

# Safety Data Sheet

according to WHS Regulations

Printing date 28.03.2019

Version number 2

Revision: 23.03.2019

## 1 Identification

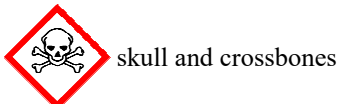
- **Product identifier**
- **Trade name:** Bis(2-chloroethyl) Ether Standard (1X1 mL)
- **Part number:** EPA-1081-1
- **Relevant identified uses of the substance or mixture and uses advised against**  
Reagents and Standards for Analytical Chemical Laboratory Use
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Agilent Technologies Australia Pty Ltd  
679 Springvale Road  
Mulgrave  
Victoria 3170, Australia
- **Further information obtainable from:**  
Telephone: 1800 802 402  
e-mail: pdl-msds\_author@agilent.com
- **Emergency telephone number:** CHEMTREC®: +(61) - 290372994

## 2 Hazard(s) Identification

- **Classification of the substance or mixture**



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



Acute Tox. 3 H331 Toxic if inhaled.



STOT SE 1 H370 Causes damage to organs.

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



GHS02 GHS06 GHS08

- **Signal word** Danger
- **Hazard-determining components of labelling:**  
methanol  
bis(2-chloroethyl) ether
- **Hazard statements**  
Highly flammable liquid and vapour.

(Contd. on page 2)

## Safety Data Sheet

### according to WHS Regulations

Printing date 28.03.2019

Version number 2

Revision: 23.03.2019

**Trade name: Bis(2-chloroethyl) Ether Standard (1X1 mL)**

(Contd. of page 1)

Toxic if inhaled.

Causes damage to organs.

- **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

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 ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF exposed: Call a POISON CENTER or doctor/physician.

Specific treatment (see on this label).

In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.











- **vPvB:** Not applicable.

### 3 Composition and Information on Ingredients

- **Chemical characterisation: Mixtures**

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

- **Dangerous components:**

67-56-1	methanol  Flam. Liq. 2, H225;  Acute Tox. 3, H301;  Acute Tox. 3, H311;  Acute Tox. 3, H331;  STOT SE 1, H370	99.368%
111-44-4	bis(2-chloroethyl) ether  Flam. Liq. 3, H226;  Acute Tox. 2, H300;  Acute Tox. 1, H310;  Acute Tox. 2, H330;  Carc. 2, H351	0.632%

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

### 4 First Aid Measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

Remove breathing equipment only after contaminated clothing have been completely removed.

(Contd. on page 3)

## Safety Data Sheet according to WHS Regulations

Printing date 28.03.2019

Version number 2

Revision: 23.03.2019

**Trade name: Bis(2-chloroethyl) Ether Standard (1X1 mL)**

(Contd. of page 2)

- In case of irregular breathing or respiratory arrest provide artificial respiration.
- **After inhalation:**  
Supply fresh air or oxygen; call for 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. Then consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**  
During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

### 6 Accidental Release Measures

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

### 7 Handling and Storage

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Keep respiratory protective device available.

(Contd. on page 4)

AU

## Safety Data Sheet

### according to WHS Regulations

Printing date 28.03.2019

Version number 2

Revision: 23.03.2019

**Trade name: Bis(2-chloroethyl) Ether Standard (1X1 mL)**

(Contd. of page 3)

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

## 8 Exposure controls and personal protection

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

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

**67-56-1 methanol**

NES	Short-term value: 328 mg/m <sup>3</sup> , 250 ppm Long-term value: 262 mg/m <sup>3</sup> , 200 ppm Sk
-----	---

WES	Short-term value: 328 mg/m <sup>3</sup> , 250 ppm Long-term value: 262 mg/m <sup>3</sup> , 200 ppm Sk
-----	---

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

NES	Short-term value: 58 mg/m <sup>3</sup> , 10 ppm Long-term value: 29 mg/m <sup>3</sup> , 5 ppm Sk
-----	--

WES	Short-term value: 58 mg/m <sup>3</sup> , 10 ppm Long-term value: 29 mg/m <sup>3</sup> , 5 ppm Sk
-----	--

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

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

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

- **Respiratory protection:**

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

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

- **Protection of hands:**

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

(Contd. on page 5)

## Safety Data Sheet

according to WHS Regulations

Printing date 28.03.2019

Version number 2

Revision: 23.03.2019

**Trade name: Bis(2-chloroethyl) Ether Standard (1X1 mL)**

(Contd. of page 4)

- **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: &gt; 4 hours

- **Eye protection:**



Tightly sealed goggles

### 9 Physical and Chemical Properties

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

- **General Information**

- **Appearance:**

<b>Form:</b>	Fluid
--------------	-------

<b>Colour:</b>	Colourless
----------------	------------

<b>Odour:</b>	Alcohol-like
---------------	--------------

<b>Odour threshold:</b>	Not determined.
-------------------------	-----------------

<b>pH-value:</b>	Not determined.
------------------	-----------------

- **Change in condition**

<b>Melting point/freezing point:</b>	-98 °C
--------------------------------------	--------

<b>Initial boiling point and boiling range:</b>	64 °C
---	-------

<b>Flash point:</b>	9 °C
---------------------	------

<b>Flammability (solid, gas):</b>	Not applicable.
-----------------------------------	-----------------

<b>Ignition temperature:</b>	455 °C
------------------------------	--------

<b>Decomposition temperature:</b>	Not determined.
-----------------------------------	-----------------

<b>Auto-ignition temperature:</b>	Product is not selfigniting.
-----------------------------------	------------------------------

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

- **Explosion limits:**

<b>Lower:</b>	5.5 Vol %
---------------	-----------

<b>Upper:</b>	44 Vol %
---------------	----------

<b>Vapour pressure at 20 °C:</b>	100 hPa
----------------------------------	---------

<b>Density at 20 °C:</b>	0.80265 g/cm <sup>3</sup>
--------------------------	---------------------------

<b>Relative density</b>	Not determined.
-------------------------	-----------------

<b>Vapour density</b>	Not determined.
-----------------------	-----------------

<b>Evaporation rate</b>	Not determined.
-------------------------	-----------------

- **Solubility in / Miscibility with water:**

Not miscible or difficult to mix.

<b>Partition coefficient: n-octanol/water:</b>	Not determined.
--	-----------------

(Contd. on page 6)

## Safety Data Sheet

### according to WHS Regulations

Printing date 28.03.2019

Version number 2

Revision: 23.03.2019

**Trade name: Bis(2-chloroethyl) Ether Standard (1X1 mL)**

(Contd. of page 5)

- |  |                 |
|--|-----------------|
| <b>· Viscosity:</b>                        |                 |
| <b>Dynamic:</b>                            | Not determined. |
| <b>Kinematic:</b>                          | Not determined. |
| <b>· Solvent content:</b>                  |                 |
| <b>Organic solvents:</b>                   | 99.4 %          |
| <b>VOC (EC)</b>                            | 99.37 %         |
| <b>· Other information</b>                 |                 |
| No further relevant information available. |                 |

### 10 Stability and Reactivity

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

### 11 Toxicological Information

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

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

#### ATE (Acute Toxicity Estimates)

Oral	LD50	11,865 mg/kg (rat)
Dermal	LD50	14,238 mg/kg (rabbit)
Inhalative	LC50/4 h	3.02 mg/L

#### 67-56-1 methanol

Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

#### 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)

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

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

Toxic

AU

(Contd. on page 7)

## Safety Data Sheet

### according to WHS Regulations

Printing date 28.03.2019

Version number 2

Revision: 23.03.2019

**Trade name: Bis(2-chloroethyl) Ether 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.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
 Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

**13 Disposal considerations**

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

**14 Transport information**

<b>· Not Regulated, De minimus Quantities</b>	-
<b>· UN-Number</b>	UN1992
<b>· ADG, IMDG, IATA</b>	UN1992
<b>· UN proper shipping name</b>	1992 FLAMMABLE LIQUID, TOXIC, N.O.S.
<b>· ADG</b>	(METHANOL)
<b>· IMDG, IATA</b>	FLAMMABLE LIQUID, TOXIC, N.O.S. (METHANOL)
<b>· Transport hazard class(es)</b>	
<b>· ADG</b>	
 	
<b>· Class</b>	3 Flammable liquids.

(Contd. on page 8)

## Safety Data Sheet

according to WHS Regulations

Printing date 28.03.2019

Version number 2

Revision: 23.03.2019

**Trade name: Bis(2-chloroethyl) Ether Standard (1X1 mL)**

(Contd. of page 7)

· **Label** 3+6.1

· **IMDG**



· **Class** 3 Flammable liquids.  
 · **Label** 3/6.1

· **IATA**



· **Class** 3 Flammable liquids.  
 · **Label** 3 (6.1)

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

· **Environmental hazards:** Not applicable.

· **Special precautions for user** Warning: Flammable liquids.  
 · **Danger code (Kemler):** 336  
 · **EMS Number:** F-E,S-D  
 · **Stowage Category** B  
 · **Stowage Code** SW2 Clear of living quarters.

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

· **Transport/Additional information:**

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

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

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

AU

(Contd. on page 9)

## Safety Data Sheet

### according to WHS Regulations

Printing date 28.03.2019

Version number 2

Revision: 23.03.2019

<b>Trade name: Bis(2-chloroethyl) Ether Standard (1X1 mL)</b>
---

(Contd. of page 8)

### 15 Regulatory information

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

- **Australian Inventory of Chemical Substances**

All ingredients are listed.
-----------------------------

- **Standard for the Uniform Scheduling of Medicines and Poisons**

67-56-1	methanol	S5, S6
---------	----------	--------

- **Directive 2012/18/EU**

- **Named dangerous substances - ANNEX I** None of the ingredients is listed.

- **Seveso category**

H2 ACUTE TOXIC

P5c FLAMMABLE LIQUIDS

- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t

- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

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

### 16 Other information

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

- **Relevant phrases**

H225 Highly flammable liquid and vapour.

H226 Flammable liquid and vapour.

H300 Fatal if swallowed.

H301 Toxic if swallowed.

H310 Fatal in contact with skin.

H311 Toxic in contact with skin.

H330 Fatal if inhaled.

H331 Toxic if inhaled.

H351 Suspected of causing cancer.

H370 Causes damage to organs.

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

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

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 2: Acute toxicity – Category 2

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 1: Acute toxicity – Category 1

Carc. 2: Carcinogenicity – Category 2

STOT SE 1: Specific target organ toxicity (single exposure) – Category 1