

SECTION 1: Identification

1.1. Product identifier

Product form : Mixture
 Trade name : SILICON STANDARD SOLUTION 1000 mg/L (0.5 HNO₃, trace HF)
 Product code : 219020x

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

Recommended uses and restrictions : For laboratory use only

1.3. Supplier's details

Labchem (Pty)Ltd
 6 Wakefield Road
 Founders Hill
 1609 Johannesburg - South Africa
 T +27 11 452 1116 - F +27 86 588 0293
techlab@labchem.co.za - www.labchem.co.za

1.4. Emergency telephone number

Emergency number : +27 11 452 1116

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to the United Nations GHS

Oxidising Liquids, Category 2 H272
 Skin corrosion/irritation, Category 2 H315
 Serious eye damage/eye irritation, Category 1 H318
 Full text of H statements : see section 16

2.2. Label elements

Labelling according to the United Nations GHS

Hazard pictograms (GHS-ZA) :



Signal word (GHS-ZA) : Danger

Hazardous ingredients : nitric acid

Hazard statements (GHS-ZA) : H272 - May intensify fire; oxidiser.
 H315 - Causes skin irritation.
 H318 - Causes serious eye damage.

Precautionary statements (GHS-ZA) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P220 - Keep away from clothing and other combustible materials.
 P264 - Wash hands, forearms and face thoroughly after handling.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P302+P352 - IF ON SKIN: Wash with plenty of 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.
 P321 - Specific treatment (see supplemental first aid instruction on this label).
 P332+P313 - If skin irritation occurs: Get medical advice/attention.
 P362+P364 - Take off contaminated clothing and wash it before reuse.
 P370+P378 - In case of fire: Use media other than water to extinguish.
 P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

Adverse physicochemical, human health and environmental effects : May intensify fire; oxidiser, Causes skin irritation, Causes serious eye damage.

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According to SANS 10234:2019 and SANS 11014:2010

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

| Name | Product identifier | % | Classification according to the United Nations GHS |
|---|---------------------|-------|--|
| nitric acid | (CAS-No.) 7697-37-2 | ≤ 3 | Ox. Liq. 2, H272 Skin Corr. 1, H314 |
| hydrofluoric acid, 25%≤concs≤60%, aqueous solutions | (CAS-No.) 7664-39-3 | ≤ 0.5 | Acute Tox. 2 (Oral), H300 Acute Tox. 1 (Dermal), H310 Acute Tox. 2 (Inhalation), H330 Skin Corr. 1A, H314 |

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
- First-aid measures after ingestion : Call a poison center or a doctor if you feel unwell.

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

- Symptoms/effects after skin contact : Irritation.
- Symptoms/effects after eye contact : Serious damage to eyes.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : May intensify fire; oxidiser.
- Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes.

6.1.2. For emergency responders

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

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
- Other information : Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Avoid contact with skin and eyes.

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According to SANS 10234:2019 and SANS 11014:2010

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

Incompatible materials : combustible materials.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

SILICON STANDARD SOLUTION 1000 mg/L (0.5 HNO₃, trace HF)

South Africa - Occupational Exposure Limits (Recommended Limits)

| | |
|-------------------------------|----------------------------|
| Local name | Hydrogen flouride - as F |
| OEL STEL (mg/m ³) | 3 mg/m ³ |
| OEL STEL (ppm) | 3 ppm |
| Regulatory reference | Government Notice. R: 1179 |

nitric acid (7697-37-2)

South Africa - Occupational Exposure Limits (Recommended Limits)

| | |
|-------------------------------|----------------------------|
| Local name | Nitric acid |
| OEL TWA (mg/m ³) | 5 mg/m ³ |
| OEL TWA (ppm) | 2 ppm |
| OEL STEL (mg/m ³) | 10 mg/m ³ |
| OEL STEL (ppm) | 4 ppm |
| Regulatory reference | Government Notice. R: 1179 |

hydrofluoric acid, 25%≤conc≤60%, aqueous solutions (7664-39-3)

South Africa - Occupational Exposure Limits (Recommended Limits)

| | |
|-------------------------------|----------------------------|
| Local name | Hydrogen flouride - as F |
| OEL STEL (mg/m ³) | 3 mg/m ³ |
| OEL STEL (ppm) | 3 ppm |
| Regulatory reference | Government Notice. R: 1179 |

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Hand protection : Protective gloves

Eye protection : Safety glasses. Face shield (EN 166)

Skin and body protection : Wear suitable protective clothing

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|--|---------------------|
| Physical state | : Liquid |
| Appearance | : Translucent. |
| Colour | : Colourless. |
| Odour | : No data available |
| Odour threshold | : No data available |
| pH | : No data available |
| pH solution | : No data available |
| Relative evaporation rate (butylacetate=1) | : No data available |

SILICON STANDARD SOLUTION 1000 mg/L (0.5 HNO₃, trace HF)

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According to SANS 10234:2019 and SANS 11014:2010

| | |
|---|---------------------|
| Relative evaporation rate (ether=1) | : No data available |
| Melting point | : Not applicable |
| 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) | : Not applicable |
| Vapour pressure | : No data available |
| Vapour pressure at 50 °C | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : No data available |
| Relative density of saturated gas/air mixture | : No data available |
| Density | : No data available |
| Relative gas density | : No data available |
| Solubility | : No data available |
| Partition coefficient n-octanol/water (Log Pow) | : No data available |
| Partition coefficient n-octanol/water (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 |
| Lower explosive limit (LEL) | : No data available |
| Upper explosive limit (UEL) | : No data available |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

May intensify fire; oxidiser.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

Combustible materials.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|-----------------------------------|------------------------------|
| Acute toxicity (oral) | : Not classified |
| Acute toxicity (dermal) | : Not classified |
| Acute toxicity (inhalation) | : Not classified |
| Skin corrosion/irritation | : Causes skin irritation. |
| 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 | : Not classified |
| STOT-repeated exposure | : Not classified |
| Aspiration hazard | : Not classified |

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According to SANS 10234:2019 and SANS 11014:2010

SECTION 12: Ecological information

12.1. Toxicity

| | |
|---|---|
| Ecology - general | : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. |
| Hazardous to the aquatic environment, short-term (acute) | : Not classified |
| Hazardous to the aquatic environment, long-term (chronic) | : Not classified |

12.2. Persistence and degradability

| SILICON STANDARD SOLUTION 1000 mg/L (0.5 HNO ₃ , trace HF) | |
|---|-------------------------------------|
| Persistence and degradability | No additional information available |
| nitric acid (7697-37-2) | |
| Persistence and degradability | Biodegradability: not applicable. |
| hydrofluoric acid, 25%≤concentration≤60%, aqueous solutions (7664-39-3) | |
| Persistence and degradability | Biodegradability: not applicable. |

12.3. Bioaccumulative potential

| SILICON STANDARD SOLUTION 1000 mg/L (0.5 HNO ₃ , trace HF) | |
|---|-------------------------------------|
| Bioaccumulative potential | No additional information available |
| nitric acid (7697-37-2) | |
| Bioaccumulative potential | Not bioaccumulative. |
| hydrofluoric acid, 25%≤concentration≤60%, aqueous solutions (7664-39-3) | |
| Bioaccumulative potential | Not bioaccumulative. |

12.4. Mobility in soil

| SILICON STANDARD SOLUTION 1000 mg/L (0.5 HNO ₃ , trace HF) | |
|---|---|
| Mobility in soil | No additional information available |
| nitric acid (7697-37-2) | |
| Ecology - soil | No (test) data on mobility of the components available. |
| hydrofluoric acid, 25%≤concentration≤60%, aqueous solutions (7664-39-3) | |
| Ecology - soil | No (test) data on mobility of the components available. |

12.5. Other adverse effects

| | |
|-----------------------|---------------------------------------|
| Ozone | : Not classified |
| Other adverse effects | : No additional information available |




SECTION 13: Disposal considerations

13.1. Disposal methods

| | |
|-------------------------|---|
| Waste treatment methods | : Dispose of contents/container in accordance with licensed collector's sorting instructions. |
|-------------------------|---|

SECTION 14: Transport information

In accordance with SANS / IMDG / IATA

| SANS | IMDG | IATA |
|---|---|---|
| 14.1. UN number | | |
| 3264 | 3264 | 3264 |
| 14.2. Proper Shipping Name | | |
| CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. | Corrosive liquid, acidic, inorganic, n.o.s. |
| 14.3. Transport hazard class(es) | | |
| 8 | 8 | 8 |
|  |  |  Not applicable |
| 14.4. Packing group | | |
| III | III | III |

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According to SANS 10234:2019 and SANS 11014:2010

| SANS | IMDG | IATA |
|--|------------------------------------|------------------------------------|
| 14.5. Environmental hazards | | |
| Dangerous for the environment : No | Dangerous for the environment : No | Dangerous for the environment : No |
| No supplementary information available | | |

14.6. Special precautions for user

- SANS

| | |
|--|---------------------|
| Special provisions (SANS) | : 223, 274 |
| Limited quantities (SANS) | : 5 L |
| Limited quantities (SANS) | : 5 L |
| Packagings, large packagings and IBCs | : P001, IBC03, LP01 |
| Packing instructions (SANS) | |
| Portable tank and bulk containers instructions (SANS) | : T7 |
| Portable tank and bulk container special provisions (SANS) | : TP1, TP28 |

- IMDG

| | |
|------------------------------------|--|
| Special provisions (IMDG) | : 223, 274 |
| Limited quantities (IMDG) | : 5 L |
| Excepted quantities (IMDG) | : E1 |
| Packing instructions (IMDG) | : P001, LP01 |
| IBC packing instructions (IMDG) | : IBC03 |
| Tank instructions (IMDG) | : T7 |
| Tank special provisions (IMDG) | : TP1, TP28 |
| EmS-No. (Fire) | : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE |
| EmS-No. (Spillage) | : S-B - SPILLAGE SCHEDULE Bravo - CORROSIVE SUBSTANCES |
| Stowage category (IMDG) | : A |
| Properties and observations (IMDG) | : Causes burns to skin, eyes and mucous membranes. |

- IATA

| | |
|--|------------|
| PCA Excepted quantities (IATA) | : E1 |
| PCA Limited quantities (IATA) | : Y841 |
| PCA limited quantity max net quantity (IATA) | : 1L |
| PCA packing instructions (IATA) | : 852 |
| PCA max net quantity (IATA) | : 5L |
| CAO packing instructions (IATA) | : 856 |
| CAO max net quantity (IATA) | : 60L |
| Special provisions (IATA) | : A3, A803 |
| ERG code (IATA) | : 8L |

14.7. 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 national regulations specific for the product

| | |
|----------------------|--|
| Regulatory reference | : SANS 10234:2008; SANS 11014:2010; SANS 10228:2012; SANS 10229:2010; SANS 10232(1,2,4), SANS 10231:2018; Occupational Health and Safety Act 85 of 1993; National Road Traffic Act 93 of 1996. |
|----------------------|--|

SECTION 16: Other information

| | |
|---------------|--------------|
| Issue date | : 27/07/2020 |
| Revision date | : 27/07/2025 |

Full text of H-statements:

| | |
|------|--|
| H272 | May intensify fire; oxidiser. |
| H300 | Fatal if swallowed. |
| H310 | Fatal in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H330 | Fatal if inhaled. |

SILICON STANDARD SOLUTION 1000 mg/L (0.5 HNO₃, trace HF)

Safety Data Sheet

According to SANS 10234:2019 and SANS 11014:2010

SDS South Africa

The data provided in this Safety Data Sheet (SDS) is correct to the best of our knowledge. The data relates to the specific product as named and is intended as a guide to the safe handling of the product in all its facets. The data may no longer be valid if the product is used in any process or in combination with other products. This SDS is not a quality specification nor any form of guarantee.