

SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier: Dynasylan® BTSE

Chemical name:
1,2-Bis(triethoxysilyl)ethane

Other means of identification
CAS Number: 16068-37-4

Recommended restrictions
Recommended use: For industrial use Metal treating agent Crosslinking agents Corrosion inhibitor
Restrictions on use: Not determined.

Manufacturer/Importer/Distributor Information

Company Name : Evonik Corporation
2 Turner Place
Piscataway, NJ 08854
USA

Telephone : +1 732 981 5000

E-mail : product-regulatory-services@evonik.com

Emergency telephone number:
24-Hour Health : +1 800 424 9300 (CHEMTREC - US & CANADA)
Emergency 800 681 9531 (CHEMTREC MEXICO)
+1 703 527 3887 (CHEMTREC WORLD)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Acute toxicity (Oral)	Category 3
Acute toxicity (Dermal)	Category 4
Specific Target Organ Toxicity - Repeated Exposure	Category 1

Environmental Hazards

Acute hazards to the aquatic environment	Category 3
Chronic hazards to the aquatic environment	Category 3

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Toxic if swallowed.
Harmful in contact with skin.
Causes damage to organs through prolonged or repeated exposure.
Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention: Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid release to the environment.

Response: IF ON SKIN: Wash with plenty of water/... IF SWALLOWED: Immediately call a POISON CENTER/doctor/... Rinse mouth. Call a POISON CENTER/doctor if you feel unwell. Specific treatment (see on this label). Wash contaminated clothing before reuse.

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Chemical name:
1,2-Bis(triethoxysilyl)ethane

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%) [*]
4,4,7,7-tetraethoxy-3,8-dioxa-4,7-disiladecane		16068-37-4	<=100%

^{*} All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition Comments: This substance is regulated under a Significant New Use Rule (SNUR) 40 CFR 721.3155, which excludes any use involving an application method that generates a vapor, mist or a aerosol. It is the responsibility of users to comply with the requirements of this rule.

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of necessary first-aid measures

General information: Observe self-protection Remove contaminated or saturated clothing immediately and dispose of safely.

Inhalation: If aerosol or mists are formed: Move victims into fresh air. Do not leave victims unattended. Keep patient warm and at rest. Call a physician immediately.

Skin Contact: Wash off immediately with plenty of water. In case of complaints: Consult doctor immediately.

Eye contact: Rinse thoroughly with plenty of water keeping eyelid open. In case of persistent discomfort: Consult an ophthalmologist.

Ingestion: Call a physician immediately. Only when patient fully conscious: Have the mouth rinsed with water. Do not leave victims unattended. Keep warm and in a quiet place. Place person on side in stable position if unconscious.

Personal Protection for First-aid Responders: As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

Most important symptoms/effects, acute and delayed

Symptoms: None known.

Hazards: None known.

Indication of immediate medical attention and special treatment needed

Treatment: After absorbing large amounts of substance: Gastric lavage, administration of activated charcoal, acceleration of gastrointestinal passage.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media: High volume water jet

Specific hazards arising from the chemical: Do not inhale decomposition gases or noxious gases.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Observe self-protection Ensure adequate ventilation. Do not breathe in vapours or aerosols. Avoid contact with the skin and the eyes.

Methods and material for containment and cleaning up: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Environmental Precautions: Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation): Provide good ventilation or extraction.

Safe handling advice: Provide good ventilation or extraction. Avoid contact with skin and eyes. Handle in accordance with good industrial hygiene and safety practice. If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used. If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used. Do not breathe in vapours or aerosols. Avoid contact with skin and eyes.

Contact avoidance measures: No data available.

Hygiene measures: When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.

Storage

Safe storage conditions: Normal measures for preventive fire protection. Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture. Recommended storage temperature: 25 °C

Safe packaging materials: No data available.

Storage Temperature: No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

Appropriate Engineering Controls Provide good ventilation or extraction.

Individual protection measures, such as personal protective equipment

Eye/face protection: Safety glasses with side-shields

Skin Protection

Hand Protection: Material: Butyl rubber.
Break-through time: >= 480 min
Material: Fluorinated rubber (Viton)
Break-through time: >= 480 min
Additional Information: Selection of protective gloves to meet the requirements of specific workplaces., Suitability for specific workplaces should be clarified with protective glove manufacturers., The information is based on our own tests, references from the literature and information from glove manufacturers, or derived by analogy with similar materials., Please observe that the daily duration of usage of a chemical protective glove is in practice far shorter due to the many influencing factors (e.g. temperature, mechanical strain on the glove material) than the permeation time determined acc. EN 374. Additional Information: The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use.

Skin and Body Protection: suitable protective clothing - Use disposable clothing if appropriate. A safety shower and eye wash fountain should be readily available. To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

Respiratory Protection: In case of dusts/vapours/aerosols being formed or if the limit values like TLV are exceeded: use respiratory equipment with suitable filter (filter type ABEK) or wear a self contained respiratory apparatus Use only respiratory protection equipment with CE-symbol including four digit test number. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used. Note time limit for wearing respiratory protective equipment. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Hygiene measures: When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work. Take off immediately all contaminated clothing. Wash contaminated clothing before reuse.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	colourless to yellow
Odor:	Characteristic
Odor Threshold:	No data available.
pH:	No data available.
Freezing point:	No data available.
Boiling Point:	315 °C (1,011 mbar)
Flash Point:	113 °C (literature value)
Evaporation Rate:	No data available.
Flammability (solid, gas):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density (air=1):	No data available.
Density:	Approximate 0.95 g/cm ³ (25 °C)
Relative density:	No data available.
Solubility in Water:	Insoluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Self Ignition Temperature:	No data available.
Decomposition Temperature:	No data available.
Kinematic viscosity:	No data available.
Dynamic viscosity:	No data available.
Other information	
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Peroxides:	Not applicable

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	None if processed as per stipulations
Conditions to avoid:	Protect from moisture. Extremes of temperature and direct sunlight.
Incompatible Materials:	Avoid contact with Oxidizing agents. Water. Acids and bases
Hazardous Decomposition Products:	None known.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	No data available.
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Product name: Dynasylan® BTSE

Skin Contact: No data available.**Eye contact:** No data available.**Ingestion:** No data available.**Symptoms related to the physical, chemical and toxicological characteristics****Inhalation:** No data available.**Skin Contact:** No data available.**Eye contact:** No data available.**Ingestion:** No data available.**Information on toxicological effects****Acute toxicity (list all possible routes of exposure)****Oral****Product:** LD 50 (Rat): 161 mg/kg**Dermal****Product:** LD 50 (Rat): 1,971 mg/kg**Inhalation****Product:** LC 50 (Rat): > 0.38 mg/l No deaths occurred., Dusts, mists and fumes**Repeated dose toxicity****Product:** LOAEC (Rat(male and female), Inhalation - vapor): 2.7 mg/m³ (Target Organ(s): Respiratory system)**Skin Corrosion/Irritation****Product:** Not irritating OECD 404 (Rabbit): Not irritating**Serious Eye Damage/Eye Irritation****Product:** Not irritating Rabbit: Not irritating**Respiratory or Skin Sensitization****Product:** Maximization Test, OECD 406 (Guinea Pig): Non sensitising**Carcinogenicity****Product:** No data available.**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogens present or none present in regulated quantities

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogens present or none present in regulated quantities

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:

No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity**In vitro****Product:** Bacterial reverse mutation assay (OECD 471): negative**In vivo****Product:** Chromosomal aberration (OECD 474) Oral (Mouse, male and female): negative**Reproductive toxicity****Product:** No data available.**Specific Target Organ Toxicity - Single Exposure****Product:** No data available.**Specific Target Organ Toxicity - Repeated Exposure****Product:** Respiratory system - Category 1 Causes damage to organs through prolonged or repeated exposure.**Aspiration Hazard****Product:** No evidence of aspiration toxicity**Other effects:** No data available.**12. Ecological information****Ecotoxicity:****Acute hazards to the aquatic environment:****Fish****Product:** LC 50 (Brachydanio rerio, 96 h): 16 mg/l**Aquatic Invertebrates****Product:** EC 50 (Daphnia magna, 48 h): 72.6 mg/l**Chronic hazards to the aquatic environment:****Fish****Product:** No data available.**Aquatic Invertebrates****Product:** No data available.**Toxicity to Aquatic Plants****Product:** EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): > 53 mg/l**Persistence and Degradability****Biodegradation****Product:** No data available.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: No data available.

Other adverse effects: Harmful to aquatic life with long lasting effects.

13. Disposal considerations

Disposal methods: Waste must be disposed of in accordance with federal, state, provincial and local regulations. Since empty containers retain product residue, follow MSDS and label warnings even after container is emptied.

Contaminated Packaging: Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities. If there is product residue in the emptied container, follow directions for handling on the container's label. Incorrect disposal or reuse of this container is illegal and can be dangerous. Other countries: observe the national regulations.

14. Transport information

Domestic regulation

49 CFR

UN/ID/NA number : UN 2810
 Proper shipping name : Toxic, liquids, organic, n.o.s.
 (4,4,7,7-tetraethoxy-3,8-dioxa-4,7-disiladecane)
 Class : 6.1
 Packing group : III
 Labels : 6.1
 ERG Code : 153
 Marine pollutant : no
 Remarks : Keep separate from foodstuffs, luxury foods, feedstuffs

International Regulations

IATA-DGR

UN/ID No. : UN 2810
 Proper shipping name : Toxic liquid, organic, n.o.s.
 (4,4,7,7-tetraethoxy-3,8-dioxa-4,7-disiladecane)
 Class : 6.1
 Packing group : III
 Labels : 6.1
 Packing instruction (cargo aircraft) : 663

Product name: Dynasylan® BTSE

Packing instruction : 655
(passenger aircraft)
Remarks : ERG-Code 6L

IMDG-Code

UN number : UN 2810
Proper shipping name : TOXIC LIQUID, ORGANIC, N.O.S.
(4,4,7,7-tetraethoxy-3,8-dioxa-4,7-disiladecane)
Class : 6.1
Packing group : III
Labels : 6.1
EmS Code : F-A, S-A
Marine pollutant : no
Remarks : Clear of living quarters.

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

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. Regulatory information**US Federal Regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

This substance is regulated under a Significant New Use Rule (SNUR) 40 CFR 721.3155, which excludes any use involving an application method that generates a vapor, mist or a aerosol. It is the responsibility of users to comply with the requirements of this rule.

Chemical Identity

4,4,7,7-tetraethoxy-3,8-dioxa-4,7-disiladecane

Reportable quantity

De minimis concentration: 1.0% One-Time Export Notification only.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)**Chemical Identity**

4,4,7,7-tetraethoxy-3,8-dioxa-4,7-disiladecane

Listed.Listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)**Hazard categories**

Acute toxicity (any route of exposure), Specific target organ toxicity (single or repeated exposure)

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

None present or none present in regulated quantities.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and Community Right-to-Know Act

No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

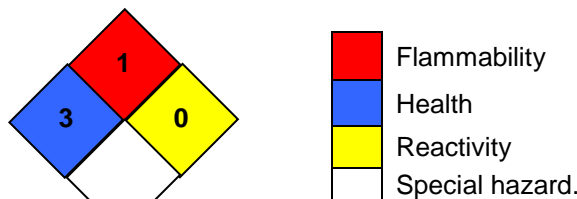
16. Other information, including date of preparation or last revision

HMIS Hazard ID

Health	3
Flammability	1
Physical Hazards	0
PERSONAL PROTECTION	

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 02/17/2020

Version #: 2.0

Further Information: No data available.

Revision Information

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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