liquids.
- **Danger code (Kemler)**: 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

- **Transport category**: Not applicable.

### Transport/Additional information:

- **ADG**
  - **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
Safety Data Sheet
according to WHS Regulations

Trade name: PAH Standard (1X1 mL)

- IMDG
  - Limited quantities (LQ) 1L
    Code: E2
    Maximum net quantity per inner packaging: 30 ml
    Maximum net quantity per outer packaging: 500 ml
  - Excepted quantities (EQ)
- 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
- Australian Inventory of Chemical Substances
  75-09-2 dichloromethane
  71-43-2 benzene
  86-73-7 fluorene
  120-12-7 anthracene
  85-01-8 phenanthrene
  206-44-0 fluoranthene
  83-32-9 acenaphthene
  218-01-9 chrysene
  129-00-0 pyrene
  91-20-3 naphthalene

- Standard for the Uniform Scheduling of Medicines and Poisons
  75-09-2 dichloromethane S5
  71-43-2 benzene S7
  91-20-3 naphthalene S6

- 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

- 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.
Trade name: PAH Standard (1X1 mL)

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

  - **Substances of very high concern (SVHC) according to REACH, Article 57**
    
    | CAS Number | Substance       |
    |------------|-----------------|
    | 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.

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**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.
  - H317 May cause an allergic skin reaction.
  - H319 Causes serious eye irritation.
  - H332 Harmful 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.
  - H360 May damage fertility or the unborn child.
  - H372 Causes damage to organs through prolonged or repeated exposure.
  - H373 May cause damage to organs through prolonged or repeated exposure.

- **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
  - 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

---

AU
Trade name: PAH Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 2</td>
<td>Flammable liquids – Category 2</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>Acute Tox. 2</td>
<td>Acute toxicity – Category 2</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>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation – Category 2A</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>Skin sensitisation – Category 1</td>
</tr>
<tr>
<td>Muta. 1B</td>
<td>Germ cell mutagenicity – Category 1B</td>
</tr>
<tr>
<td>Muta. 2</td>
<td>Germ cell mutagenicity – Category 2</td>
</tr>
<tr>
<td>Care. 1A</td>
<td>Carcinogenicity – Category 1A</td>
</tr>
<tr>
<td>Care. 1B</td>
<td>Carcinogenicity – Category 1B</td>
</tr>
<tr>
<td>Care. 2</td>
<td>Carcinogenicity – Category 2</td>
</tr>
<tr>
<td>Repr. 1B</td>
<td>Reproductive toxicity – Category 1B</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure)</td>
</tr>
<tr>
<td>STOT RE 1</td>
<td>Specific target organ toxicity (repeated exposure)</td>
</tr>
<tr>
<td>STOT RE 2</td>
<td>Specific target organ toxicity (repeated exposure)</td>
</tr>
<tr>
<td>Asp. Tox. 1</td>
<td>Aspiration hazard – Category 1</td>
</tr>
</tbody>
</table>

* Data compared to the previous version altered.
1 Identification

· 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 Australia Pty Ltd
  679 Springvale Road
  Mulgrave
  Victoria 3170, Australia
· Further information obtainable from:
  Telephone: 1800 802 402
  e-mail: pdl-msds_author@agilent.com
· Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

· Classification of the substance or mixture

  health hazard
  
  STOT RE 2  H373  May cause damage to organs through prolonged or repeated exposure.

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

· Label elements
· GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).
· Hazard pictograms

  GHS07  GHS08

· Signal word Warning
· Hazard-determining components of labelling:
  dichloromethane
  DNOC
  2,4-dichlorophenol
  2,4-dinitrophenol

(Contd. on page 2)
48.1.26

- **Hazard statements**
  - Harmful if swallowed.
  - Harmful in contact with skin.
  - Causes skin irritation.
  - Causes serious eye irritation.
  - May cause respiratory irritation.
  - May cause damage to organs through prolonged or repeated exposure.

- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Do not breathe dust/fume/gas/mist/vapours/spray.
  - Wash thoroughly after handling.
  - Do not eat, drink or smoke when using this product.
  - Use only outdoors or in a well-ventilated area.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  - Rinse mouth.
  - IF ON SKIN: Wash with plenty of water.
  - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
  - Continue rinsing.
  - Get medical advice/attention if you feel unwell.
  - Specific measures (see on this label).
  - If skin irritation occurs: Get medical advice/attention.
  - If eye irritation persists: Get medical advice/attention.
  - Take off contaminated clothing and wash before reuse.
  - Wash contaminated clothing before reuse.
  - Store in a well-ventilated place. Keep container tightly closed.
  - Store locked up.
  - 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 and Information on Ingredients

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

#### Dangerous components:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>98.341%</td>
</tr>
<tr>
<td>STOT RE 2, H373; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335</td>
<td></td>
</tr>
<tr>
<td>534-52-1 DNOC</td>
<td>0.151%</td>
</tr>
<tr>
<td>Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; Muta. 2, H341; Eye Dam. 1, H318; Skin Irrit. 2, H315; Skin Sens. 1, H317</td>
<td></td>
</tr>
<tr>
<td>87-86-5 pentachlorophenol</td>
<td>0.151%</td>
</tr>
<tr>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 2, H330; Carc. 2, H351; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</td>
<td></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 Fire Fighting 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.
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 respiratory protective device available.
  - Conditions for safe storage, including any incompatibilities
    - Storage:
      - Requirements to be met by storeroms 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 and 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>NES Long-term value: 174 mg/m³, 50 ppm</th>
<th>Sk</th>
<th>WES Long-term value: 174 mg/m³, 50 ppm</th>
<th>Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>534-52-1 DNOC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>87-86-5 pentachlorophenol</td>
<td></td>
<td></td>
<td></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.
Safety Data Sheet
according to WHS Regulations

Trade name: Phenols Standard (1X1 mL)

· 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:
- 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 %
- 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
    - LD/LC50 values relevant for classification:
      ATE (Acute Toxicity Estimates)
      | Route     | LD50    | LC50    |
      |------------|---------|---------|
      | Oral       | 1,019 mg/kg (rat) |
      | Dermal     | >1,909 mg/kg |
      | Inhalative | 63.7 mg/L |

      75-09-2 dichloromethane
      | Route     | LD50    | LC50    |
      |------------|---------|---------|
      | Oral       | 1,600 mg/kg (rat) |
      | Dermal     | >2,000 mg/kg |
      | Inhalative | 88 mg/L (rat) |
Trade name: Phenols Standard (1X1 mL)

534-52-1 DNOC

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</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>

87-86-5 pentachlorophenol

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</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>355 mg/L (rat)</td>
</tr>
</tbody>
</table>

88-06-2 2,4,6-trichlorophenol

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>820 mg/kg (rat)</td>
</tr>
</tbody>
</table>

59-50-7 chlorocresol

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>1,830 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>~2,000 mg/kg (rat)</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - Skin corrosion/irritation: Irritant to skin and mucous membranes.
  - Serious eye damage/irritation: Irritating effect.
  - Respiratory or skin sensitisation: No sensitising effects known.
  - Additional toxicological information:
    The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
    Harmful
    Irritant

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.
### Trade name: Phenols Standard (1X1 mL)

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

### 14 Transport information

| · Not Regulated, De minimus Quantities | - |
| · UN-Number | UN1593 |
| · ADG, IMDG, IATA | - |
| · UN proper shipping name | - |
| · ADG | 1593 DICHLOROMETHANE |
| · IMDG, IATA | DICHLOROMETHANE |
| · Transport hazard class(es) | - |
| · ADG, IMDG, IATA | - |
| · Class | 6.1 Toxic substances. |
| · Label | 6.1 |
| · Packing group | - |
| · ADG, 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. |

### Transport/Additional information:

| · ADG | - |
| · 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 |
15 Regulatory information

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

- Australian Inventory of Chemical Substances
  All ingredients are listed.

- Standard for the Uniform Scheduling of Medicines and Poisons

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Substance</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
<td>S5</td>
</tr>
<tr>
<td>51-28-5</td>
<td>2,4-dinitrophenol</td>
<td>S10</td>
</tr>
<tr>
<td>88-75-5</td>
<td>2-nitrophenol</td>
<td>S6</td>
</tr>
<tr>
<td>100-02-7</td>
<td>4-nitrophenol</td>
<td>S6</td>
</tr>
<tr>
<td>87-86-5</td>
<td>pentachlorophenol</td>
<td>S6, S7</td>
</tr>
<tr>
<td>88-06-2</td>
<td>2,4,6-trichlorophenol</td>
<td>S6</td>
</tr>
<tr>
<td>59-50-7</td>
<td>chlorocresol</td>
<td>S5</td>
</tr>
<tr>
<td>108-95-2</td>
<td>phenol</td>
<td>S2, S4, S5, S6</td>
</tr>
</tbody>
</table>

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- 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.
  H317 May cause an allergic skin reaction.
  H318 Causes serious eye damage.
  H319 Causes serious eye irritation.
  H330 Fatal if inhaled.
  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.

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

IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
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 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
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
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
1 Identification

- **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 Australia Pty Ltd
    679 Springvale Road
    Mulgrave
    Victoria 3170, Australia
  - **Further information obtainable from:**
    Telephone: 1800 802 402
e-mail: pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

- **Classification of the substance or mixture**
  - health hazard
  - Carc. 1B  H350  May cause cancer.
  - STOT RE 2  H373  May cause damage to organs through prolonged or repeated exposure.

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

- **Label elements**
  - **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).

- **Hazard pictograms**
  - GHS07
  - GHS08

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  - dichloromethane
  - chrysene-d12

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

**Precautionary statements**

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves / eye protection / face protection.
Use personal protective equipment as required.
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.
IF ON SKIN: Wash with plenty of water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
IF exposed or concerned: Get medical advice/attention.
Specific treatment (see on this label).
Take off contaminated clothing and wash before reuse.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
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 and Information on Ingredients

- **Chemical characterisation**: Mixtures

#### Dangerous components:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>98.19%</td>
</tr>
<tr>
<td>1719-03-5</td>
<td>0.302%</td>
</tr>
<tr>
<td>3855-82-1</td>
<td>0.302%</td>
</tr>
</tbody>
</table>

**SVHC**

- 1719-03-5 chrysene-d12
**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 Fire Fighting Measures**

- **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 and 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 |
  | NES Long-term value: 174 mg/m³, 50 ppm |
  | Sk               |
  | WES Long-term value: 174 mg/m³, 50 ppm |
  | Sk               |

- 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
Trade name: Semi-Volatiles Internal Standard (1X1 mL)

- **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>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Information</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Appearance</strong></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>Fluid</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>Like chlorine</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>pH-value</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
<td></td>
</tr>
<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>
<tr>
<td><strong>Flash point</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Ignition temperature</strong></td>
<td>605 °C</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td><strong>Explosion properties</strong></td>
<td>Product does not present an explosion hazard.</td>
</tr>
<tr>
<td><strong>Explosion limits</strong></td>
<td></td>
</tr>
<tr>
<td>Lower</td>
<td>13 Vol %</td>
</tr>
<tr>
<td>Upper</td>
<td>22 Vol %</td>
</tr>
<tr>
<td><strong>Vapour pressure at 20 °C:</strong></td>
<td>360 hPa</td>
</tr>
<tr>
<td><strong>Density at 20 °C:</strong></td>
<td>1.3 g/cm³</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with water at 20 °C:</strong></td>
<td>20 g/l</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td></td>
</tr>
<tr>
<td>Dynamic</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>
Trade name: Semi-Volatiles Internal Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Kinematic:</th>
<th>Not determined.</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Solvent content:</td>
<td>98.2 %</td>
</tr>
<tr>
<td>· Organic solvents:</td>
<td>98.2 %</td>
</tr>
<tr>
<td>· VOC (EC)</td>
<td>98.19 %</td>
</tr>
<tr>
<td>· Solids content:</td>
<td>1.8 %</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
  · LD/LC50 values relevant for classification:
    ATE (Acute Toxicity Estimates)
    | Oral   | LD50 | 1,629 mg/kg (rat) |
    | Dermal | LD50 | >2,037 mg/kg (rat) |
    | Inhalative | LC50/4 h | 89.6 mg/L (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) |
· Primary irritant effect:
· Skin corrosion/irritation Irritant to skin and mucous membranes.
· Serious eye damage/irritation Irritating effect.
· Respiratory or skin sensitisation No sensitising effects known.
· Additional toxicological information:
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Irritant
CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Carc. 1B
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.

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

*14 Transport information*

- **Not Regulated, De minimus Quantities**

- **UN-Number**
  - **ADG, IMDG, IATA** UN1593

- **UN proper shipping name**
  - **ADG** 1593 DICHLOROMETHANE
  - **IMDG, IATA** DICHLOROMETHANE

- **Transport hazard class(es)**
  - **ADG, IMDG, IATA**
  
  - **Class** 6.1 Toxic substances.
  - **Label** 6.1

- **Packing group**
  - **ADG, IMDG, IATA** III
Trade name: Semi-Volatiles Internal Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Environmental hazards:</th>
<th>Not applicable.</th>
</tr>
</thead>
<tbody>
<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>ADG</td>
<td>5L</td>
</tr>
<tr>
<td>Limited quantities (LQ)</td>
<td>Code: E1</td>
</tr>
<tr>
<td>Excepted quantities (EQ)</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>Transport category</td>
<td>2</td>
</tr>
<tr>
<td>Tunnel restriction code</td>
<td>E</td>
</tr>
<tr>
<td>IMDG</td>
<td>5L</td>
</tr>
<tr>
<td>Limited quantities (LQ)</td>
<td>Code: E1</td>
</tr>
<tr>
<td>Excepted quantities (EQ)</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>UN &quot;Model Regulation&quot;:</td>
<td>UN 1593 DICHLOROMETHANE, 6.1, III</td>
</tr>
</tbody>
</table>

15 Regulatory information

| Safety, health and environmental regulations/legislation specific for the substance or mixture |
| Australian Inventory of Chemical Substances |
| 75-09-2 dichloromethane |
| Standard for the Uniform Scheduling of Medicines and Poisons |
| 75-09-2 dichloromethane S5 |
| Directive 2012/18/EU |
| Named dangerous substances - ANNEX I None of the ingredients is listed. |
| 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 |
Trade name: Semi-Volatiles Internal Standard (1X1 mL)

- **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**
  - 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.

- **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
  - 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. 4: Acute toxicity – Category 4
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  - 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

- * Data compared to the previous version altered.
1 Identification

- **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 Australia Pty Ltd
    679 Springvale Road
    Mulgrave
    Victoria 3170, Australia
- **Further information obtainable from:**
  - Telephone: 1800 802 402
  - e-mail: pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

- **Classification of the substance or mixture**
  - **health hazard**
  - **STOT RE 2 H373** May cause damage to organs through prolonged or repeated exposure.

- **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. 2A H319** Causes serious eye irritation.
- **STOT SE 3 H335** May cause respiratory irritation.

- **Label elements**
  - **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).
  - **Hazard pictograms**
    - GHS07
    - GHS08

- **Signal word** Warning

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

(Contd. on page 2)
Hazard statements
Harmful if swallowed.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.
IF ON SKIN: Wash with plenty of water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Get medical advice/attention if you feel unwell.
Specific measures (see on this label).
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
Wash contaminated clothing before reuse.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
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 and Information on Ingredients

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

Dangerous components:

<table>
<thead>
<tr>
<th>Chemical</th>
<th>CAS Number</th>
<th>Hazard Class</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dichloromethane</td>
<td>75-09-2</td>
<td>STOT RE 2, H373; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335</td>
<td>98.341%</td>
</tr>
<tr>
<td>Bis(2-chloroethyl) ether</td>
<td>111-44-4</td>
<td>Flam. Liq. 3, H226; Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330; Carc. 2, H351</td>
<td>0.151%</td>
</tr>
<tr>
<td>4-Bromophenyl phenyl ether</td>
<td>101-55-3</td>
<td>Acute Tox. 4, H302; Eye Irrit. 2A, H319; Skin Sens. 1, H317</td>
<td>0.151%</td>
</tr>
</tbody>
</table>
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 Fire Fighting 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 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 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 and 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

<table>
<thead>
<tr>
<th></th>
<th>NES</th>
<th>WES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long-term value: 174 mg/m³, 50 ppm</td>
<td>Long-term value: 174 mg/m³, 50 ppm</td>
</tr>
<tr>
<td></td>
<td>Sk</td>
<td>Sk</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>NES</th>
<th>WES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short-term value: 58 mg/m³, 10 ppm</td>
<td>Short-term value: 58 mg/m³, 10 ppm</td>
</tr>
<tr>
<td></td>
<td>Long-term value: 29 mg/m³, 5 ppm</td>
<td>Long-term value: 29 mg/m³, 5 ppm</td>
</tr>
<tr>
<td></td>
<td>Sk</td>
<td>Sk</td>
</tr>
</tbody>
</table>

84-74-2 dibutyl phthalate

<table>
<thead>
<tr>
<th></th>
<th>NES</th>
<th>WES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Long-term value: 5 mg/m³</td>
<td>Long-term value: 5 mg/m³</td>
</tr>
</tbody>
</table>
Safety Data Sheet
according to WHS Regulations

Printing date 31.03.2019
Version number 3
Revision: 31.03.2019

Trade name: Ethers and Phthalates Standard (1X1 mL)

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

<table>
<thead>
<tr>
<th></th>
<th>NES</th>
<th>Long-term value: 5 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term value:</td>
<td>10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>WES</th>
<th>Long-term value: 5 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term value:</td>
<td>10 mg/m³</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

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

- **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:**
  - **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

<table>
<thead>
<tr>
<th>LD/LC50 values relevant for classification:</th>
</tr>
</thead>
</table>

ATE (Acute Toxicity Estimates)

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>1,486 mg/kg</td>
<td>&gt;1,967 mg/kg</td>
<td>&gt;87.7 mg/L (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalative LC50/4 h</td>
<td></td>
<td></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>LD50</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>Dermal LD50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalative LC50/4 h</td>
<td></td>
<td></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>LD50</td>
<td>75 mg/kg (rat)</td>
<td>90 mg/kg (rabbit)</td>
<td>330 mg/L (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalative LC50/4 h</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

117-84-0 dioctyl phthalate

<table>
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<th>Dermal</th>
<th>Inhalative</th>
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</thead>
<tbody>
<tr>
<td>LD50</td>
<td>47,000 mg/kg (rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal LD50</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Inhalative LC50/4 h</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

84-74-2 dibutyl phthalate

<table>
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<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>6,300 mg/kg (rat)</td>
<td>&gt;4,000 mg/kg (rabbit)</td>
<td>15.68 mg/L (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Inhalative LC50/4 h</td>
<td></td>
<td></td>
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</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>LD50</td>
<td>&gt;20,000 mg/kg (rat)</td>
<td>4,000 mg/kg (rat)</td>
<td>25,000 mg/kg (rabbit)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalative LC50/4 h</td>
<td></td>
<td></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>LD50</td>
<td>2,330 mg/kg (rat)</td>
<td>6,700 mg/kg (rabbit)</td>
<td>&gt;6.7 mg/L (rat)</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalative LC50/4 h</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Primary irritant effect:
- Skin corrosion/irritation: Irritant to skin and mucous membranes.
- Serious eye damage/irritation: Irritating effect.
- Respiratory or skin sensitisation: No sensitising effects known.
- Additional toxicological information:
  The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
  Harmful
  Irritant

(Contd. on page 8)
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.
  - **Uncleaned packaging**
    - **Recommendation**: Disposal must be made according to official regulations.

14 Transport information

- **Not Regulated, De minimus Quantities**
- **UN-Number**
  - ADG, IMDG, IATA UN1593
- **UN proper shipping name**
  - ADG 1593 DICHLOROMETHANE
  - IMDG, IATA DICHLOROMETHANE
- **Transport hazard class(es)**
  - ADG, IMDG, IATA
    - **Class**: 6.1 Toxic substances.
    - **Label**: 6.1
  - **Packing group**
    - ADG, IMDG, IATA III
Safety Data Sheet
according to WHS Regulations

Trade name: Ethers and Phthalates Standard (1X1 mL)

- Environmental hazards: Not applicable.
- Special precautions for user
  - Warning: Toxic substances.
  - 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:
  - ADG
  - 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
  - Australian Inventory of Chemical Substances
    - 75-09-2 dichloromethane
    - 111-44-4 bis(2-chloroethyl) ether
    - 101-55-3 4-bromophenyl phenyl ether
    - 7005-72-3 4-chlorophenyl phenyl ether
    - 131-11-3 dimethyl phthalate
    - 117-84-0 dioctyl phthalate
    - 84-74-2 dibutyl phthalate
    - 117-81-7 di-(2-ethylhexyl) phthalate
    - 85-68-7 BBP
    - 84-66-2 diethyl phthalate
  - Standard for the Uniform Scheduling of Medicines and Poisons
    - 75-09-2 dichloromethane S5
    - 131-11-3 dimethyl phthalate S10
    - 84-74-2 dibutyl phthalate S10
    - 85-68-7 BBP S10

(Contd. of page 8)

(Contd. on page 10)
Trade name: Ethers and Phthalates Standard (1X1 mL)

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- 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.
  - 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.
  - H360 May damage fertility or the unborn child.
  - H361 Suspected of damaging fertility or the unborn child.
  - H373 May cause damage to organs through prolonged or repeated exposure.

- 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
  - 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. 4: Acute toxicity – Category 4
  - Acute Tox. 1: Acute toxicity – Category 1
Trade name: Ethers and Phthalates Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Tox. 3</td>
<td>Acute toxicity – Category 3</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation – Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation – Category 2A</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
<td>Skin sensitisation – Category 1</td>
</tr>
<tr>
<td>Carc. 2</td>
<td>Carcinogenicity – Category 2</td>
</tr>
<tr>
<td>Repr. 1B</td>
<td>Reproductive toxicity – Category 1B</td>
</tr>
<tr>
<td>Repr. 2</td>
<td>Reproductive toxicity – 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>
</tbody>
</table>
# Safety Data Sheet

## 1 Identification

- **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 Australia Pty Ltd
    679 Springvale Road
    Mulgrave
    Victoria 3170, Australia
  - **Further information obtainable from:**
    - Telephone: 1800 802 402
    - e-mail: pdl-msds_author@agilent.com
    - **Emergency telephone number:** CHEMTREC®: +(61) - 290372994

## 2 Hazard(s) Identification

- **Classification of the substance or mixture**
  - Health hazard
  - **Carc. 1B** H350 May cause cancer.
  - **STOT RE 2** H373 May cause damage to organs through prolonged or repeated exposure.

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  - Dichloromethane
  - Hexachlorobuta-1,3-diene
  - Hexachlorobenzene

(Contd. on page 2)
Hazard statements
Harmful if swallowed.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May cause cancer.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.
IF ON SKIN: Wash with plenty of water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
Specific measures (see on this label).
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
Wash contaminated clothing before reuse.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

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

Composition and 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.
  - **Indication of any immediate medical attention and special treatment needed** No further relevant information available.

### 5 Fire Fighting 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.
Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

- **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 and 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>NES Long-term value</th>
<th>NES Sk</th>
<th>WES Long-term value</th>
<th>WES Sk</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
<td>174 mg/m³, 50 ppm</td>
<td></td>
<td>174 mg/m³, 50 ppm</td>
<td></td>
</tr>
<tr>
<td>106-46-7 1,4-dichlorobenzene</td>
<td>300 mg/m³, 50 ppm</td>
<td></td>
<td>150 mg/m³, 25 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

87-68-3 hexachlorobuta-1,3-diene

<table>
<thead>
<tr>
<th></th>
<th>NES</th>
<th>WES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term value</td>
<td>0.21 mg/m³, 0.02 ppm</td>
<td>0.21 mg/m³, 0.02 ppm</td>
</tr>
<tr>
<td>Sk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

120-82-1 1,2,4-trichlorobenzene

<table>
<thead>
<tr>
<th></th>
<th>NES</th>
<th>WES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak limitation</td>
<td>37 mg/m³, 5 ppm</td>
<td>37 mg/m³, 5 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 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
## 48.1.26

- **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.
- **Explosion 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:** 98.5 %
- **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.
### 11 Toxicological Information

**Information on toxicological effects**

**Acute toxicity**

**LD/LC50 values relevant for classification:**

#### ATE (Acute Toxicity Estimates)

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>1,584 mg/kg (rat)</td>
<td>&gt;1,965 mg/kg</td>
<td>84.1 mg/L (rat)</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>LD50</td>
<td>1,600 mg/kg (rat)</td>
<td>&gt;2,000 mg/kg (rat)</td>
<td>88 mg/L (rat)</td>
</tr>
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</table>

**95-50-1 1,2-dichlorobenzene**

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>500 mg/kg (rat)</td>
<td>&gt;10,000 mg/kg (rabbit)</td>
<td></td>
</tr>
</tbody>
</table>

**106-46-7 1,4-dichlorobenzene**

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>&gt;2,000 mg/kg (rat)</td>
<td>&gt;2,000 mg/kg (rat)</td>
<td>&gt;5.07 mg/L (rat)</td>
</tr>
</tbody>
</table>

**118-74-1 hexachlorobenzene**

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>10,000 mg/kg (rat)</td>
<td>3,600 mg/L (rat)</td>
</tr>
</tbody>
</table>

**87-68-3 hexachlorobuta-1,3-diene**

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>82 mg/kg (rat)</td>
<td>370 mg/L (mouse)</td>
</tr>
</tbody>
</table>

**77-47-4 hexachlorocyclopentadiene**

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
<th>Inhalative</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>315 mg/kg (rat)</td>
<td>430 mg/kg (rabbit)</td>
<td>2 mg/L (rat)</td>
</tr>
</tbody>
</table>

**608-93-5 pentachlorobenzene**

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>1,080 mg/kg (rat)</td>
<td>&gt;2,500 mg/kg (rat)</td>
</tr>
</tbody>
</table>

**120-82-1 1,2,4-trichlorobenzene**

<table>
<thead>
<tr>
<th></th>
<th>Oral</th>
<th>Dermal</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>756 mg/kg (rat)</td>
<td>6,139 mg/kg (rat)</td>
</tr>
</tbody>
</table>

**Primary irritant effect:**

- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Irritating effect.
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**:
    - 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.
  - **Uncleaned packaging**:
    - **Recommendation**: Disposal must be made according to official regulations.

14 Transport information

- **Not Regulated, De minimus Quantities**
- **UN-Number**
  - ADG, IMDG, IATA
  - UN1593
## 48.1.26
### UN proper shipping name
- ADG
- IMDG, IATA

### Transport hazard class(es)
- ADG, IMDG, IATA

### Class
- 6.1 Toxic substances.

### Label
- 6.1

### Packing group
- ADG, IMDG, IATA
- III

### Environmental hazards:
- Not applicable.

### Special precautions for user
- Warning: Toxic substances.
- Danger code (Kepler): 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:

#### ADG
- 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

#### Australian Inventory of Chemical Substances
- 75-09-2 dichloromethane
- 95-50-1 1,2-dichlorobenzene
- 541-73-1 1,3-dichlorobenzene
Safety Data Sheet  
according to WHS Regulations  

Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Substance Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>106-46-7</td>
<td>1,4-dichlorobenzene</td>
</tr>
<tr>
<td>118-74-1</td>
<td>hexachlorobenzene</td>
</tr>
<tr>
<td>87-68-3</td>
<td>hexachlorobuta-1,3-diene</td>
</tr>
<tr>
<td>77-47-4</td>
<td>hexachlorocyclopentadiene</td>
</tr>
<tr>
<td>67-72-1</td>
<td>hexachloroethane</td>
</tr>
<tr>
<td>608-93-5</td>
<td>pentachlorobenzene</td>
</tr>
<tr>
<td>76-01-7</td>
<td>pentachloroethane</td>
</tr>
<tr>
<td>120-82-1</td>
<td>1,2,4-trichlorobenzene</td>
</tr>
<tr>
<td>1888-71-7</td>
<td>hexachloropropene</td>
</tr>
</tbody>
</table>

- **Standard for the Uniform Scheduling of Medicines and Poisons**
  - 75-09-2 dichloromethane S5
  - 95-50-1 1,2-dichlorobenzene S6
  - 106-46-7 1,4-dichlorobenzene S5
  - 118-74-1 hexachlorobenzene S7

- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.

- **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**
  - H227 Combustible liquid.
  - H301 Toxic if swallowed.
  - H302 Harmful if swallowed.
  - H310 Fatal in contact with skin.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - 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.

- **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
### Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

- **IATA:** International Air Transport Association
- **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. 4:** Flammable liquids – Category 4
- **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. 2A:** Serious eye damage/eye irritation – Category 2A
- **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
*1 Identification*

- **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 Australia Pty Ltd
  - 679 Springvale Road
  - Mulgrave
  - Victoria 3170, Australia
- **Further information obtainable from:**
  - Telephone: 1800 802 402
  - e-mail: pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(61) - 290372994

*2 Hazard(s) Identification*

- **Classification of the substance or mixture**
  - Flam. Liq. 2 H225 Highly flammable liquid and vapour.
  - Acute Tox. 4 H302 Harmful if swallowed.
  - Acute Tox. 4 H312 Harmful in contact with skin.
  - Eye Irrit. 2A H319 Causes serious eye irritation.
  - STOT SE 3 H336 May cause drowsiness or dizziness.

- **Label elements**
  - **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).
  - **Hazard pictograms**
    - GHS02
    - GHS07

- **Signal word** Danger

- **Hazard-determining components of labelling:**
  - endosulfan sulfate
  - dieldrin (ISO)
  - endrin (ISO)
  - endosulfan I

- **Hazard statements**
  - Highly flammable liquid and vapour.
Harmful if swallowed.
Harmful in contact with skin.
Causes serious eye irritation.
May cause drowsiness or dizziness.

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
Specific measures (see on this label).
If eye irritation persists: Get medical advice/attention.

Wash contaminated clothing before reuse.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
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 and Information on Ingredients

Chemical characterisation: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1 acetone</td>
<td>95.702%</td>
</tr>
<tr>
<td>72-54-8 TDE</td>
<td>0.253%</td>
</tr>
<tr>
<td>50-29-3 DDT (common name not adopted by ISO)</td>
<td>0.253%</td>
</tr>
</tbody>
</table>

(AU)
### Trade name: Organochlorine Pesticides Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Material Number</th>
<th>Description</th>
<th>H &amp; Carc Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>72-55-9</td>
<td>2,2-bis(p-chlorophenyl)-1,1-dichloroethylene</td>
<td>Carc. 2, H351; Acute Tox. 4, H302</td>
<td>0.253%</td>
</tr>
<tr>
<td>60-57-1</td>
<td>dieldrin (ISO)</td>
<td>Acute Tox. 3, H301; Acute Tox. 1, H310; Carc. 2, H351; STOT RE 1, H372</td>
<td>0.253%</td>
</tr>
<tr>
<td>76-44-8</td>
<td>heptachlor (ISO)</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Carc. 2, H351; STOT RE 2, H373</td>
<td>0.253%</td>
</tr>
<tr>
<td>1024-57-3</td>
<td>heptachlor epoxide - isomer B</td>
<td>Acute Tox. 3, H301; Carc. 2, H351; STOT RE 2, H373</td>
<td>0.253%</td>
</tr>
<tr>
<td>319-85-7</td>
<td>(1alpha,2ß,3alpha,4ß,5alpha,6ß)-1,2,3,4,5,6-hexachlorocyclohexane</td>
<td>Carc. 2, H351; Acute Tox. 4, H312</td>
<td>0.253%</td>
</tr>
<tr>
<td>58-89-9</td>
<td>γ-HCH or γ-BHC</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; STOT RE 2, H373; Lact., H362</td>
<td>0.253%</td>
</tr>
<tr>
<td>72-43-5</td>
<td>methoxychlor</td>
<td>Carc. 2, H351; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332</td>
<td>0.253%</td>
</tr>
<tr>
<td>309-00-2</td>
<td>aldrin (ISO)</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Carc. 2, H351; STOT RE 1, H372</td>
<td>0.253%</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:**
  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:**
  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 Fire Fighting 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 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 and 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**
      - NES Short-term value: 2375 mg/m³, 1000 ppm
        Long-term value: 1185 mg/m³, 500 ppm
      - WES Short-term value: 2375 mg/m³, 1000 ppm
        Long-term value: 1185 mg/m³, 500 ppm
  - **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.
  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:
    Odour: Characteristic
    Odour threshold: Not determined.
  - pH-value:
    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:
  Flash point: -17 °C
- Flammability (solid, gas):
  Flammability (solid, gas): Not applicable.
### 48.1.26

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

#### 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**

#### LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th>ATE (Acute Toxicity Estimates)</th>
<th>Oral LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>671 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>
**Trade name: Organochlorine Pesticides Standard (1X1 mL)**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Route</th>
<th>LD50 Value</th>
<th>LC50/4 h Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1 acetone</td>
<td>Dermal</td>
<td>1,775 mg/kg</td>
<td>132 mg/L</td>
</tr>
<tr>
<td>72-54-8 TDE</td>
<td>Dermal</td>
<td>1,200 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td>50-29-3 DDT (common name not adopted by ISO)</td>
<td>Oral</td>
<td>87 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>72-55-9 2,2-bis(p-chlorophenyl)-1,1-dichoroethylene</td>
<td>Oral</td>
<td>880 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>60-57-1 dieldrin (ISO)</td>
<td>Oral</td>
<td>38 mg/kg (mouse)</td>
<td></td>
</tr>
<tr>
<td>60-57-1 dieldrin (ISO)</td>
<td>Oral</td>
<td>38 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>72-20-8 endrin (ISO)</td>
<td>Oral</td>
<td>3 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>72-20-8 endrin (ISO)</td>
<td>Dermal</td>
<td>60 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>959-98-8 endosulfan I</td>
<td>Oral</td>
<td>76 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>33213-65-9 endosulfan II</td>
<td>Oral</td>
<td>240 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>1031-07-8 endosulfan sulfate</td>
<td>Oral</td>
<td>18 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>76-44-8 heptachlor (ISO)</td>
<td>Oral</td>
<td>40 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>1024-57-3 heptachlor epoxide - isomer B</td>
<td>Oral</td>
<td>15 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>319-85-7 (1alpha,2ß,3alpha,4ß,5alpha,6ß)-1,2,3,4,5,6-hexachlorocyclohexane</td>
<td>Oral</td>
<td>6,000 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>58-89-9 γ-HCH or γ-BHC</td>
<td>Oral</td>
<td>88 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>72-43-5 methoxychlor</td>
<td>Oral</td>
<td>1,855 mg/kg (rat)</td>
<td></td>
</tr>
</tbody>
</table>
Dermal LD50 6,000 mg/kg (rat)

**309-00-2 aldrin (ISO)**

<table>
<thead>
<tr>
<th>Type</th>
<th>LD50</th>
<th>(megagrams per kilogram)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>39</td>
<td>(rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>98</td>
<td>(rat)</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>(rabbit)</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **Skin corrosion/irritation** No irritant effect.
  - **Serious eye damage/irritation** Irritating effect.
  - **Respiratory or skin sensitisation** No sensitising effects known.

- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
  - **Harmful**
  - **Irritant**

### 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.

### Disposal considerations

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

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

### Transport information

- **Not Regulated, De minimus Quantities**

(Contd. on page 9)
### Trade name: Organochlorine Pesticides Standard (1X1 mL)

<table>
<thead>
<tr>
<th>· UN-Number</th>
<th>UN1090</th>
</tr>
</thead>
<tbody>
<tr>
<td>· UN, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>· UN proper shipping name</td>
<td>1090 ACETONE solution, ENVIRONMENTALLY HAZARDOUS</td>
</tr>
<tr>
<td>· ADG</td>
<td>ACETONE solution, MARINE POLLUTANT</td>
</tr>
<tr>
<td>· IMDG</td>
<td>ACETONE solution</td>
</tr>
<tr>
<td>· IATA</td>
<td></td>
</tr>
</tbody>
</table>

| · Transport hazard class(es) |        |
| · ADG, IMDG | 3 Flammable liquids. |
| · IATA      | 3 |

| · Packing group |        |
| · ADG, IMDG, IATA | II |

| · Environmental hazards: | Product contains environmentally hazardous substances: |
| · Marine pollutant: | aldrin (ISO), γ -HCH or γ -BHC |
| · Special marking (ADG): | 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: |        |
| · ADG | 1L |
| · Limited quantities (LQ) | Code: E2 |
| · Excepted quantities (EQ) | Maximum net quantity per inner packaging: 30 ml |
| · Transport category | 2 |
| · Tunnel restriction code | D/E |

(Contd. on page 10)
15 Regulatory information

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

· Australian Inventory of Chemical Substances

<table>
<thead>
<tr>
<th>Chemical Code</th>
<th>Chemical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1</td>
<td>acetone</td>
</tr>
<tr>
<td>72-54-8</td>
<td>TDE</td>
</tr>
<tr>
<td>50-29-3</td>
<td>DDT (common name not adopted by ISO)</td>
</tr>
<tr>
<td>72-55-9</td>
<td>2,2-bis(p-chlorophenyl)-1,1-dichloroethylene</td>
</tr>
<tr>
<td>60-57-1</td>
<td>dieldrin (ISO)</td>
</tr>
<tr>
<td>72-20-8</td>
<td>endrin (ISO)</td>
</tr>
<tr>
<td>959-98-8</td>
<td>endosulfan I</td>
</tr>
<tr>
<td>33213-65-9</td>
<td>endosulfan II</td>
</tr>
<tr>
<td>1031-07-8</td>
<td>endosulfan sulfate</td>
</tr>
<tr>
<td>76-44-8</td>
<td>heptachlor (ISO)</td>
</tr>
<tr>
<td>319-84-6</td>
<td>alpha-BHC (alpha-HCH)</td>
</tr>
<tr>
<td>1024-57-3</td>
<td>heptachlor epoxide - isomer B</td>
</tr>
<tr>
<td>319-85-7</td>
<td>(1alpha,2ß,3alpha,4ß,5alpha,6ß)-1,2,3,4,5,6-hexachlorocyclohexane</td>
</tr>
<tr>
<td>319-86-8</td>
<td>delta-BHC (delta-HCH)</td>
</tr>
<tr>
<td>58-89-9</td>
<td>γ-HCH or γ-BHC</td>
</tr>
<tr>
<td>72-43-5</td>
<td>methoxychlor</td>
</tr>
<tr>
<td>309-00-2</td>
<td>aldrin (ISO)</td>
</tr>
</tbody>
</table>

· Standard for the Uniform Scheduling of Medicines and Poisons

<table>
<thead>
<tr>
<th>Chemical Code</th>
<th>Chemical Name</th>
<th>Safety Phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1</td>
<td>acetone</td>
<td>S5</td>
</tr>
<tr>
<td>72-54-8</td>
<td>TDE</td>
<td>S5, S6</td>
</tr>
<tr>
<td>50-29-3</td>
<td>DDT (common name not adopted by ISO)</td>
<td>S10</td>
</tr>
<tr>
<td>60-57-1</td>
<td>dieldrin (ISO)</td>
<td>S6</td>
</tr>
<tr>
<td>72-20-8</td>
<td>endrin (ISO)</td>
<td>S7</td>
</tr>
<tr>
<td>76-44-8</td>
<td>heptachlor (ISO)</td>
<td>S6</td>
</tr>
<tr>
<td>58-89-9</td>
<td>γ-HCH or γ-BHC</td>
<td>S2, S4, S5, S6</td>
</tr>
<tr>
<td>72-43-5</td>
<td>methoxychlor</td>
<td>S5</td>
</tr>
<tr>
<td>309-00-2</td>
<td>aldrin (ISO)</td>
<td>S6</td>
</tr>
</tbody>
</table>

· Directive 2012/18/EU
· Named dangerous substances - ANNEX I None of the ingredients is listed.
Trade name: Organochlorine Pesticides Standard (1X1 mL)

- **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
- **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.
  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.
  H332 Harmful if inhaled.
  H360 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.

- **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
  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. 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
  Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  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

* Data compared to the previous version altered.
1 Identification

- **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 Australia Pty Ltd
    - 679 Springvale Road
    - Mulgrave
    - Victoria 3170, Australia
  - **Further information obtainable from:**
    - Telephone: 1800 802 402
    - e-mail: pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

- **Classification of the substance or mixture**
  - **Health hazard**
    - Carc. 1A  H350  May cause cancer.
    - STOT RE 2  H373  May cause damage to organs through prolonged or repeated exposure.
  - **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. 2A** H319  Causes serious eye irritation.
  - **STOT SE 3** H335  May cause respiratory irritation.

- **Label elements**
  - **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).
  - **Hazard pictograms**
    - GHS07  GHS08

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

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

N-Nitrosomethylethylamine

- **Hazard statements**
  - Harmful if swallowed.
  - Harmful in contact with skin.
  - Causes skin irritation.
  - Causes serious eye irritation.
  - May cause cancer.
  - May cause respiratory irritation.
  - May cause damage to organs through prolonged or repeated exposure.

- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - Do not breathe dust/fume/gas/mist/vapours/spray.
  - Wash thoroughly after handling.
  - Do not eat, drink or smoke when using this product.
  - Use only outdoors or in a well-ventilated area.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - Use personal protective equipment as required.
  - IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  - Rinse mouth.
  - IF ON SKIN: Wash with plenty of water.
  - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
  - Continue rinsing.
  - IF exposed or concerned: Get medical advice/attention.
  - Get medical advice/attention if you feel unwell.
  - Specific measures (see on this label).
  - If skin irritation occurs: Get medical advice/attention.
  - If eye irritation persists: Get medical advice/attention.
  - Take off contaminated clothing and wash before reuse.
  - Wash contaminated clothing before reuse.
  - Store in a well-ventilated place. Keep container tightly closed.
  - Store locked up.
  - 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 and Information on Ingredients

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

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Substance</th>
<th>Hazard Symbols</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>Dichloromethane</td>
<td>STOT RE 2, H373; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335</td>
<td>98.643%</td>
</tr>
</tbody>
</table>
Trade name: Nitrosamines Standard (1X1 mL)

<table>
<thead>
<tr>
<th>CAS number</th>
<th>Chemical Name</th>
<th>Carcinogenicity</th>
<th>Acute Toxicity</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>621-64-7</td>
<td>nitrosodipropylamine</td>
<td>Carc. 1B, H350; Acute Tox. 4, H302</td>
<td>0.151%</td>
<td></td>
</tr>
<tr>
<td>930-55-2</td>
<td>1-nitrosopyrrolidine</td>
<td>Carc. 1A, H350; Acute Tox. 4, H302</td>
<td>0.151%</td>
<td></td>
</tr>
<tr>
<td>55-18-5</td>
<td>diethylnitrosoamine</td>
<td>Acute Tox. 3, H301; Carc. 1A, H350</td>
<td>0.151%</td>
<td></td>
</tr>
<tr>
<td>62-75-9</td>
<td>dimethylnitrosamine</td>
<td>Acute Tox. 3, H301; Acute Tox. 2, H330; Carc. 1B; H350; STOT RE 1, H372; Flam. Lq. 4, H227</td>
<td>0.151%</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 Fire Fighting 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 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.
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 and 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 |
    |------------------------|
    | NES Sk                 |
    | Long-term value: 174 mg/m³, 50 ppm |
    | WES Sk                 |
    | Long-term value: 174 mg/m³, 50 ppm |

  - **62-75-9 dimethylnitrosoamine**
    
    | NES Sk |
    | WES Sk |

  - **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: Nitrosamines 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.
### 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**
  - **LD/LC50 values relevant for classification:**
    - **ATE (Acute Toxicity Estimates)**
      - **Oral**: LD50 1,441 mg/kg (rat)
      - **Dermal**: LD50 >1,967 mg/kg
      - **Inhalative**: LC50/4 h 78.5 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)

#### 621-64-7 nitrosodipropylamine
- **Oral**: LD50 480 mg/kg (rat)

#### 930-55-2 1-nitrosopyrrolidine
- **Oral**: LD50 900 mg/kg (rat)

#### 55-18-5 diethylnitrosamine
- **Oral**: LD50 220 mg/kg (rat)
Safety Data Sheet
according to WHS Regulations

Trade name: Nitrosamines Standard (1X1 mL)

<table>
<thead>
<tr>
<th>62-75-9 dimethylnitrosoamine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
<tr>
<td>Inhalative</td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **Skin corrosion/irritation** Irritant to skin and mucous membranes.
  - **Serious eye damage/irritation** Irritating effect.
  - **Respiratory or skin sensitisation** No sensitising effects known.

- **Additional toxicological information:**
  The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
  Harmful
  Irritant
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
  Carc. 1A

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

14 Transport information

- **Not Regulated, De minimus Quantities**
## 48.1.26 UN-Number

- ADG, IMDG, IATA: UN1593

## UN proper shipping name

- ADG: 1593 DICHLOROMETHANE
- IMDG, IATA: DICHLOROMETHANE

## Transport hazard class(es)

- ADG, IMDG, IATA

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

## Packing group

- ADG, IMDG, IATA: III

## Environmental hazards:

- Not applicable.

## Special precautions for user

- Warning: Toxic substances.

<table>
<thead>
<tr>
<th>Danger code (Kemler)</th>
<th>EMS Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>F-A,S-A</td>
</tr>
</tbody>
</table>

## Segregation groups

- Liquid halogenated hydrocarbons: A

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

- Not applicable.

## Transport/Additional information:

<table>
<thead>
<tr>
<th>ADG</th>
<th>IMDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited quantities (LQ): 5L</td>
<td>Limited quantities (LQ): 5L</td>
</tr>
<tr>
<td>Excepted quantities (EQ): Code: E1</td>
<td>Excepted quantities (EQ): Code: E1</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 1000 ml</td>
<td>Maximum net quantity per outer packaging: 1000 ml</td>
</tr>
</tbody>
</table>

## Transport category

- ADG: 2
- IMDG: E

## Tunnel restriction code

- ADG: E
- IMDG: E

## UN "Model Regulation":

- UN 1593 DICHLOROMETHANE, 6.1, III

### 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Australian Inventory of Chemical Substances

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
</tr>
</tbody>
</table>
### Trade name: Nitrosamines Standard (1X1 mL)

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>62-75-9</td>
<td>dimethylnitrosoamine</td>
</tr>
<tr>
<td>86-30-6</td>
<td>nitrosodiphenylamine</td>
</tr>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
</tr>
</tbody>
</table>

- **Standard for the Uniform Scheduling of Medicines and Poisons**
  - 75-09-2 dichloromethane

- **Directive 2012/18/EU**
  - **Named dangerous substances** - ANNEX I None of the ingredients is listed.

- **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**
  - H227 Combustible liquid.
  - 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.
  - H372 Causes damage to organs through prolonged or repeated exposure.
  - H373 May cause damage to organs through prolonged or repeated exposure.

- **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
  - 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. 4: Flammable liquids – Category 4
  - 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. 2A: Serious eye damage/eye irritation – Category 2A
  - Carc. 1A: Carcinogenicity – Category 1A
  - Carc. 1B: Carcinogenicity – Category 1B

(Contd. on page 10)
<table>
<thead>
<tr>
<th>Trade name: Nitrosamines Standard (1X1 mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>48.1.26</td>
</tr>
<tr>
<td>STOT SE 3: Specific target organ toxicity (single exposure) – Category 3</td>
</tr>
<tr>
<td>STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1</td>
</tr>
<tr>
<td>STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2</td>
</tr>
<tr>
<td>* Data compared to the previous version altered.</td>
</tr>
</tbody>
</table>
**1 Identification**

- **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
- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:**
    - Agilent Technologies Australia Pty Ltd
    - 679 Springvale Road
    - Mulgrave
    - Victoria 3170, Australia
  - **Further information obtainable from:**
    - Telephone: 1800 802 402
    - e-mail: pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(61) - 290372994

**2 Hazard(s) Identification**

- **Classification of the substance or mixture**
  - health hazard
  - Carc. 1A  H350  May cause cancer.
  - STOT RE 2  H373  May cause damage to organs through prolonged or repeated exposure.

- **Label elements**
  - **GHS label elements**
    - The product is classified and labelled according to the Globally Harmonised System (GHS).
  - **Hazard pictograms**
    - GHS07  GHS08

- **Signal word**
  - Danger

- **Hazard-determining components of labelling:**
  - dichloromethane
  - 4-dimethylaminobenzene
  - o-toluidine

(Contd. on page 2)
3 Composition and Information on Ingredients

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

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical Name</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
<td>98.0396%</td>
</tr>
</tbody>
</table>

· PBT: Not applicable.
· vPvB: Not applicable.

48.1.26 diphenylamine

- Hazard statements
  - Harmful if swallowed.
  - Harmful in contact with skin.
  - Causes skin irritation.
  - Causes serious eye irritation.
  - May cause cancer.
  - May cause respiratory irritation.
  - May cause damage to organs through prolonged or repeated exposure.

- Precautionary statements
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - Do not breathe dust/fume/gas/mist/vapours/spray.
  - Wash thoroughly after handling.
  - Do not eat, drink or smoke when using this product.
  - Use only outdoors or in a well-ventilated area.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - Use personal protective equipment as required.
  - IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
  - Rinse mouth.
  - IF ON SKIN: Wash with plenty of water.
  - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
  - Continue rinsing.
  - IF exposed or concerned: Get medical advice/attention.
  - Get medical advice/attention if you feel unwell.
  - Specific measures (see on this label).
  - If skin irritation occurs: Get medical advice/attention.
  - If eye irritation persists: Get medical advice/attention.
  - Take off contaminated clothing and wash before reuse.
  - Wash contaminated clothing before reuse.
  - Store in a well-ventilated place. Keep container tightly closed.
  - Store locked up.
  - 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.
### 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 Fire Fighting 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

8 Exposure controls and 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>CAS Number</th>
<th>Substance</th>
<th>NES Long-term Value</th>
<th>WES Long-term Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
<td>174 mg/m³, 50 ppm</td>
<td>174 mg/m³, 50 ppm</td>
</tr>
<tr>
<td>91-94-1</td>
<td>3,3'-dichlorobenzidine</td>
<td>Sk</td>
<td>Sk</td>
</tr>
<tr>
<td>119-93-7</td>
<td>4,4'-bi-o-toluidine</td>
<td>Sk</td>
<td>Sk</td>
</tr>
<tr>
<td>91-59-8</td>
<td>2-naphthylamine</td>
<td>-(P) ppm</td>
<td>-(P) ppm</td>
</tr>
<tr>
<td>95-53-4</td>
<td>o-toluidine</td>
<td>8.8 mg/m³, 2 ppm</td>
<td>8.8 mg/m³, 2 ppm</td>
</tr>
<tr>
<td>92-67-1</td>
<td>4-aminobiphenyl</td>
<td>(P) ppm</td>
<td>(P) 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 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.
Safety Data Sheet
according to WHS Regulations

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

- 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.
### 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**
    - **LD/LC50 values relevant for classification:**
      - **ATE (Acute Toxicity Estimates)**
        - Oral LD50 1,499 mg/kg
        - Dermal LD50 >1,928 mg/kg
        - Inhalative LC50/4 h 24.3 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)
      - 122-39-4 diphenylamine
        - Oral LD50 1,120 mg/kg (rat)
48.1.26

<table>
<thead>
<tr>
<th>Substance</th>
<th>Oral LD50</th>
<th>Inhalative LC50/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>91-59-8 2-naphthylamine</td>
<td>727 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>106-50-3 p-phenylenediamine</td>
<td>80 mg/kg (rat)</td>
<td>0.92 mg/L (rat)</td>
</tr>
<tr>
<td>62-44-2 phenacetin</td>
<td>1,650 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>95-53-4 o-toluidine</td>
<td>900 mg/kg (rat)</td>
<td>3,244 mg/kg (rabbit)</td>
</tr>
<tr>
<td>92-67-1 4-aminobiphenyl</td>
<td>500 mg/kg (rat)</td>
<td></td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - Skin corrosion/irritation: Irritant to skin and mucous membranes.
  - Serious eye damage/irritation: Irritating effect.
  - Respiratory or skin sensitisation: No sensitising effects known.
- Additional toxicological information:
  - The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
    - Harmful
    - Irritant
  - CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
    - Care. 1A

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

### 14 Transport information

- **Not Regulated, De minimus Quantities**
- **UN-Number**
  - ADG, IMDG, IATA UN1593
- **UN proper shipping name**
  - ADG 1593 DICHLOROMETHANE
  - IMDG, IATA DICHLOROMETHANE
- **Transport hazard class(es)**
  - ADG, 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>

- **Packing group**
  - ADG, IMDG, IATA III
- **Environmental hazards:**
  - Not applicable.
- **Special precautions for user**
  - Warning: Toxic substances.
  - 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:**
  - **ADG**
    - 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
Safety Data Sheet
according to WHS Regulations

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

- 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

- Australian Inventory of Chemical Substances
  - 75-09-2 dichloromethane
  - 53-96-3 2-acetylaminofluorene
  - 60-11-7 4-dimethylaminoazobenzene
  - 91-94-1 3,3'-dichlorobenzidine
  - 119-93-7 4,4'-bi-o-toluidine
  - 122-09-8 alpha,alpha-dimethylphenethylamine
  - 122-39-4 diphenylamine
  - 134-32-7 1-naphthylamine
  - 99-55-8 5-nitro-o-toluidine
  - 106-50-3 p-phenylenediamine
  - 62-44-2 phenacetin
  - 95-53-4 o-toluidine

- Standard for the Uniform Scheduling of Medicines and Poisons
  - 75-09-2 dichloromethane S5
  - 60-11-7 4-dimethylaminoazobenzene S7
  - 119-93-7 4,4'-bi-o-toluidine S7
  - 91-59-8 2-naphthylamine S7
  - 99-55-8 5-nitro-o-toluidine S7
  - 106-50-3 p-phenylenediamine S6, S10
  - 62-44-2 phenacetin S4
  - 95-53-4 o-toluidine S7, S10

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.

- 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.

(Contd. on page 11)
Safety Data Sheet
according to WHS Regulations

Printing date 31.03.2019
Version number 3
Revision: 31.03.2019

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

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
  H227 Combustible liquid.
  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.
  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.

- 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
  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
  Flamm. Liq. 4: Flammable liquids – Category 4
  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
  Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  Skin Sens. 1: Skin sensitisation – Category 1
  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 2: Specific target organ toxicity (repeated exposure) – Category 2

* Data compared to the previous version altered.

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

· 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

· Details of the supplier of the safety data sheet

· Manufacturer/Supplier:
  Agilent Technologies Australia Pty Ltd
  679 Springvale Road
  Mulgrave
  Victoria 3170, Australia

· Further information obtainable from:
  Telephone: 1800 802 402
  e-mail: pdl-mds_author@agilent.com
  Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

· Classification of the substance or mixture

  skull and crossbones

  Acute Tox. 3  H311  Toxic in contact with skin.

  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.

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

· Label elements

· GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).
· Hazard pictograms

  GHS06  GHS08

(Contd. on page 2)
Signal word Danger

Hazard-determining components of labelling:
dichloromethane
1,3-dinitrobenzene
2,4-dinitrotoluene
ethyl methanesulfonate

Hazard statements
Harmful if swallowed.
Toxic in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May cause genetic defects.
May cause cancer.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Use personal protective equipment as required.
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.
IF ON SKIN: Wash with plenty of water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
Specific measures (see on this label).
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Remove/Take off immediately all contaminated clothing.
Wash contaminated clothing before reuse.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
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 and Information on Ingredients

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

**Dangerous components:**

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Substance</th>
<th>% Concentration</th>
<th>Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
<td>98.0396%</td>
<td>STOT RE 2, H373; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335</td>
</tr>
<tr>
<td>62-50-0</td>
<td>ethyl methanesulfonate</td>
<td>0.151%</td>
<td>Muta. 1A, H340; Carc. 2, H351; Acute Tox. 4, H302</td>
</tr>
<tr>
<td>121-14-2</td>
<td>2,4-dinitrotoluene</td>
<td>0.151%</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Muta. 2, H341; Carc. 1B, H350; Repr. 2, H361; STOT RE 2, H373</td>
</tr>
<tr>
<td>606-20-2</td>
<td>2,6-dinitrotoluene</td>
<td>0.151%</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Muta. 2, H341; Carc. 1B, H350; Repr. 2, H361; STOT RE 2, H373</td>
</tr>
<tr>
<td>130-15-4</td>
<td>1,4-naphthoquinone</td>
<td>0.151%</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335</td>
</tr>
<tr>
<td>98-95-3</td>
<td>nitrobenzene</td>
<td>0.151%</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Carc. 2, H351; Repr. 1B, H360; STOT RE 1, H372; Flam. Liq. 4, H227</td>
</tr>
<tr>
<td>82-68-8</td>
<td>quintozene (ISO)</td>
<td>0.151%</td>
<td>Resp. Sens. 1, H334; Acute Tox. 4, H302; Skin Sens. 1, H317</td>
</tr>
<tr>
<td>94-59-7</td>
<td>safrole</td>
<td>0.151%</td>
<td>Muta. 2, H341; Carc. 1B, H350; Acute Tox. 4, H302</td>
</tr>
<tr>
<td>78-59-1</td>
<td>3,5,5-trimethylcyclohex-2-enone</td>
<td>0.151%</td>
<td>Carc. 2, H351; Acute Tox. 4, H302; Acute Tox. 4, H312; Eye Irrit. 2, H319; STOT SE 3, H335</td>
</tr>
</tbody>
</table>

**SVHC**

- 121-14-2 2,4-dinitrotoluene
- 98-95-3 nitrobenzene

**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.
  **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.

(Contd. on page 4)
5 Fire Fighting 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 and 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>CAS Number</th>
<th>NES Long-term value</th>
<th>WES Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>174 mg/m³, 50 ppm</td>
<td>174 mg/m³, 50 ppm</td>
</tr>
<tr>
<td>98-95-3</td>
<td>5 mg/m³, 1 ppm</td>
<td>5 mg/m³, 1 ppm</td>
</tr>
<tr>
<td>82-68-8</td>
<td>0.5 mg/m³</td>
<td>0.5 mg/m³</td>
</tr>
<tr>
<td>78-59-1</td>
<td>Peak limitation: 28 mg/m³, 5 ppm</td>
<td>Peak limitation: 28 mg/m³, 5 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 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
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 at 20 °C: 0.43 mPas

(Contd. on page 7)
48.1.26

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
  - LD/LC50 values relevant for classification:
    ATE (Acute Toxicity Estimates)
    
    | Route     | LD50     | LC50/4 h |
    |-----------|----------|----------|
    | Oral      | 1,495 mg/kg (rat) | 55 mg/L |
    | Dermal    | >902 mg/kg |          |
    | Inhalative|          |          |

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

    62-50-0 ethyl methanesulfonate
    
    | Route     | LD50     | LC50/4 h |
    |-----------|----------|----------|
    | Oral      | 470 mg/kg (mouse) |          |

    99-65-0 1,3-dinitrobenzene
    
    | Route     | LD50     | LC50/4 h |
    |-----------|----------|----------|
    | Oral      | 83 mg/kg (rat) |          |

    121-14-2 2,4-dinitrotoluene
    
    | Route     | LD50     | LC50/4 h |
    |-----------|----------|----------|
    | Oral      | 268 mg/kg (rat) |          |

    606-20-2 2,6-dinitrotoluene
    
    | Route     | LD50     | LC50/4 h |
    |-----------|----------|----------|
    | Oral      | 177 mg/kg (rat) |          |

    130-15-4 1,4-naphthoquinone
    
    | Route     | LD50     | LC50/4 h |
    |-----------|----------|----------|
    | Oral      | 190 mg/kg (rat) |          |
    | Inhalative| 46 mg/L (rat) |          |
### Safety Data Sheet according to WHS Regulations

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

#### 98-95-3 nitrobenzene

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>390 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>2,100 mg/kg (rat)</td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h</td>
<td>556 mg/L (rat)</td>
</tr>
</tbody>
</table>

#### 82-68-8 quintozene (ISO)

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>1,100 mg/kg (rat)</td>
</tr>
</tbody>
</table>

#### 99-35-4 1,3,5-trinitrobenzene

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>275 mg/kg (rat)</td>
</tr>
</tbody>
</table>

#### 94-59-7 safrole

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>1,950 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>&gt;5,000 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

#### 78-59-1 3,5,5-trimethylcyclohex-2-enone

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>1,870 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>1,200 mg/kg (rabbit)</td>
</tr>
<tr>
<td>Inhalative</td>
<td>LC50/4 h</td>
<td>7,000 mg/L (rat)</td>
</tr>
</tbody>
</table>

*Primary irritant effect:*
- Skin corrosion/irritation: Irritant to skin and mucous membranes.
- Serious eye damage/irritation: Irritating effect.
- Respiratory or skin sensitisation: No sensitising effects known.

*Additional toxicological information:*
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
- Toxic
- Harmful
- Irritant

*CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)*
- Muta. 1A, Carc. 1B

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

**14 Transport information**

- **Not Regulated, De minimus Quantities**
- **UN-Number**
  - ADG, IMDG, IATA: UN1593
- **UN proper shipping name**
  - ADG: 1593 DICHLOROMETHANE
  - IMDG: DICHLOROMETHANE, MARINE POLLUTANT
  - IATA: DICHLOROMETHANE
- **Transport hazard class(es)**
  - ADG, 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>

- **IMDG**

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

- **Packing group**
  - ADG, IMDG, IATA: III
- **Environmental hazards**:
- **Marine pollutant**: 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
Trade name: Base/Neutrals Standard (1X1 mL)

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

· Transport/Additional information:
  · ADG
    · 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 DICHLOOROMETHANE, 6.1, III

15 Regulatory information

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

  · Australian Inventory of Chemical Substances
    75-09-2 dichloromethane
    62-50-0 ethyl methanesulfonate
    120-58-1 isosafrole
    66-27-3 methyl methanesulfonate
    99-65-0 1,3-dinitrobenzene
    121-14-2 2,4-dinitrotoluene
    606-20-2 2,6-dinitrotoluene
    130-15-4 1,4-naphthoquinone
    98-95-3 nitrobenzene
    82-68-8 quintozene (ISO)
    98-86-2 acetophenone
    94-59-7 safrole
    78-59-1 3,5,5-trimethylcyclohex-2-enone

  · Standard for the Uniform Scheduling of Medicines and Poisons
    75-09-2 dichloromethane S5
    98-95-3 nitrobenzene S6
    82-68-8 quintozene (ISO) S5
    98-86-2 acetophenone S5
    94-59-7 safrole S6, S10
    78-59-1 3,5,5-trimethylcyclohex-2-enone S5
· Directive 2012/18/EU
· Named dangerous substances - ANNEX I None of the ingredients is listed.
· 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
    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
  H227 Combustible liquid.
  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.
  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.
  H360 May damage fertility or the unborn child.
  H361 Suspected of damaging fertility or the unborn child.
  H372 Causes damage to organs through prolonged or repeated exposure.
  H373 May cause damage to organs through prolonged or repeated exposure.

· 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
  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
<table>
<thead>
<tr>
<th>LD50: Lethal dose, 50 percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBT: Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>SVHC: Substances of Very High Concern</td>
</tr>
<tr>
<td>vPvB: very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>Flam. Liq. 4: Flammable liquids – Category 4</td>
</tr>
<tr>
<td>Acute Tox. 3: Acute toxicity – Category 3</td>
</tr>
<tr>
<td>Acute Tox. 4: Acute toxicity – Category 4</td>
</tr>
<tr>
<td>Skin Irrit. 2: Skin corrosion/irritation – Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2: Serious eye damage/eye irritation – Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A</td>
</tr>
<tr>
<td>Resp. Sens. 1: Respiratory sensitisation – Category 1</td>
</tr>
<tr>
<td>Skin Sens. 1: Skin sensitisation – Category 1</td>
</tr>
<tr>
<td>Muta. 1A: Germ cell mutagenicity – Category 1A</td>
</tr>
<tr>
<td>Muta. 2: Germ cell mutagenicity – Category 2</td>
</tr>
<tr>
<td>Carc. 1B: Carcinogenicity – Category 1B</td>
</tr>
<tr>
<td>Carc. 2: Carcinogenicity – Category 2</td>
</tr>
<tr>
<td>Repr. 1B: Reproductive toxicity – Category 1B</td>
</tr>
<tr>
<td>Repr. 2: Reproductive toxicity – Category 2</td>
</tr>
<tr>
<td>STOT SE 3: Specific target organ toxicity (single exposure) – Category 3</td>
</tr>
<tr>
<td>STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1</td>
</tr>
<tr>
<td>STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2</td>
</tr>
</tbody>
</table>

* Data compared to the previous version altered.
1 Identification

· 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 Australia Pty Ltd
    679 Springvale Road
    Mulgrave
    Victoria 3170, Australia
  · Further information obtainable from:
    Telephone: 1800 802 402
    e-mail: pdl-msds_author@agilent.com
  · Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

· Classification of the substance or mixture

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

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

  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.

  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2A H319 Causes serious eye irritation.
  STOT SE 3 H335 May cause respiratory irritation.

· Label elements
  · GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).
Trade name: PAH Standard (1X1 mL)

- **Hazard pictograms**
  
  GHS02  GHS06  GHS08

- **Signal word** Danger

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

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

- **Precautionary statements**
  If medical advice is needed, have product container or label at hand.
  Keep out of reach of children.
  Read label before use.
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  Ground/bond container and receiving equipment.
  Use explosion-proof electrical/ventilating/lighting equipment.
  Use only non-sparking tools.
  Take precautionary measures against static discharge.
  Do not breathe dust/fume/gas/mist/vapours/spray.
  Do not get in eyes, on skin, or on clothing.
  Wash thoroughly after handling.
  Do not eat, drink or smoke when using this product.
  Use only outdoors or in a well-ventilated area.
  Wear protective gloves/protective clothing/eye protection/face protection.
  Use personal protective equipment as required.
  IF SWALLOWED: Immediately call a POISON CENTER/doctor.
  Do NOT induce vomiting.
  IF ON SKIN: Gently wash with plenty of soap and water.
  IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  IF exposed or concerned: Get medical advice/attention.
  Call a POISON CENTER/doctor if you feel unwell.
  Get medical advice/attention if you feel unwell.
  Specific measures (see on this label).
3 Composition and Information on Ingredients

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

<table>
<thead>
<tr>
<th>Chemicals</th>
<th>Concentration</th>
<th>H-Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-43-2 benzene</td>
<td>49.818%</td>
<td>Flammable, Liq. 2, H225; Acute Tox. 1, H310; Mutagen. 1B, H340; Carc. 1A, H350; STOT RE 1, H372; Asp. Tox. 1, H304; Skin Irrit. 2, H315; Eye Irrit. 2, H319</td>
</tr>
<tr>
<td>75-09-2 dichloromethane</td>
<td>49.818%</td>
<td>STOT RE 2, H373; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335</td>
</tr>
<tr>
<td>56-49-5 3-methylcholanthrene</td>
<td>0.182%</td>
<td>Carc. 1A, H350</td>
</tr>
<tr>
<td>57-97-6 7,12-dimethylbenz[a]anthracene</td>
<td>0.182%</td>
<td>Carc. 1A, H350; Acute Tox. 4, H302</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.
- **Indication of any immediate medical attention and special treatment needed**
  No further relevant information available.
5 Fire Fighting 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.
  - Specific end use(s) No further relevant information available.
8 Exposure controls and 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>CAS Number</th>
<th>Ingredient</th>
<th>NES Long-term value</th>
<th>WES Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-43-2</td>
<td>benzene</td>
<td>3.2 mg/m³, 1 ppm</td>
<td>3.2 mg/m³, 1 ppm</td>
</tr>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
<td>174 mg/m³, 50 ppm</td>
<td>174 mg/m³, 50 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 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:

Tightly sealed goggles
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.

- Explosive properties:
  - Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

  - Explosion limits:
    - Lower: 1.2 Vol %
    - Upper: 22 Vol %

  - Vapour pressure at 20 °C: 360 hPa

  - Density: Not determined.
    - 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: Not determined.
    - Kinematic: Not determined.

  - Solvent content:
    - Organic solvents: 99.6 %
    - 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.
11 Toxicological Information

- 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

**LD/LC50 values relevant for classification:**

<table>
<thead>
<tr>
<th>ATE (Acute Toxicity Estimates)</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>2,171 mg/kg (rat)</td>
<td>&gt;94.1 mg/kg</td>
<td>177 mg/L (rat)</td>
</tr>
<tr>
<td>75-09-2 dichloromethane</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>57-97-6 7,12-dimethylbenz[a]anthracene</td>
<td>1,600 mg/kg (rat)</td>
<td>&gt;2,000 mg/kg (rat)</td>
<td>88 mg/L (rat)</td>
</tr>
</tbody>
</table>

**71-43-2 benzene**

- **Oral LD50**: 2,171 mg/kg (rat)
- **Dermal LD50**: >94.1 mg/kg
- **Inhalative LC50/4 h**: 177 mg/L (rat)

**75-09-2 dichloromethane**

- **Oral LD50**: 3,340 mg/kg (rat)
- **Dermal LD50**: 48 mg/kg (mouse)
- **Inhalative LC50/4 h**: >8,260 mg/kg (rabbit)

**57-97-6 7,12-dimethylbenz[a]anthracene**

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

**Primary irritant effect:**

- **Skin corrosion/irritation**: Irritant to skin and mucous membranes.
- **Serious eye damage/irritation**: Irritating effect.
- **Respiratory or skin sensitisation**: No sensitising effects known.

**Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

- **Irritant**
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
  - Muta. 1B, Carc. 1A

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.
**Trade name:** PAH Standard (1X1 mL)  

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

## 14 Transport information

- **Not Regulated, De minimus Quantities**

<table>
<thead>
<tr>
<th><strong>UN-Number</strong></th>
<th><strong>ADG, IMDG, IATA</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UN1992</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>UN proper shipping name</strong></th>
<th><strong>ADG</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE)</td>
<td>3 Flammable liquids.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>IMDG, IATA</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Transport hazard class(es)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADG</strong></td>
</tr>
<tr>
<td>![Flammable symbol]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Class</strong></th>
<th><strong>Label</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3 Flammable liquids.</td>
<td>3+6.1</td>
</tr>
</tbody>
</table>

(Contd. on page 9)
### 48.1.26

- **Label**: 3/6.1
- **IATA**: Class 3 Flammable liquids.
- **Label**: 3 (6.1)
- **Packing group**: ADG, IMDG, IATA II
- **Environmental hazards**: Not applicable.
- **Special precautions for user**: Warning: Flammable liquids.
- **Danger code (Kemler)**: 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.
- **Transport/Additional information**:
  - **ADG**
    - **Limited quantities (LQ)**: 1L Code: E2
    - **Excepted quantities (EQ)**: 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 Code: E2
    - **Excepted quantities (EQ)**: 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

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Australian Inventory of Chemical Substances**
    - 71-43-2 benzene
    - 75-09-2 dichloromethane
  - **Standard for the Uniform Scheduling of Medicines and Poisons**
    - 71-43-2 benzene S7
    - 75-09-2 dichloromethane S5
Trade name: PAH Standard (1X1 mL)

- 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

- 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.
  - H372 Causes damage to organs through prolonged or repeated exposure.
  - H373 May cause damage to organs through prolonged or repeated exposure.

- 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
  - 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
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Trade name: PAH Standard (1X1 mL)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muta. 1B</td>
<td>Germ cell mutagenicity – Category 1B</td>
</tr>
<tr>
<td>Carc. 1A</td>
<td>Carcinogenicity – Category 1A</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) – Category 3</td>
</tr>
<tr>
<td>STOT RE 1</td>
<td>Specific target organ toxicity (repeated exposure) – Category 1</td>
</tr>
<tr>
<td>STOT RE 2</td>
<td>Specific target organ toxicity (repeated exposure) – Category 2</td>
</tr>
<tr>
<td>Asp. Tox. 1</td>
<td>Aspiration hazard – Category 1</td>
</tr>
</tbody>
</table>
1 Identification

· 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 Australia Pty Ltd
    679 Springvale Road
    Mulgrave
    Victoria 3170, Australia

· Further information obtainable from:
  Telephone: 1800 802 402
e-mail: pdl-mds_author@agilent.com
  · Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

· Classification of the substance or mixture
  health hazard
  
  STOT RE 2  H373  May cause damage to organs through prolonged or repeated exposure.
  
  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. 2A  H319  Causes serious eye irritation.
  STOT SE 3  H335  May cause respiratory irritation.

· Label elements
  · GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).
  · Hazard pictograms

  GH507  GH508

· Signal word Warning

· Hazard-determining components of labelling:
  dichloromethane
  o-cresol
  m-cresol
  p-cresol

(Contd. on page 2)
Hazard statements
Harmful if swallowed.
Harmful in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a POISON CENTER/doctor if you feel unwell.
Rinse mouth.
If on skin: Wash with plenty of water.
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Get medical advice/attention if you feel unwell.
Specific measures (see on this label).
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
Wash contaminated clothing before reuse.
Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
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 and Information on Ingredients
- Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

<table>
<thead>
<tr>
<th>Dangerous components:</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
</tr>
<tr>
<td>88-85-7</td>
</tr>
</tbody>
</table>

SVHC
- 88-85-7 | dinoseb | (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 Fire Fighting 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.
    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 and 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>NES Long-term value: 174 mg/m³, 50 ppm</td>
</tr>
<tr>
<td>Sk</td>
</tr>
<tr>
<td>WES Long-term value: 174 mg/m³, 50 ppm</td>
</tr>
<tr>
<td>Sk</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, 11-13mil thickness
  For direct contact with the chemical: butyl rubber, 12-15mil thickness
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.
Safety Data Sheet
according to WHS Regulations

Trade name: Phenols Standard (1X1 mL)

| Kinematic: | Not determined. |
| Solvent content: | Organic solvents: 99.1% | VOC (EC) 99.10% |
| 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
· LD/LC50 values relevant for classification:

| ATE (Acute Toxicity Estimates) |
| Oral | LD50 | 1,360 mg/kg (rat) |
| Dermal | LD50 | >1,925 mg/kg |
| Inhalative | LC50/4 h | 85.3 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) |

| 70-30-4 2,2'-methylenebis-(3,4,6-tri-chlorophenol) |
| Oral | LD50 | 60 mg/kg (rat) |
| Inhalative | LC50/4 h | 340 mg/L (rat) |

| 58-90-2 2,3,4,6-tetrachlorophenol |
| Oral | LD50 | 140 mg/kg (rat) |
| Dermal | LD50 | 250 mg/kg (rabbit) |

| 95-95-4 2,4,5-trichlorophenol |
| Oral | LD50 | 820 mg/kg (rat) |

| 88-85-7 dinoseb |
| Oral | LD50 | 27 mg/kg (rat) |
| Dermal | LD50 | 217.5 mg/kg (rat) |
Trade name: Phenols Standard (1X1 mL)

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.

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

14 Transport information

- **Not Regulated, De minimus Quantities**
- **UN-Number**
  - **ADG, IMDG, IATA**: UN1593
- **UN proper shipping name**
  - **ADG**: 1593 DICHLOROMETHANE
  - **IMDG, IATA**: DICHLOROMETHANE
### 48.1.26

#### Transport hazard class(es)
- ADG, IMDG, IATA

#### Class
- 6.1 Toxic substances.

#### Label
- 6.1

#### Packing group
- ADG, 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.

### 15 Regulatory information

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

**Australian Inventory of Chemical Substances**

<table>
<thead>
<tr>
<th>Australian Inventory Number</th>
<th>Chemical Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
</tr>
<tr>
<td>95-48-7</td>
<td>o-cresol</td>
</tr>
<tr>
<td>108-39-4</td>
<td>m-cresol</td>
</tr>
<tr>
<td>106-44-5</td>
<td>p-cresol</td>
</tr>
<tr>
<td>70-30-4</td>
<td>2,2'-methylenebis-(3,4,6-tri-chlorophenol)</td>
</tr>
</tbody>
</table>
Trade name: Phenols Standard (1X1 mL)

- **Standard for the Uniform Scheduling of Medicines and Poisons**
  - 75-09-2 dichloromethane, S5
  - 70-30-4 2,2'-methylenebis-(3,4,6-tri-chlorophenol), S2, S4, S6
  - 95-95-4 2,4,5-trichlorophenol, S6
  - 88-85-7 dinoseb, S7

- **Directive 2012/18/EU**
  - **Named dangerous substances - ANNEX I** None of the ingredients is listed.

- **National regulations:**

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

- **Substances of very high concern (SVHC) according to REACH, Article 57**
  - 88-85-7 dinoseb

- **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.
  - H319 Causes serious eye irritation.
  - H335 May cause respiratory irritation.
  - H360 May damage fertility or the unborn child.
  - H373 May cause damage to organs through prolonged or repeated exposure.

- **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
  - 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 Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  - 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 |
### 1 Identification

- **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 Australia Pty Ltd
    - 679 Springvale Road
    - Mulgrave
    - Victoria 3170, Australia
  - **Further information obtainable from:**
    - Telephone: 1800 802 402
    - e-mail: pdl-mds_author@agilent.com
    - **Emergency telephone number:** CHEMTREC®: +(61) - 290372994

### 2 Hazard(s) Identification

#### Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STOT RE 2</td>
<td>H373 May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
</tbody>
</table>

- **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. 2A H319** Causes serious eye irritation.
- **STOT SE 3 H335** May cause respiratory irritation.

#### Label elements

- **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).

#### Hazard pictograms

- GHS07
- GHS08

- **Signal word** Warning

- **Hazard-determining components of labelling:**
  - dichloromethane
  - isodrin
  - chlordecone (ISO)

- **Hazard statements** Harmful if swallowed.

(Contd. on page 2)
48.1.26 Harmful in contact with skin.  
Causes skin irritation.  
Causes serious eye irritation.  
May cause respiratory irritation.  
May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements**
- If medical advice is needed, have product container or label at hand.  
- Keep out of reach of children.  
- Read label before use.  
- Do not breathe dust/fume/gas/mist/vapours/spray.  
- Wash thoroughly after handling.  
- Do not eat, drink or smoke when using this product.  
- Use only outdoors or in a well-ventilated area.  
- Wear protective gloves/protective clothing/eye protection/face protection.  
- IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
- Rinse mouth.  
- IF ON SKIN: Wash with plenty of water.  
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
- Get medical advice/attention if you feel unwell.  
- Specific measures (see on this label).  
- If skin irritation occurs: Get medical advice/attention.  
- If eye irritation persists: Get medical advice/attention.  
- Take off contaminated clothing and wash before reuse.  
- Wash contaminated clothing before reuse.  
- Store in a well-ventilated place. Keep container tightly closed.  
- Store locked up.  
- 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 and Information on Ingredients

**Chemical characterisation:** Mixtures

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

**Dangerous components:**

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS Number</th>
<th>Chemical Name</th>
<th>Hazard Class</th>
<th>Mass Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2</td>
<td>dichloromethane</td>
<td>99.095%</td>
<td>STOT RE 2, H373; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335</td>
<td></td>
</tr>
<tr>
<td>143-50-0</td>
<td>chlordecone (ISO)</td>
<td>0.151%</td>
<td>Acute Tox. 3, H301; Acute Tox. 3, H311; Carc. 2, H351</td>
<td></td>
</tr>
<tr>
<td>23950-58-5</td>
<td>propyzamide (ISO)</td>
<td>0.151%</td>
<td>Carc. 2, H351</td>
<td></td>
</tr>
<tr>
<td>2303-16-4</td>
<td>di-allate (ISO)</td>
<td>0.151%</td>
<td>Carc. 2, H351; Acute Tox. 4, H302; Flam. Liq. 4, H227</td>
<td></td>
</tr>
</tbody>
</table>
48.1.26

· 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 Fire Fighting 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.

(Contd. on page 4)
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 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 and 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>NES</td>
</tr>
<tr>
<td>Sk</td>
</tr>
<tr>
<td>WES</td>
</tr>
<tr>
<td>Sk</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
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.
## 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

### 11.1 Information on toxicological effects

### 11.1.1 Acute toxicity

<table>
<thead>
<tr>
<th>Substance</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalative LC50/4h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ATE (Acute Toxicity Estimates)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>1,175 mg/kg (rat)</td>
<td>&gt;1,769 mg/kg</td>
<td>70 mg/L</td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>75-09-2 dichloromethane</strong></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><strong>510-15-6 chlorobenzilate (ISO)</strong></td>
<td>700 mg/kg (rat)</td>
<td>&gt;1,000 mg/kg (rabbit)</td>
<td></td>
</tr>
<tr>
<td><strong>143-50-0 chlordecone (ISO)</strong></td>
<td>91.3 mg/kg (rat)</td>
<td>475 mg/kg (rat)</td>
<td>345 mg/kg (rabbit)</td>
</tr>
<tr>
<td><strong>465-73-6 isodrin</strong></td>
<td>7 mg/kg (rat)</td>
<td>23 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td><strong>23950-58-5 propyzamide (ISO)</strong></td>
<td>3,350 mg/kg (rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Trade name: Pesticides Standard (1X1 mL)

<table>
<thead>
<tr>
<th>2303-16-4 di-allate (ISO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - Skin corrosion/irritation Irritant to skin and mucous membranes.
  - Serious eye damage/irritation Irritating effect.
  - Respiratory or skin sensitisation No sensitising effects known.

- Additional toxicological information:
  The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
  Harmful
  Irritant

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.

- 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.

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

14 Transport information

- Not Regulated, De minimus Quantities
<table>
<thead>
<tr>
<th><strong>Trade name:</strong> Pesticides Standard (1X1 mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UN-Number</strong></td>
</tr>
<tr>
<td><strong>ADG, IMDG, IATA</strong></td>
</tr>
<tr>
<td><strong>IMDG</strong></td>
</tr>
<tr>
<td><strong>IATA</strong></td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
</tr>
<tr>
<td><strong>Class</strong></td>
</tr>
<tr>
<td><strong>Label</strong></td>
</tr>
<tr>
<td><strong>IATA</strong></td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
</tr>
<tr>
<td><strong>ADG, IMDG, IATA</strong></td>
</tr>
<tr>
<td><strong>Marine pollutant:</strong></td>
</tr>
<tr>
<td><strong>Special marking (ADG):</strong></td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
</tr>
<tr>
<td><strong>Danger code (Kemler):</strong></td>
</tr>
<tr>
<td><strong>EMS Number:</strong></td>
</tr>
<tr>
<td><strong>Segregation groups</strong></td>
</tr>
<tr>
<td><strong>Stowage Category</strong></td>
</tr>
<tr>
<td><strong>Transport in bulk according to Annex II of Marpol and the IBC Code</strong></td>
</tr>
<tr>
<td><strong>Transport/Additional information:</strong></td>
</tr>
<tr>
<td><strong>ADG</strong></td>
</tr>
<tr>
<td><strong>Limited quantities (LQ)</strong></td>
</tr>
<tr>
<td><strong>Code:</strong> E1</td>
</tr>
<tr>
<td><strong>Excepted quantities (EQ)</strong></td>
</tr>
<tr>
<td><strong>Maximum net quantity per outer packaging:</strong></td>
</tr>
<tr>
<td><strong>Transport category</strong></td>
</tr>
<tr>
<td><strong>Tunnel restriction code</strong></td>
</tr>
</tbody>
</table>
Safety Data Sheet
according to WHS Regulations

Trade name: Pesticides Standard (1X1 mL)

- IMDG
  - Limited quantities (LQ)
  - Exempted 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
  - Australian Inventory of Chemical Substances
    - 75-09-2 dichloromethane
    - 143-50-0 chlordecone (ISO)
    - 23950-58-5 propyzamide (ISO)
    - 2303-16-4 di-allate (ISO)
  - Standard for the Uniform Scheduling of Medicines and Poisons
    - 75-09-2 dichloromethane S5
    - 143-50-0 chlordecone (ISO) S7
    - 23950-58-5 propyzamide (ISO) S5

- 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
  - 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
  - H227 Combustible liquid.
  - H301 Toxic if swallowed.
  - H302 Harmful if swallowed.
  - H311 Toxic in contact with skin.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H335 May cause respiratory irritation.
  - H351 Suspected of causing cancer.
  - H337 May cause damage to organs through prolonged or repeated exposure.

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

(Contd. on page 10)
<table>
<thead>
<tr>
<th>Abbreviations and acronyms:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>IMDG: International Maritime Code for Dangerous Goods</td>
</tr>
<tr>
<td>IATA: International Air Transport Association</td>
</tr>
<tr>
<td>EINECS: European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS: European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>CAS: Chemical Abstracts Service (division of the American Chemical Society)</td>
</tr>
<tr>
<td>VOC: Volatile Organic Compounds (USA, EU)</td>
</tr>
<tr>
<td>LC50: Lethal concentration, 50 percent</td>
</tr>
<tr>
<td>LD50: Lethal dose, 50 percent</td>
</tr>
<tr>
<td>PBT: Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>vPvB: very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>Flam. Liq. 4: Flammable liquids – Category 4</td>
</tr>
<tr>
<td>Acute Tox. 3: Acute toxicity – Category 3</td>
</tr>
<tr>
<td>Acute Tox. 4: Acute toxicity – Category 4</td>
</tr>
<tr>
<td>Skin Irrit. 2: Skin corrosion/irritation – Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A</td>
</tr>
<tr>
<td>Carc. 2: Carcinogenicity – Category 2</td>
</tr>
<tr>
<td>STOT SE 3: Specific target organ toxicity (single exposure) – Category 3</td>
</tr>
<tr>
<td>STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2</td>
</tr>
</tbody>
</table>

* Data compared to the previous version altered.
1 Identification

- **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 Australia Pty Ltd
    679 Springvale Road
    Mulgrave
    Victoria 3170, Australia
  - **Further information obtainable from:**
    Telephone: 1800 802 402
    e-mail: pdl-msds_author@agilent.com
  - **Emergency telephone number:** CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

- **Classification of the substance or mixture**
  
  - **Acute Tox. 3** H301 Toxic if swallowed.
  - **Acute Tox. 3** H311 Toxic in contact with skin.
  
  - **Health hazard**
  
  - **STOT RE 2** H373 May cause damage to organs through prolonged or repeated exposure.
  
  - **Skin Irrit. 2** H315 Causes skin irritation.
  - **Eye Irrit. 2A** H319 Causes serious eye irritation.
  - **STOT SE 3** H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**
  
  - **GHS06**
  - **GHS08**

- **Signal word** Danger

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

(Contd. on page 2)
O,O-diethyl O-pyrazin-2-yl phosphorothioate
parathion -methyl (ISO)
sulfotep (ISO)

- **Hazard statements**
  - Toxic if swallowed.
  - Toxic in contact with skin.
  - Causes skin irritation.
  - Causes serious eye irritation.
  - May cause respiratory irritation.
  - May cause damage to organs through prolonged or repeated exposure.

- **Precautionary statements**
  - If medical advice is needed, have product container or label at hand.
  - Keep out of reach of children.
  - Read label before use.
  - Do not breathe dust/fume/gas/mist/vapours/spray.
  - Wash thoroughly after handling.
  - Do not eat, drink or smoke when using this product.
  - Use only outdoors or in a well-ventilated area.
  - Wear protective gloves/protective clothing/eye protection/face protection.
  - IF SWALLOWED: Immediately call a POISON CENTER/doctor.
  - Rinse mouth.
  - IF ON SKIN: Wash with plenty of water.
  - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
  - Continue rinsing.
  - Call a POISON CENTER/doctor if you feel unwell.
  - Get medical advice/attention if you feel unwell.
  - Specific measures (see on this label).
  - If skin irritation occurs: Get medical advice/attention.
  - If eye irritation persists: Get medical advice/attention.
  - Remove/Take off immediately all contaminated clothing.
  - Wash contaminated clothing before reuse.
  - Store in a well-ventilated place. Keep container tightly closed.
  - Store locked up.
  - 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 and Information on Ingredients

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

- **Dangerous components:**
  - 75-09-2 dichloromethane
    - STOT RE 2, H373; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335 98.643%

- **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.
- 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 Fire Fighting 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.
  Prevent formation of aerosols.
8 Exposure controls and personal protection

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

- **Control parameters**

<table>
<thead>
<tr>
<th>Ingredients with limit values that require monitoring at the workplace:</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</td>
</tr>
<tr>
<td>NES</td>
</tr>
<tr>
<td>Sk</td>
</tr>
<tr>
<td>WES</td>
</tr>
<tr>
<td>Sk</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

(Contd. on page 5)
### 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:** Not determined.
  - **Kinematic:** Not determined.

- **Solvent content:**
  - **Organic solvents:** 99.1 %

(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

<table>
<thead>
<tr>
<th>Substance</th>
<th>Oral LD$_{50}$</th>
<th>Dermal LD$_{50}$</th>
<th>Inhalative LC$_{50}$/4 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-09-2 dichloromethane</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>297-97-2 O,O-diethyl O-pyrazin-2-yl phosphorothioate</td>
<td>3.5 mg/kg (rat)</td>
<td>8 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>3689-24-5 sulfotep (ISO)</td>
<td>5 mg/kg (rat)</td>
<td>20 mg/kg (rat)</td>
<td>38 mg/L (rat)</td>
</tr>
<tr>
<td>298-00-0 parathion -methyl (ISO)</td>
<td>6.01 mg/kg (rat)</td>
<td>67 mg/kg (rat)</td>
<td>300 mg/kg (rabbit)</td>
</tr>
<tr>
<td>298-04-4 disulfoton</td>
<td>2 mg/kg (rat)</td>
<td>20 mg/kg (rat)</td>
<td></td>
</tr>
</tbody>
</table>
48.1.26 56-38-2 parathion (ISO)  
Oral LD50 2 mg/kg (rat)  
Dermal LD50 6.8 mg/kg (rat)  
298-02-2 phorate (ISO)  
Oral LD50 1.6 mg/kg (rat)  
Dermal LD50 2.5 mg/kg (rat)  

Primary irritant effect:  
Skin corrosion/irritation Irritant to skin and mucous membranes.  
Serious eye damage/irritation Irritating effect.  
Respiratory or skin sensitisation No sensitising effects known.  
Additional toxicological information:  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Toxic  
Irritant  

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

14 Transport information  
Not Regulated, De minimus Quantities  

### Trade name: Organophosphorous Pesticides Standard (1X1 mL)

<table>
<thead>
<tr>
<th>· UN-Number</th>
<th>UN1593</th>
</tr>
</thead>
<tbody>
<tr>
<td>· ADG, IMDG, IATA</td>
<td>1593 DICHLOROMETHANE, ENVIRONMENTALLY HAZARDOUS</td>
</tr>
<tr>
<td>· IMDG</td>
<td>DICHLOROMETHANE, MARINE POLLUTANT</td>
</tr>
<tr>
<td>· IATA</td>
<td>DICHLOROMETHANE</td>
</tr>
</tbody>
</table>

#### Transport hazard class(es)

- **ADG, IMDG**
  - Class 6.1 Toxic substances.
  - Label 6.1

- **IATA**
  - Class 6.1 Toxic substances.
  - Label 6.1

#### Packing group

- **ADG, IMDG, IATA** III

#### Environmental hazards:

- **Marine pollutant:** Symbol (fish and tree)
- **Special marking (ADG):** 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:

- **ADG**
  - 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
Trade name: Organophosphorous Pesticides Standard (1X1 mL)

- 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
  - Australian Inventory of Chemical Substances
    | Code   | Substance                        |
    |--------|----------------------------------|
    | 75-09-2| dichloromethane                  |
    | 52-85-7| famphur                          |
    | 298-00-0| parathion -methyl (ISO)          |
    | 298-04-4| disulfoton                       |
    | 60-51-5| dimethoate (ISO)                 |
    | 56-38-2| parathion (ISO)                  |
    | 298-02-2| phorate (ISO)                    |

  - Standard for the Uniform Scheduling of Medicines and Poisons
    | Code   | Substance                        |
    |--------|----------------------------------|
    | 75-09-2| dichloromethane                  |
    | 52-85-7| famphur                          |
    | 3689-24-5| sulfoptep (ISO)                |
    | 298-00-0| parathion -methyl (ISO)          |
    | 298-04-4| disulfoton                       |
    | 60-51-5| dimethoate (ISO)                 |
    | 56-38-2| parathion (ISO)                  |
    | 298-02-2| phorate (ISO)                    |

- 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
  - 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
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

- **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
  - 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
  - Skin Irrit. 2: Skin corrosion/irritation – Category 2
  - Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
  - STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
  - STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
1 Identification

· 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 Australia Pty Ltd
  679 Springvale Road
  Mulgrave
  Victoria 3170, Australia
· Further information obtainable from:
  Telephone: 1800 802 402
  e-mail: pdl-msds_author@agilent.com
· Emergency telephone number: CHEMTREC®: +(61) - 290372994

2 Hazard(s) Identification

· Classification of the substance or mixture

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

  health hazard
  Carc. 1A  H350  May cause cancer.

  Eye Irrit. 2A  H319  Causes serious eye irritation.
  STOT SE 3  H336  May cause drowsiness or dizziness.

· Label elements
· GHS label elements The product is classified and labelled according to the Globally Harmonised System (GHS).
· Hazard pictograms

  GHS02  GHS07  GHS08

· Signal word Danger
· Hazard-determining components of labelling:
  4-Nitroquinoline-1-oxide
· Hazard statements
  Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause cancer.
May cause drowsiness or dizziness.

· **Precautionary statements**
  If medical advice is needed, have product container or label at hand.
  Keep out of reach of children.
  Read label before use.
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  Ground/bond container and receiving equipment.
  Use explosion-proof electrical/ventilating/lighting equipment.
  Use only non-sparking tools.
  Take precautionary measures against static discharge.
  Avoid breathing dust/fume/gas/mist/vapours/spray.
  Wash thoroughly after handling.
  Use only outdoors or in a well-ventilated area.
  Wear protective gloves/protective clothing/eye protection/face protection.
  Use personal protective equipment as required.
  IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  IF exposed or concerned: Get medical advice/attention.
  Call a POISON CENTER/doctor if you feel unwell.
  If eye irritation persists: Get medical advice/attention.
  In case of fire: Use for extinction: CO2, powder or water spray.
  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 and Information on Ingredients

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

#### Dangerous components:

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Substance</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1</td>
<td>Acetone</td>
<td>98.9888%</td>
</tr>
<tr>
<td>56-57-5</td>
<td>4-Nitroquinoline-1-oxide</td>
<td>0.253%</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.
· 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 Fire Fighting 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.
· 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 and personal protection

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

- **Control parameters**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Short-term value</th>
<th>Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>67-64-1 acetone</td>
<td>2375 mg/m³, 1000 ppm</td>
<td>1185 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
### 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 self-igniting.
- **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**
- **Vapour density**
- **Evaporation rate**

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

VOC (EC) | 99.24 %
--- | ---
Solids content: | 0.0 %
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
- LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th>67-64-1 acetone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Dermal LD50</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
- Skin corrosion/irritation: No irritant effect.
- Serious eye damage/irritation: Irritating effect.
- Respiratory or skin sensitisation: No sensitising effects known.
- Additional toxicological information:
  - The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
    - Irritant
  - CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
    - Carc. 1A

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 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.
Trade name: Pyridines Standard (1X1 mL)

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

### 14 Transport information

- **Not Regulated, De minimus Quantities**
- **UN-Number**
  - ADG, IMDG, IATA UN1090
- **UN proper shipping name**
  - ADG 1090 ACETONE
  - IMDG, IATA ACETONE
- **Transport hazard class(es)**
  - ADG, IMDG, IATA
    - Class 3 Flammable liquids.
    - Label 3
- **Packing group**
  - ADG, IMDG, IATA II
- **Environmental hazards:**
  Not applicable.
- **Special precautions for user**
  - Warning: Flammable liquids.
  - Danger code (Kemler): 33
  - EMS Number: F-E,S-D
- **Stowage Category**
  - E
- **Transport in bulk according to Annex II of Marpol and the IBC Code**
  Not applicable.
- **Transport/Additional information:**
  - ADG
    - 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
Trade name: Pyridines Standard (1X1 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, 3, II

15 Regulatory information

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

- Australian Inventory of Chemical Substances
  - 67-64-1 acetone
  - 109-06-8 2-methylpyridine
  - 110-86-1 pyridine

- Standard for the Uniform Scheduling of Medicines and Poisons
  - 67-64-1 acetone S5

- 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

- 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.
  - H350 May cause cancer.

- 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)
Trade name: Pyridines Standard (1X1 mL)

IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
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
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Carc. 1A: Carcinogenicity – Category 1A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3