acc. to Safe Work Australia - Code of Practice

#### Benzene ROTICHROM® GC

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Version: (GHS 3)

# SECTION 1: Identification of the substance/mixture and of the company/ undertaking

#### **Product identifier** 1.1

Identification of the substance Benzene ROTICHROM® GC

Article number 4898 CAS number 71-43-2

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: Laboratory chemical

Laboratory and analytical use

Uses advised against: Do not use for products which come into contact

with foodstuffs. Do not use for private purposes (household). Food, drink and animal feeding-

stuffs.

#### 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

Telephone:+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 e-mail: sicherheit@carlroth.de Website: www.carlroth.de

Competent person responsible for the safety data Department Health, Safety and Environment

sheet:

sicherheit@carlroth.de e-mail (competent person):

#### 1.4 **Emergency telephone number**

| Name   | Street          | Postal code/city        | Telephone | Website |
|--|-----------------|-------------------------|-----------|---------|
| NSW Poisons Information Centre<br>Childrens Hospital | Hawkesbury Road | 2145 West-<br>mead, NSW | 131126    |         |

# **SECTION 2: Hazards identification**

#### 2.1 Classification of the substance or mixture

# Classification acc. to GHS

| Section | Hazard class                      | Cat-<br>egory | Hazard class and category | Hazard<br>statement |
|---------|-----------------------------------|---------------|---------------------------|---------------------|
| 2.6     | Flammable liquid                  | 2             | Flam. Liq. 2              | H225                |
| 3.2     | Skin corrosion/irritation         | 2             | Skin Irrit. 2             | H315                |
| 3.3     | Serious eye damage/eye irritation | 2             | Eye Irrit. 2              | H319                |
| 3.5     | Germ cell mutagenicity            | 1B            | Muta. 1B                  | H340                |

Australia (en) Page 1 / 15

acc. to Safe Work Australia - Code of Practice

### **Benzene ROTICHROM® GC**

article number: 4898



| Section | Hazard class                                       | Cat-<br>egory | Hazard class and category | Hazard<br>statement |
|---------|--|---------------|---------------------------|---------------------|
| 3.6     | Carcinogenicity                                    | 1A            | Carc. 1A                  | H350                |
| 3.9     | Specific target organ toxicity - repeated exposure | 1             | STOT RE 1                 | H372                |
| 3.10    | Aspiration hazard                                  | 1             | Asp. Tox. 1               | H304                |

For full text of abbreviations: see SECTION 16

# The most important adverse physicochemical, human health and environmental effects

Delayed or immediate effects can be expected after short or long-term exposure. The product is combustible and can be ignited by potential ignition sources.

#### 2.2 Label elements

### Labelling

Signal word Danger

# **Pictograms**

GHS02, GHS07, GHS08







## **Hazard statements**

| H225 | Highly flammable liquid and vapour   |
|------|--|
| H304 | May be fatal if swallowed and enters airways   |
| H315 | Causes skin irritation   |
| H319 | Causes serious eye irritation  |
| H340 | May cause genetic defects  |
| H350 | May cause cancer   |
| H372 | Causes damage to organs (haematopoietic system) through prolonged or repeated exposure |

# **Precautionary statements**

# **Precautionary statements - prevention**

| P210 | Keep away from heat/sparks/open flames/hot surfaces No smoking |
|------|--|
| P260 | Do not breathe dust/fume/gas/mist/yapours/spray                |

# **Precautionary statements - response**

| B004 B040      | TE CHANGE TO THE TENTE OF THE T |
|----------------|--|
| P301+P310      | IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician   |
| P302+P352      | IF ON SKIN: Wash with plenty of soap and water   |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact  |
|                | lenses, if present and easy to do. Continue rinsing  |
| P308+P313      | IF exposed or concerned: Get medical advice/attention  |

P331 Do NOT induce vomiting

P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher for extinction

# **Precautionary statements - storage**

P403+P235 Store in a well-ventilated place. Keep cool

For professional users only

Australia (en) Page 2 / 15

acc. to Safe Work Australia - Code of Practice

#### **Benzene ROTICHROM® GC**

article number: 4898



#### 2.3 Other hazards

#### Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

### **Endocrine disrupting properties**

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

# **SECTION 3: Composition/information on ingredients**

# 3.1 Substances

Name of substance Benzene

Molecular formula C<sub>6</sub>H<sub>6</sub>

Molar mass  $78.11 \,^{\mathrm{g}}$ /<sub>mol</sub>

CAS No 71-43-2

# **SECTION 4: First aid measures**

### 4.1 Description of first aid measures



#### **General notes**

Take off contaminated clothing.

### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

### Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

### Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

### Following ingestion

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Observe aspiration hazard if vomiting occurs.

# 4.2 Most important symptoms and effects, both acute and delayed

Following inhalation: Agitation, Cough, pain, choking, and breathing difficulties, Headaches and dizziness may occur, Poisoning effect on central nervous system can cause convulsions, laboured breathing and loss of consciousness,

Following skin contact: Irritation, Localised redness,

After eye contact: Irritation, Conjunctival oedema (chemosis) of the eyes,

Following ingestion: Nausea, Vomiting, Aspiration hazard

### 4.3 Indication of any immediate medical attention and special treatment needed

none

Australia (en) Page 3 / 15

acc. to Safe Work Australia - Code of Practice

### **Benzene ROTICHROM® GC**

article number: 4898



# **SECTION 5: Firefighting measures**

### 5.1 Extinguishing media



### Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! water spray, alcohol resistant foam, dry extinguishing powder, BC-powder, carbon dioxide (CO<sub>2</sub>)

## Unsuitable extinguishing media

water jet

### 5.2 Special hazards arising from the substance or mixture

Combustible. In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours are heavier than air, spread along floors and form explosive mixtures with air. Vapours may form explosive mixtures with air

### **Hazardous combustion products**

In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

### 5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

### **SECTION 6: Accidental release measures**

# 6.1 Personal precautions, protective equipment and emergency procedures



### For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

### **6.2** Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

# 6.3 Methods and material for containment and cleaning up

### Advice on how to contain a spill

Covering of drains.

### Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

## Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

Australia (en) Page 4 / 15

acc. to Safe Work Australia - Code of Practice

### **Benzene ROTICHROM® GC**

article number: 4898



#### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

# **SECTION 7: Handling and storage**

### 7.1 Precautions for safe handling

Provision of sufficient ventilation. Avoid exposure.

# Measures to prevent fire as well as aerosol and dust generation



Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge. Due to danger of explosion, prevent leakage

of vapours into cellars, flues and ditches.

# Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

# 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Keep in a cool place.

### **Incompatible substances or mixtures**

Observe hints for combined storage.

### Consideration of other advice:

Ground/bond container and receiving equipment.

### **Ventilation requirements**

Use local and general ventilation.

### Specific designs for storage rooms or vessels

Recommended storage temperature: 2 - 8 °C

# 7.3 Specific end use(s)

No information available.

# **SECTION 8: Exposure controls/personal protection**

# 8.1 Control parameters

**National limit values** 

Australia (en) Page 5 / 15

acc. to Safe Work Australia - Code of Practice

#### Benzene ROTICHROM® GC

article number: 4898



### **Occupational exposure limit values (Workplace Exposure Limits)**

| Cou<br>ntr<br>y | Name of agent | CAS No  | Identi-<br>fier | TW<br>A<br>[pp<br>m] | TWA<br>[mg/<br>m³] | STE<br>L<br>[pp<br>m] | STEL<br>[mg/<br>m³] | Ceil<br>ing-<br>C<br>[pp<br>m] | Ceil-<br>ing-C<br>[mg/<br>m³] | Nota-<br>tion | Source |
|-----------------|---------------|---------|-----------------|----------------------|--------------------|-----------------------|---------------------|--------------------------------|-------------------------------|---------------|--------|
| AU              | benzene       | 71-43-2 | WES             | 1                    | 3.2                |                       |                     |                                |                               |               | WES    |

Notation

Ceiling-C STEL

Ceiling value is a limit value above which exposure should not occur

Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA

Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

#### **Environmental values**

#### **Relevant PNECs and other threshold levels** End-**Threshold Organism Environmental com-Exposure time** point level partment $80 \, ^{\mu g}/_{l}$ **PNEC** freshwater aquatic organisms short-term (single instance) **PNEC** 8 µg/ı marine water short-term (single instance) aquatic organisms 39 mg/<sub>I</sub> **PNEC** aquatic organisms sewage treatment plant short-term (single instance) (STP) **PNEC** 1.36 <sup>mg</sup>/<sub>ka</sub> aquatic organisms freshwater sediment short-term (single instance) 0.136 mg/kg **PNEC** aquatic organisms marine sediment short-term (single instance) 0.225 mg/kg **PNEC** terrestrial organisms soil short-term (single instance)

#### 8.2 **Exposure controls**

### **Individual protection measures (personal protective equipment)**

### **Eye/face protection**





Use safety goggle with side protection.

### Skin protection



### hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

Page 6 / 15 Australia (en)

acc. to Safe Work Australia - Code of Practice

### **Benzene ROTICHROM® GC**

article number: 4898

# type of material

FKM (fluoro rubber)

### material thickness

≥0,4 mm

# • breakthrough times of the glove material

>480 minutes (permeation: level 6)

### other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Flame-retardant protective clothing.

### **Respiratory protection**





Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown).

### **Environmental exposure controls**

Keep away from drains, surface and ground water.

# **SECTION 9: Physical and chemical properties**

# 9.1 Information on basic physical and chemical properties

Physical state liquid
Colour colourless

Odour aromatic

Melting point/freezing point 5.49 °C at 1,013 hPa (ECHA)

Boiling point or initial boiling point and boiling 80.09 °C at 1,014 hPa (ECHA)

range

Flammability flammable liquid in accordance with GHS criteria

Lower and upper explosion limit 39 g/m³ (LEL) - 270 g/m³ (UEL) /

1.2 vol% (LEL) - 7.8 vol% (UEL)

Flash point -11 °C at 1,014 hPa (ECHA)

Auto-ignition temperature 498 °C at 1,014 hPa (ECHA)

Decomposition temperature not relevant

pH (value) not determined
Kinematic viscosity not determined

Dynamic viscosity 0.604 mPa s at 25 °C

Solubility(ies)

Water solubility 1.88  $^{9}$ / $_{1}$  at 23.5  $^{\circ}$ C (ECHA)

Australia (en) Page 7 / 15



acc. to Safe Work Australia - Code of Practice

### **Benzene ROTICHROM® GC**

article number: 4898

Partition coefficient

Partition coefficient n-octanol/water (log value): 2.13 (pH value: 7, 25 °C) (ECHA)

100 hPa at 20 °C Vapour pressure

155 hPa at 30 °C 365 hPa at 50 °C 625 hPa at 65 °C

Density and/or relative density

Density  $0.876 \, {}^{9}/_{cm^{3}}$  at 20 °C (ECHA)

Relative vapour density 2.7 (air = 1)

Particle characteristics not relevant (liquid)

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard

classes:

There is no additional information.

Other safety characteristics:

Gas group (explosion group)

Maximum Experimental Safe Gap value; MESG >

0,9 mm

Maximum explosion pressure 9.8 bar Refractive index 1.501

# **SECTION 10: Stability and reactivity**

### Reactivity

It's a reactive substance. Risk of ignition. Vapours may form explosive mixtures with air.

### If heated

Risk of ignition.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

# 10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser, Chlorine, Chromium(VI) oxide, Fluorine, Perchlorates, Permanganates, Peroxides, Nitric acid, Hydrogen peroxide

# 10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

### 10.5 Incompatible materials

Rubber articles, different plastics

Page 8 / 15 Australia (en)



acc. to Safe Work Australia - Code of Practice

## **Benzene ROTICHROM® GC**

article number: 4898



Hazardous combustion products: see section 5.



# 11.1 Information on toxicological effects

### Classification acc. to GHS

## **Acute toxicity**

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4. May be harmful if swallowed or if inhaled.

| Acute toxicity     |          |  |         |        |        |
|--------------------|----------|--|---------|--------|--------|
| Exposure route     | Endpoint | Value                                    | Species | Method | Source |
| oral               | LD50     | >2,000 <sup>mg</sup> / <sub>kg</sub>     | rat     |        | ECHA   |
| inhalation: vapour | LC50     | 43,767 <sup>mg</sup> / <sub>m³</sub> /4h | rat     |        | ECHA   |

### Skin corrosion/irritation

Causes skin irritation.

## Serious eye damage/eye irritation

Causes serious eye irritation.

# Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

### **Germ cell mutagenicity**

May cause genetic defects.

### Carcinogenicity

May cause cancer.

### Reproductive toxicity

Shall not be classified as a reproductive toxicant.

### Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

# **Specific target organ toxicity - repeated exposure**

Causes damage to organs (haematopoietic system) through prolonged or repeated exposure.

| Hazard category | Target organ          | Exposure route |
|-----------------|-----------------------|----------------|
| 1               | haematopoietic system | if exposed     |

# **Aspiration hazard**

May be fatal if swallowed and enters airways.

# Symptoms related to the physical, chemical and toxicological characteristics

### If swallowed

nausea, vomiting, aspiration hazard

Australia (en) Page 9 / 15



# 10.6 Hazardous decomposition products

acc. to Safe Work Australia - Code of Practice

### **Benzene ROTICHROM® GC**

article number: 4898



Causes serious eye irritation, conjunctivitis (pink eye)

#### If inhaled

cough, pain, choking, and breathing difficulties, headache, vertigo, poisoning effect on central nervous system can cause convulsions, laboured breathing and loss of consciousness

#### If on skin

causes skin irritation, localised redness

#### Other information

Other adverse effects: Agitation, Drowsiness, Dizziness, Narcosis

# 11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

# **SECTION 12: Ecological information**

### 12.1 Toxicity

Toxic to aquatic life with long lasting effects.

| Aquatic toxicity (acute) |                                  |                       |        |                  |  |  |
|--------------------------|----------------------------------|-----------------------|--------|------------------|--|--|
| Endpoint                 | Value                            | Species               | Source | Exposure<br>time |  |  |
| LC50                     | 5.3 <sup>mg</sup> / <sub>l</sub> | fish                  | ECHA   | 96 h             |  |  |
| EC50                     | 10 <sup>mg</sup> / <sub>l</sub>  | aquatic invertebrates | ECHA   | 48 h             |  |  |
| ErC50                    | 100 <sup>mg</sup> / <sub>l</sub> | algae                 | ECHA   | 72 h             |  |  |

### 12.2 Persistence and degradability

Theoretical Oxygen Demand: 3.072 <sup>mg</sup>/<sub>mg</sub> Theoretical Carbon Dioxide: 3.381 <sup>mg</sup>/<sub>mg</sub>

### **Biodegradation**

The substance is readily biodegradable.

### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

| n-octanol/water (log KOW) | 2.13 (pH value: 7, 25 °C) (ECHA) |
|---------------------------|----------------------------------|
| BCF                       | 13 (ECHA)                        |

# 12.4 Mobility in soil

| Henry's law constant | 542 Pa m³/ <sub>mol</sub> at 25 °C (ECHA) |
|----------------------|---|
|----------------------|---|

### 12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

### 12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of  $\geq$  0,1%.

Australia (en) Page 10 / 15



acc. to Safe Work Australia - Code of Practice

#### **Benzene ROTICHROM® GC**

article number: 4898

#### 12.7 Other adverse effects

Data are not available.

# **SECTION 13: Disposal considerations**

# 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

# Sewage disposal-relevant information

Do not empty into drains.

# Waste treatment of containers/packagings

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

### Relevant provisions relating to waste(Basel Convention)

# Properties of waste which render it hazardous

**H3** Flammable liquids

H11 Toxic (Delayed or chronic)

### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

# **SECTION 14: Transport information**

| 14.1 | UN number                  |         |
|------|----------------------------|---------|
|      | UN RTDG                    | UN 1114 |
|      | IMDG-Code                  | UN 1114 |
|      | ICAO-TI                    | UN 1114 |
| 14.2 | UN proper shipping name    |         |
|      | UN RTDG                    | BENZENE |
|      | IMDG-Code                  | BENZENE |
|      | ICAO-TI                    | Benzene |
| 14.3 | Transport hazard class(es) |         |
|      | UN RTDG                    | 3       |
|      | IMDG-Code                  | 3       |
|      | ICAO-TI                    | 3       |
| 14.4 | Packing group              |         |
|      | UN RTDG                    | II      |
|      | IMDG-Code                  | II      |
|      |                            |         |

Australia (en) Page 11 / 15



acc. to Safe Work Australia - Code of Practice

### **Benzene ROTICHROM® GC**

article number: 4898

ICAO-TI II

**14.5 Environmental hazards** non-environmentally hazardous acc. to the dan-

gerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

# 14.8 Information for each of the UN Model Regulations

Transport informationNational regulationsAdditional information(UN RTDG)

UN number 1114
Class 3
Packing group II
Danger label(s) 3



Special provisions (SP)

UN RTDG

Excepted quantities (EQ)

E2 UN RTDG

Limited quantities (LQ) 1 L

ÜÑ RTDG

Emergency Action Code 3WE

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name BENZENE

Particulars in the shipper's declaration UN1114, BENZENE, 3, II, -11°C c.c.

Marine pollutant -

Danger label(s) 3



Special provisions (SP) -

Excepted quantities (EQ) E2
Limited quantities (LQ) 1 L

EmS F-E, S-D

Stowage category B

Australia (en) Page 12 / 15



acc. to Safe Work Australia - Code of Practice

### **Benzene ROTICHROM® GC**

article number: 4898



# International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name Benzene

Particulars in the shipper's declaration UN1114, Benzene, 3, II

Danger label(s) 3



Excepted quantities (EQ) E2 Limited quantities (LQ) 1 L

# **SECTION 15: Regulatory information**

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

There is no additional information.

National regulations(Australia)

Australian Inventory of Chemical Substances(AICS)

Substance is listed.

### Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

# **National inventories**

| Country | Inventory  | Status                       |
|---------|------------|------------------------------|
| AU      | AIIC       | substance is listed          |
| CA      | DSL        | substance is listed          |
| CN      | IECSC      | substance is listed          |
| EU      | ECSI       | substance is listed          |
| EU      | REACH Reg. | substance is listed          |
| JP      | CSCL-ENCS  | substance is listed          |
| KR      | KECI       | substance is listed          |
| MX      | INSQ       | substance is listed          |
| NZ      | NZIoC      | substance is listed          |
| PH      | PICCS      | substance is listed          |
| TR      | CICR       | substance is listed          |
| TW      | TCSI       | substance is listed          |
| US      | TSCA       | substance is listed (ACTIVE) |
| VN      | NCI        | substance is listed          |

Legend

Australian Inventory of Industrial Chemicals Chemical Inventory and Control Regulation List of Existing and New Chemical Substances (CSCL-ENCS) AIIC

Domestic Substances List (DSL) EC Substance Inventory (EINECS, ELINCS, NLP) FCSI

Inventory of Existing Chemical Substances Produced or Imported in China **IECSC** 

Australia (en) Page 13 / 15

acc. to Safe Work Australia - Code of Practice

### **Benzene ROTICHROM® GC**

article number: 4898

Legend

INSQ National Inventory of Chemical Substances
KECI Korea Existing Chemicals Inventory
NCI National Chemical Inventory
NZIOC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances
TCSI Taiwan Chemical Substance Inventory
TSCA Toxic Substance Control Act

# 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

# **SECTION 16: Other information**

# Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value)   | Safety-<br>relev-<br>ant |
|---------|---------------------------|---|--------------------------|
| 2.3     |                           | Endocrine disrupting properties:<br>Does not contain an endocrine disruptor (ED) at<br>a concentration of ≥ 0,1%. | yes                      |
| 14.8    |                           | Emergency Action Code:<br>3WE   | yes                      |
| 15.1    |                           | National inventories:<br>change in the listing (table)  | yes                      |

# **Abbreviations and acronyms**

| Abbr.     | Descriptions of used abbreviations   |
|-----------|--|
| BCF       | Bioconcentration factor  |
| CAS       | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)   |
| Ceiling-C | Ceiling value  |
| DGR       | Dangerous Goods Regulations (see IATA/DGR)   |
| EC50      | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| ED        | Endocrine disruptor  |
| EINECS    | European Inventory of Existing Commercial Chemical Substances  |
| ELINCS    | European List of Notified Chemical Substances  |
| EmS       | Emergency Schedule   |
| ErC50     | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control           |
| GHS       | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations  |
| IATA      | International Air Transport Association  |
| IATA/DGR  | Dangerous Goods Regulations (DGR) for the air transport (IATA)   |
| ICAO      | International Civil Aviation Organization  |
| ICAO-TI   | Technical instructions for the safe transport of dangerous goods by air  |
| IMDG      | International Maritime Dangerous Goods Code  |

Australia (en) Page 14 / 15



acc. to Safe Work Australia - Code of Practice

# **Benzene ROTICHROM® GC**

article number: 4898



| Abbr.     | Descriptions of used abbreviations  |
|-----------|---|
| IMDG-Code | International Maritime Dangerous Goods Code   |
| LC50      | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50      | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval                  |
| LEL       | Lower explosion limit (LEL)   |
| NLP       | No-Longer Polymer   |
| PBT       | Persistent, Bioaccumulative and Toxic   |
| PNEC      | Predicted No-Effect Concentration   |
| ppm       | Parts per million   |
| STEL      | Short-term exposure limit   |
| TWA       | Time-weighted average   |
| UEL       | Upper explosion limit (UEL)   |
| UN RTDG   | UN Recommendations on the Transport of Dangerous Good   |
| vPvB      | Very Persistent and very Bioaccumulative  |
| WES       | Safe Work Australia: Workplace exposure standards for airborne contaminants   |

# Key literature references and sources for data

Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

# List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text  |
|------|---|
| H225 | Highly flammable liquid and vapour.   |
| H304 | May be fatal if swallowed and enters airways.   |
| H315 | Causes skin irritation.   |
| H319 | Causes serious eye irritation.  |
| H340 | May cause genetic defects.  |
| H350 | May cause cancer.   |
| H372 | Causes damage to organs (haematopoietic system) through prolonged or repeated exposure. |

### Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

Australia (en) Page 15 / 15