SAFETY DATA SHEET
Si 266®

Material no.  Specification  Order Number
131884  

Version  Revision date  Print Date
3.0 / US  05/29/2015  05/29/2015

Page  1 / 12

1. Identification

1.1. Product identifier

Trade name  Si 266®
Chemical Name  4,4,13,13-Tetraethoxy-3,14-dioxa-8,9-dithia-4,13-disilahexadecane
CAS-No.  56706-10-6

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified  Rubber - producing and processing industry

1.3. Details of the supplier of the safety data sheet

Company  Evonik Corporation USA
Address  299 Jefferson Road
          Parsippany, NJ 07054-0677
USA
Telephone  973-929-8000
Telex  973-929-8040
Email address  Product-Regulatory-Services@Evonik.com

1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:

CHEMTREC - US & CANADA:  800-424-9300
CHEMTREC MEXICO:  01-800-681-9531
CHEMTREC INTERNATIONAL:  +1 703-527-3887 (collect calls accepted)
Product Regulatory Services:  973-929-8060

2. Hazards identification

2.1. Classification of the substance or mixture

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
Remarks  Not a hazardous substance or mixture.

2.2. Label elements

Statutory basis  Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
Remarks  Not a hazardous substance or mixture.

2.3. Other hazards

None known

4,4,13,13-Tetraethoxy-3,14-dioxa-8,9-dithia-4,13-disilahexadecane Not a PBT, vPvB substance as per the criteria of the REACH Regulation.
3. Composition/information on ingredients

3.1. Substances

- 4,4,13,13-Tetraethoxy-3,14-dioxa-8,9-dithia-4,13-disilahexadecane

  **CAS-No.** 56706-10-6

  **Remarks** Not a hazardous substance or mixture.

3.2. Mixtures

  not applicable

4. First aid measures

4.1. Description of first aid measures

**General advice**
Remove contaminated or saturated clothing.

**Inhalation**
If aerosol or mists are formed:
Possible discomfort: cough, sneezing, flow of tears. Take affected persons out into the fresh air. If symptoms persist, call a physician.

**Skin contact**
Wash off with soap and plenty of water.

**Eye contact**
With eye held open, thoroughly rinse immediately with plenty of water for at least 5 minutes. In case of persistent discomfort: Consult an ophthalmologist.

**Ingestion**
Rinse mouth. Have patient drink plenty of water in small sips. After absorbing large amounts of substance: Consult a physician.

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

**Symptoms**
None known

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

If required, therapy of irritative effect. After absorbing large amounts of substance: administration of activated charcoal. Acceleration of gastrointestinal passage

5. Fire-fighting measures

5.1. Extinguishing media

**Suitable extinguishing media:** Water spray, foam, CO2, dry powder.

**Unsuitable extinguishing media:** high volume water jet
5.2. Special hazards arising from the substance or mixture
May be released in case of fire: carbon monoxide, carbon dioxide, sulphur oxides.

5.3. Advice for firefighters
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. Containers can build up pressure if exposed to heat (fire). Cool with water spray. As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Wear personal protective equipment.

6.2. Environmental precautions
Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, rivers, groundwater or soil.

6.3. Methods and material for containment and cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Fill into marked, sealable containers. To be disposed of in compliance with existing regulations.

Suitable binder: sand (for damming up)

Additional advice
Defect containers must be isolated and sealed immediately.

7. Handling and storage

7.1. Precautions for safe handling
Local ventilation. Always close container tightly after removal of product.

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion
Take precautionary measures against static discharges.
Keep away from sources of ignition - No smoking. Explosion protection is recommended in case the explosion limits for the following substance might be exceeded: Ethanol.
Danger of explosion from residual product fumes; therefore avoid spark production through cutting, grinding, or welding work in the area of the container.
When repairs of the production system are to be made (e.g. welding work), the section to be repaired must be essentially free of product.
Keep away from humidity.

Storage
Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.

Advice on common storage
Protect against humid air and water.
Incompatible with acids and bases.

Storage stability
10 - 40 °C
Do not store longer than 12 months.
8. Exposure controls/personal protection

8.1. Control parameters

DNEL/DMEL values

Remarks: not necessary (see chapter 15)

PNEC values

Remarks: not necessary (see chapter 15)

8.2. Exposure controls

Engineering measures

see section 7.

Personal protective equipment

Respiratory protection

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.

Hand protection

Wear protective gloves made of resistant material.

Glove material: butyl-rubber
Material thickness: 0.5 mm
Break through time: >= 480 min

Glove material: Nitrile rubber
Material thickness: 0.35 mm
Break through time: >= 480 min

Glove material: Fluorinated rubber (Viton)
Material thickness: 0.4 mm
Break through time: >= 480 min

The rupture time and material thickness data are guideline values! Exact rupture time / material thickness data can be obtained from the protective glove manufacturer. Suitability for specific workplaces should be clarified with protective glove manufacturers.

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.

Eye protection

Use chemical splash goggles or face shield.

Skin and body protection

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.

Hygiene measures

When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work.
Remove contaminated or saturated clothing.
Wash contaminated clothing before re-use.
Preventive skin protection is recommended.
Protective measures
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 the skin and the eyes.

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>Physical state</td>
<td>liquid (20 °C)</td>
</tr>
<tr>
<td>Colour</td>
<td>light yellow</td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>sulphurous</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>not determined</td>
</tr>
<tr>
<td>pH</td>
<td>not applicable</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>ca. -117 °C</td>
</tr>
<tr>
<td>Method</td>
<td>EC Method A.1</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>269 °C (1013 hPa)</td>
</tr>
<tr>
<td>Method</td>
<td>EC Method A.2</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 100 °C (1013 hPa)</td>
</tr>
<tr>
<td>Method</td>
<td>DIN EN ISO 2719 (Pensky-Martens, Closed Cup)</td>
</tr>
<tr>
<td></td>
<td>188 °C (1013 hPa)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>not determined</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>no data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>1 % (V) (76 °C)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>not to be determined</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>0.1 hPa (20 °C)</td>
</tr>
<tr>
<td>Method</td>
<td>EC Method A.4</td>
</tr>
<tr>
<td>Density</td>
<td>ca. 1.03 g/cm³ (20 °C)</td>
</tr>
<tr>
<td>Method</td>
<td>EC Method A.3</td>
</tr>
<tr>
<td>Water solubility</td>
<td>&lt;= 1 mg/l (20 °C)</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 105</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>not applicable</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>230 °C</td>
</tr>
<tr>
<td>Method</td>
<td>DIN 51 794</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Material no. 131884
Specification
Order Number

Version 3.0 / US
Revision date 05/29/2015
Print Date 05/29/2015
Page 6 / 12

Thermal decomposition > 150 °C (1013 mbar)
Viscosity, dynamic 8 mPa.s (20 °C)
Viscosity, kinematic 7.73 mm2/s (20 °C)

9.2. Other information
Explosiveness not explosive

10. Stability and reactivity
10.1. Reactivity
No dangerous reaction known under conditions of normal use.

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

10.4. Conditions to avoid
Keep away from heat and sources of ignition.

10.5. Incompatible materials
Reaction with water and alkaline solutions; Reacts with; Acids, Formation of ethanol.

10.6. Hazardous decomposition products
Decomposition products with heating above decomposition temperature
Carbon monoxide, Carbon dioxide (CO2), hydrogen sulphide, Ethanol

11. Toxicological information
11.1. Information on toxicological effects

Acute oral toxicity LD50 Rat: > 2150 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity (limit test)

Acute inhalation toxicity LC50 Rat: > 7.967 mg/l / 4 h / Aerosol
Method: OECD Test Guideline 403
Test substance: Structurally similar substance
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity LD50 Rat: > 2000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin irritation Rabbit
No skin irritation
Method: OECD Test Guideline 404

Eye irritation Rabbit
No eye irritation
### Sensitization

**Method:** OECD Test Guideline 405

Maximization test Guinea pig: Does not cause skin sensitisation.

**Test substance:** Structurally similar substance

### Repeated dose toxicity

**Method:** OECD Test Guideline 406

**Test substance:** Structurally similar substance

**Oral Rat**

- **Testing period:** 28 d
- **NOAEL:** 200 mg/kg

**Method:** OECD Test Guideline 407

**Assessment of STOT single exposure**

Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

**Assessment of STOT repeat exposure**

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### Risk of aspiration toxicity

No evidence of aspiration toxicity

### Gentoxicity in vitro

**Ames test Salmonella typhimurium**

Method: OECD 471

Negative

**Cytogenetic test V 79 cells (Chinese hamster)**

Method: OECD 473

Negative

### Gentoxicity in vivo

**Micronucleus test (mouse) intraperitoneal (i.p.)**

Method: OECD 474

Negative

### Carcinogenicity

No evidence that cancer may be caused.

### Toxicity to reproduction

No data available

### 12. Ecological information

#### 12.1. Toxicity

**Toxicity to fish**

*(Brachydanio rerio)*: No toxic effect in the event of maximal solubility in water

#### 12.2. Persistence and degradability

**Biodegradability**

- **Exposure time:** 28 d
- **Result:** ca.20 %
- **Method:** OECD 301 F

Not readily biodegradable.

#### 12.3. Bioaccumulative potential

**Bioaccumulation**

Method: OECD TG 305 C

Low
12.4. Mobility in soil
   Mobility
   Adsorption on the floor: low.

12.5. Other adverse effects
   Further Information
   The data we have at our disposal do not necessitate identification concerning environmental hazard.

13. Disposal considerations
13.1. Waste treatment methods
   Product
   Waste must be disposed of in accordance with federal, state, provincial and local regulations.
   Uncleaned packaging
   Packaging, that can not be reused after cleaning must be disposed or recycled in accordance with all federal, national and local regulations.
   Incorrect disposal or reuse of this container is illegal and can be dangerous.
   Other countries: observe the national regulations.

14. Transport information

Not dangerous according to transport regulations.

14.1. UN number: –
14.2. UN proper shipping name: –
14.3. Transport hazard class(es): –
14.4. Packing group: –
14.5. Environmental hazards (Marine pollutant): –
14.6. Special precautions for user: Yes
   Not dangerous according to transport regulations.

15. Regulatory information

US Federal Regulations

OSHA
   If listed below, chemical specific standards apply to the product or components:
   • None listed

Clean Air Act Section (112)
   If listed below, components present at or above the de minimus level are hazardous air pollutants:
   • None listed
CERCLA Reportable Quantities
If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- None listed

SARA Title III Section 311/312 Hazard Categories
The product meets the criteria only for the listed hazard classes:

- No SARA Hazards

SARA Title III Section 313 Reportable Substances
If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

- None listed

Toxic Substances Control Act (TSCA)
If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed

State Regulations

California Proposition 65
A warning under the California Drinking Water Act is required only if listed below:

- None listed

An employer using HMIS/NFPA labeling must through training ensure that its employees are fully aware of the hazards of the chemicals used.

HMIS Ratings

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Physical Hazard</td>
<td>0</td>
</tr>
</tbody>
</table>

NFPA Ratings

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
</tbody>
</table>

16. Other information
Further information

Revision date 05/29/2015

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

This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.
Legend
ACC  American Chemistry Council
ACGIH American Conference of Governmental Industrial Hygenists
ACS Advisory Committee on Sustainability
ADI Acceptable Daily Intake
ASTM American Society for Testing and Materials
ATP Adaptation to Technical Progress
BCF Bioconcentration factor
BOD Biochemical oxygen demand
c.c. closed cup
CAO Cargo Aircraft Only
Carc Carcinogen
CAS Chemical Abstract Services
CDN Canada
CEPA Canadian Environmental Protection Act
CERCLA Comprehensive Environmental Response – Compensation and Liability Act
CFR Code of Federal Regulations
CMR carcinogenic-mutagenic-toxic for reproduction
COD Chemical oxygen demand
DIN German Institute for Standardization
DMEL Derived minimum effect level
DNEL Derived no effect level
DOT Department of Transportation
EC50 half maximal effective concentration
EPA Environmental Protection Agency
EC50 Reduction of Growth Rate
ERG Emergency Response Guide Book
FDA Food and Drug Administration
GHS Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
GLP Good Laboratory Practice
GM0 Genetic Modified Organism
HC5 Hazard Communication Standard
HMIS Hazardous Materials Identification System
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IBC Intermediate Bulk Container
ICAO-TI International Civil Aviation Organization- Technical Instructions
ICCA International Council of Chemical Association
ID Identification number
IMDG International Maritime Dangerous Goods
IUPAC International Union of Pure and Applied Chemistry
ISO International Organization For Standardization
LC50 50 % Lethal Concentration
LD50 50 % Lethal Dose
L(E)C50 LC50 or EC50
LOAEL Lowest observed adverse effect level
LOEL Lowest observed effect level
MARPOL International Convention for the Prevention of Pollution from Ships
NFPA National Fire Protection Association
NOAEL No observed adverse effect level
NOEC no observed effect concentration
NOEL no observed effect level
o.c. open cup
OECD Organisation for Economic Cooperation and Development
OEL Occupational Exposure Limit
OSHA Occupational Safety and Health Administration
PBT Persistent, bioaccumulative, toxic
PEC Predicted effect concentration
PNEC Predicted no effect concentration
RQ Reportable Quantity
SDS Safety Data Sheet
STOT Specific Target Organ Toxicity
UN United Nations
vPvB very persistent, very bioaccumulative
<table>
<thead>
<tr>
<th>vovc</th>
<th>volatile organic compounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
</tbody>
</table>