

Product code	Description
US-121K	EPA Method 8270C Calibration Standards Kit
Components:	
US-104N-1	Toxic Substances Standard (1X1 mL)
US-106N-1	PAH Standard (1X1 mL)
US-107N-1	Phenols Standard (1X1 mL)
US-108N-1	Semi-Volatiles Internal Standard (1X1 mL)
US-110-1	Ethers and Phthalates Standard (1X1 mL)
US-111-1	Chlorinated Hydrocarbons Standard (1X1 mL)
US-112B-1	Organochlorine Pesticides Standard (1X1 mL)
US-113N-1	Nitrosamines Standard (1X1 mL)
US-114-1	Base/Neutrals Standard (1X1 mL)
US-115-1	Base/Neutrals Standard (1X1 mL)
US-116N-1	PAH Standard (1X1 mL)
US-117N-1	Phenols Standard (1X1 mL)
US-118-1	Pesticides Standard (1X1 mL)
US-119-1	Organophosphorous Pesticides Standard (1X1 mL)
US-120AN-1	Pyridines Standard (1X1 mL)

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

1 Identification

- **Product identifier**
- **Trade name:** Toxic Substances Standard (1X1 mL)
- **Part number:** US-104N-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity - Category 1B

H350 May cause cancer.

 Specific Target Organ Toxicity - Repeated Exposure -
 Category 2

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


GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Acute Toxicity (Dermal) – Category 4

H312 Harmful in contact with skin.

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

Skin Sensitizer - Category 1

H317 May cause an allergic skin reaction.

 Specific Target Organ Toxicity - Single Exposure -
 Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS07 GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

 dichloromethane
 4-chloroaniline

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Trade name: Toxic Substances Standard (1X1 mL)

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o-nitroaniline
m-nitroaniline
aniline

· **Hazard statements**

Harmful if swallowed or in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
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.
Contaminated work clothing should not be allowed out of the workplace.
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 person to fresh air and keep 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.
Take off contaminated clothing and wash it before reuse.
Specific measures (see on this label).
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
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.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



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Trade name: Toxic Substances Standard (1X1 mL)

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3 Composition/Information on ingredients

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

· Dangerous components:

75-09-2	dichloromethane	98.794% w/w
106-47-8	4-chloroaniline	0.151% w/w
62-53-3	aniline	0.151% w/w

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

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **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.

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See Section 13 for disposal information.

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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 protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

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

75-09-2 dichloromethane

EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm

106-47-8 4-chloroaniline

EL	IARC 2B
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62-53-3 aniline

EL	Long-term value: 2 ppm Skin
EV	Long-term value: 8 mg/m ³ , 2 ppm Skin

- **Additional information:** The lists that were valid during the creation 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.

- **Breathing equipment:**

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

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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 11-13 mil 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 12-15 mil 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

Color: Colorless

- **Odor:** Like chlorine

- **Odor threshold:** Not determined.

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

- **Change in condition**

Melting point/Melting range: -95.1 °C

Boiling point/Boiling range: 40 °C

- **Flash point:** Not applicable.

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

- **Ignition temperature:** 605 °C

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

Lower: 13 Vol %

Upper: 22 Vol %

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

- **Density at 20 °C:** 1.29731 g/cm³

- **Relative density** Not determined.

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· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water at 20 °C:	20 g/l
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	98.9 %
Solids content:	0.8 %
· Other information	No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
ATE (Acute Toxicity Estimate)		
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)

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Inhalative	LC50/4 h	175 mg/L (mouse)
		3.27 mg/L (rat)

- **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.

- **on the eye:** Irritating effect.

- **Sensitization:** Sensitization possible through skin contact.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

75-09-2	dichloromethane	2A
106-47-8	4-chloroaniline	2B
62-53-3	aniline	3

- **NTP (National Toxicology Program)**

75-09-2	dichloromethane	R
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12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior 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 (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 of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**

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

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14 Transport information

· Not Regulated, De minimus Quantities	-
· UN-Number · DOT, TDG, IMDG, IATA	UN1593
· UN proper shipping name · DOT · TDG · IMDG, IATA	Dichloromethane 1593 DICHLOROMETHANE DICHLOROMETHANE
· Transport hazard class(es) · DOT, TDG, IMDG, IATA	
· Class · Label	6.1 Toxic substances 6.1
· Packing group · DOT, TDG, IMDG, IATA	III
· Environmental hazards:	Not applicable.
· Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups · Stowage Category	Warning: Toxic substances 60 F-A,S-A Liquid halogenated hydrocarbons A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · DOT · Quantity limitations · Hazardous substance:	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L 1000 lbs, 454 kg
· TDG · Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L 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

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15 Regulatory information

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

· Section 355 (extremely hazardous substances):	
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62-53-3	aniline
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· Section 313 (Specific toxic chemical listings):	
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75-09-2	dichloromethane
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132-64-9	dibenzofuran
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100-01-6	p-nitroaniline
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106-47-8	4-chloroaniline
----------	-----------------

62-53-3	aniline
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· TSCA (Toxic Substances Control Act):	
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All ingredients are listed.

· Canadian substance listings:	
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· Canadian Domestic Substances List (DSL)	
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All ingredients are listed.

· Canadian Ingredient Disclosure list (limit 0.1%)	
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75-09-2	dichloromethane
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· Canadian Ingredient Disclosure list (limit 1%)	
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None of the ingredients is listed.

· National regulations:	
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· Information about limitation of use:	
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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.	
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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.

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

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

· Date of the latest revision of the safety data sheet 03/31/2019 / 2	
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· Abbreviations and acronyms:	
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IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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)

NFPA: National Fire Protection Association (USA)
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HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent
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LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic
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vPvB: very Persistent and very Bioaccumulative
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1 Identification

- **Product identifier**
- **Trade name:** PAH Standard (1X1 mL)
- **Part number:** US-106N-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids - Category 2

H225 Highly flammable liquid and vapour.



GHS06 Skull and crossbones

Acute Toxicity (Dermal) – Category 2

H310 Fatal in contact with skin.



GHS08 Health hazard

Germ Cell Mutagenicity - Category 1B

H340 May cause genetic defects.

Carcinogenicity - Category 1A

H350 May cause cancer.

Reproductive Toxicity - Category 1B

H360 May damage fertility or the unborn child.

 Specific Target Organ Toxicity - Repeated Exposure -
 Category 1

 H372 Causes damage to organs through prolonged or
 repeated exposure.

Aspiration Hazard - Category 1

H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

Skin Sensitizer - Category 1

H317 May cause an allergic skin reaction.

 Specific Target Organ Toxicity - Single Exposure -
 Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

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· Hazard pictograms

GHS02 GHS06 GHS07 GHS08

· Signal word Danger**· Hazard-determining components of labeling:**

benzene
dichloromethane
benzo[a]pyrene
dibenz[a,h]anthracene
anthracene
phenanthrene

· Hazard statements

Highly flammable liquid and vapour.
Fatal in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
May damage fertility or the unborn child.
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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Ground and bond container and receiving equipment.
Use explosion-proof [electrical/ventilating/lighting] equipment.
Use non-sparking tools.
Take actions to prevent static discharges.
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.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
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): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.

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Trade name: PAH Standard (1X1 mL)

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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.
 Take off contaminated clothing and wash it before reuse.
 Specific measures (see on this label).
 If skin irritation or rash occurs: Get medical advice/attention.
 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.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



3 Composition/Information on ingredients

· **Chemical characterization: Mixtures**

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

· **Dangerous components:**

75-09-2	dichloromethane	58.52% w/w
71-43-2	benzene	38.572% w/w
86-73-7	fluorene	0.182% w/w
120-12-7	anthracene	0.182% w/w
85-01-8	phenanthrene	0.182% w/w
206-44-0	fluoranthene	0.182% w/w
53-70-3	dibenz[a,h]anthracene	0.182% w/w
193-39-5	indeno[1,2,3-cd]pyrene	0.182% w/w
218-01-9	chrysene	0.182% w/w
207-08-9	benzo[k]fluoranthene	0.182% w/w
205-99-2	benz[e]acephenanthrylene	0.182% w/w
50-32-8	benzo[a]pyrene	0.182% w/w
56-55-3	benz[a]anthracene	0.182% w/w
191-24-2	benzo[ghi]perylene	0.182% w/w
129-00-0	pyrene	0.182% w/w

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91-20-3 naphthalene

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0.182% w/w

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 and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing 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.

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Trade name: PAH Standard (1X1 mL)

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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 protection against explosions and fires:**
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 receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

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

75-09-2 dichloromethane

EL	Long-term value: 25 ppm IARC 2A
----	------------------------------------

EV	Long-term value: 175 mg/m ³ , 50 ppm
----	---

71-43-2 benzene

EL	Short-term value: 2.5 ppm Long-term value: 0.5 ppm Skin; ACGIH A1; IARC 1
----	---

EV	Short-term value: 2.5 ppm Long-term value: 0.5 ppm Skin
----	---

218-01-9 chrysene

EL	IARC 2B
----	---------

205-99-2 benz[e]acephenanthrylene

EL	ACGIH A2; IARC 2B
----	-------------------

50-32-8 benzo[a]pyrene

EL	ACGIH A2; IARC 1
----	------------------

56-55-3 benz[a]anthracene

EL	ACGIH A2; IARC 2B
----	-------------------

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Trade name: PAH Standard (1X1 mL)

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91-20-3 naphthalene

EL	Long-term value: 10 ppm Skin; IARC 2B
EV	Short-term value: 78 mg/m ³ , 15 ppm Long-term value: 52 mg/m ³ , 10 ppm

- **Additional information:** The lists that were valid during the creation 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.
- **Breathing equipment:**
 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 11-13 mil 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 12-15 mil 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
Color:	According to product specification
- **Odor:** Characteristic
- **Odor threshold:** Not determined.
- **pH-value:** Not determined.

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· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	40 °C
· Flash point:	-11 °C
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	555 °C
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· Explosion limits:	
Lower:	1.2 Vol %
Upper:	22 Vol %
· Vapor pressure at 20 °C:	360 hPa
· Density:	Not determined.
· Relative density	Not determined.
· Vapor 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:	97.1 %
Solids content:	2.9 %
· Other information	No further relevant information available.

10 Stability and reactivity

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

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Trade name: PAH Standard (1X1 mL)
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11 Toxicological information

- **Information on toxicological effects**

- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)		
Oral	LD50	2,078 mg/kg (rat)
Dermal	LD50	>120 mg/kg
Inhalative	LC50/4 h	150 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)

71-43-2 benzene		
Oral	LD50	3,340 mg/kg (rat)
Dermal	LD50	48 mg/kg (mouse)
		>8,260 mg/kg (rabbit)
Inhalative	LC50/4 h	9,980 mg/L (mouse)

85-01-8 phenanthrene		
Oral	LD50	700 mg/kg (mouse)

206-44-0 fluoranthene		
Oral	LD50	2,000 mg/kg (rat)
Dermal	LD50	3,180 mg/kg (rabbit)

208-96-8 acenaphthylene		
Oral	LD50	1,760 mg/kg (mouse)

129-00-0 pyrene		
Oral	LD50	2,700 mg/kg (rat)
Inhalative	LC50/4 h	170 mg/L (rat)

91-20-3 naphthalene		
Oral	LD50	490 mg/kg (rat)
Dermal	LD50	5,000 mg/kg (rat)
		20,000 mg/kg (rabbit)

- **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.

- **on the eye:** Irritating effect.

- **Sensitization:** Sensitization possible through skin contact.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

The product can cause inheritable damage.

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· Carcinogenic categories
· IARC (International Agency for Research on Cancer)

75-09-2	dichloromethane	2A
71-43-2	benzene	1
86-73-7	fluorene	3
120-12-7	anthracene	3
85-01-8	phenanthrene	3
206-44-0	fluoranthene	3
83-32-9	acenaphthene	3
53-70-3	dibenz[a,h]anthracene	2A
193-39-5	indeno[1,2,3-cd]pyrene	2B
218-01-9	chrysene	2B
207-08-9	benzo[k]fluoranthene	2B
205-99-2	benz[e]acephenanthrylene	2B
50-32-8	benzo[a]pyrene	1
56-55-3	benz[a]anthracene	2B
191-24-2	benzo[ghi]perylene	3
129-00-0	pyrene	3
91-20-3	naphthalene	2B

· NTP (National Toxicology Program)

75-09-2	dichloromethane	R
71-43-2	benzene	K
86-73-7	fluorene	R
120-12-7	anthracene	R
85-01-8	phenanthrene	R
206-44-0	fluoranthene	R
53-70-3	dibenz[a,h]anthracene	R
193-39-5	indeno[1,2,3-cd]pyrene	R
218-01-9	chrysene	R
207-08-9	benzo[k]fluoranthene	R
205-99-2	benz[e]acephenanthrylene	R
50-32-8	benzo[a]pyrene	R
56-55-3	benz[a]anthracene	R
129-00-0	pyrene	R
91-20-3	naphthalene	R

12 Ecological information

· Toxicity
· Aquatic toxicity: No further relevant information available.

· Persistence and degradability No further relevant information available.

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- **Behavior 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 (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 of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **Not Regulated, De minimus Quantities** -
- **UN-Number**
- **DOT, TDG, IMDG, IATA** UN1992
- **UN proper shipping name**
- **DOT** Flammable liquids, toxic, n.o.s. (Benzene)
- **TDG** 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE), ENVIRONMENTALLY HAZARDOUS
- **IMDG** FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE, fluorene), MARINE POLLUTANT
- **IATA** FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE)
- **Transport hazard class(es)**
- **DOT**
- 

- **Class** 3 Flammable liquids

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Trade name: PAH Standard (1X1 mL)

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 · **Label** 3, 6.1

 · **TDG (Transport dangerous goods):**

 · **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**

 · **DOT, TDG, IMDG, IATA** II

 · **Environmental hazards:** Product contains environmentally hazardous substances:

dibenz[a,h]anthracene

 · **Marine pollutant:** Symbol (fish and tree)

 · **Special marking (TDG):** 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 MARPOL73/78 and the IBC Code** Not applicable.

 · **Transport/Additional information:**

 · **DOT**

 · **Quantity limitations** On passenger aircraft/rail: 1 L

On cargo aircraft only: 60 L

 · **TDG**

 · **Excepted quantities (EQ)** Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

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<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
<ul style="list-style-type: none"> · 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
- Sara

- **Section 355 (extremely hazardous substances):**

129-00-0	pyrene
----------	--------

- **Section 313 (Specific toxic chemical listings):**

75-09-2	dichloromethane
71-43-2	benzene
120-12-7	anthracene
85-01-8	phenanthrene
206-44-0	fluoranthene
53-70-3	dibenz[a,h]anthracene
193-39-5	indeno[1,2,3-cd]pyrene
218-01-9	chrysene
207-08-9	benzo[k]fluoranthene
205-99-2	benz[e]acephenanthrylene
50-32-8	benzo[a]pyrene
56-55-3	benz[a]anthracene
191-24-2	benzo[ghi]perylene
91-20-3	naphthalene

- **TSCA (Toxic Substances Control Act):**

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
208-96-8	acenaphthylene
53-70-3	dibenz[a,h]anthracene
193-39-5	indeno[1,2,3-cd]pyrene
218-01-9	chrysene

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50-32-8	benzo[a]pyrene
56-55-3	benz[a]anthracene
129-00-0	pyrene
91-20-3	naphthalene

· Canadian substance listings:
· Canadian Domestic Substances List (DSL)

75-09-2	dichloromethane
71-43-2	benzene
86-73-7	fluorene
120-12-7	anthracene
85-01-8	phenanthrene
83-32-9	acenaphthene
218-01-9	chrysene
50-32-8	benzo[a]pyrene
129-00-0	pyrene
91-20-3	naphthalene

· Canadian Ingredient Disclosure list (limit 0.1%)

75-09-2	dichloromethane
71-43-2	benzene
53-70-3	dibenz[a,h]anthracene
193-39-5	indeno[1,2,3-cd]pyrene
218-01-9	chrysene
205-99-2	benz[e]acephenanthrylene
50-32-8	benzo[a]pyrene
56-55-3	benz[a]anthracene

· Canadian Ingredient Disclosure list (limit 1%)

None of the ingredients is listed.

· National regulations:
· Additional classification according to Decree on Hazardous Materials:

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.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of the latest revision of the safety data sheet 03/31/2019 / 2

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Trade name: PAH Standard (1X1 mL)

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· Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

· * Data compared to the previous version altered.

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1 Identification

- **Product identifier**
- **Trade name: Phenols Standard (1X1 mL)**
- **Part number:** US-107N-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity - Category 1B

H350 May cause cancer.

Specific Target Organ Toxicity - Repeated Exposure - Category 2

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



GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Acute Toxicity (Dermal) – Category 4

H312 Harmful in contact with skin.

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

Skin Sensitizer - Category 1

H317 May cause an allergic skin reaction.

Specific Target Organ Toxicity - Single Exposure - Category 3

H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07 GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
 dichloromethane
 DNOC

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Trade name: Phenols Standard (1X1 mL)

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2,4-dichlorophenol

2,4-dinitrophenol

chlorocresol

· Hazard statements

Harmful if swallowed or in contact with skin.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

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.

Contaminated work clothing should not be allowed out of the workplace.

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 person to fresh air and keep 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.

Take off contaminated clothing and wash it before reuse.

Specific measures (see on this label).

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

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.

· Classification system:**· NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 0

Reactivity = 0

· HMIS-ratings (scale 0 - 4)

HEALTH 2 Health = *2

FIRE 0 Fire = 0

REACTIVITY 0 Reactivity = 0

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3 Composition/Information on ingredients

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

· Dangerous components:

75-09-2	dichloromethane	98.341% w/w
534-52-1	DNOC	0.151% w/w
87-86-5	pentachlorophenol	0.151% w/w
88-06-2	2,4,6-trichlorophenol	0.151% w/w
59-50-7	chlorocresol	0.151% w/w

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

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **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.

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- **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 protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

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

75-09-2 dichloromethane

EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm

534-52-1 DNOC

EL	Long-term value: 0.2 mg/m ³ Skin
EV	Long-term value: 0.2 mg/m ³ Skin

87-86-5 pentachlorophenol

EL	Long-term value: 0.5 mg/m ³ Skin, IARC 2B
EV	Long-term value: 0.5 mg/m ³ Skin

- **Additional information:** The lists that were valid during the creation 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.

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Store protective clothing separately.
Avoid contact with the eyes and skin.

· **Breathing equipment:**

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 11-13 mil 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 12-15 mil 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
Color:	Colorless
Odor:	Like chlorine
Odor threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range:	-95.1 °C
Boiling point/Boiling range:	40 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 605 °C

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

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Trade name: Phenols Standard (1X1 mL)

(Contd. of page 5)

· Explosion limits:	
Lower:	13 Vol %
Upper:	22 Vol %
· Vapor pressure at 20 °C:	360 hPa
· Density at 20 °C:	1.3 g/cm ³
· Relative density	Not determined.
· Vapor 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 %
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 that are relevant for classification:		
ATE (Acute Toxicity Estimate)		
Oral	LD50	1,019 mg/kg (rat)
Dermal	LD50	>1,909 mg/kg
Inhalative	LC50/4 h	63.7 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)

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Safety Data Sheet

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Trade name: Phenols Standard (1X1 mL)

(Contd. of page 6)

534-52-1 DNOC

Oral	LD50	7 mg/kg (rat)
Dermal	LD50	200 mg/kg (rat)
		1,000 mg/kg (rabbit)

87-86-5 pentachlorophenol

Oral	LD50	27 mg/kg (rat)
Dermal	LD50	96 mg/kg (rat)
Inhalative	LC50/4 h	355 mg/L (rat)

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

Oral	LD50	820 mg/kg (rat)
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59-50-7 chlorocresol

Oral	LD50	1,830 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)

- **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.

- **on the eye:** Irritating effect.

- **Sensitization:** Sensitization possible through skin contact.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

75-09-2	dichloromethane	2A
95-57-8	2-chlorophenol	2B
120-83-2	2,4-dichlorophenol	2B
87-86-5	pentachlorophenol	2B
88-06-2	2,4,6-trichlorophenol	2B
108-95-2	phenol	3

- **NTP (National Toxicology Program)**

75-09-2	dichloromethane	R
87-86-5	pentachlorophenol	R
88-06-2	2,4,6-trichlorophenol	R

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:** No further relevant information available.

- **Persistence and degradability** No further relevant information available.

- **Behavior in environmental systems:**

- **Bioaccumulative potential** No further relevant information available.

- **Mobility in soil** No further relevant information available.

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Trade name: Phenols Standard (1X1 mL)


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- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (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 of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

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

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Trade name: Phenols Standard (1X1 mL)

(Contd. of page 8)

· Transport in bulk according to Annex II of MARPOL/73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· Hazardous substance:	1000 lbs, 454 kg
· TDG	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 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

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

Section 355 (extremely hazardous substances):

534-52-1	DNOC
108-95-2	phenol

Section 313 (Specific toxic chemical listings):

75-09-2	dichloromethane
95-57-8	2-chlorophenol
534-52-1	DNOC
105-67-9	2,4-xylenol
51-28-5	2,4-dinitrophenol
120-83-2	2,4-dichlorophenol
88-75-5	2-nitrophenol
100-02-7	4-nitrophenol
87-86-5	pentachlorophenol
88-06-2	2,4,6-trichlorophenol
108-95-2	phenol

TSCA (Toxic Substances Control Act):

All ingredients are listed.

Canadian substance listings:
Canadian Domestic Substances List (DSL)

75-09-2	dichloromethane
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Trade name: Phenols Standard (1X1 mL)

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95-57-8	2-chlorophenol
534-52-1	DNOC
51-28-5	2,4-dinitrophenol
120-83-2	2,4-dichlorophenol
88-75-5	2-nitrophenol
100-02-7	4-nitrophenol
87-86-5	pentachlorophenol
59-50-7	chlorocresol
108-95-2	phenol

· Canadian Ingredient Disclosure list (limit 0.1%)

75-09-2	dichloromethane
51-28-5	2,4-dinitrophenol

· Canadian Ingredient Disclosure list (limit 1%)

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.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of the latest revision of the safety data sheet 03/31/2019 / 2

· Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 4

Reviewed on 03/31/2019

1 Identification

- **Product identifier**
- **Trade name:** Semi-Volatiles Internal Standard (1X1 mL)
- **Part number:** US-108N-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity - Category 1B

H350 May cause cancer.

 Specific Target Organ Toxicity - Repeated Exposure -
 Category 2

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


GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

 Specific Target Organ Toxicity - Single Exposure -
 Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

dichloromethane

chrysene-d12

- **Hazard statements**

Harmful if swallowed.

Causes skin irritation.

(Contd. on page 2)

Safety Data Sheet according to HPR, Schedule 1

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

(Contd. of page 1)

- 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.
 If swallowed: Call a poison center/doctor if you feel unwell.
 Rinse mouth.
 If on skin: Wash with plenty of water.
 IF INHALED: Remove person to fresh air and keep 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).
 Get medical advice/attention if you feel unwell.
 Take off contaminated clothing and wash it before reuse.
 If skin irritation occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 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.

· **Classification system:**· **NFPA ratings (scale 0 - 4)**· **HMIS-ratings (scale 0 - 4)**

3 Composition/Information on ingredients

- **Chemical characterization: Mixtures**
 · **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

75-09-2	dichloromethane	98.19% w/w
1719-03-5	chrysene-d12	0.302% w/w

(Contd. on page 3)

Safety Data Sheet according to HPR, Schedule 1

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

3855-82-1 | 1,4-dichlorobenzene-d4

(Contd. of page 2)

0.302% w/w

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

* 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

* 6 Accidental release measures

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

* 7 Handling and storage

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

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CA

Safety Data Sheet

according to HPR, Schedule 1

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Version Number 4

Reviewed on 03/31/2019

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

(Contd. of page 3)

- **Information about protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

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

75-09-2 dichloromethane

EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm

- **Additional information:** The lists that were valid during the creation 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.
- **Breathing equipment:**
 - 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 11-13 mil 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 12-15 mil 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

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

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· Eye protection:

Safety glasses



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties
· General Information
· Appearance:

Form:	Fluid
Color:	Colorless
· Odor:	Like chlorine
· Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	-95.1 °C
Boiling point/Boiling range:	40 °C

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 605 °C

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:

Lower:	13 Vol %
Upper:	22 Vol %

· Vapor pressure at 20 °C: 360 hPa

· Density at 20 °C:	1.3 g/cm ³
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.

· Solubility in / Miscibility with
Water at 20 °C: 20 g/l

· Partition coefficient (n-octanol/water): Not determined.

· Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

· Solvent content:
Organic solvents: 98.2 %

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CA

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 4

Reviewed on 03/31/2019

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

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Solids content:	1.8 %
Other information	No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

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:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

75-09-2	dichloromethane	2A
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- **NTP (National Toxicology Program)**

75-09-2	dichloromethane	R
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according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 4

Reviewed on 03/31/2019

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

(Contd. of page 6)


12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior 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 (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 of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

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

(Contd. on page 8)

Safety Data Sheet

according to HPR, Schedule 1

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Version Number 4

Reviewed on 03/31/2019

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

(Contd. of page 7)

· 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 MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· Hazardous substance:	1000 lbs, 454 kg
· TDG	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 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

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

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

75-09-2 | dichloromethane

· TSCA (Toxic Substances Control Act):

75-09-2 | dichloromethane

· Canadian substance listings:
· Canadian Domestic Substances List (DSL)

75-09-2 | dichloromethane

· Canadian Ingredient Disclosure list (limit 0.1%)

75-09-2 | dichloromethane

· Canadian Ingredient Disclosure list (limit 1%)

None of the ingredients is listed.

(Contd. on page 9)

Safety Data Sheet according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 4

Reviewed on 03/31/2019

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

(Contd. of page 8)

- **National regulations:**
- **Additional classification according to Decree on Hazardous Materials:**
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.

- **Department issuing SDS:** Document Control / Regulatory
- **Contact:** regulatory@ultrasci.com
- **Date of the latest revision of the safety data sheet** 03/31/2019 / 3
- **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
- *** Data compared to the previous version altered.**

CA

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

1 Identification

- **Product identifier**
- **Trade name:** Ethers and Phthalates Standard (1X1 mL)
- **Part number:** US-110-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity - Category 1B	H350 May cause cancer.
Reproductive Toxicity - Category 1B	H360 May damage fertility or the unborn child.
Specific Target Organ Toxicity - Repeated Exposure - Category 2	H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Toxicity (Oral) - Category 4	H302 Harmful if swallowed.
Acute Toxicity (Dermal) - Category 4	H312 Harmful in contact with skin.
Skin Irritation - Category 2	H315 Causes skin irritation.
Eye Irritation - Category 2A	H319 Causes serious eye irritation.
Skin Sensitizer - Category 1	H317 May cause an allergic skin reaction.
Specific Target Organ Toxicity - Single Exposure - Category 3	H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07 GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
 dichloromethane

(Contd. on page 2)

Safety Data Sheet according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

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

(Contd. of page 1)

bis(2-chloroethyl) ether
bis(2-chloroethoxy)methane
dibutyl phthalate
4-bromophenyl phenyl ether
4-chlorophenyl phenyl ether

· Hazard statements

Harmful if swallowed or in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause cancer.
May damage fertility or the unborn child.
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.
Contaminated work clothing should not be allowed out of the workplace.
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 person to fresh air and keep 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.
Take off contaminated clothing and wash it before reuse.
Specific measures (see on this label).
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
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.

· Classification system:**· NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

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

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· HMIS-ratings (scale 0 - 4)

HEALTH	2	Health = *2
FIRE	0	Fire = 0
REACTIVITY	0	Reactivity = 0

3 Composition/Information on ingredients

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

· Dangerous components:

75-09-2	dichloromethane	98.341% w/w
111-44-4	bis(2-chloroethyl) ether	0.151% w/w
101-55-3	4-bromophenyl phenyl ether	0.151% w/w
7005-72-3	4-chlorophenyl phenyl ether	0.151% w/w
117-84-0	dioctyl phthalate	0.151% w/w
84-74-2	dibutyl phthalate	0.151% w/w
117-81-7	di-(2-ethylhexyl) phthalate	0.151% w/w
85-68-7	BBP	0.151% w/w

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

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.

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

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- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

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

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
 Ensure good ventilation/exhaustion at the workplace.
 Open and handle receptacle with care.
 Prevent formation of aerosols.
- **Information about protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

 · **Components with limit values that require monitoring at the workplace:**
75-09-2 dichloromethane

EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm

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

EL	Short-term value: 10 ppm Long-term value: 5 ppm Skin
EV	Short-term value: 58 mg/m ³ , 10 ppm Long-term value: 29 mg/m ³ , 5 ppm Skin

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

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117-84-0 dioctyl phthalate	
EL	Long-term value: 5 mg/m ³
84-74-2 dibutyl phthalate	
EL	Long-term value: 5 mg/m ³
	R
EV	Long-term value: 5 mg/m ³
117-81-7 di-(2-ethylhexyl) phthalate	
EL	Long-term value: 5 mg/m ³
	IARC 2B
EV	Short-term value: 5 mg/m ³
	Long-term value: 3 mg/m ³

· **Additional information:** The lists that were valid during the creation 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.

· **Breathing equipment:**

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 11-13 mil 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 12-15 mil 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

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9 Physical and chemical properties

· Information on basic physical and chemical properties	
· General Information	
· Appearance:	
· Form:	Fluid
· Color:	Colorless
· Odor:	Like chlorine
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
· Melting point/Melting range:	-95.1 °C
· Boiling point/Boiling range:	40 °C
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	605 °C
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
· Lower:	13 Vol %
· Upper:	22 Vol %
· Vapor pressure at 20 °C:	360 hPa
· Density at 20 °C:	1.3 g/cm ³
· Relative density	Not determined.
· Vapor 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 %
· 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.

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

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- **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 that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	1,486 mg/kg
Dermal	LD50	>1,967 mg/kg
Inhalative	LC50/4 h	>87.7 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)

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

Oral	LD50	75 mg/kg (rat)
Dermal	LD50	90 mg/kg (rabbit)
Inhalative	LC50/4 h	330 mg/L (rat)

117-84-0 dioctyl phthalate

Oral	LD50	47,000 mg/kg (rat)
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84-74-2 dibutyl phthalate

Oral	LD50	6,300 mg/kg (rat)
Dermal	LD50	>4,000 mg/kg (rabbit)
Inhalative	LC50/4 h	15.68 mg/L (rat)

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

Oral	LD50	>20,000 mg/kg (rat)
Dermal	LD50	4,000 mg/kg (rat) 25,000 mg/kg (rabbit)

85-68-7 BBP

Oral	LD50	2,330 mg/kg (rat)
Dermal	LD50	6,700 mg/kg (rabbit)
Inhalative	LC50/4 h	>6.7 mg/L (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

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Irritant

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· Carcinogenic categories
· IARC (International Agency for Research on Cancer)

75-09-2	dichloromethane	2A
111-44-4	bis(2-chloroethyl) ether	3
108-60-1	bis(2-chloroisopropyl) ether	3
117-81-7	di-(2-ethylhexyl) phthalate	2B
85-68-7	BBP	3

· NTP (National Toxicology Program)

75-09-2	dichloromethane	R
117-81-7	di-(2-ethylhexyl) phthalate	R

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior 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 (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 of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· Not Regulated, De minimus Quantities	-
· UN-Number	
· DOT, TDG, IMDG, IATA	UN1593

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· UN proper shipping name	Dichloromethane
· DOT	1593 DICHLOROMETHANE
· TDG	DICHLOROMETHANE
· IMDG, IATA	

· Transport hazard class(es)	
· DOT, TDG, IMDG, IATA	



· Class	6.1 Toxic substances
· Label	6.1

· Packing group	III
· DOT, TDG, IMDG, IATA	

· 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/73/78 and the IBC Code	Not applicable.
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· Transport/Additional information:	
-------------------------------------	--

· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· Hazardous substance:	1000 lbs, 454 kg

· TDG	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 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
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15 Regulatory information

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

- Sara

- **Section 355 (extremely hazardous substances):**

111-44-4	bis(2-chloroethyl) ether
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- **Section 313 (Specific toxic chemical listings):**

75-09-2	dichloromethane
111-91-1	bis(2-chloroethoxy)methane
111-44-4	bis(2-chloroethyl) ether
108-60-1	bis(2-chloroisopropyl) ether
131-11-3	dimethyl phthalate
84-74-2	dibutyl phthalate
117-81-7	di-(2-ethylhexyl) phthalate

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **Canadian substance listings:**

- **Canadian Domestic Substances List (DSL)**

75-09-2	dichloromethane
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

- **Canadian Ingredient Disclosure list (limit 0.1%)**

75-09-2	dichloromethane
117-81-7	di-(2-ethylhexyl) phthalate
84-66-2	diethyl phthalate

- **Canadian Ingredient Disclosure list (limit 1%)**

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.

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

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

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· **Date of the latest revision of the safety data sheet** 03/31/2019 / 2· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

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1 Identification

- **Product identifier**
- **Trade name:** Chlorinated Hydrocarbons Standard (1X1 mL)
- **Part number:** US-111-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity - Category 1B

H350 May cause cancer.

Specific Target Organ Toxicity - Repeated Exposure - Category 2

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



GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Acute Toxicity (Dermal) – Category 4

H312 Harmful in contact with skin.

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

Specific Target Organ Toxicity - Single Exposure - Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

dichloromethane

hexachlorobuta-1,3-diene

hexachlorocyclopentadiene

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Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

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hexachlorobenzene

· Hazard statements

Harmful if swallowed or 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.

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

If on skin: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep 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.

Take off contaminated clothing and wash it before reuse.

Specific measures (see on this label).

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

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.

· Classification system:**· NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 0

Reactivity = 0

· HMIS-ratings (scale 0 - 4)

Health = *2

Fire = 0

Reactivity = 0

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Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

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3 Composition/Information on ingredients

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

- **Dangerous components:**

75-09-2	dichloromethane	98.0396% w/w
106-46-7	1,4-dichlorobenzene	0.151% w/w
118-74-1	hexachlorobenzene	0.151% w/w
87-68-3	hexachlorobuta-1,3-diene	0.151% w/w
67-72-1	hexachloroethane	0.151% w/w
608-93-5	pentachlorobenzene	0.151% w/w
76-01-7	pentachloroethane	0.151% w/w
120-82-1	1,2,4-trichlorobenzene	0.151% w/w

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

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **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).

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Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

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- 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 protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

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

75-09-2 dichloromethane

EL	Long-term value: 25 ppm IARC 2A
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EV	Long-term value: 175 mg/m ³ , 50 ppm
----	---

106-46-7 1,4-dichlorobenzene

EL	Long-term value: 10 ppm IARC 2B
----	------------------------------------

EV	Long-term value: 10 ppm
----	-------------------------

118-74-1 hexachlorobenzene

EL	Long-term value: 0.002 mg/m ³ Skin; IARC 2B
----	---

EV	Long-term value: 0.002 mg/m ³ Skin
----	--

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

EL	Long-term value: 0.02 ppm Skin
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EV	Long-term value: 0.21 mg/m ³ , 0.02 ppm Skin
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67-72-1 hexachloroethane

 EL Long-term value: 1 ppm
 Skin; IARC 2B

EV Long-term value: 1 ppm

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

EL Ceiling limit value: 5 ppm

 EV Ceiling limit value: 37 mg/m³, 5 ppm

· **Additional information:** The lists that were valid during the creation 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.

· **Breathing equipment:**

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 11-13 mil 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 12-15 mil 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
Color:	Colorless

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Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

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· Odor:	Like chlorine
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	-95.1 °C
Boiling point/Boiling range:	40 °C
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	605 °C
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	13 Vol %
Upper:	22 Vol %
· Vapor pressure at 20 °C:	360 hPa
· Density at 20 °C:	1.3 g/cm ³
· Relative density	Not determined.
· Vapor 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 %
Solids content:	0.9 %
· Other information	No further relevant information available.

10 Stability and reactivity

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

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Trade name: Chlorinated Hydrocarbons Standard (1X1 mL)

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11 Toxicological information

- Information on toxicological effects
- Acute toxicity:

- LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)

Oral	LD50	1,584 mg/kg (rat)
Dermal	LD50	>1,965 mg/kg
Inhalative	LC50/4 h	84.1 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)

95-50-1 1,2-dichlorobenzene

Oral	LD50	500 mg/kg (rat)
Dermal	LD50	>10,000 mg/kg (rabbit)

106-46-7 1,4-dichlorobenzene

Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rat)
Inhalative	LC50/4 h	>5.07 mg/L (rat)

118-74-1 hexachlorobenzene

Oral	LD50	10,000 mg/kg (rat)
Inhalative	LC50/4 h	3,600 mg/L (rat)

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

Oral	LD50	82 mg/kg (rat)
Dermal	LD50	100 mg/kg (rabbit)
Inhalative	LC50/4 h	370 mg/L (mouse)

77-47-4 hexachlorocyclopentadiene

Oral	LD50	315 mg/kg (rat)
Dermal	LD50	430 mg/kg (rabbit)
Inhalative	LC50/4 h	2 mg/L (rat)

67-72-1 hexachloroethane

Dermal	LD50	32,000 mg/kg (rabbit)
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608-93-5 pentachlorobenzene

Oral	LD50	1,080 mg/kg (rat)
Dermal	LD50	>2,500 mg/kg (rat)

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

Oral	LD50	756 mg/kg (rat)
Dermal	LD50	6,139 mg/kg (rat)

- Primary irritant effect:
- on the skin: Irritant to skin and mucous membranes.
- on the eye: Irritating effect.

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- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

75-09-2	dichloromethane	2A
95-50-1	1,2-dichlorobenzene	3
541-73-1	1,3-dichlorobenzene	3
106-46-7	1,4-dichlorobenzene	2B
118-74-1	hexachlorobenzene	2B
87-68-3	hexachlorobuta-1,3-diene	3
67-72-1	hexachloroethane	2B
608-93-5	pentachlorobenzene	2B
76-01-7	pentachloroethane	3

- **NTP (National Toxicology Program)**

75-09-2	dichloromethane	R
106-46-7	1,4-dichlorobenzene	R
118-74-1	hexachlorobenzene	R
67-72-1	hexachloroethane	R

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior 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 (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
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- **Other adverse effects** No further relevant information available.

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13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· Not Regulated, De minimus Quantities	-
· UN-Number · DOT, TDG, IMDG, IATA	UN1593
· UN proper shipping name · DOT · TDG · IMDG, IATA	Dichloromethane 1593 DICHLOROMETHANE DICHLOROMETHANE
· Transport hazard class(es) · DOT, TDG, IMDG, IATA	
	
· Class · Label	6.1 Toxic substances 6.1
· Packing group · DOT, TDG, IMDG, IATA	III
· Environmental hazards:	Not applicable.
· Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups · Stowage Category	Warning: Toxic substances 60 F-A,S-A Liquid halogenated hydrocarbons A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · DOT · Quantity limitations · Hazardous substance:	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L 1000 lbs, 454 kg

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<ul style="list-style-type: none"> · TDG · Excepted quantities (EQ) 	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · UN "Model Regulation": 	UN 1593 DICHLOROMETHANE, 6.1, III

15 Regulatory information

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

- **Section 355 (extremely hazardous substances):**

77-47-4	hexachlorocyclopentadiene
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- **Section 313 (Specific toxic chemical listings):**

75-09-2	dichloromethane
95-50-1	1,2-dichlorobenzene
541-73-1	1,3-dichlorobenzene
106-46-7	1,4-dichlorobenzene
118-74-1	hexachlorobenzene
87-68-3	hexachlorobuta-1,3-diene
77-47-4	hexachlorocyclopentadiene
67-72-1	hexachloroethane
608-93-5	pentachlorobenzene
76-01-7	pentachloroethane
120-82-1	1,2,4-trichlorobenzene

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **Canadian substance listings:**

- **Canadian Domestic Substances List (DSL)**

75-09-2	dichloromethane
91-58-7	2-chloronaphthalene
95-50-1	1,2-dichlorobenzene
541-73-1	1,3-dichlorobenzene
106-46-7	1,4-dichlorobenzene
118-74-1	hexachlorobenzene
87-68-3	hexachlorobuta-1,3-diene
77-47-4	hexachlorocyclopentadiene

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67-72-1	hexachloroethane
608-93-5	pentachlorobenzene
120-82-1	1,2,4-trichlorobenzene
95-94-3	1,2,4,5-tetrachlorobenzene

· Canadian Ingredient Disclosure list (limit 0.1%)

75-09-2	dichloromethane
87-68-3	hexachlorobuta-1,3-diene

· Canadian Ingredient Disclosure list (limit 1%)

None of the ingredients is listed.

· National regulations:

· Additional classification according to Decree on Hazardous Materials:
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.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of the latest revision of the safety data sheet 03/31/2019 / 2

· Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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1 Identification

- **Product identifier**
- **Trade name:** Organochlorine Pesticides Standard (1X1 mL)
- **Part number:** US-112B-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids - Category 2

H225 Highly flammable liquid and vapour.



GHS08 Health hazard

Carcinogenicity - Category 1A

H350 May cause cancer.



GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Acute Toxicity (Dermal) – Category 4

H312 Harmful in contact with skin.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

 Specific Target Organ Toxicity - Single Exposure -
 Category 3

H336 May cause drowsiness or dizziness.

Reproductive Toxicity - Effects on or via Lactation

H362 May cause harm to breast-fed children.

- **Label elements**

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

- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Danger

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Trade name: Organochlorine Pesticides Standard (1X1 mL)

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· Hazard-determining components of labeling:

acetone
endosulfan sulfate
dieldrin (ISO)
 γ -HCH or γ -BHC

· Hazard statements

Highly flammable liquid and vapour.
Harmful if swallowed or in contact with skin.
Causes serious eye irritation.
May cause cancer.
May cause harm to breast-fed children.
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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Ground and bond container and receiving equipment.
Use explosion-proof [electrical/ventilating/lighting] equipment.
Use non-sparking tools.
Take actions to prevent static discharges.
Do not breathe dust/fume/gas/mist/vapours/spray.
Avoid contact during pregnancy and while nursing.
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): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
IF INHALED: Remove person to fresh air and keep 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 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.

· Classification system:**· NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 3
Reactivity = 0

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· HMIS-ratings (scale 0 - 4)

HEALTH	2	Health = *2
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

3 Composition/Information on ingredients

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

· Dangerous components:

67-64-1	acetone	95.702% w/w
72-54-8	TDE	0.253% w/w
50-29-3	DDT (common name not adopted by ISO)	0.253% w/w
72-55-9	2,2-bis(p-chlorophenyl)-1,1-dichloroethylene	0.253% w/w
60-57-1	dieldrin (ISO)	0.253% w/w
76-44-8	heptachlor (ISO)	0.253% w/w
319-84-6	alpha-BHC (alpha-HCH)	0.253% w/w
1024-57-3	heptachlor epoxide - isomer B	0.253% w/w
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	0.253% w/w
319-86-8	delta-BHC (delta-HCH)	0.253% w/w
58-89-9	gamma-HCH or gamma-BHC	0.253% w/w
72-43-5	methoxychlor	0.253% w/w
309-00-2	aldrin (ISO)	0.253% w/w

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:** Immediately call a 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.

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* 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing 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 protection against explosions and fires:**
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 receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

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8 Exposure controls/ Personal protection

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

- **Control parameters**

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

67-64-1 acetone

EL	Short-term value: 500 ppm Long-term value: 250 ppm
EV	Short-term value: 750 ppm Long-term value: 500 ppm

1024-57-3 heptachlor epoxide - isomer B

EL	Long-term value: 0.05 mg/m ³ Skin
EV	Long-term value: 0.05 mg/m ³ Skin

- **Additional information:** The lists that were valid during the creation 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.

- **Breathing equipment:**

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 11-13 mil 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 12-15 mil 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

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· Eye protection:


Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties
· General Information
· Appearance:

Form:	Fluid
Color:	Colorless
· Odor:	Characteristic
· Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	-94.7 °C
Boiling point/Boiling range:	55.8-56.6 °C

· Flash point: -17 °C

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 465 °C

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· Explosion limits:

Lower:	2.6 Vol %
Upper:	13 Vol %

· Vapor pressure at 20 °C: 245.3 hPa

· Density at 20 °C:	0.791 g/cm ³
· Relative density	Not determined.
· Vapor 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 %

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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 that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	671 mg/kg
Dermal	LD50	1,775 mg/kg
Inhalative	LC50/4 h	132 mg/L

67-64-1 acetone

Oral	LD50	5,800 mg/kg (rat)
Dermal	LD50	20,000 mg/kg (rabbit)

72-54-8 TDE

Dermal	LD50	1,200 mg/kg (rabbit)
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50-29-3 DDT (common name not adopted by ISO)

Oral	LD50	87 mg/kg (rat)
Dermal	LD50	2,510 mg/kg (rat) 300 mg/kg (rabbit)

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

Oral	LD50	880 mg/kg (rat)
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60-57-1 dieldrin (ISO)

Oral	LD50	38 mg/kg (mouse) 38 mg/kg (rat)
Dermal	LD50	10 mg/kg (rat) 250 mg/kg (rabbit)

72-20-8 endrin (ISO)

Oral	LD50	3 mg/kg (rat)
Dermal	LD50	60 mg/kg (rat)

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		60 mg/kg (rabbit)
959-98-8 endosulfan I		
Oral	LD50	76 mg/kg (rat)
33213-65-9 endosulfan II		
Oral	LD50	240 mg/kg (rat)
1031-07-8 endosulfan sulfate		
Oral	LD50	18 mg/kg (rat)
76-44-8 heptachlor (ISO)		
Oral	LD50	40 mg/kg (rat)
Dermal	LD50	119 mg/kg (rat)
319-84-6 alpha-BHC (alpha-HCH)		
Oral	LD50	177 mg/kg (rat)
1024-57-3 heptachlor epoxide - isomer B		
Oral	LD50	15 mg/kg (rat)
319-85-7 (1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane		
Oral	LD50	6,000 mg/kg (rat)
319-86-8 delta-BHC (delta-HCH)		
Oral	LD50	1,000 mg/kg (rat)
58-89-9 gamma-HCH or gamma-BHC		
Oral	LD50	88 mg/kg (rat)
Dermal	LD50	900 mg/kg (rat)
Inhalative	LC50/4 h	1,560 mg/L (rat)
72-43-5 methoxychlor		
Oral	LD50	1,855 mg/kg (rat)
Dermal	LD50	6,000 mg/kg (rat)
309-00-2 aldrin (ISO)		
Oral	LD50	39 mg/kg (rat)
Dermal	LD50	98 mg/kg (rat)
		15 mg/kg (rabbit)

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** Irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

50-29-3	DDT (common name not adopted by ISO)	2A
60-57-1	dieldrin (ISO)	3
72-20-8	endrin (ISO)	3

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Safety Data Sheet

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Reviewed on 03/31/2019

Trade name: Organochlorine Pesticides Standard (1X1 mL)

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76-44-8	heptachlor (ISO)	2B
319-84-6	alpha-BHC (alpha-HCH)	2B
1024-57-3	heptachlor epoxide - isomer B	2B
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	2B
58-89-9	gamma -HCH or gamma -BHC	1
72-43-5	methoxychlor	3
309-00-2	aldrin (ISO)	3

· NTP (National Toxicology Program)

50-29-3	DDT (common name not adopted by ISO)	R
319-84-6	alpha-BHC (alpha-HCH)	R
319-85-7	(1alpha,2beta,3alpha,4beta,5alpha,6beta)-1,2,3,4,5,6-hexachlorocyclohexane	R
319-86-8	delta-BHC (delta-HCH)	R
58-89-9	gamma -HCH or gamma -BHC	R

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior 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 (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 of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

* 14 Transport information

- **Not Regulated, De minimus Quantities** -

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Trade name: Organochlorine Pesticides Standard (1X1 mL)

(Contd. of page 9)

· UN-Number	UN1090
· DOT, TDG, IMDG, IATA	
· UN proper shipping name	Acetone solution
· DOT	1090 ACETONE solution, ENVIRONMENTALLY
· TDG	HAZARDOUS
· IMDG	ACETONE solution, MARINE POLLUTANT
· IATA	ACETONE solution
· Transport hazard class(es)	
· DOT, IATA	
	
· Class	3 Flammable liquids
· Label	3
· TDG, IMDG	
 	
· Class	3 Flammable liquids
· Label	3
· Packing group	II
· DOT, TDG, IMDG, IATA	
· Environmental hazards:	Product contains environmentally hazardous substances: aldrin (ISO), γ -HCH or γ -BHC
· Marine pollutant:	Symbol (fish and tree)
· Special marking (TDG):	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 MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· TDG	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml

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Trade name: Organochlorine Pesticides Standard (1X1 mL)

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<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
<ul style="list-style-type: none"> · UN "Model Regulation": 	UN 1090 ACETONE SOLUTION, 3, II, ENVIRONMENTALLY HAZARDOUS

15 Regulatory information

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

- **Section 355 (extremely hazardous substances):**

72-20-8	endrin (ISO)
58-89-9	γ -HCH or γ -BHC
309-00-2	aldrin (ISO)

- **Section 313 (Specific toxic chemical listings):**

76-44-8	heptachlor (ISO)
319-84-6	alpha-BHC (alpha-HCH)
58-89-9	γ -HCH or γ -BHC
72-43-5	methoxychlor
309-00-2	aldrin (ISO)

- **TSCA (Toxic Substances Control Act):**

67-64-1	acetone
50-29-3	DDT (common name not adopted by ISO)
319-84-6	alpha-BHC (alpha-HCH)
319-85-7	(1 α ,2 β ,3 α ,4 β ,5 α ,6 β)-1,2,3,4,5,6-hexachlorocyclohexane
319-86-8	delta-BHC (delta-HCH)
58-89-9	γ -HCH or γ -BHC

- **Canadian substance listings:**

- **Canadian Domestic Substances List (DSL)**

67-64-1	acetone
58-89-9	γ -HCH or γ -BHC
72-43-5	methoxychlor

- **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients is listed.

- **Canadian Ingredient Disclosure list (limit 1%)**

All ingredients are listed.

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Trade name: Organochlorine Pesticides Standard (1X1 mL)

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- **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.

- **Department issuing SDS:** Document Control / Regulatory
- **Contact:** regulatory@ultrasci.com
- **Date of the latest revision of the safety data sheet** 03/31/2019 / 2
- **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
- *** Data compared to the previous version altered.**

CA

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

1 Identification

- **Product identifier**
- **Trade name:** Nitrosamines Standard (1X1 mL)
- **Part number:** US-113N-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity - Category 1B

H350 May cause cancer.

Specific Target Organ Toxicity - Repeated Exposure - Category 2

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



GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Acute Toxicity (Dermal) – Category 4

H312 Harmful in contact with skin.

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

Specific Target Organ Toxicity - Single Exposure - Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

dichloromethane

N-nitrosomorpholine

N-Nitrosomethylethylamine

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Trade name: Nitrosamines Standard (1X1 mL)

(Contd. of page 1)

dimethylnitrosoamine

· Hazard statements

Harmful if swallowed or 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.

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

If on skin: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep 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.

Take off contaminated clothing and wash it before reuse.

Specific measures (see on this label).

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

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.

· Classification system:**· NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 0

Reactivity = 0

· HMIS-ratings (scale 0 - 4)

Health = *2

Fire = 0

Reactivity = 0

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Trade name: Nitrosamines Standard (1X1 mL)

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3 Composition/Information on ingredients

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

- **Dangerous components:**

75-09-2	dichloromethane	98.643% w/w
621-64-7	nitrosodipropylamine	0.151% w/w
59-89-2	N-nitrosomorpholine	0.151% w/w
10595-95-6	N-Nitrosomethylethylamine	0.151% w/w
930-55-2	1-nitrosopyrrolidine	0.151% w/w
924-16-3	N-nitrosodibutylamine	0.151% w/w
55-18-5	diethylnitrosoamine	0.151% w/w
62-75-9	dimethylnitrosoamine	0.151% w/w
100-75-4	1-nitrosopiperidine	0.151% w/w

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

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **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.

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Trade name: Nitrosamines Standard (1X1 mL)

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- **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 protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

 · **Components with limit values that require monitoring at the workplace:**

75-09-2 dichloromethane	
EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm
59-89-2 N-nitrosomorpholine	
EL	IARC 2B
10595-95-6 N-Nitrosomethylethylamine	
EL	IARC 2B
930-55-2 1-nitrosopyrrolidine	
EL	IARC 2B
55-18-5 diethylnitrosoamine	
EL	IARC 2A
62-75-9 dimethylnitrosoamine	
EL	Skin; IARC 2A
EV	Long-term value: (L) ppm Skin

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Trade name: Nitrosamines Standard (1X1 mL)

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100-75-4 1-nitrosopiperidine

EL IARC 2B

- **Additional information:** The lists that were valid during the creation 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.
- **Breathing equipment:**
 - 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 11-13 mil 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 12-15 mil 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
Color:	Colorless
Odor:	Like chlorine
Odor threshold:	Not determined.
- **pH-value:** Not determined.
- **Change in condition**

Melting point/Melting range:	-95.1 °C
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Trade name: Nitrosamines Standard (1X1 mL)

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Boiling point/Boiling range:	40 °C
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	605 °C
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	13 Vol %
Upper:	22 Vol %
· Vapor pressure at 20 °C:	360 hPa
· Density at 20 °C:	1.3 g/cm ³
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water at 20 °C:	20 g/l
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	98.6 %
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.

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Trade name: Nitrosamines Standard (1X1 mL)

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11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

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)
------	------	-----------------

59-89-2 N-nitrosomorpholine

Oral	LD50	282 mg/kg (rat)
------	------	-----------------

10595-95-6 N-Nitrosomethylethylamine

Oral	LD50	90 mg/kg (rat)
------	------	----------------

930-55-2 1-nitrosopyrrolidine

Oral	LD50	900 mg/kg (rat)
------	------	-----------------

924-16-3 N-nitrosodibutylamine

Oral	LD50	1,200 mg/kg (rat)
------	------	-------------------

55-18-5 diethylnitrosoamine

Oral	LD50	220 mg/kg (rat)
------	------	-----------------

62-75-9 dimethylnitrosoamine

Oral	LD50	37 mg/kg (rat)
Inhalative	LC50/4 h	78 mg/L (rat)

100-75-4 1-nitrosopiperidine

Oral	LD50	200 mg/kg (rat)
------	------	-----------------

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:
 Harmful
 Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

75-09-2	dichloromethane	2A
621-64-7	nitrosodipropylamine	2B

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Trade name: Nitrosamines Standard (1X1 mL)

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59-89-2	N-nitrosomorpholine	2B
10595-95-6	N-Nitrosomethylethylamine	2B
930-55-2	1-nitrosopyrrolidine	2B
924-16-3	N-nitrosodibutylamine	2B
55-18-5	diethylnitrosoamine	2A
62-75-9	dimethylnitrosoamine	2A
86-30-6	nitrosodiphenylamine	3
100-75-4	1-nitrosopiperidine	2B

· NTP (National Toxicology Program)

75-09-2	dichloromethane	R
621-64-7	nitrosodipropylamine	R
59-89-2	N-nitrosomorpholine	R
930-55-2	1-nitrosopyrrolidine	R
924-16-3	N-nitrosodibutylamine	R
55-18-5	diethylnitrosoamine	R
62-75-9	dimethylnitrosoamine	R
100-75-4	1-nitrosopiperidine	R

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior 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 (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 of together with household garbage. Do not allow product to reach sewage system.

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Trade name: Nitrosamines Standard (1X1 mL)

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

14 Transport information

· Not Regulated, De minimus Quantities	-
· UN-Number	UN1593
· DOT, TDG, IMDG, IATA	UN1593
· UN proper shipping name	
· DOT	Dichloromethane
· TDG	1593 DICHLOROMETHANE
· IMDG, IATA	DICHLOROMETHANE
· Transport hazard class(es)	
· DOT, TDG, IMDG, IATA	
	
· Class	6.1 Toxic substances
· Label	6.1
· Packing group	
· DOT, TDG, 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 MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· Hazardous substance:	1000 lbs, 454 kg
· TDG	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG	
· Limited quantities (LQ)	5L

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Trade name: Nitrosamines Standard (1X1 mL)

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· 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
· Sara
· Section 355 (extremely hazardous substances):

62-75-9	dimethylnitrosoamine
---------	----------------------

· Section 313 (Specific toxic chemical listings):

75-09-2	dichloromethane
621-64-7	nitrosodipropylamine
59-89-2	N-nitrosomorpholine
924-16-3	N-nitrosodibutylamine
55-18-5	diethylnitrosoamine
62-75-9	dimethylnitrosoamine
86-30-6	nitrosodiphenylamine
100-75-4	1-nitrosopiperidine

· TSCA (Toxic Substances Control Act):

75-09-2	dichloromethane
621-64-7	nitrosodipropylamine
930-55-2	1-nitrosopyrrolidine
924-16-3	N-nitrosodibutylamine
55-18-5	diethylnitrosoamine
62-75-9	dimethylnitrosoamine
86-30-6	nitrosodiphenylamine
100-75-4	1-nitrosopiperidine

· Canadian substance listings:
· Canadian Domestic Substances List (DSL)

75-09-2	dichloromethane
86-30-6	nitrosodiphenylamine

· Canadian Ingredient Disclosure list (limit 0.1%)

75-09-2	dichloromethane
621-64-7	nitrosodipropylamine
59-89-2	N-nitrosomorpholine
930-55-2	1-nitrosopyrrolidine
924-16-3	N-nitrosodibutylamine
55-18-5	diethylnitrosoamine
62-75-9	dimethylnitrosoamine

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Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

Trade name: Nitrosamines Standard (1X1 mL)

(Contd. of page 10)

86-30-6	nitrosodiphenylamine
100-75-4	1-nitrosopiperidine

· Canadian Ingredient Disclosure list (limit 1%)

None of the ingredients is listed.

· National regulations:
· Additional classification according to Decree on Hazardous Materials:

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.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of the latest revision of the safety data sheet 03/31/2019 / 2

· Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

· * Data compared to the previous version altered.

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

1 Identification

- **Product identifier**
- **Trade name:** Base/Neutrals Standard (1X1 mL)
- **Part number:** US-114-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity - Category 1A

H350 May cause cancer.

Specific Target Organ Toxicity - Repeated Exposure - Category 2

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



GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Acute Toxicity (Dermal) – Category 4

H312 Harmful in contact with skin.

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

Skin Sensitizer - Category 1

H317 May cause an allergic skin reaction.

Specific Target Organ Toxicity - Single Exposure - Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS07 GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

dichloromethane

4-dimethylaminoazobenzene

(Contd. on page 2)

Safety Data Sheet according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

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

(Contd. of page 1)

diphenylamine

o-toluidine

3,3'-dichlorobenzidine

p-phenylenediamine

· Hazard statements

Harmful if swallowed or in contact with skin.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

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.

Contaminated work clothing should not be allowed out of the workplace.

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 person to fresh air and keep 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.

Take off contaminated clothing and wash it before reuse.

Specific measures (see on this label).

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

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.

· Classification system:**· NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 0

Reactivity = 0

· HMIS-ratings (scale 0 - 4)

Health = *2

Fire = 0

Reactivity = 0

CA

(Contd. on page 3)

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

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

(Contd. of page 2)

3 Composition/Information on ingredients

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

- **Dangerous components:**

75-09-2	dichloromethane	98.0396% w/w
53-96-3	2-acetylaminofluorene	0.151% w/w
60-11-7	4-dimethylaminoazobenzene	0.151% w/w
91-94-1	3,3'-dichlorobenzidine	0.151% w/w
119-93-7	4,4'-bi-o-toluidine	0.151% w/w
91-59-8	2-naphthylamine	0.151% w/w
99-55-8	5-nitro-o-toluidine	0.151% w/w
106-50-3	p-phenylenediamine	0.151% w/w
62-44-2	phenacetin	0.151% w/w
95-53-4	o-toluidine	0.151% w/w
92-67-1	4-aminobiphenyl	0.151% w/w

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

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **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.

(Contd. on page 4)

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

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

(Contd. of page 3)

6 Accidental release measures

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

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
 Ensure good ventilation/exhaustion at the workplace.
 Open and handle receptacle with care.
 Prevent formation of aerosols.
- **Information about protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

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

75-09-2 dichloromethane	
EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm
91-94-1 3,3'-dichlorobenzidine	
EL	Skin; IARC 2B
119-93-7 4,4'-bi-o-toluidine	
EL	Skin, IARC 2B
EV	Long-term value: (L) ppm Skin
91-59-8 2-naphthylamine	
EL	ACGIH A1; IARC 1

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Safety Data Sheet

according to HPR, Schedule 1

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Version Number 3

Reviewed on 03/31/2019

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

(Contd. of page 4)

99-55-8 5-nitro-o-toluidine

EL	Long-term value: 1 mg/m ³ Inhalable
EV	Long-term value: 1 mg/m ³ inhalable

95-53-4 o-toluidine

EL	Long-term value: 2 ppm Skin; IARC 1
EV	Long-term value: 9 mg/m ³ , 2 ppm Skin

92-67-1 4-aminobiphenyl

EL	Skin; ACGIH A1; IARC 1
----	------------------------

· **Additional information:** The lists that were valid during the creation 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.

· **Breathing equipment:**

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 11-13 mil 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 12-15 mil 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

CA

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Trade name: Base/Neutrals Standard (1X1 mL)
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(Contd. of page 5)

9 Physical and chemical properties

· Information on basic physical and chemical properties	
· General Information	
· Appearance:	
Form:	Fluid
Color:	Colorless
· Odor:	Like chlorine
· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	-95.1 °C
Boiling point/Boiling range:	40 °C
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	605 °C
· Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	13 Vol %
Upper:	22 Vol %
· Vapor pressure at 20 °C:	360 hPa
· Density at 20 °C:	1.3 g/cm ³
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water at 20 °C:	20 g/l
· Partition coefficient (n-octanol/water): Not determined.	
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	98.2 %
Solids content:	1.4 %
· Other information No further relevant information available.	

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

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Version Number 3

Reviewed on 03/31/2019

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

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- **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 that are relevant for classification:**

ATE (Acute Toxicity Estimate)

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)
------	------	-------------------

91-59-8 2-naphthylamine

Oral	LD50	727 mg/kg (rat)
------	------	-----------------

106-50-3 p-phenylenediamine

Oral	LD50	80 mg/kg (rat)
Inhalative	LC50/4 h	0.92 mg/L (rat)

62-44-2 phenacetin

Oral	LD50	1,650 mg/kg (rat)
------	------	-------------------

95-53-4 o-toluidine

Oral	LD50	900 mg/kg (rat)
Dermal	LD50	3,244 mg/kg (rabbit)
Inhalative	LC50/4 h	862 mg/L (rat)

92-67-1 4-aminobiphenyl

Oral	LD50	500 mg/kg (rat)
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Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

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

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- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:
 Harmful
 Irritant

- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)

75-09-2	dichloromethane	2A
60-11-7	4-dimethylaminoazobenzene	2B
91-94-1	3,3'-dichlorobenzidine	2B
119-93-7	4,4'-bi-o-toluidine	2B
134-32-7	1-naphthylamine	3
91-59-8	2-naphthylamine	1
99-55-8	5-nitro-o-toluidine	3
106-50-3	p-phenylenediamine	3
62-44-2	phenacetin	1
95-53-4	o-toluidine	1
92-67-1	4-aminobiphenyl	1

· NTP (National Toxicology Program)

75-09-2	dichloromethane	R
53-96-3	2-acetylaminofluorene	R
60-11-7	4-dimethylaminoazobenzene	R
91-94-1	3,3'-dichlorobenzidine	R
119-93-7	4,4'-bi-o-toluidine	R
91-59-8	2-naphthylamine	K
62-44-2	phenacetin	R
95-53-4	o-toluidine	K
92-67-1	4-aminobiphenyl	K

12 Ecological information

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

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Safety Data Sheet

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Reviewed on 03/31/2019

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


(Contd. of page 8)

- **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 of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· Not Regulated, De minimus Quantities	-
· UN-Number	
· DOT, TDG, IMDG, IATA	UN1593
· UN proper shipping name	
· DOT	Dichloromethane
· TDG	1593 DICHLOROMETHANE
· IMDG, IATA	DICHLOROMETHANE
· Transport hazard class(es)	
· DOT, TDG, IMDG, IATA	
	
· Class	6.1 Toxic substances
· Label	6.1
· Packing group	
· DOT, TDG, 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/73/78 and the IBC Code	Not applicable.

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Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

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

(Contd. of page 9)

· Transport/Additional information:
· DOT
· Quantity limitations

On passenger aircraft/rail: 60 L

On cargo aircraft only: 220 L

· Hazardous substance:

1000 lbs, 454 kg

· TDG
· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 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

· Safety, health and environmental regulations/legislation specific for the substance or mixture
· Sara
· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

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
122-39-4	diphenylamine
134-32-7	1-naphthylamine
91-59-8	2-naphthylamine
99-55-8	5-nitro-o-toluidine
106-50-3	p-phenylenediamine
95-53-4	o-toluidine
92-67-1	4-aminobiphenyl

· TSCA (Toxic Substances Control Act):

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

(Contd. on page 11)

CA

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

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

(Contd. of page 10)

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
92-67-1	4-aminobiphenyl

· Canadian substance listings:
· Canadian Domestic Substances List (DSL)

75-09-2	dichloromethane
60-11-7	4-dimethylaminoazobenzene
119-93-7	4,4'-bi-o-toluidine
122-39-4	diphenylamine
134-32-7	1-naphthylamine
91-59-8	2-naphthylamine
106-50-3	p-phenylenediamine
62-44-2	phenacetin
95-53-4	o-toluidine

· Canadian Ingredient Disclosure list (limit 0.1%)

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
122-39-4	diphenylamine
91-59-8	2-naphthylamine
106-50-3	p-phenylenediamine
95-53-4	o-toluidine
92-67-1	4-aminobiphenyl

· Canadian Ingredient Disclosure list (limit 1%)

None of the ingredients is listed.

· National regulations:
· Additional classification according to Decree on Hazardous Materials:

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.

CA

(Contd. on page 12)

Safety Data Sheet
according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

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

(Contd. of page 11)

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.

- **Department issuing SDS:** Document Control / Regulatory
- **Contact:** regulatory@ultrasci.com
- **Date of the latest revision of the safety data sheet** 03/31/2019 / 2
- **Abbreviations and acronyms:**
 - IMDG: International Maritime Code for Dangerous Goods
 - DOT: US Department of Transportation
 - 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)
 - NFPA: National Fire Protection Association (USA)
 - HMIS: Hazardous Materials Identification System (USA)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
- *** Data compared to the previous version altered.**

CA

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 4

Reviewed on 03/31/2019

1 Identification

- **Product identifier**
- **Trade name:** Base/Neutrals Standard (1X1 mL)
- **Part number:** US-115-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Toxicity (Dermal) – Category 3

H311 Toxic in contact with skin.



GHS08 Health hazard

Respiratory Sensitizer - Category 1

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ Cell Mutagenicity - Category 1A

H340 May cause genetic defects.

Carcinogenicity - Category 1B

H350 May cause cancer.

Reproductive Toxicity - Category 1B

H360 May damage fertility or the unborn child.

Specific Target Organ Toxicity - Repeated Exposure - Category 2

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



GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

Skin Sensitizer - Category 1

H317 May cause an allergic skin reaction.

Specific Target Organ Toxicity - Single Exposure - Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

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· Hazard pictograms

GHS06 GHS07 GHS08

· Signal word Danger**· Hazard-determining components of labeling:**

dichloromethane
1,3-dinitrobenzene
1,3,5-trinitrobenzene
2,4-dinitrotoluene
1,4-naphthoquinone
quintozene (ISO)

· Hazard statements

Harmful if swallowed.
Toxic in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause genetic defects.
May cause cancer.
May damage fertility or the unborn child.
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.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
[In case of inadequate ventilation] wear respiratory 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 person to fresh air and keep 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.
Take off contaminated clothing and wash it before reuse.
Specific measures (see on this label).
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.

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If experiencing respiratory symptoms: Call a poison center/doctor.

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.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *2

Fire = 0

Reactivity = 0

3 Composition/Information on ingredients

· **Chemical characterization: Mixtures**

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

· **Dangerous components:**

75-09-2	dichloromethane	98.0396% w/w
62-50-0	ethyl methanesulfonate	0.151% w/w
66-27-3	methyl methanesulfonate	0.151% w/w
121-14-2	2,4-dinitrotoluene	0.151% w/w
606-20-2	2,6-dinitrotoluene	0.151% w/w
130-15-4	1,4-naphthoquinone	0.151% w/w
98-95-3	nitrobenzene	0.151% w/w
82-68-8	quintozene (ISO)	0.151% w/w
94-59-7	safrole	0.151% w/w
78-59-1	3,5,5-trimethylcyclohex-2-enone	0.151% w/w

4 First aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

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

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

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

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- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

* 5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

* 6 Accidental release measures

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

* 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

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8 Exposure controls/ Personal protection

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

- **Control parameters**

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

75-09-2 dichloromethane	
EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm
98-95-3 nitrobenzene	
EL	Long-term value: 1 ppm Skin; IARC 2B
EV	Long-term value: 5 mg/m ³ , 1 ppm Skin
82-68-8 quitozene (ISO)	
EL	Long-term value: 0.5 mg/m ³
EV	Long-term value: 0.5 mg/m ³
78-59-1 3,5,5-trimethylcyclohex-2-enone	
EL	Ceiling limit value: 5 ppm
EV	Ceiling limit value: 28 mg/m ³ , 5 ppm

- **Additional information:** The lists that were valid during the creation 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.

- **Breathing equipment:**

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 11-13 mil 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 12-15 mil 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

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· Eye protection:

Safety glasses



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties
· General Information
· Appearance:

Form:	Fluid
Color:	Colorless
· Odor:	Like chlorine
· Odor threshold:	Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range:	-95.1 °C
Boiling point/Boiling range:	40 °C

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 605 °C

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product does not present an explosion hazard.

· Explosion limits:

Lower:	13 Vol %
Upper:	22 Vol %

· Vapor pressure at 20 °C: 360 hPa

· Density at 20 °C:	1.3 g/cm ³
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.

· Solubility in / Miscibility with
Water at 20 °C: 20 g/l

· Partition coefficient (n-octanol/water): Not determined.

· Viscosity:

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

· Solvent content:
Organic solvents: 98.3 %

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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 that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	1,495 mg/kg (rat)
Dermal	LD50	>902 mg/kg
Inhalative	LC50/4 h	55 mg/L

75-09-2 dichloromethane

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

62-50-0 ethyl methanesulfonate

Oral	LD50	470 mg/kg (mouse)
------	------	-------------------

66-27-3 methyl methanesulfonate

Oral	LD50	225 mg/kg (rat)
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99-65-0 1,3-dinitrobenzene

Oral	LD50	83 mg/kg (rat)
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121-14-2 2,4-dinitrotoluene

Oral	LD50	268 mg/kg (rat)
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606-20-2 2,6-dinitrotoluene

Oral	LD50	177 mg/kg (rat)
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130-15-4 1,4-naphthoquinone

Oral	LD50	190 mg/kg (rat)
Inhalative	LC50/4 h	46 mg/L (rat)

98-95-3 nitrobenzene

Oral	LD50	390 mg/kg (rat)
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Dermal	LD50	2,100 mg/kg (rat)
Inhalative	LC50/4 h	556 mg/L (rat)
82-68-8 quintozene (ISO)		
Oral	LD50	1,100 mg/kg (rat)
99-35-4 1,3,5-trinitrobenzene		
Oral	LD50	275 mg/kg (rat)
94-59-7 safrole		
Oral	LD50	1,950 mg/kg (rat)
Dermal	LD50	>5,000 mg/kg (rabbit)
78-59-1 3,5,5-trimethylcyclohex-2-enone		
Oral	LD50	1,870 mg/kg (rat)
Dermal	LD50	1,200 mg/kg (rabbit)
Inhalative	LC50/4 h	7,000 mg/L (rat)

- **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.

- **on the eye:** Irritating effect.

- **Sensitization:**

- Sensitization possible through inhalation.

- Sensitization possible through skin contact.

- **Additional toxicological information:**

- The product shows the following dangers according to internally approved calculation methods for preparations:

- Toxic

- Harmful

- Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

75-09-2	dichloromethane	2A
62-50-0	ethyl methanesulfonate	2B
120-58-1	isosafrole	3
66-27-3	methyl methanesulfonate	2A
121-14-2	2,4-dinitrotoluene	2B
606-20-2	2,6-dinitrotoluene	2B
98-95-3	nitrobenzene	2B
82-68-8	quintozene (ISO)	3
94-59-7	safrole	2B

- **NTP (National Toxicology Program)**

75-09-2	dichloromethane	R
62-50-0	ethyl methanesulfonate	R
66-27-3	methyl methanesulfonate	R
130-15-4	1,4-naphthoquinone	R
98-95-3	nitrobenzene	R

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94-59-7 saffrole

R


12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior 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 (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 of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

* 14 Transport information

- **Not Regulated, De minimus Quantities** -
- **UN-Number**
- **DOT, TDG, IMDG, IATA** UN1593
- **UN proper shipping name**
- **DOT** Dichloromethane
- **TDG** 1593 DICHLOROMETHANE
- **IMDG** DICHLOROMETHANE, MARINE POLLUTANT
- **IATA** DICHLOROMETHANE
- **Transport hazard class(es)**
- **DOT, IMDG**
- 
- **Class** 6.1 Toxic substances

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· **Label** 6.1
 · **TDG, IATA**



· **Class** 6.1 Toxic substances
 · **Label** 6.1

· **Packing group**
 · **DOT, TDG, IMDG, IATA** III

· **Environmental hazards:**
 · **Marine pollutant:** Yes (DOT)
 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 MARPOL73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**
 · **DOT**
 · **Quantity limitations** On passenger aircraft/rail: 60 L
 On cargo aircraft only: 220 L
 · **Hazardous substance:** 1000 lbs, 454 kg
 · **Remarks:** Special marking with the symbol (fish and tree).

· **TDG**
 · **Excepted quantities (EQ)** Code: E1
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 1000 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

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

· **Section 355 (extremely hazardous substances):**

98-95-3	nitrobenzene
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· Section 313 (Specific toxic chemical listings):

75-09-2	dichloromethane
120-58-1	isosafrole
99-65-0	1,3-dinitrobenzene
121-14-2	2,4-dinitrotoluene
606-20-2	2,6-dinitrotoluene
98-95-3	nitrobenzene
82-68-8	quintozene (ISO)
98-86-2	acetophenone
94-59-7	safrole

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Canadian substance listings:
· Canadian Domestic Substances List (DSL)

75-09-2	dichloromethane
120-58-1	isosafrole
99-65-0	1,3-dinitrobenzene
121-14-2	2,4-dinitrotoluene
130-15-4	1,4-naphthoquinone
98-95-3	nitrobenzene
98-86-2	acetophenone
78-59-1	3,5,5-trimethylcyclohex-2-enone

· Canadian Ingredient Disclosure list (limit 0.1%)

75-09-2	dichloromethane
---------	-----------------

· Canadian Ingredient Disclosure list (limit 1%)

None of the ingredients is listed.

· National regulations:
· Additional classification according to Decree on Hazardous Materials:

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.

· Department issuing SDS: Document Control / Regulatory

· Contact: regulatory@ultrasci.com

· Date of the latest revision of the safety data sheet 03/31/2019 / 3

· Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

· * **Data compared to the previous version altered.**

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Safety Data Sheet

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1 Identification

- **Product identifier**
- **Trade name: PAH Standard (1X1 mL)**
- **Part number: US-116N-1**
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Agilent Technologies, Inc.
5301 Stevens Creek Blvd.
Santa Clara, CA 95051 USA
- **Information department:**
Telephone: 800-227-9770
e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number: CHEMTREC®: 1-800-424-9300**

2 Hazard identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids - Category 2

H225 Highly flammable liquid and vapour.



GHS06 Skull and crossbones

Acute Toxicity (Dermal) – Category 2

H310 Fatal in contact with skin.



GHS08 Health hazard

Germ Cell Mutagenicity - Category 1B

H340 May cause genetic defects.

Carcinogenicity - Category 1A

H350 May cause cancer.

Specific Target Organ Toxicity - Repeated Exposure - Category 1

H372 Causes damage to organs through prolonged or repeated exposure.

Aspiration Hazard - Category 1

H304 May be fatal if swallowed and enters airways.



GHS07

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

Specific Target Organ Toxicity - Single Exposure - Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

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Trade name: PAH Standard (1X1 mL)

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· Hazard pictograms**· Signal word** Danger**· Hazard-determining components of labeling:**

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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Ground and bond container and receiving equipment.
Use explosion-proof [electrical/ventilating/lighting] equipment.
Use non-sparking tools.
Take actions to prevent static discharges.
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.
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): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
IF INHALED: Remove person to fresh air and keep 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.
Take off contaminated clothing and wash it before reuse.
Specific measures (see on this label).

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Trade name: PAH Standard (1X1 mL)

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If skin irritation occurs: Get medical advice/attention.
 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.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



- **HMIS-ratings (scale 0 - 4)**



3 Composition/Information on ingredients

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

- **Dangerous components:**

71-43-2	benzene	49.818% w/w
75-09-2	dichloromethane	49.818% w/w
56-49-5	3-methylcholanthrene	0.182% w/w
57-97-6	7,12-dimethylbenz[a]anthracene	0.182% w/w

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.

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

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing 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 protection against explosions and fires:**
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 receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.

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

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8 Exposure controls/ Personal protection

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

 · **Control parameters**

 · **Components with limit values that require monitoring at the workplace:**
71-43-2 benzene

EL	Short-term value: 2.5 ppm Long-term value: 0.5 ppm Skin; ACGIH A1; IARC 1
EV	Short-term value: 2.5 ppm Long-term value: 0.5 ppm Skin

75-09-2 dichloromethane

EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm

 · **Additional information:** The lists that were valid during the creation 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.

 · **Breathing equipment:**

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 11-13 mil 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 12-15 mil 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

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· Eye protection:


Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties
· General Information
· Appearance:

Form: Fluid
Color: According to product specification

· Odor: Characteristic

· Odor threshold: Not determined.

· pH-value: Not determined.

· Change in condition

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 40 °C

· Flash point: -11 °C

· Flammability (solid, gaseous): Not applicable.

· Ignition temperature: 555 °C

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· Explosion limits:

Lower: 1.2 Vol %
Upper: 22 Vol %

· Vapor pressure at 20 °C: 360 hPa

· Density: Not determined.

· Relative density Not determined.

· Vapor 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 %

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- | | |
|--------------------------|--|
| Solids content: | 0.4 % |
| Other information | No further relevant information available. |

10 Stability and reactivity

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

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

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

71-43-2 benzene

Oral	LD50	3,340 mg/kg (rat)
Dermal	LD50	48 mg/kg (mouse)
		>8,260 mg/kg (rabbit)
Inhalative	LC50/4 h	9,980 mg/L (mouse)

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)

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

Oral	LD50	327 mg/kg (rat)
------	------	-----------------

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

The product can cause inheritable damage.

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· Carcinogenic categories
· IARC (International Agency for Research on Cancer)

71-43-2	benzene	1
75-09-2	dichloromethane	2A

· NTP (National Toxicology Program)

71-43-2	benzene	K
75-09-2	dichloromethane	R
57-97-6	7,12-dimethylbenz[a]anthracene	R

12 Ecological information

· Toxicity

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

· Behavior 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 (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 of together with household garbage. Do not allow product to reach sewage system.

· Uncleaned packagings:

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

14 Transport information

· Not Regulated, De minimus Quantities -

· UN-Number
· DOT, TDG, IMDG, IATA UN1992

· UN proper shipping name
· DOT Flammable liquids, toxic, n.o.s. (Benzene)
· TDG 1992 FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE)
· IMDG, IATA FLAMMABLE LIQUID, TOXIC, N.O.S. (BENZENE)

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 · **Transport hazard class(es)**

 · **DOT**

 · **Class** 3 Flammable liquids

 · **Label** 3, 6.1

 · **TDG (Transport dangerous goods):**

 · **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**

 · **DOT, TDG, 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 MARPOL73/78 and the IBC Code** Not applicable.

 · **Transport/Additional information:**

 · **DOT**

 · **Quantity limitations** On passenger aircraft/rail: 1 L
On cargo aircraft only: 60 L

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<ul style="list-style-type: none"> · TDG · Excepted quantities (EQ) 	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
<ul style="list-style-type: none"> · 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**
- **Sara**

- **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

- **Section 313 (Specific toxic chemical listings):**

All ingredients are listed.

- **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

- **Canadian substance listings:**

- **Canadian Domestic Substances List (DSL)**

All ingredients are listed.

- **Canadian Ingredient Disclosure list (limit 0.1%)**

All ingredients are listed.

- **Canadian Ingredient Disclosure list (limit 1%)**

None of the ingredients is listed.

- **National regulations:**

- **Additional classification according to Decree on Hazardous Materials:**

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.

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

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

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Trade name: PAH Standard (1X1 mL)

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· **Date of the latest revision of the safety data sheet** 03/31/2019 / 2· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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1 Identification

- **Product identifier**
- **Trade name: Phenols Standard (1X1 mL)**
- **Part number:** US-117N-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity - Category 1B	H350 May cause cancer.
Reproductive Toxicity - Category 1B	H360 May damage fertility or the unborn child.
Specific Target Organ Toxicity - Repeated Exposure - Category 2	H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Acute Toxicity (Oral) - Category 4	H302 Harmful if swallowed.
Acute Toxicity (Dermal) - Category 4	H312 Harmful in contact with skin.
Skin Irritation - Category 2	H315 Causes skin irritation.
Eye Irritation - Category 2A	H319 Causes serious eye irritation.
Specific Target Organ Toxicity - Single Exposure - Category 3	H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS07 GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**
 dichloromethane
 dinoseb

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o-cresol

m-cresol

· Hazard statements

Harmful if swallowed or in contact with skin.

Causes skin irritation.

Causes serious eye irritation.

May cause cancer.

May damage fertility or the unborn child.

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.

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

If on skin: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep 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.

Take off contaminated clothing and wash it before reuse.

Specific measures (see on this label).

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

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.

· Classification system:
· NFPA ratings (scale 0 - 4)


Health = 2

Fire = 0

Reactivity = 0

· HMIS-ratings (scale 0 - 4)


Health = *2

Fire = 0

Reactivity = 0

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3 Composition/Information on ingredients

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

· Dangerous components:

75-09-2	dichloromethane	98.794% w/w
88-85-7	dinoseb	0.151% w/w

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

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **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.

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See Section 13 for disposal information.

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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 protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

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

75-09-2 dichloromethane

EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm

- **Additional information:** The lists that were valid during the creation 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.
- **Breathing equipment:**
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 11-13 mil 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 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

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- **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

- Color:** Colorless

- **Odor:** Like chlorine

- **Odor threshold:** Not determined.

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

- **Change in condition**

- Melting point/Melting range:** -95.1 °C

- Boiling point/Boiling range:** 40 °C

- **Flash point:** Not applicable.

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

- **Ignition temperature:** 605 °C

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

- Lower:** 13 Vol %

- Upper:** 22 Vol %

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

- **Density at 20 °C:** 1.3 g/cm³

- **Relative density** Not determined.

- **Vapor 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.

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· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	99.1 %
· 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 that are relevant for classification:
ATE (Acute Toxicity Estimate)

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)
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88-85-7 dinoseb

Oral	LD50	27 mg/kg (rat)
Dermal	LD50	217.5 mg/kg (rat)

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- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:
 Harmful
 Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

75-09-2	dichloromethane	2A
70-30-4	2,2'-methylenebis-(3,4,6-tri-chlorophenol)	3
58-90-2	2,3,4,6-tetrachlorophenol	2B
95-95-4	2,4,5-trichlorophenol	2B
87-65-0	2,6-dichlorophenol	2B

- **NTP (National Toxicology Program)**

75-09-2	dichloromethane	R
---------	-----------------	---

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior 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 (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 of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

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14 Transport information

· Not Regulated, De minimus Quantities	-
· UN-Number · DOT, TDG, IMDG, IATA	UN1593
· UN proper shipping name · DOT · TDG · IMDG, IATA	Dichloromethane 1593 DICHLOROMETHANE DICHLOROMETHANE
· Transport hazard class(es) · DOT, TDG, IMDG, IATA	
· Class · Label	6.1 Toxic substances 6.1
· Packing group · DOT, TDG, IMDG, IATA	III
· Environmental hazards:	Not applicable.
· Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups · Stowage Category	Warning: Toxic substances 60 F-A,S-A Liquid halogenated hydrocarbons A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · DOT · Quantity limitations · Hazardous substance:	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L 1000 lbs, 454 kg
· TDG · Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L 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

CA

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Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

Trade name: Phenols Standard (1X1 mL)

(Contd. of page 8)

15 Regulatory information

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

Section 355 (extremely hazardous substances):

95-48-7	o-cresol
88-85-7	dinoseb

Section 313 (Specific toxic chemical listings):

All ingredients are listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

Canadian substance listings:
Canadian Domestic Substances List (DSL)

75-09-2	dichloromethane
95-48-7	o-cresol
108-39-4	m-cresol
106-44-5	p-cresol
70-30-4	2,2'-methylenebis-(3,4,6-tri-chlorophenol)
58-90-2	2,3,4,6-tetrachlorophenol
88-85-7	dinoseb

Canadian Ingredient Disclosure list (limit 0.1%)

75-09-2	dichloromethane
70-30-4	2,2'-methylenebis-(3,4,6-tri-chlorophenol)

Canadian Ingredient Disclosure list (limit 1%)

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.

- **Department issuing SDS:** Document Control / Regulatory
- **Contact:** regulatory@ultrasci.com
- **Date of the latest revision of the safety data sheet** 03/31/2019 / 2
- **Abbreviations and acronyms:**
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 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)
 NFPA: National Fire Protection Association (USA)

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Safety Data Sheet
according to HPR, Schedule 1

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Version Number 3

Reviewed on 03/31/2019

Trade name: Phenols Standard (1X1 mL)

HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

(Contd. of page 9)

CA

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

1 Identification

- **Product identifier**
- **Trade name: Pesticides Standard (1X1 mL)**
- **Part number:** US-118-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Carcinogenicity - Category 1B

H350 May cause cancer.

Specific Target Organ Toxicity - Repeated Exposure - Category 2

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



GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Acute Toxicity (Dermal) – Category 4

H312 Harmful in contact with skin.

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

Specific Target Organ Toxicity - Single Exposure - Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

dichloromethane
 isodrin
 chlordecone (ISO)

(Contd. on page 2)

Safety Data Sheet

according to HPR, Schedule 1

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Reviewed on 03/31/2019

Trade name: Pesticides Standard (1X1 mL)

(Contd. of page 1)

· Hazard statements

- Harmful if swallowed or 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.
- If swallowed: Call a poison center/doctor if you feel unwell.
- Rinse mouth.
- If on skin: Wash with plenty of water.
- IF INHALED: Remove person to fresh air and keep 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.
- Take off contaminated clothing and wash it before reuse.
- Specific measures (see on this label).
- If skin irritation occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- 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.

· Classification system:
· NFPA ratings (scale 0 - 4)

· HMIS-ratings (scale 0 - 4)


CA

(Contd. on page 3)

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

Trade name: Pesticides Standard (1X1 mL)

(Contd. of page 2)

3 Composition/Information on ingredients

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

- **Dangerous components:**

75-09-2	dichloromethane	99.095% w/w
143-50-0	chlordecone (ISO)	0.151% w/w
140-57-8	aramite	0.151% w/w
23950-58-5	propryzamide (ISO)	0.151% w/w

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

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **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.

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Safety Data Sheet

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Trade name: Pesticides Standard (1X1 mL)

See Section 13 for disposal information.

(Contd. of page 3)

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 protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

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

75-09-2 dichloromethane

EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm

- **Additional information:** The lists that were valid during the creation 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.
- **Breathing equipment:**
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 11-13 mil 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 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

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Trade name: Pesticides Standard (1X1 mL)

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- **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
Color:	Colorless
Odor:	Like chlorine
Odor threshold:	Not determined.

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

- **Change in condition**

Melting point/Melting range:	-95.1 °C
Boiling point/Boiling range:	40 °C

- **Flash point:** Not applicable.

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

- **Ignition temperature:** 605 °C

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

Lower:	13 Vol %
Upper:	22 Vol %

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

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

- **Solubility in / Miscibility with**

Water at 20 °C:	20 g/l
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- **Partition coefficient (n-octanol/water):** Not determined.

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Trade name: Pesticides Standard (1X1 mL)

(Contd. of page 5)

· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	99.1 %
· Solids content:	
Solids content:	0.5 %
· Other information	
No further relevant information available.	

10 Stability and reactivity

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

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

LD/LC50 values that are relevant for classification:
ATE (Acute Toxicity Estimate)

Oral	LD50	1,175 mg/kg (rat)
Dermal	LD50	>1,769 mg/kg
Inhalative	LC50/4 h	70 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)

510-15-6 chlorobenzilate (ISO)

Oral	LD50	700 mg/kg (rat)
Dermal	LD50	>1,000 mg/kg (rabbit)

143-50-0 chlordecone (ISO)

Oral	LD50	91.3 mg/kg (rat)
Dermal	LD50	475 mg/kg (rat)
		345 mg/kg (rabbit)

140-57-8 aramite

Oral	LD50	3,900 mg/kg (rat)
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465-73-6 isodrin

Oral	LD50	7 mg/kg (rat)
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Trade name: Pesticides Standard (1X1 mL)

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Dermal	LD50	23 mg/kg (rat)
23950-58-5 propyzamide (ISO)		
Oral	LD50	3,350 mg/kg (rat)
2303-16-4 di-allate (ISO)		
Oral	LD50	395 mg/kg (rat)

- **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.

- **on the eye:** Irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

75-09-2	dichloromethane	2A
510-15-6	chlorobenzilate (ISO)	3
143-50-0	chlordecone (ISO)	2B
140-57-8	aramite	2B
2303-16-4	di-allate (ISO)	3

- **NTP (National Toxicology Program)**

75-09-2	dichloromethane	R
143-50-0	chlordecone (ISO)	R

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.

- **Behavior 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 (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.

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Trade name: Pesticides Standard (1X1 mL)

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13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

* 14 Transport information

· Not Regulated, De minimus Quantities	-
· UN-Number	
· DOT, TDG, IMDG, IATA	UN1593
· UN proper shipping name	
· DOT	Dichloromethane
· TDG	1593 DICHLOROMETHANE, ENVIRONMENTALLY HAZARDOUS
· IMDG	DICHLOROMETHANE, MARINE POLLUTANT
· IATA	DICHLOROMETHANE
· Transport hazard class(es)	
· DOT, IATA	
	
· Class	6.1 Toxic substances
· Label	6.1
· TDG, IMDG	
	
· Class	6.1 Toxic substances
· Label	6.1
· Packing group	
· DOT, TDG, IMDG, IATA	III
· Environmental hazards:	Product contains environmentally hazardous substances: di-allate (ISO), isodrin
· Marine pollutant:	Symbol (fish and tree)
· Special marking (TDG):	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

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Reviewed on 03/31/2019

Trade name: Pesticides Standard (1X1 mL)

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· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· Hazardous substance:	1000 lbs, 454 kg

· TDG	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 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**
- **Sara**

Section 355 (extremely hazardous substances):

465-73-6	isodrin
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Section 313 (Specific toxic chemical listings):

75-09-2	dichloromethane
510-15-6	chlorobenzilate (ISO)
465-73-6	isodrin
23950-58-5	propyzamide (ISO)
2303-16-4	di-allate (ISO)

TSCA (Toxic Substances Control Act):

75-09-2	dichloromethane
510-15-6	chlorobenzilate (ISO)
465-73-6	isodrin

Canadian substance listings:
Canadian Domestic Substances List (DSL)

75-09-2	dichloromethane
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Canadian Ingredient Disclosure list (limit 0.1%)

75-09-2	dichloromethane
---------	-----------------

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Reviewed on 03/31/2019

Trade name: Pesticides Standard (1X1 mL)

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· Canadian Ingredient Disclosure list (limit 1%)

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.

· Department issuing SDS: Document Control / Regulatory**· Contact:** regulatory@ultrasci.com**· Date of the latest revision of the safety data sheet** 03/31/2019 / 2**· Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

· * Data compared to the previous version altered.

CA

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

1 Identification

- **Product identifier**
- **Trade name:** Organophosphorous Pesticides Standard (1X1 mL)
- **Part number:** US-119-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Toxicity (Oral) - Category 3

H301 Toxic if swallowed.

Acute Toxicity (Dermal) – Category 3

H311 Toxic in contact with skin.



GHS08 Health hazard

Carcinogenicity - Category 1B

H350 May cause cancer.

 Specific Target Organ Toxicity - Repeated Exposure -
 Category 2

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


GHS07

Skin Irritation - Category 2

H315 Causes skin irritation.

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

 Specific Target Organ Toxicity - Single Exposure -
 Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS06



GHS07



GHS08

- **Signal word** Danger

(Contd. on page 2)

Safety Data Sheet according to HPR, Schedule 1

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Version Number 3

Reviewed on 03/31/2019

Trade name: Organophosphorous Pesticides Standard (1X1 mL)

(Contd. of page 1)

· Hazard-determining components of labeling:

dichloromethane
O,O-diethyl O-pyrazin-2-yl phosphorothioate
parathion -methyl (ISO)
sulfotep (ISO)

· Hazard statements

Toxic if swallowed or 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.
If swallowed: Immediately call a poison center/doctor.
Rinse mouth.
If on skin: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep 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.
Take off contaminated clothing and wash it before reuse.
Specific measures (see on this label).
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
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.

· Classification system:**· NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 0
Reactivity = 0

· HMIS-ratings (scale 0 - 4)

Health = *2
Fire = 0
Reactivity = 0

CA

(Contd. on page 3)

Safety Data Sheet according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

Trade name: Organophosphorous Pesticides Standard (1X1 mL)

(Contd. of page 2)

3 Composition/Information on ingredients

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

- **Dangerous components:**

75-09-2	dichloromethane	98.643% w/w
56-38-2	parathion (ISO)	0.151% w/w

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

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **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.

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Trade name: Organophosphorous Pesticides Standard (1X1 mL)

See Section 13 for disposal information.

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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 protection against explosions and fires:** 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 receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

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

75-09-2 dichloromethane

EL	Long-term value: 25 ppm IARC 2A
EV	Long-term value: 175 mg/m ³ , 50 ppm

- **Additional information:** The lists that were valid during the creation 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.
- **Breathing equipment:**
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 11-13 mil 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 12-15 mil thickness with breakthrough times exceeding 4 hrs. Supplier recommendations should be followed.

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- **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
Color:	Colorless
Odor:	Like chlorine
Odor threshold:	Not determined.

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

- **Change in condition**

Melting point/Melting range:	-95.1 °C
Boiling point/Boiling range:	40 °C

- **Flash point:** Not applicable.

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

- **Ignition temperature:** 605 °C

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

Lower:	13 Vol %
Upper:	22 Vol %

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

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

- **Solubility in / Miscibility with**

Water at 20 °C:	20 g/l
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- **Partition coefficient (n-octanol/water):** Not determined.

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· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	99.1 %
· Solids content:	
Solids content:	0.5 %
· Other information	
No further relevant information available.	

10 Stability and reactivity

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

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

LD/LC50 values that are relevant for classification:
ATE (Acute Toxicity Estimate)

Oral	LD50	244 mg/kg (rat)
Dermal	LD50	>593 mg/kg
Inhalative	LC50/4 h	21.1 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)

297-97-2 O,O-diethyl O-pyrazin-2-yl phosphorothioate

Oral	LD50	3.5 mg/kg (rat)
Dermal	LD50	8 mg/kg (rat)

3689-24-5 sulfotep (ISO)

Oral	LD50	5 mg/kg (rat)
Dermal	LD50	20 mg/kg (rat)
Inhalative	LC50/4 h	38 mg/L (rat)

298-00-0 parathion -methyl (ISO)

Oral	LD50	6.01 mg/kg (rat)
Dermal	LD50	67 mg/kg (rat)
		300 mg/kg (rabbit)

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Trade name: Organophosphorous Pesticides Standard (1X1 mL)

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298-04-4 disulfoton

Oral	LD50	2 mg/kg (rat)
Dermal	LD50	20 mg/kg (rat)

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:**

- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.

 · **Sensitization:** No sensitizing effects known.

 · **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

 Toxic
Irritant

 · **Carcinogenic categories**

 · **IARC (International Agency for Research on Cancer)**

75-09-2	dichloromethane	2A
298-00-0	parathion -methyl (ISO)	3
56-38-2	parathion (ISO)	2B

 · **NTP (National Toxicology Program)**

75-09-2	dichloromethane	R
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12 Ecological information

 · **Toxicity**

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

 · **Behavior 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 (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.

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Trade name: Organophosphorous Pesticides Standard (1X1 mL)

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13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· Not Regulated, De minimus Quantities	-
· UN-Number · DOT, TDG, IMDG, IATA	UN1593
· UN proper shipping name · DOT · TDG · IMDG · IATA	Dichloromethane 1593 DICHLOROMETHANE, ENVIRONMENTALLY HAZARDOUS DICHLOROMETHANE, MARINE POLLUTANT DICHLOROMETHANE
· Transport hazard class(es) · DOT, IATA	
	
· Class · Label · TDG, IMDG	6.1 Toxic substances 6.1
	
· Class · Label	6.1 Toxic substances 6.1
· Packing group · DOT, TDG, IMDG, IATA	III
· Environmental hazards: · Marine pollutant: · Special marking (TDG):	Symbol (fish and tree) Symbol (fish and tree)
· Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups	Warning: Toxic substances 60 F-A,S-A Liquid halogenated hydrocarbons

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· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· Hazardous substance:	1000 lbs, 454 kg

· TDG	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 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**
- **Sara**

Section 355 (extremely hazardous substances):

297-97-2	O,O-diethyl O-pyrazin-2-yl phosphorothioate
3689-24-5	sulfotep (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)

Section 313 (Specific toxic chemical listings):

75-09-2	dichloromethane
52-85-7	famphur
298-00-0	parathion -methyl (ISO)
60-51-5	dimethoate (ISO)
56-38-2	parathion (ISO)

TSCA (Toxic Substances Control Act):

75-09-2	dichloromethane
297-97-2	O,O-diethyl O-pyrazin-2-yl phosphorothioate
52-85-7	famphur

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Trade name: Organophosphorous Pesticides Standard (1X1 mL)

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60-51-5 dimethoate (ISO)

- **Canadian substance listings:**

- **Canadian Domestic Substances List (DSL)**

75-09-2 dichloromethane

- **Canadian Ingredient Disclosure list (limit 0.1%)**

75-09-2 dichloromethane

- **Canadian Ingredient Disclosure list (limit 1%)**

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.

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

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

- **Date of the latest revision of the safety data sheet** 03/31/2019 / 2

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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1 Identification

- **Product identifier**
- **Trade name:** Pyridines Standard (1X1 mL)
- **Part number:** US-120AN-1
- **Application of the substance / the mixture** Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Agilent Technologies, Inc.
 5301 Stevens Creek Blvd.
 Santa Clara, CA 95051 USA
- **Information department:**
 Telephone: 800-227-9770
 e-mail: pdl-msds_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: 1-800-424-9300

2 Hazard identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids - Category 2

H225 Highly flammable liquid and vapour.



GHS08 Health hazard

Carcinogenicity - Category 1A

H350 May cause cancer.



GHS07

Eye Irritation - Category 2A

H319 Causes serious eye irritation.

 Specific Target Organ Toxicity - Single Exposure -
 Category 3

H336 May cause drowsiness or dizziness.

- **Label elements**

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

- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

acetone

4-Nitroquinoline-1-oxide

- **Hazard statements**

Highly flammable liquid and vapour.

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Trade name: Pyridines Standard (1X1 mL)

(Contd. of page 1)

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, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Ground and bond container and receiving equipment.

Use explosion-proof [electrical/ventilating/lighting] equipment.

Use non-sparking tools.

Take actions to prevent static discharges.

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.

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

IF INHALED: Remove person to fresh air and keep 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.

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.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 3

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *2

Fire = 3

Reactivity = 0

3 Composition/Information on ingredients

· **Chemical characterization: Mixtures**

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

· **Dangerous components:**

67-64-1	acetone	98.9888% w/w
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Trade name: Pyridines Standard (1X1 mL)

56-57-5 4-Nitroquinoline-1-oxide

(Contd. of page 2)

0.253% w/w

4 First aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing 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.

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Trade name: Pyridines Standard (1X1 mL)

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- **Information about protection against explosions and fires:**
 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 receptacle tightly sealed.
 Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

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

- **Control parameters**

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

67-64-1 acetone	
EL	Short-term value: 500 ppm Long-term value: 250 ppm
EV	Short-term value: 750 ppm Long-term value: 500 ppm

- **Additional information:** The lists that were valid during the creation 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.

- **Breathing equipment:**

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 11-13 mil 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 12-15 mil 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

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Trade name: Pyridines Standard (1X1 mL)

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- **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
Color:	Colorless
Odor:	Characteristic
Odor threshold:	Not determined.

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

- **Change in condition**

Melting point/Melting range:	-94.7 °C
Boiling point/Boiling range:	55.8-56.6 °C

- **Flash point:** -17 °C

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

- **Ignition temperature:** 465 °C

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not selfigniting.

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**

Lower:	2.6 Vol %
Upper:	13 Vol %

- **Vapor pressure at 20 °C:** 245.3 hPa

Density at 20 °C:	0.791 g/cm ³
Relative density	Not determined.
Vapor 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

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Trade name: Pyridines Standard (1X1 mL)

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Kinematic:	Not determined.
Solvent content:	
Organic solvents:	99.2 %
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 that are relevant for classification:		
67-64-1 acetone		
Oral	LD50	5,800 mg/kg (rat)
Dermal	LD50	20,000 mg/kg (rabbit)

Oral	LD50	5,800 mg/kg (rat)
Dermal	LD50	20,000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

- **Carcinogenic categories**

IARC (International Agency for Research on Cancer)		
110-86-1	pyridine	3

- **NTP (National Toxicology Program)**

None of the ingredients is listed.		
------------------------------------	--	--

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.

(Contd. on page 7)

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Trade name: Pyridines Standard (1X1 mL)


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- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|---|----------------------------|
| · Not Regulated, De minimus Quantities | - |
| · UN-Number | |
| · DOT, TDG, IMDG, IATA | UN1090 |
| · UN proper shipping name | |
| · DOT | Acetone |
| · TDG | 1090 ACETONE |
| · IMDG, IATA | ACETONE |
| · Transport hazard class(es) | |
| · DOT, TDG, IMDG, IATA | |
|  | |
| · Class | 3 Flammable liquids |
| · Label | 3 |
| · Packing group | |
| · DOT, TDG, 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 MARPOL73/78 and the IBC Code | Not applicable. |

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Trade name: Pyridines Standard (1X1 mL)

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· Transport/Additional information:
· DOT
· Quantity limitations

On passenger aircraft/rail: 5 L

On cargo aircraft only: 60 L

· TDG
· Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

· 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
· Sara
· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

109-06-8 2-methylpyridine

110-86-1 pyridine

· TSCA (Toxic Substances Control Act):

67-64-1 acetone

109-06-8 2-methylpyridine

110-86-1 pyridine

· Canadian substance listings:
· Canadian Domestic Substances List (DSL)

67-64-1 acetone

109-06-8 2-methylpyridine

110-86-1 pyridine

· Canadian Ingredient Disclosure list (limit 0.1%)

None of the ingredients is listed.

· Canadian Ingredient Disclosure list (limit 1%)

All ingredients are listed.

· National regulations:
· Additional classification according to Decree on Hazardous Materials:

Carcinogenic hazardous material group III (dangerous).

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Safety Data Sheet according to HPR, Schedule 1

Printing date 03/31/2019

Version Number 3

Reviewed on 03/31/2019

Trade name: Pyridines Standard (1X1 mL)

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· 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.

· Department issuing SDS: Document Control / Regulatory**· Contact:** regulatory@ultrasci.com**· Date of the latest revision of the safety data sheet** 03/31/2019 / 2**· Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

· * Data compared to the previous version altered.

CA