

SAFETY DATA SHEET

1. PRODUCT

1.1 Product identifiers

Name: Tetracyanoethylene

CAS-No.: 670-54-2

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

Identified uses : Laboratory chemicals, Synthesis of substances

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)


Acute toxicity, Oral (Category 1), H300

Acute toxicity, Inhalation (Category 4), H332

Acute toxicity, Dermal (Category 4), H312

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

| | |
|----------------------------|--|
| Pictogram |  |
| Signal word | Danger |
| Hazard statement(s) | H300 Fatal if swallowed. H312 + H332 Harmful in contact with skin or if inhaled |
| Precautionary statement(s) | P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. P264 Wash skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/ protective clothing. P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth. P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell. P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell. P363 Wash contaminated clothing before reuse. P405 Store locked up. P501 Dispose of contents/ container to an approved waste disposal plant. |

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| | |
|-------------------|---|
| Synonyms: | TCNE Ethylenetetracarbonitrile Percyanoethylene |
| Formula: | C ₆ N ₄ |
| Molecular weight: | 128.09 g/mol |
| CAS-No.: | 670-54-2 |
| EC-No.: | 211-578-0 |

Hazardous components

| Component | Classification | Concentration |
|---------------------------|---|---------------|
| Ethylenetetracarbonitrile | Acute Tox. 1; Acute Tox. 4; H300, H312 + H332 | <= 100 % |

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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|---|
| General advice |
| Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area. |
| If inhaled |
| If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. |
| In case of skin contact |
| Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician. |
| In case of eye contact |
| Flush eyes with water as a precaution. |
| If swallowed |
| Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.2 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO_x)

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for

disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature 2 - 8 °C

Moisture sensitive.

Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Hazardous components without workplace control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

| | |
|---------------------|---|
| Eye/face protection | Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). |
| Skin protection | Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M) Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario. |

| | |
|-----------------------------------|---|
| Body Protection | Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. |
| Respiratory protection | Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). |
| Control of environmental exposure | Prevent further leakage or spillage if safe to do so. Do not let product enter drains. |

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

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|--|---|
| Appearance | Form: solid |
| Odour | No data available |
| Odour Threshold | No data available |
| pH | No data available |
| Melting point/freezing point | Melting point/range: 197 - 199 °C (387 - 390 °F) - lit. |
| Initial boiling point and boiling range | No data available |
| Flash point | No data available |
| Evaporation rate | No data available |
| Flammability (solid, gas) | No data available |
| Upper/lower flammability or explosive limits | No data available |
| Vapour pressure | No data available |
| Vapour density | No data available |
| Relative density | No data available |
| Water solubility | No data available |
| Partition coefficient: n-octanol/water | No data available |
| Auto-ignition temperature | No data available |
| Decomposition temperature | No data available |
| Viscosity | No data available |
| Explosive properties | No data available |
| Oxidizing properties | No data available |

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong acids, Strong bases, Strong oxidizing agents, Strong reducing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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|--|
| Acute toxicity |
| LD50 Oral - Rat - 5 mg/kg Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other. Behavioral:Somnolence (general depressed activity). Skin and Appendages: Other: Hair. No data available |
| Skin corrosion/irritation |
| No data available |
| Serious eye damage/eye irritation |
| No data available |
| Respiratory or skin sensitisation |
| No data available |
| Germ cell mutagenicity |
| No data available |
| Carcinogenicity |
| IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |
| Reproductive toxicity |
| No data available No data available |
| Specific target organ toxicity -single exposure |
| No data available |
| Specific target organ toxicity -repeated exposure |
| No data available |
| Aspiration hazard |
| No data available |
| Additional Information |
| RTECS: KM7300000 Cough, Shortness of breath, Headache, Nausea, Vomiting, May cause cyanosis., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. |

12. ECOLOGICAL INFORMATION

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

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|--|
| Product |
| Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. |
| Contaminated packaging |
| Dispose of as unused product. |

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2811 Class: 6.1 Packing group: I

Proper shipping name: Toxic solids, organic, n.o.s. (Ethylenetetra carbonitrile)

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG

UN number: 2811 Class: 6.1 Packing group: I EMS-No: F-A, S-A

Proper shipping name: TOXIC SOLID, ORGANIC, N.O.S. (Ethylenetetra carbonitrile)

IATA

UN number: 2811 Class: 6.1 Packing group: I

Proper shipping name: Toxic solid, organic, n.o.s. (Ethylenetetra carbonitrile)

15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

| Component | CAS-No. | Revision Date |
|----------------------------|----------|---------------|
| Ethylenetetra carbonitrile | 670-54-2 | |

New Jersey Right To Know Components

| Component | CAS-No. | Revision Date |
|----------------------------|----------|---------------|
| Ethylenetetra carbonitrile | 670-54-2 | |

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox. Acute toxicity

H300 Fatal if swallowed.

H312 Harmful in contact with skin.

H312 + H332 Harmful in contact with skin or if inhaled

H332 Harmful if inhaled.

HMIS Rating

Health hazard: 4

Chronic Health Hazard:

Flammability: 0

Physical Hazard 0

NFPA Rating

Health hazard: 2

Fire Hazard: 0

Reactivity Hazard: 0
