

SODIUM ORTHOSILICATE, tech-90

Safety Data Sheet SIS6986.0

Date of issue: 26/01/2016

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Version: 1.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

| | |
|-----------------|---|
| Product form | : Substance |
| Physical state | : Solid |
| Substance name | : SODIUM ORTHOSILICATE, tech-90 |
| Product code | : SIS6986.0 |
| Formula | : Na ₄ O ₄ Si |
| Synonyms | : TETRASODIUM ORTHOSILICATE; SILICIC ACID, TETRASODIUM SALT; TETRASODIUM SILICATE; SILICIC ACID (H ₄ SiO ₄), SODIUM SALT (1:4) |
| Chemical family | : INORGANIC SILICATE |

1.2. Relevant identified uses of the substance or mixture and uses advised against**1.2.1. Relevant identified uses**

Use of the substance/mixture : Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet**GELEST, INC.**11 East Steel Road
Morrisville, PA 19067**USA**

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

info@gelest.com - www.gelest.com**GELEST INC.**Fritz-Klatte-Strasse 8
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T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM

info@gelestde.com - www.gelestde.com**1.4. Emergency telephone number**

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification according to Regulation (EC) No. 1272/2008 [CLP]**

| | |
|---|------|
| Skin corrosion/irritation, Category 1B | H314 |
| Serious eye damage/eye irritation, Category 1 | H318 |
| Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation | H335 |

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements**Labelling according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard pictograms (CLP) :



GHS05

GHS07

Signal word (CLP) : Danger

Hazard statements (CLP) : H314 - Causes severe skin burns and eye damage.

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Precautionary statements (CLP)

H335 - May cause respiratory irritation.

- : P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P260 - Do not breathe dust.
P264 - Wash hands thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P310 - Immediately call a POISON CENTER or doctor/physician
P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

| | |
|----------------|---------------------------------|
| Substance type | : Multi-constituent |
| Name | : SODIUM ORTHOSILICATE, tech-90 |
| CAS-No. | : 13472-30-5 |
| EC-No. | : 236-741-3 |

| Name | Product identifier | % | Classification according to Regulation (EC) No. 1272/2008 [CLP] |
|----------------------|--|----------|---|
| Sodium orthosilicate | (CAS-No.) 13472-30-5 (EC-No.) 236-741-3 | 90 - 100 | Skin Corr. 1C, H314 Eye Dam. 1, H318 STOT SE 3, H335 |
| Sodium metasilicate | (CAS-No.) 6834-92-0 (EC-No.) 229-912-9 (EC Index-No.) 014-010-00-8 | 0 - 10 | Skin Corr. 1B, H314 STOT SE 3, H335 |

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

| | |
|---------------------------------------|--|
| First-aid measures general | : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label. |
| First-aid measures after inhalation | : Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice. |
| First-aid measures after skin contact | : Wash with plenty of water/.... Get medical advice/attention. |
| First-aid measures after eye contact | : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. |
| First-aid measures after ingestion | : Never give anything by mouth to an unconscious person. Get medical advice/attention. |

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

| | |
|-------------------------------------|--|
| Symptoms/effects | : Causes severe skin burns and eye damage. |
| Symptoms/effects after inhalation | : May cause respiratory irritation. |
| Symptoms/effects after skin contact | : Causes (severe) skin burns. |
| Symptoms/effects after eye contact | : Causes serious eye damage. |
| Symptoms/effects after ingestion | : May be harmful if swallowed. |

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

Treat exposures by protocols for mild caustic.

SECTION 5: Firefighting measures

5.1. Extinguishing media

| | |
|--------------------------------|--------------------|
| Suitable extinguishing media | : Not combustible. |
| Unsuitable extinguishing media | : None known. |

5.2. Special hazards arising from the substance or mixture

| | |
|------------------|---------------|
| Fire hazard | : None known. |
| Explosion hazard | : None known. |

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5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Avoid contact with skin and eyes. Do not breathe dust.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Store < 5°C. Store locked up.

Incompatible materials : Fluorine gas. Hydrofluoric acid.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Sodium orthosilicate (13472-30-5)

| | | |
|----------|-------------------------------------|--------------------------|
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 2 mg/m ³ NaOH |
|----------|-------------------------------------|--------------------------|

Sodium metasilicate (6834-92-0)

| | | |
|----------|-------------------------------------|--------------------------|
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 2 mg/m ³ NaOH |
|----------|-------------------------------------|--------------------------|

8.2. Exposure controls

Appropriate engineering controls:

Provide local exhaust or general room ventilation.

Personal protective equipment:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:

Neoprene or nitrile rubber gloves

Eye protection:

Chemical goggles or face shield. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

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Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified dust and mist (orange cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|---------------------------------------|
| Physical state | : Solid |
| Appearance | : Powder. |
| Molecular mass | : 184.04 g/mol |
| Colour | : White. |
| Odour | : No data available |
| Odour threshold | : No data available |
| Refractive index | : No additional information available |
| pH | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |
| Melting point | : 1018 °C |
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : No data available |
| Auto-ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapour pressure | : < 0.01 mm Hg 20°C |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| % Volatiles | : 0 % |
| Solubility | : Insoluble in water. |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Slowly reacts with moisture and carbon dioxide to form sodium metasilicate and sodium carbonate.

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

Fluorine gas. Hydrofluoric acid.

10.6. Hazardous decomposition products

When heated to decomposition emits sodium peroxide, sodium hydroxide and silicates.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Sodium metasilicate (6834-92-0)

LD50 oral rat

1280 mg/kg

Skin corrosion/irritation : Causes severe skin burns and eye damage.

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| | |
|---|--|
| Serious eye damage/irritation | : Causes serious eye damage. |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| STOT-single exposure | : May cause respiratory irritation. |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard | : Not classified |
| Potential adverse human health effects and symptoms | : Sodium orthosilicate is a caustic material that can cause severe irritation and caustic burns. |
| Symptoms/effects after inhalation | : May cause respiratory irritation. |
| Symptoms/effects after skin contact | : Causes (severe) skin burns. |
| Symptoms/effects after eye contact | : Causes serious eye damage. |
| Symptoms/effects after ingestion | : May be harmful if swallowed. |
| Reason for classification | : Expert judgment |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|--------------------------|------------------|
| Acute aquatic toxicity | : Not classified |
| Chronic aquatic toxicity | : Not classified |

Sodium metasilicate (6834-92-0)

| | |
|-------------|---|
| LC50 fish 1 | 210 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [semi-static]) |
| LC50 fish 2 | 210 mg/l (Exposure time: 96 h - Species: Brachydanio rerio) |

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : This substance may be hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--|--|
| Sewage disposal recommendations | : Do not dispose of waste into sewer. |
| Product/Packaging disposal recommendations | : Landfill. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility. |
| Ecology - waste materials | : Avoid release to the environment. |

SECTION 14: Transport information

14.1. UN number

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

| | |
|---------------|--------|
| UN-No. (ADR) | : 3262 |
| UN-No. (IMDG) | : 3262 |
| UN-No. (IATA) | : 3262 |
| UN-No. (ADN) | : 3262 |
| UN-No. (RID) | : 3262 |

14.2. UN proper shipping name

| | |
|-----------------------------|---|
| Proper Shipping Name (ADR) | : CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. |
| Proper Shipping Name (IMDG) | : CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. |
| Proper Shipping Name (IATA) | : Corrosive solid, basic, inorganic, n.o.s. |
| Proper Shipping Name (ADN) | : CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. |

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| | |
|---------------------------------------|---|
| Proper Shipping Name (RID) | : CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. |
| Transport document description (ADR) | : UN 3262 CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (SODIUM ORTHOSILICATE), 8, III, (E) |
| Transport document description (IMDG) | : UN 3262 CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (SODIUM ORTHOSILICATE), 8, III |
| Transport document description (IATA) | : UN 3262 Corrosive solid, basic, inorganic, n.o.s. (SODIUM ORTHOSILICATE), 8, III |
| Transport document description (ADN) | : UN 3262 CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (SODIUM ORTHOSILICATE), 8, III |
| Transport document description (RID) | : UN 3262 CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (SODIUM ORTHOSILICATE), 8, III |

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 8

Danger labels (ADR) : 8



IMDG

Transport hazard class(es) (IMDG) : 8

Danger labels (IMDG) : 8



IATA

Transport hazard class(es) (IATA) : 8

Hazard labels (IATA) : 8



ADN

Transport hazard class(es) (ADN) : 8

Danger labels (ADN) : 8



RID

Transport hazard class(es) (RID) : 8

Danger labels (RID) : 8



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14.4. Packing group

| | |
|----------------------|-------|
| Packing group (ADR) | : III |
| Packing group (IMDG) | : III |
| Packing group (IATA) | : III |
| Packing group (ADN) | : III |
| Packing group (RID) | : III |

14.5. Environmental hazards

| | |
|-------------------------------|--|
| Dangerous for the environment | : No |
| Marine pollutant | : No |
| Other information | : No supplementary information available |

14.6. Special precautions for user

- Overland transport

| | |
|---|---------------------------|
| Classification code (ADR) | : C6 |
| Special provisions (ADR) | : 274 |
| Limited quantities (ADR) | : 5kg |
| Excepted quantities (ADR) | : E1 |
| Packing instructions (ADR) | : P002, IBC08, LP02, R001 |
| Mixed packing provisions (ADR) | : MP10 |
| Portable tank and bulk container instructions (ADR) | : T1 |
| Portable tank and bulk container special provisions (ADR) | : TP33 |
| Tank code (ADR) | : SGAV, L4BN |
| Vehicle for tank carriage | : AT |
| Transport category (ADR) | : 3 |
| Special provisions for carriage - Bulk (ADR) | : VC1, VC2, AP7 |
| Hazard identification number (Kemler No.) | : 80 |
| Orange plates | : |



| | |
|-------------------------------|------|
| Tunnel restriction code (ADR) | : E |
| EAC code | : 2X |

- Transport by sea

| | |
|------------------------------------|---|
| Special provisions (IMDG) | : 223, 274 |
| Limited quantities (IMDG) | : 5 kg |
| Excepted quantities (IMDG) | : E1 |
| Packing instructions (IMDG) | : P002, LP02 |
| IBC packing instructions (IMDG) | : IBC08 |
| IBC special provisions (IMDG) | : B3 |
| Tank instructions (IMDG) | : T1 |
| Tank special provisions (IMDG) | : TP33 |
| EmS-No. (Fire) | : F-A |
| EmS-No. (Spillage) | : S-B |
| Stowage category (IMDG) | : A |
| Segregation (IMDG) | : SG35 |
| Properties and observations (IMDG) | : Reacts violently with acids. Causes burns to skin, eyes and mucous membranes. |

- Air transport

| | |
|--|---------|
| PCA Excepted quantities (IATA) | : E1 |
| PCA Limited quantities (IATA) | : Y845 |
| PCA limited quantity max net quantity (IATA) | : 5kg |
| PCA packing instructions (IATA) | : 860 |
| PCA max net quantity (IATA) | : 25kg |
| CAO packing instructions (IATA) | : 864 |
| CAO max net quantity (IATA) | : 100kg |

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Special provisions (IATA) : A3
ERG code (IATA) : 8L

- Inland waterway transport

Classification code (ADN) : C6
Special provisions (ADN) : 274
Limited quantities (ADN) : 5 kg
Excepted quantities (ADN) : E1
Equipment required (ADN) : PP, EP
Number of blue cones/lights (ADN) : 0

- Rail transport

Classification code (RID) : C6
Special provisions (RID) : 274
Limited quantities (RID) : 5kg
Excepted quantities (RID) : E1
Packing instructions (RID) : P002, IBC08, LP02, R001
Special packing provisions (RID) : B3
Mixed packing provisions (RID) : MP10
Portable tank and bulk container instructions (RID) : T1
Portable tank and bulk container special provisions (RID) : TP33
Tank codes for RID tanks (RID) : SGAV, L4BN
Transport category (RID) : 3
Special provisions for carriage – Bulk (RID) : VC1, VC2, AP7
Colis express (express parcels) (RID) : CE11
Hazard identification number (RID) : 80

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

SODIUM ORTHOSILICATE, tech-90 is not on the REACH Candidate List

SODIUM ORTHOSILICATE, tech-90 is not on the REACH Annex XIV List

SODIUM ORTHOSILICATE, tech-90 is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

SODIUM ORTHOSILICATE, tech-90 is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

% Volatiles : 0 %

15.1.2. National regulations

Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

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Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

| | |
|---------------|--|
| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Skin Corr. 1B | Skin corrosion/irritation, Category 1B |
| Skin Corr. 1C | Skin corrosion/irritation, Category 1C |
| STOT SE 3 | Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation |
| H314 | Causes severe skin burns and eye damage. |
| H318 | Causes serious eye damage. |
| H335 | May cause respiratory irritation. |

SDS EU (REACH Annex II) - Custom

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