

Safety data sheet Safety data sheet

acc. to Safe Work Australia - Code of Practice



DMT-Removal-DCE for DNA-synthesis with PolyGen® Synthesizer for DNA synthesis

article number: **K060**
Version: **GHS 3.0 en**
Replaces version of: 2022-04-12
Version: (GHS 2)

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

1.1 Product identifier

Identification of the substance **DMT-Removal-DCE for DNA synthesis**
Article number **K060**

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 sheet: Department Health, Safety and Environment

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

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|------------------------------------------------------|-----------------|--------------------|-----------|---------|
| NSW Poisons Information Centre Childrens Hospital | Hawkesbury Road | 2145 Westmead, NSW | 131126 | |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

| Section | Hazard class | Category | Hazard class and category | Hazard statement |
|---------|---------------------------|----------|---------------------------|------------------|
| 2.6 | Flammable liquid | 2 | Flam. Liq. 2 | H225 |
| 3.10 | Acute toxicity (oral) | 4 | Acute Tox. 4 | H302 |
| 3.1I | Acute toxicity (inhal.) | 3 | Acute Tox. 3 | H331 |
| 3.2 | Skin corrosion/irritation | 2 | Skin Irrit. 2 | H315 |

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| Section | Hazard class | Cat-egory | Hazard class and category | Hazard statement |
|---------|---------------------------------------------------------------------------------|-----------|---------------------------|------------------|
| 3.3 | Serious eye damage/eye irritation | 1 | Eye Dam. 1 | H318 |
| 3.6 | Carcinogenicity | 1B | Carc. 1B | H350 |
| 3.8R | Specific target organ toxicity - single exposure (respiratory tract irritation) | 3 | STOT SE 3 | H335 |
| 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

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labelling

Signal word

Danger

Pictograms

GHS02, GHS05,
GHS06, GHS08



Hazard statements

H225 Highly flammable liquid and vapour
H302 Harmful if swallowed
H304 May be fatal if swallowed and enters airways
H315 Causes skin irritation
H318 Causes serious eye damage
H331 Toxic if inhaled
H335 May cause respiratory irritation
H350 May cause cancer

Precautionary statements

Precautionary statements - prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Precautionary statements - response

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
P331 Do NOT induce vomiting
P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher for extinction

Precautionary statements - storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed
P403+P235 Store in a well-ventilated place. Keep cool

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For professional users only

Hazardous ingredients for labelling: 1,2-Dichloroethane, Trichloroacetic acid

2.3 Other hazards

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0,1\%$.

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

not relevant (mixture)

3.2 Mixtures

Description of the mixture

| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes |
|----------------------|----------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------|
| 1,2-Dichloroethane | CAS No 107-06-2 EC No 203-458-1 | ≥ 50 | Flam. Liq. 2 / H225 Acute Tox. 4 / H302 Acute Tox. 3 / H331 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Carc. 1B / H350 STOT SE 3 / H335 Asp. Tox. 1 / H304 | | |
| Trichloroacetic acid | CAS No 76-03-9 EC No 200-927-2 | 3 - < 5 | Skin Corr. 1A / H314 STOT SE 3 / H335 | | |

Remarks

For full text of abbreviations: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Self-protection of the first aider.

Following inhalation

Call a physician immediately. If breathing is irregular or stopped, administer artificial respiration.

Following skin contact

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

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Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Following ingestion

Rinse mouth with water (only if the person is conscious). Call a physician immediately. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Call a doctor. Observe aspiration hazard if vomiting occurs.

4.2 Most important symptoms and effects, both acute and delayed

Aspiration hazard, Vomiting, Risk of blindness, Risk of serious damage to eyes, Irritation, Cough, Dyspnoea

4.3 Indication of any immediate medical attention and special treatment needed

none

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 (CO₂)

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

Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrogen chloride (HCl), Hydrogen halides (HX), May produce toxic fumes of carbon monoxide if burning.

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.

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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. If substance has entered a water course or sewer, inform the responsible authority.

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.

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. Use extractor hood (laboratory). 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. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Protect from sunlight.

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Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Store locked up. Ground/bond container and receiving equipment.

Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted. Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | CAS No | Identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | Notation | Source |
|---------|------------------------------------------|----------|------------|-----------|--------------------------|------------|---------------------------|-----------------|--------------------------------|----------|--------|
| AU | ethylene dichloride (1,2-dichloroethane) | 107-06-2 | WES | 10 | 40 | | | | | | WES |
| AU | trichloroacetic acid | 76-03-9 | WES | 1 | 6.7 | | | | | | WES |

Notation

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

STEL 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)

| Relevant DNELs of components | | | | | | |
|------------------------------|---------|-----------|-------------------------|------------------------------------|-------------------|----------------------------|
| Name of substance | CAS No | End-point | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
| Trichloroacetic acid | 76-03-9 | DNEL | 1.41 mg/kg | human, dermal | worker (industry) | acute - local effects |
| Trichloroacetic acid | 76-03-9 | DNEL | 124.3 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Trichloroacetic acid | 76-03-9 | DNEL | 124.3 mg/m ³ | human, inhalatory | worker (industry) | acute - systemic effects |
| Trichloroacetic acid | 76-03-9 | DNEL | 1.41 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |
| Trichloroacetic acid | 76-03-9 | DNEL | 1.41 mg/kg bw/day | human, dermal | worker (industry) | acute - systemic effects |

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| Relevant PNECs of components | | | | | | |
|------------------------------|----------|-----------|-----------------------------|-----------------------|------------------------------|------------------------------|
| Name of substance | CAS No | End-point | Threshold level | Organism | Environmental compartment | Exposure time |
| 1,2-Dichloroethane | 107-06-2 | PNEC | 1.1 mg/l | aquatic organisms | freshwater | short-term (single instance) |
| 1,2-Dichloroethane | 107-06-2 | PNEC | 0.11 mg/l | aquatic organisms | marine water | short-term (single instance) |
| 1,2-Dichloroethane | 107-06-2 | PNEC | 27.8 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| 1,2-Dichloroethane | 107-06-2 | PNEC | 11.1 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| 1,2-Dichloroethane | 107-06-2 | PNEC | 1.11 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| 1,2-Dichloroethane | 107-06-2 | PNEC | 1.8 mg/kg | terrestrial organisms | soil | short-term (single instance) |
| Trichloroacetic acid | 76-03-9 | PNEC | 0.000014 mg/cm ³ | unknown | marine sediment | intermittent release |
| Trichloroacetic acid | 76-03-9 | PNEC | 0.000017 mg/cm ³ | unknown | marine water | intermittent release |
| Trichloroacetic acid | 76-03-9 | PNEC | 0.0027 mg/cm ³ | unknown | air | intermittent release |
| Trichloroacetic acid | 76-03-9 | PNEC | 0.00014 mg/cm ³ | unknown | freshwater sediment | intermittent release |
| Trichloroacetic acid | 76-03-9 | PNEC | 0.00017 mg/cm ³ | unknown | freshwater | intermittent release |
| Trichloroacetic acid | 76-03-9 | PNEC | 100 mg/cm ³ | unknown | sewage treatment plant (STP) | intermittent release |
| Trichloroacetic acid | 76-03-9 | PNEC | 0.0046 mg/cm ³ | unknown | soil | intermittent release |
| Trichloroacetic acid | 76-03-9 | PNEC | 2.7 µg/l | aquatic organisms | water | intermittent release |
| Trichloroacetic acid | 76-03-9 | PNEC | 0.17 µg/l | aquatic organisms | freshwater | short-term (single instance) |
| Trichloroacetic acid | 76-03-9 | PNEC | 0.017 µg/l | aquatic organisms | marine water | short-term (single instance) |
| Trichloroacetic acid | 76-03-9 | PNEC | 100 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| Trichloroacetic acid | 76-03-9 | PNEC | 0.143 µg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| Trichloroacetic acid | 76-03-9 | PNEC | 0.014 µg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| Trichloroacetic acid | 76-03-9 | PNEC | 20 µg/kg | terrestrial organisms | soil | short-term (single instance) |

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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.

• type of material

FKM (fluoro rubber)

• material thickness

0,4 mm

• breakthrough times of the glove material

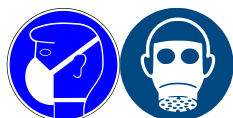
>480 minutes (permeation: level 6)

• 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.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Physical state | liquid |
| Colour | colourless |
| Odour | characteristic |
| Odour threshold | 3 ppm |
| Melting point/freezing point | -35.5 °C |
| Boiling point or initial boiling point and boiling range | 84 °C |
| Flammability | flammable liquid in accordance with GHS criteria |
| Lower and upper explosion limit | 250 g/m ³ (LEL) - 660 g/m ³ (UEL) / 6 vol% (LEL) - 15.9 vol% (UEL) |
| Flash point | 13 °C |
| Auto-ignition temperature | 440 °C |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | 0.64 mm ² /s at 20 °C |
| Dynamic viscosity | 0.8 mPa s at 20 °C |

Solubility(ies)

Water solubility 8 g/l at 20 °C

Partition coefficient

Partition coefficient n-octanol/water (log value): this information is not available

Vapour pressure 87 hPa at 20 °C

Density and/or relative density

Density 1.25 g/cm³

Relative vapour density 3.4 (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.

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Other safety characteristics:

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

The mixture contains reactive substance(s). 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, Alkali metals, Alkaline earth metal, Metal powder, Nitric acid, Nitrogen oxides (NO_x)

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Direct light irradiation. Protect from moisture.

10.5 Incompatible materials

aluminium, iron, different Light metals

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to GHS

Acute toxicity

Harmful if swallowed. Toxic if inhaled.

GHS of the United Nations, annex 4. May be harmful in contact with skin.

| Acute toxicity estimate (ATE) of components | | | |
|---------------------------------------------|----------|--------------------|---------------|
| Name of substance | CAS No | Exposure route | ATE |
| 1,2-Dichloroethane | 107-06-2 | oral | 670 mg/kg |
| 1,2-Dichloroethane | 107-06-2 | inhalation: vapour | 7.758 mg/l/4h |

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| Acute toxicity of components | | | | | |
|------------------------------|----------|--------------------|----------|-----------------------------|---------|
| Name of substance | CAS No | Exposure route | Endpoint | Value | Species |
| 1,2-Dichloroethane | 107-06-2 | inhalation: vapour | LC50 | 7,758 mg/m ³ /4h | rat |
| 1,2-Dichloroethane | 107-06-2 | oral | LD50 | 670 mg/kg | rat |
| 1,2-Dichloroethane | 107-06-2 | dermal | LD50 | 2,800 mg/kg | rabbit |
| Trichloroacetic acid | 76-03-9 | oral | LD50 | 3,320 mg/kg | rat |

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

May cause cancer.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

vomiting, aspiration hazard

• If in eyes

Causes serious eye damage, risk of blindness

• If inhaled

vertigo, headache, Irritation to respiratory tract, cough, Dyspnoea

• If on skin

causes skin irritation

• Other information

Other adverse effects: Liver and kidney damage, Cardiovascular system, Central nervous system

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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) of components | | | | | |
|----------------------------------------|----------|----------|-------------|-----------------------|---------------|
| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
| 1,2-Dichloroethane | 107-06-2 | LC50 | 136 mg/l | fish | 96 h |
| 1,2-Dichloroethane | 107-06-2 | EC50 | 160 mg/l | aquatic invertebrates | 48 h |
| Trichloroacetic acid | 76-03-9 | EC50 | 2,000 mg/l | daphnia magna | 48 h |
| Trichloroacetic acid | 76-03-9 | LC50 | >1,000 mg/l | orfe (Leuciscus idus) | 48 h |
| Trichloroacetic acid | 76-03-9 | LC50 | 2,000 mg/l | Pimephales promelas | 96 h |

12.2 Persistence and degradability

0.787 mg/mg

| Degradability of components | | | | | | |
|-----------------------------|---------|----------------|------------------|------|--------|--------|
| Name of substance | CAS No | Process | Degradation rate | Time | Method | Source |
| Trichloroacetic acid | 76-03-9 | biotic/abiotic | 59 % | 20 d | | |

12.3 Bioaccumulative potential

Data are not available.

| Bioaccumulative potential of components | | | | |
|-----------------------------------------|----------|-----|------------------------------|----------|
| Name of substance | CAS No | BCF | Log KOW | BOD5/COD |
| 1,2-Dichloroethane | 107-06-2 | 2 | 1.45 (pH value: ~7.4, 20 °C) | |
| Trichloroacetic acid | 76-03-9 | | 1.33 | |

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0,1\%$.

12.6 Endocrine disrupting properties

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

12.7 Other adverse effects

Data are not available.

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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 2924 |
| IMDG-Code | UN 2924 |
| ICAO-TI | UN 2924 |

14.2 UN proper shipping name

| | |
|----------------------------------------|------------------------------------------|
| UN RTDG | FLAMMABLE LIQUID, CORROSIVE, N.O.S. |
| IMDG-Code | FLAMMABLE LIQUID, CORROSIVE, N.O.S. |
| ICAO-TI | Flammable liquid, corrosive, n.o.s. |
| Technical name (hazardous ingredients) | 1,2-Dichloroethane, Trichloroacetic acid |

14.3 Transport hazard class(es)

| | |
|-----------|----------|
| UN RTDG | 3 (8) |
| IMDG-Code | 3 (8) |
| ICAO-TI | 3 (8) |

14.4 Packing group

| | |
|-----------|----|
| UN RTDG | II |
| IMDG-Code | II |



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| | | |
|-------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| ICAO-TI | II | |
| 14.5 Environmental hazards | hazardous to the aquatic environment | |
| Environmentally hazardous substance (aquatic environment): | Trichloroacetic acid | |
| 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 information | National regulations | Additional information(UN RTDG) |
| UN number | | 2924 |
| Class | | 3 |
| Subsidiary risk(s) | | 8 |
| Environmental hazards | | Yes Hazardous to the aquatic environment |
| Packing group | | II |
| Danger label(s) | | 3+8 Fish and tree |
|  | | |
| Special provisions (SP) | | 274 UN RTDG |
| Excepted quantities (EQ) | | E2 UN RTDG |
| Limited quantities (LQ) | | 1 L UN RTDG |
| Emergency Action Code | | 3WE |
| International Maritime Dangerous Goods Code (IMDG) - Additional information | | |
| Proper shipping name | | FLAMMABLE LIQUID, CORROSIVE, N.O.S. |
| Particulars in the shipper's declaration | | UN2924, FLAMMABLE LIQUID, CORROSIVE, N.O.S., (contains: 1,2-Dichloroethane, Trichloroacetic acid), 3 (8), II, 13°C c.c., MARINE POLLUTANT |
| Marine pollutant | | yes (hazardous to the aquatic environment), (Trichloroacetic acid) |
| Danger label(s) | | 3+8, "Fish and tree" |
|  | | |
| Special provisions (SP) | | 274 |
| Excepted quantities (EQ) | | E2 |

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| | |
|-------------------------|----------|
| Limited quantities (LQ) | 1 L |
| EmS | F-E, S-C |
| Stowage category | B |

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

| | |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Proper shipping name | Flammable liquid, corrosive, n.o.s. |
| Particulars in the shipper's declaration | UN2924, Flammable liquid, corrosive, n.o.s., (contains: 1,2-Dichloroethane, Trichloroacetic acid), 3 (8), II |
| Environmental hazards | yes (hazardous to the aquatic environment) |
| Danger label(s) | 3+8 |



| | |
|--------------------------|-------|
| Special provisions (SP) | A3 |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 0,5 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)

All ingredients are listed or exempt from listing.

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 | all ingredients are listed |
| CA | DSL | all ingredients are listed |
| CN | IECSC | all ingredients are listed |
| EU | ECSI | all ingredients are listed |
| EU | REACH Reg. | all ingredients are listed |
| JP | CSCL-ENCS | all ingredients are listed |
| JP | ISHA-ENCS | not all ingredients are listed |
| KR | KECI | all ingredients are listed |
| MX | INSQ | all ingredients are listed |
| NZ | NZIoC | all ingredients are listed |

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| Country | Inventory | Status |
|---------|-----------|-------------------------------------|
| PH | PICCS | all ingredients are listed |
| TR | CICR | not all ingredients are listed |
| TW | TCSI | all ingredients are listed |
| US | TSCA | all ingredients are listed (ACTIVE) |
| VN | NCI | all ingredients are listed |

Legend

| | |
|------------|-------------------------------------------------------------------------|
| AIIC | Australian Inventory of Industrial Chemicals |
| CICR | Chemical Inventory and Control Regulation |
| CSCL-ENCS | List of Existing and New Chemical Substances (CSCL-ENCS) |
| DSL | Domestic Substances List (DSL) |
| ECSI | EC Substance Inventory (EINECS, ELINCS, NLP) |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ | National Inventory of Chemical Substances |
| ISHA-ENCS | Inventory of Existing and New Chemical Substances (ISHA-ENCS) |
| 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

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|-----------------|
| 2.3 | Results of PBT and vPvB assessment: This mixture does not contain any substances that are assessed to be a PBT or a vPvB. | Results of PBT and vPvB assessment: Does not contain a PBT-/vPvB-substance at a concentration of $\geq 0,1\%$. | yes |
| 2.3 | | Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of $\geq 0,1\%$. | yes |
| 14.8 | | Emergency Action Code: 3WE | yes |
| 15.1 | | National inventories: change in the listing (table) | yes |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|------------|------------------------------------|
| Acute Tox. | Acute toxicity |
| Asp. Tox. | Aspiration hazard |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |
| BOD | Biochemical Oxygen Demand |
| Carc. | Carcinogenicity |

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| Abbr. | Descriptions of used abbreviations |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| Ceiling-C | Ceiling value |
| COD | Chemical oxygen demand |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| 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 |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| ED | Endocrine disruptor |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| Eye Dam. | Seriously damaging to the eye |
| Eye Irrit. | Irritant to the eye |
| Flam. Liq. | Flammable liquid |
| 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 |
| 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) |
| log KOW | n-Octanol/water |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| ppm | Parts per million |
| Skin Corr. | Corrosive to skin |
| Skin Irrit. | Irritant to skin |
| STEL | Short-term exposure limit |

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| Abbr. | Descriptions of used abbreviations |
|---------|-----------------------------------------------------------------------------|
| STOT SE | Specific target organ toxicity - single exposure |
| 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).

Classification procedure

Physical and chemical properties. The classification is based on tested mixture. Health hazards. Environmental hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

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

| Code | Text |
|------|-----------------------------------------------|
| H225 | Highly flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H304 | May be fatal if swallowed and enters airways. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H319 | Causes serious eye irritation. |
| H331 | Toxic if inhaled. |
| H335 | May cause respiratory irritation. |
| H350 | May cause cancer. |

Disclaimer

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