SPECTRASCAN®

MATERIAL SAFETY DATA SHEET
according to EC Directive 2001/58/EC
SS-1116, SS-1216, SS-1516
Revision Number 1, Revision Date January 08, 2007

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

Product code SS-1116 BA
Product name 1000 ug/mL Barium
Common Name Barium in Dilute Nitric Acid
Manufacturer, importer, supplier Teknolab
P.O. Box 33
1411 Kolbotn
Norway
Tel: + 47 66 81 34 70
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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	~95-99	N/A	N/A
7697-37-2	Nitric Acid	~0-1	2 ppm TWA	2 ppm TWA; 5 mg/m3 TWA
10022-31-8	Barium nitrate	~0.1-1	0.5 mg/m3 TWA (as Ba)	0.5 mg/m3 TWA (as Ba)

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

3. HAZARDS IDENTIFICATION

Emergency Overview
- Final product is not regulated

Eye contact	• Irritating to eyes
Skin contact	• Irritating to skin
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 • Consult a physician if necessary
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 • If eye irritation persists, consult a specialist
Inhalation	• Move to fresh air in case of accidental inhalation of vapours • If breathing is difficult, give oxygen • Consult a physician if necessary
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

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
Under conditions giving incomplete combustion, hazardous gases produced may consist of:	• nitrogen oxides (NOx).

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)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Component Information

CAS	Chemical Name	% Weight	LD50/oral/rat =	LD50/dermal/rat =
7732-18-5	Water	~95-99	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
10022-31-8	Barium nitrate	~0.1-1	Oral LD50 Rat: 355 mg/kg	Oral LD50 Rat: 355 mg/kg

Product Information

Local effects	• Poison • Acute intoxication by inhalation or ingestion of water soluble barium salts causes vomiting, diarrhea, convulsive tremors and muscular paralysis
Skin irritation	Irritating to skin.
Eye irritation	Irritant.
Inhalation	May cause irritation of respiratory tract.
Ingestion	Harmful if swallowed. If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Component Information

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 Final product is not regulated

IATA-DGR Final product is not regulated

15. REGULATORY INFORMATION

U.S. INVENTORIES:

CAS	Chemical Name	% Weight	CPCL*	NJRTK*	CERCLA/SARA*
7732-18-5	Water	~95-99	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
10022-31-8	Barium nitrate	~0.1-1	N/A	sn 0186	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	~95-99	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
10022-31-8	Barium nitrate	~0.1-1	C, D1A, D2B	233-020-5

* 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.