

SAFETY DATA SHEET

Creation Date 16-Apr-2012

Revision Date 24-Dec-2021

Revision Number 5

1. Identification

Product Name Tetracyanoethylene

Cat No. : AC138050000; AC138050050; AC138050100; AC138050250;
AC138051000

CAS No 670-54-2
Synonyms TCNE

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|--|------------|
| Acute oral toxicity | Category 1 |
| Acute dermal toxicity | Category 2 |
| Acute Inhalation Toxicity - Dusts and Mists | Category 3 |
| Skin Corrosion/Irritation | Category 2 |
| Serious Eye Damage/Eye Irritation | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system. | |

Label Elements

Signal Word
Danger

Hazard Statements

Causes skin irritation
Causes serious eye irritation
Toxic if inhaled
May cause respiratory irritation
Fatal if swallowed or in contact with skin

**Precautionary Statements****Prevention**

Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not get in eyes, on skin, or on clothing
Avoid breathing dust/fume/gas/mist/vapors/spray

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician

Skin

Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth

Storage

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

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

None identified

3. Composition/Information on Ingredients

| Component | CAS No | Weight % |
|---------------------|----------|----------|
| Tetracyanomethylene | 670-54-2 | >95 |

4. First-aid measures

General Advice

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

| | |
|--|---|
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required. |
| Inhalation | Remove to fresh air. If breathing is difficult, give oxygen. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. |
| Ingestion | Do NOT induce vomiting. Call a physician or poison control center immediately. |
| Most important symptoms and effects | No information available. |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---|---|
| Suitable Extinguishing Media | Water spray, carbon dioxide (CO ₂), dry chemical, alcohol-resistant foam. |
| Unsuitable Extinguishing Media | No information available |
| Flash Point | No information available |
| Method - | No information available |
| Autoignition Temperature | No information available |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrogen cyanide (hydrocyanic acid).

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

| | | | |
|---------------|---------------------|--------------------|-------------------------|
| Health | Flammability | Instability | Physical hazards |
| 4 | 0 | 0 | N/A |

6. Accidental release measures

| | |
|----------------------------------|---|
| Personal Precautions | Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Avoid dust formation. |
| Environmental Precautions | Should not be released into the environment. See Section 12 for additional Ecological Information. |

Methods for Containment and Clean Up Avoid dust formation. Sweep up and shovel into suitable containers for disposal.

7. Handling and storage

| | |
|-----------------|--|
| Handling | Use only under a chemical fume hood. Wear personal protective equipment/face protection. Avoid contact with skin, eyes or clothing. Avoid dust formation. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid ingestion and inhalation. |
|-----------------|--|

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep refrigerated. Keep locked up. Incompatible Materials. Strong oxidizing agents. Strong acids. Strong bases. Strong reducing agents.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

| | |
|--|---------------------------------|
| Physical State | Powder Solid |
| Appearance | Beige |
| Odor | Odorless |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | 196 - 201 °C / 384.8 - 393.8 °F |
| Boiling Point/Range | 223 °C / 433.4 °F @ 760 mmHg |
| Flash Point | No information available |
| Evaporation Rate | Not applicable |
| Flammability (solid,gas) | No information available |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | No information available |
| Vapor Density | Not applicable |
| Specific Gravity | No information available |
| Solubility | No information available |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | No information available |
| Decomposition Temperature | No information available |
| Viscosity | Not applicable |
| Molecular Formula | C ₆ N ₄ |
| Molecular Weight | 128.09 |

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions. Moisture sensitive.

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|---|--|
| Conditions to Avoid | Incompatible products. Excess heat. Exposure to moist air or water. |
| Incompatible Materials | Strong oxidizing agents, Strong acids, Strong bases, Strong reducing agents |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂), Hydrogen cyanide (hydrocyanic acid) |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

| | |
|------------------------------|---|
| Product Information | No acute toxicity information is available for this product |
| Component Information | |

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---------------------|------------------------|--------------------------|-----------------|
| Tetracyanomethylene | LD50 = 5 mg/kg (Rat) | 100 mg/kg (Guinea pig) | Not listed |

| | |
|---|--------------------------|
| Toxicologically Synergistic Products | No information available |
|---|--------------------------|

Delayed and immediate effects as well as chronic effects from short and long-term exposure

| | |
|------------------------|--|
| Irritation | Irritating to eyes, respiratory system and skin |
| Sensitization | No information available |
| Carcinogenicity | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component | CAS No | IARC | NTP | ACGIH | OSHA | Mexico |
|---------------------|----------|------------|------------|------------|------------|------------|
| Tetracyanomethylene | 670-54-2 | Not listed | Not listed | Not listed | Not listed | Not listed |

| | |
|--------------------------|--------------------------|
| Mutagenic Effects | No information available |
|--------------------------|--------------------------|

| | |
|-----------------------------|---------------------------|
| Reproductive Effects | No information available. |
|-----------------------------|---------------------------|

| | |
|------------------------------|---------------------------|
| Developmental Effects | No information available. |
|------------------------------|---------------------------|

| | |
|-----------------------|---------------------------|
| Teratogenicity | No information available. |
|-----------------------|---------------------------|

| | |
|---------------------------------|--------------------|
| STOT - single exposure | Respiratory system |
| STOT - repeated exposure | None known |

| | |
|--------------------------|--------------------------|
| Aspiration hazard | No information available |
|--------------------------|--------------------------|

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|---|--------------------------|
| Symptoms / effects, both acute and delayed | No information available |
|---|--------------------------|

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|--|--------------------------|
| Endocrine Disruptor Information | No information available |
|--|--------------------------|

| | |
|------------------------------|--|
| Other Adverse Effects | The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information. |
|------------------------------|--|

12. Ecological information

Ecotoxicity

Do not empty into drains.

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|--------------------------------------|--|
| Persistence and Degradability | Persistence is unlikely based on information available. Soluble in water |
|--------------------------------------|--|

| | |
|--------------------------------------|---------------------------|
| Bioaccumulation/ Accumulation | No information available. |
|--------------------------------------|---------------------------|

Mobility Will likely be mobile in the environment due to its water solubility.

| Component | log Pow |
|---------------------|---------|
| Tetracyanomethylene | -0.29 |

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3439
 Proper Shipping Name NITRILES, SOLID, TOXIC, N.O.S.
 Technical Name Tetracyanomethylene
 Hazard Class 6.1
 Packing Group I

TDG

UN-No UN3439
 Proper Shipping Name NITRILES, SOLID, TOXIC, N.O.S.
 Hazard Class 6.1
 Packing Group I

IATA

UN-No UN3439
 Proper Shipping Name NITRILES, SOLID, TOXIC, N.O.S.
 Hazard Class 6.1
 Packing Group I

IMDG/IMO

UN-No UN3439
 Proper Shipping Name NITRILES, SOLID, TOXIC, N.O.S.
 Hazard Class 6.1
 Packing Group I

15. Regulatory information

United States of America Inventory

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|---------------------|----------|------|---|-----------------------------|
| Tetracyanomethylene | 670-54-2 | X | ACTIVE | - |

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component | CAS No | DSL | NDSL | EINECS | PICCS | ENCS | ISHL | AICS | IECSC | KECL |
|---------------------|----------|-----|------|-----------|-------|------|------|------|-------|------|
| Tetracyanomethylene | 670-54-2 | X | - | 211-578-0 | X | - | | X | - | - |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations

| | |
|---|---|
| SARA 313 | Not applicable |
| SARA 311/312 Hazard Categories | See section 2 for more information |
| CWA (Clean Water Act) | Not applicable |
| Clean Air Act | Not applicable |
| OSHA - Occupational Safety and Health Administration | Not applicable |
| CERCLA | Not applicable |
| California Proposition 65 | This product does not contain any Proposition 65 chemicals. |
| U.S. State Right-to-Know Regulations | Not applicable |

U.S. Department of Transportation

| | |
|-----------------------------|---|
| Reportable Quantity (RQ): | N |
| DOT Marine Pollutant | N |
| DOT Severe Marine Pollutant | N |

| | |
|---|--|
| U.S. Department of Homeland Security | This product does not contain any DHS chemicals. |
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Other International Regulations

| | |
|-----------------------|--------------------------|
| Mexico - Grade | No information available |
|-----------------------|--------------------------|

Authorisation/Restrictions according to EU REACH**Safety, health and environmental regulations/legislation specific for the substance or mixture**

| Component | CAS No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|---------------------|----------|----------------|------------------------------|---------------------------|--|
| Tetracyanomethylene | 670-54-2 | Not applicable | Not applicable | Not applicable | Not applicable |

| Component | CAS No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|---------------------|----------|---|--|----------------------------|------------------------------------|
| Tetracyanomethylene | 670-54-2 | Not applicable | Not applicable | Not applicable | Not applicable |

16. Other information

| | |
|-------------------------|--|
| Prepared By | Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com |
| Creation Date | 16-Apr-2012 |
| Revision Date | 24-Dec-2021 |
| Print Date | 24-Dec-2021 |
| Revision Summary | This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally |

Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS