SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identification

Product Description: Tris(trimethylsilyl)amine
Cat No.: 378770000; 378770050; 378770250
Synonyms: Nonamethyltrisilazane
CAS-No: 1586-73-8
EC-No.: 216-445-0
Molecular Formula: C9 H27 N Si3

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

Recommended Use: Laboratory chemicals.
Uses advised against: No Information available

1.3. Details of the supplier of the safety data sheet

Company: Acros Organics BVBA
Janssen Pharmaceuticaalaaan 3a
2440 Geel, Belgium
E-mail address: begel.sdsdesk@thermofisher.com

1.4. 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

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

Physical hazards
Based on available data, the classification criteria are not met

Health hazards

| Acute oral toxicity | Category 4 |
| Acute dermal toxicity | Category 4 |
| Acute Inhalation Toxicity - Dusts and Mists | Category 4 |
| Skin Corrosion/Irritation | Category 1B |
| Serious Eye Damage/Eye Irritation | Category 1 |

Environmental hazards
Based on available data, the classification criteria are not met

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Symbol(s): C - Corrosive
R-phrase(s): R34 - Causes burns
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed
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For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.2. Label elements

Signal Word

Danger

Hazard Statements

H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H332 - Harmful if inhaled

Precautionary Statements

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection
P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor/ physician
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

2.3. Other hazards

No information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>EC-No.</th>
<th>Weight %</th>
<th>CLP Classification - Regulation (EC) No 1272/2008</th>
<th>DSD Classification - 67/548/EEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silanamine, 1,1,1-trimethyl-N,N-bis(trimethylsilyl) -</td>
<td>1586-73-8</td>
<td>EEC No. 216-445-0</td>
<td>99</td>
<td>Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Corr. 1B (H314) Acute Tox. 4 (H332)</td>
<td>Xn; R20/21/22 C; R34</td>
</tr>
</tbody>
</table>

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

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact

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

Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

Ingestion

Do not induce vomiting. Call a physician immediately.
Inhalation
Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

Protection of First-aiders
Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

4.2. Most important symptoms and effects, both acute and delayed
Causes burns by all exposure routes. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation.

4.3. Indication of any immediate medical attention and special treatment needed
Notes to Physician
Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media
Suitable Extinguishing Media
Carbon dioxide (CO$_2$). Dry chemical. chemical foam.

Extinguishing media which must not be used for safety reasons
No information available.

5.2. Special hazards arising from the substance or mixture
Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products
Carbon monoxide (CO), Carbon dioxide (CO$_2$), Silicon dioxide.

5.3. Advice for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation.

6.2. Environmental precautions
See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up
Sweep up or vacuum up spillage and collect in suitable container for disposal.

6.4. Reference to other sections
Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling
Do not breathe dust. Do not get in eyes, on skin, or on clothing. Use only in area provided with appropriate exhaust ventilation.
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7.2. Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Corrosives area. Keep under nitrogen.

7.3. Specific end use(s)

Use in laboratories

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

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

Biological limit values
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
MDHS70 General methods for sampling airborne gases and vapours
MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography
MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Derived No Effect Level (DNEL)

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Acute effects (local)</th>
<th>Acute effects (systemic)</th>
<th>Chronic effects (local)</th>
<th>Chronic effects (systemic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Dermal Inhalation</td>
<td>No information available</td>
<td>No information available</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Engineering Measures
Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment
Eye Protection Goggles (European standard - EN 166)
Hand Protection Protective gloves
Glove material | Breakthrough time | Glove thickness | EU standard | Glove comments
--- | --- | --- | --- | ---
Natural rubber | See manufacturers recommendations | - | EN 374 | (minimum requirement)
Nitrile rubber | | | | 
Neoprene | | | | 
PVC | | | | 

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

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.
(Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Respiratory Protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

Large scale/emergency use Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended Filter type: Particulates filter conforming to EN 143

Small scale/Laboratory use Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141
When RPE is used a face piece Fit Test should be conducted

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

Environmental exposure controls No information available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance Colorless
Physical State Solid

Odor No information available
Odor Threshold No data available
pH No information available
Melting Point/Range 67 - 69 °C / 152.6 - 156.2 °F
Softening Point No data available
Boiling Point/Range 72 °C / 161.6 °F @ 10 mmHg
Flash Point No information available Method - No information available Solid
Evaporation Rate Not applicable
Flammability (solid,gas) No information available
Explosion Limits No data available

Vapor Pressure No data available
Vapor Density Not applicable Solid
Specific Gravity / Density No data available
Bulk Density No data available
Water Solubility Insoluble
Solubility in other solvents No information available
Partition Coefficient (n-octanol/water) No data available
Autoignition Temperature Not applicable
Decomposition Temperature No data available
Viscosity Not applicable Solid
Explosive Properties No information available
SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
None known, based on information available

10.2. Chemical stability
Moisture sensitive

10.3. Possibility of hazardous reactions
Hazardous Polymerization: Hazardous polymerization does not occur.
Hazardous Reactions: No information available.

10.4. Conditions to avoid
Incompatible products.

10.5. Incompatible materials
Strong oxidizing agents.

10.6. Hazardous decomposition products
Carbon monoxide (CO). Carbon dioxide (CO₂). Silicon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
Product Information

(a) acute toxicity;
   Oral Category 4
   Dermal Category 4
   Inhalation Category 4

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;
   Respiratory No data available
   Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

   There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available
**SAFETY DATA SHEET**

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**Target Organs**

| Information Available | No information available. |

**(j) aspiration hazard;**

| Not applicable | Solid |

**Other Adverse Effects**

| The toxicological properties have not been fully investigated. |

**Symptoms / effects, both acute and delayed**

| Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |

### SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

| Ecotoxicity effects | Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants. |

12.2. Persistence and degradability

| Persistence | Persistence is unlikely, based on information available. |

12.3. Bioaccumulative potential

| Bioaccumulation is unlikely |

12.4. Mobility in soil

| The product is insoluble and floats on water. Is not likely mobile in the environment. Is not likely mobile in the environment due its low water solubility and propensity to bind to soil particles |

12.5. Results of PBT and vPvB assessment

| No data available for assessment. |

12.6. Other adverse effects

| Endocrine Disruptor Information | This product does not contain any known or suspected endocrine disruptors |

| Persistent Organic Pollutant | This product does not contain any known or suspected substance |

| Ozone Depletion Potential | This product does not contain any known or suspected substance |

### SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

| Waste from Residues / Unused Products | Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations. |

| Contaminated Packaging | Dispose of this container to hazardous or special waste collection point. |

| European Waste Catalogue (EWC) | According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. |

| Other Information | Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not dispose of waste into sewer. Large amounts will affect pH and harm aquatic organisms. |

### SECTION 14: TRANSPORT INFORMATION

**IMDG/IMO**

| 14.1. UN number | UN3259 |

| 14.2. UN proper shipping name | AMINES, SOLID, CORROSIVE, N.O.S |

| 14.3. Transport hazard class(es) | 8 |

| 14.4. Packing group | II |

**ADR**

| 14.1. UN number | UN3259 |
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14.2. UN proper shipping name AMINES, SOLID, CORROSIVE, N.O.S
14.3. Transport hazard class(es) 8
14.4. Packing group II

IATA

14.1. UN number UN3259
14.2. UN proper shipping name AMINES, SOLID, CORROSIVE, N.O.S
14.3. Transport hazard class(es) 8
14.4. Packing group II
14.5. Environmental hazards No hazards identified
14.6. Special precautions for user No special precautions required
14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable, packaged goods

SECTION 15: REGULATORY INFORMATION

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

<table>
<thead>
<tr>
<th>International Inventories</th>
<th>X = listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Component</td>
<td>EINECS</td>
</tr>
<tr>
<td>Silanamine, 1,1,1-trimethyl-N,N-bis(trimethylsilyl)-</td>
<td>216-445-0</td>
</tr>
</tbody>
</table>

National Regulations

Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment.
Take note of Dir 94/33/EC on the protection of young people at work
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

SECTION 16: OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3
R34 - Causes burns
R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed

Full text of H-Statements referred to under sections 2 and 3
H302 - Harmful if swallowed
H312 - Harmful in contact with skin
H314 - Causes severe skin burns and eye damage
H332 - Harmful if inhaled

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
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KECL - Korean Existing and Evaluated Chemical Substances
WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic

NZIoC - New Zealand Inventory of Chemicals
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
PNEC - Predicted No Effect Concentration
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

Key literature references and sources for data
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.

Creation Date 07-May-2010
Revision Date 26-Jan-2015
Revision Summary Update to Format.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet