SAFETY DATA SHEET
Bis[3-(triethoxysilyl)propyl]-disulfide

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

1.1. Product identifier

Product name
Bis[3-(triethoxysilyl)propyl]-disulfide

Product number
FB40976

CAS number
56706-10-6

EC number
260-350-7

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

Identified uses
Laboratory reagent. Manufacture of substances. Research and development.

1.3. Details of the supplier of the safety data sheet

Supplier
Carbosynth Ltd
8&9 Old Station Business Park
Compton
Berkshire
RG20 6NE
UK
+44 1635 578444
+44 1635 579444
info@carbosynth.com

1.4. Emergency telephone number

Emergency telephone
+44 7887 998634

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)
Physical hazards
Not Classified

Health hazards
Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 STOT SE 3 - H335

Environmental hazards
Not Classified

2.2. Label elements

EC number
260-350-7

Pictogram

Signal word
Warning

Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
Bis[3-(triethoxysilyl)propyl]-disulfide

Precautionary statements

P264 Wash contaminated skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

2.3. Other hazards

No data available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name Bis[3-(triethoxysilyl)propyl]-disulfide
CAS number 56706-10-6
EC number 260-350-7
Chemical formula C₁₈H₄₂O₆S₂Si₂

SECTION 4: First aid measures

4.1. Description of first aid measures

General information Get medical advice/attention if you feel unwell.
Inhalation Remove person to fresh air and keep comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. If breathing stops, provide artificial respiration. Get medical attention if symptoms are severe or persist.
Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Give plenty of water to drink. Get medical attention if symptoms are severe or persist.
Skin contact Remove contaminated clothing. Rinse with water. Continue to rinse for at least 15 minutes. Wash contaminated clothing before reuse. Get medical attention if symptoms are severe or persist.
Eye contact Rinse immediately with plenty of water. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist.

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

General information See Section 11 for additional information on health hazards.

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

Notes for the doctor Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards None known.
Bis[3-(triethoxysilyl)propyl]-disulfide

Hazardous combustion products
Thermal decomposition or combustion products may include the following substances:
Harmful gases or vapours. Oxides of carbon. Oxides of sulphur. Oxides of the following substances: Silicon.

5.3. Advice for firefighters
Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents. Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Avoid inhalation of vapours. Provide adequate ventilation. Eliminate all sources of ignition. Keep unnecessary and unprotected personnel away from the spillage.

6.2. Environmental precautions
Environmental precautions
Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up
Wear protective clothing as described in Section 8 of this safety data sheet. Absorb spillage with sand or other inert absorbent. Clear up spills immediately and dispose of waste safely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Provide adequate ventilation. For waste disposal, see Section 13.

6.4. Reference to other sections
Reference to other sections
For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Usage precautions
Wear protective clothing as described in Section 8 of this safety data sheet. Wash hands thoroughly after handling. Provide adequate ventilation. Avoid contact with skin and eyes. Avoid inhalation of vapours. Eliminate all sources of ignition. Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities
Storage precautions
Keep container tightly closed. Store in a cool and well-ventilated place. Store away from incompatible materials (see Section 10). Eliminate all sources of ignition. Store at room temperature.

7.3. Specific end use(s)
Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters
Occupational exposure limits
No exposure limits known for ingredient(s).

8.2. Exposure controls
Bis[3-(triethoxysilyl)propyl]-disulfide

**Appropriate engineering controls**
Provide adequate ventilation.

**Eye/face protection**
Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

**Hand protection**
Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374.

**Other skin and body protection**
Wear appropriate clothing to prevent repeated or prolonged skin contact.

**Respiratory protection**
Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is ‘CE’-marked. Gas and combination filter cartridges should comply with European Standard EN14387. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

**Environmental exposure controls**
Keep container tightly sealed when not in use.

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## SECTION 9: Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Liquid</td>
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<tr>
<td><strong>Odour</strong></td>
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<tr>
<td><strong>Odour threshold</strong></td>
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<tr>
<td><strong>pH</strong></td>
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<tr>
<td><strong>Melting point</strong></td>
<td>No data available</td>
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<tr>
<td><strong>Initial boiling point and range</strong></td>
<td>250°C</td>
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<tr>
<td><strong>Flash point</strong></td>
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<tr>
<td><strong>Evaporation rate</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
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<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>No data available</td>
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<tr>
<td><strong>Vapour density</strong></td>
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<tr>
<td><strong>Relative density</strong></td>
<td>1.03</td>
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<tr>
<td><strong>Solubility(ies)</strong></td>
<td>No data available</td>
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<tr>
<td><strong>Partition coefficient</strong></td>
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<tr>
<td><strong>Auto-ignition temperature</strong></td>
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<tr>
<td><strong>Decomposition Temperature</strong></td>
<td>No data available</td>
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<tr>
<td><strong>Viscosity</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>No data available</td>
</tr>
</tbody>
</table>
Bis[3-(triethoxysilyl)propyl]-disulfide

Oxidising properties
No data available.

9.2. Other information
Molecular weight 474.83

SECTION 10: Stability and reactivity

10.1. Reactivity
Reactivity
No data available.

10.2. Chemical stability
Stability
Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions
Possibility of hazardous reactions
No data available.

10.4. Conditions to avoid
Conditions to avoid
Heat, sparks, flames. Dust/Mist

10.5. Incompatible materials
Materials to avoid
Strong oxidising agents.

10.6. Hazardous decomposition products
Hazardous decomposition products
Oxides of carbon. Oxides of sulphur. Oxides of the following substances: Silicon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity - oral
Notes (oral LD₅₀) Acute Tox. 4 - H302 Harmful if swallowed.
ATE oral (mg/kg) 500.0

Acute toxicity - dermal
Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

Acute toxicity - inhalation
Notes (inhalation LC₅₀) Based on available data the classification criteria are not met.

Skin corrosion/irritation
Animal data Irritating.

Serious eye damage/irritation
Causes serious eye irritation.

Respiratory sensitisation
Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation
Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity
Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity
Bis[3-(triethoxysilyl)propyl]-disulfide

Carcinogenicity
Based on available data the classification criteria are not met.

IARC carcinogenicity
None of the ingredients are listed or exempt.

Reproductive toxicity
Reproductive toxicity - fertility
Based on available data the classification criteria are not met.

Reproductive toxicity - development
Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
STOT - single exposure
STOT SE 3 - H335 May cause respiratory irritation.

Target organs
Respiratory system, lungs

Specific target organ toxicity - repeated exposure
STOT - repeated exposure
Not classified as a specific target organ toxicant after repeated exposure.

Aspiration hazard
Based on available data the classification criteria are not met.

General information
The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

Inhalation
A single exposure may cause the following adverse effects: Irritation of nose, throat and airway. Difficulty in breathing. Coughing.

Ingestion
May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.

Skin contact
Redness. Irritating to skin.

Eye contact
Irritating to eyes.

Route of exposure
Ingestion Inhalation Skin and/or eye contact

Target organs
Respiratory system, lungs

SECTION 12: Ecological Information

Ecotoxicity
Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

12.1. Toxicity
Toxicity
Based on available data the classification criteria are not met.

12.2. Persistence and degradability
Persistence and degradability
The degradability of the product is not known.

12.3. Bioaccumulative potential
Bioaccumulative potential
No data available on bioaccumulation.

Partition coefficient
No data available.

12.4. Mobility in soil
Mobility
No data available.

12.5. Results of PBT and vPvB assessment
Results of PBT and vPvB assessment
No data available.
Bis[3-(triethoxysilyl)propyl]-disulfide

12.6. Other adverse effects

Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information

Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered.

SECTION 14: Transport information

General

The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

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

National regulations

Health and Safety at Work etc. Act 1974 (as amended).

EU legislation

Bis[3-(triethoxysilyl)propyl]-disulfide

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories
US - TSCA
Present.

SECTION 18: Other information

<table>
<thead>
<tr>
<th>Abbreviations and acronyms used in the safety data sheet</th>
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<tbody>
<tr>
<td>ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.</td>
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<tr>
<td>ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.</td>
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<tr>
<td>RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.</td>
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<tr>
<td>IATA: International Air Transport Association.</td>
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<tr>
<td>IMDG: International Maritime Dangerous Goods.</td>
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<tr>
<td>CAS: Chemical Abstracts Service.</td>
</tr>
<tr>
<td>ATE: Acute Toxicity Estimate.</td>
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<tr>
<td>LC₅₀: Lethal Concentration to 50% of a test population.</td>
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<tr>
<td>LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).</td>
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<tr>
<td>EC₅₀: 50% of maximal Effective Concentration.</td>
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<tr>
<td>PBT: Persistent, Bioaccumulative and Toxic substance.</td>
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<tr>
<td>vPvB: Very Persistent and Very Bioaccumulative.</td>
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</tbody>
</table>

Training advice
Only trained personnel should use this material.

Revision date
05/12/2018
Revision
1
SDS number
144929

Hazard statements in full
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

This 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. Such information is, to the best of the company’s knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.