SPECTRASCAN®

MATERIAL SAFETY DATA SHEET
according to EC Directive 2001/58/EC

SS-1156; SS-1256; SS-1556

Revision Number 1, Revision Date April 25, 2007

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product code SS-156 SI
Product name 1000 µg/mL Silicon
Common Name Silicon in Trace Nitric Acid Trace Hydrofluoric Acid
Manufacturer, importer, supplier Teknolab
P.O. Box 33
1411 Kolbotn
Norway
Tel: + 47 66 81 34 70
Fax: +47 66 81 34 71
Web: www.spectrascan.no
Emergency telephone number 800-424-9300 CHEMTREC (24 hrs)

2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS	Chemical Name	% Weight	ACGIH*	OSHA*
7732-18-5	Water	99.8	N/A	N/A
7697-37-2	Nitric Acid	<0.1	2 ppm TWA	2 ppm TWA; 5 mg/m3 TWA
7664-39-3	Hydrogen fluoride	<0.1	0.5 ppm TWA (as F)	3 ppm TWA
60676-86-0	Silica, fused	0.2	0.1 mg/m3 TWA (respirable fraction)	N/A

* ACGIH - Occupational Exposure Limits - TWAs
* OSHA - Final PELs - Time Weighted Averages (TWAs)

3. HAZARDS IDENTIFICATION

Emergency Overview
- Final product is not regulated

Eye contact	• Contact with eyes may cause irritation
Skin contact	• Causes severe burns
Inhalation	• May cause irritation of respiratory tract
Ingestion	• Harmful if swallowed

4. FIRST AID MEASURES

General advice	• Show this safety data sheet to the doctor in attendance
Skin contact	• Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes • First treatment with calcium gluconate paste • Immediate medical attention is required
Eye contact	• Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes • Keep eye wide open while rinsing • Immediate medical attention is required
Inhalation	• Move to fresh air in case of accidental inhalation of vapours • If breathing is difficult, give oxygen • Immediate medical attention is required
Ingestion	• Call a physician or Poison Control Centre immediately • If swallowed, seek medical advice immediately and show this container or label • If conscious, drink plenty of water
Notes to physician	• Treat symptomatically

Protection of first-aiders	● Use personal protective equipment

5. FIRE-FIGHTING MEASURES

Flash point	NA
Suitable extinguishing media	● Use extinguishing measures that are appropriate to local circumstances and the surrounding environment
Specific hazards	● Thermal decomposition can lead to release of irritating gases and vapours
Specific methods	● Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations
Special protective equipment for firefighters	● As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
NFPA (National Fire Protection Association)	● Health - 2 ● Fire Hazard - 0 ● Reactivity - 0
Under conditions giving incomplete combustion, hazardous gases produced may consist of:	● nitrogen oxides (NOx). ● F^{-1}.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	● Evacuate personnel to safe areas ● Keep people away from and upwind of spill/leak ● Wear personal protective equipment ● Ensure adequate ventilation
Environmental precautions	● Prevent further leakage or spillage if safe to do so ● Prevent product from entering drains
Methods for cleaning up	● Dam up ● Neutralize with lime milk or soda and flush with plenty of water ● Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container ● After cleaning, flush away traces with water

7. HANDLING AND STORAGE

Handling

Technical measures/Precautions	● Use only in area provided with appropriate exhaust ventilation
Safe handling advice	● Wear personal protective equipment

Storage

Technical measures/Precautions	● Keep in properly labelled containers ● Store at room temperature in the original container ● Keep containers tightly closed in a dry, cool and well-ventilated place
Incompatible products	● organic materials ● reducing agents

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal protective equipment	
Hand protection	● impervious gloves
Eye protection	● tightly fitting safety goggles
Respiratory protection	● Ensure adequate ventilation
Skin and body protection	● Chemical resistant apron ● Lab coat
Hygiene measures	● When using, do not eat, drink or smoke

	• Regular cleaning of equipment, work area and clothing

9. PHYSICAL AND CHEMICAL PROPERTIES

General Information

Form	liquid.
Appearance	clear
Colour	None.
Odour	None.

Important Health Safety and Environmental Information

pH	0 to 2
Boiling point/range	100°C
Flash point	N/A
Vapour pressure	NA.
Water solubility	miscible.

10. STABILITY AND REACTIVITY

Stability	• Stable under normal conditions • Hazardous polymerisation does not occur
Materials to avoid	• organic materials • reducing agents
Hazardous decomposition products	• nitrogen oxides (NOx) • F^{-1}

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Component Information

CAS	Chemical Name	% Weight	LD50/oral/rat =	LD50/dermal/rat =
7732-18-5	Water	99.8	N/A	N/A
7697-37-2	Nitric Acid	<0.1	Inhalation LC50 Rat: 130 mg/kg/4H	Inhalation LC50 Rat: 130 mg/kg/4H
7664-39-3	Hydrogen fluoride	<0.1	Inhalation LC50 Rat: 1276 ppm/1H	Inhalation LC50 Rat: 1276 ppm/1H
60676-86-0	Silica, fused	0.2	N/A	N/A

Product Information

Local effects	HF is toxic and can cause severe burns that are not apparent immediately. Symptoms may be delayed
Skin irritation	Causes severe burns.
Eye irritation	Irritant.
Inhalation	Irritant.
Ingestion	If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach. Harmful if swallowed.
Chronic toxicity	Avoid repeated exposure. Prolonged exposure may cause chronic effects.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Component Information

CAS	Chemical Name	% Weight	EFAD*	EFFSD*	EMD - Ecotoxicity*
7732-18-5	Water	99.8	N/A	N/A	N/A
7697-37-2	Nitric Acid	<0.1	N/A	N/A	N/A

7664-39-3	Hydrogen fluoride	<0.1	N/A	N/A	N/A
60676-86-0	Silica, fused	0.2	N/A	N/A	N/A

* EFAD - Ecotoxicity - Freshwater Algae Data
* EFFSD - Ecotoxicity - Freshwater Fish Species Data
* EMD - Ecotoxicity - Microtox Data

Product Information

Do not allow material to contaminate ground water or sewage system

Other information

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products	• In accordance with local and national regulations
Contaminated packaging	• Empty containers should be taken for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

DOT

UN-No UN3264 / Class 8
Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s
Packing group III

IATA-DGR

UN-No UN3264 / Class 8
Proper shipping name Corrosive liquid, acidic, inorganic, n.o.s
Packing group III

15. REGULATORY INFORMATION

U.S. INVENTORIES:

CAS	Chemical Name	% Weight	CPCL*	NJRTK*	CERCLA/SARA*
7732-18-5	Water	99.8	N/A	N/A	N/A
7697-37-2	Nitric Acid	<0.1	N/A	sn 1356	1000 lb final RQ; 454 kg final RQ
7664-39-3	Hydrogen fluoride	<0.1	N/A	sn 1014	100 lb final RQ; 45.4 kg final RQ
60676-86-0	Silica, fused	0.2	N/A	sn 1656	N/A

* CPCL - California - Proposition 65 - Carcinogens List
* NJRTK - New Jersey - Department of Health RTK List
* CERCLA/SARA - Hazardous Substances and their Reportable Quantities

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INTERNATIONAL INVENTORIES:

CAS	Chemical Name	% Weight	WHMIS*	EINECCS - European Union*
7732-18-5	Water	99.8	Uncontrolled product according to WHMIS classification criteria	231-791-2
7697-37-2	Nitric Acid	<0.1	C, E (including 60%, 61.3%, 63%, 67%, 67.18%, 70%, 90%); E (10%)	231-714-2
7664-39-3	Hydrogen fluoride	<0.1	D1A, E; D1B (including 12%, 24%, 48-50%, 52%, 70%)	231-634-8
60676-86-0	Silica, fused	0.2	Uncontrolled product according to WHMIS classification criteria	262-373-8

* WHMIS - Canada - WHMIS - Classifications of Substances
* EINECCS - European Union - European inventory of Existing Commercial Chemical Substances (EINECCS)

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16. OTHER INFORMATION

The above information is believed to be accurate and represents the best information available to us. It

has been compiled from the data presented in various technical publications and our experience and should only be used as a guide for handling this product. It is the user's responsibility to determine the suitability of this information for their particular purposes. We assume that only qualified individuals, trained and familiar with procedures suitable to this product will handle this material. Teknolab assumes no responsibility and shall not be held liable for any damage resulting from misuse of this product.