

**Material Safety Data Sheet**

Version 4.0  
Revision Date 08/19/2010  
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**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : **Barium Standard for ICP**  
 Product Number : 59943  
 Brand : Fluka  
 Company : Sigma-Aldrich  
 3050 Spruce Street  
 SAINT LOUIS MO 63103  
 USA  
 Telephone : +1 800-325-5832  
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**2. HAZARDS IDENTIFICATION**

**Emergency Overview**

**OSHA Hazards**  
Target Organ Effect, Corrosive

**Target Organs**

Lungs, Teeth., Cardiovascular system.

**HMIS Classification**

Health hazard: 3  
 Chronic Health Hazard: +  
 Flammability: 0  
 Physical hazards: 0

**NFPA Rating**

Health hazard: 3  
 Fire: 0  
 Reactivity Hazard: 0

**Potential Health Effects**

**Inhalation** May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.  
**Skin** May be harmful if absorbed through skin. Causes skin burns.  
**Eyes** Causes eye burns.  
**Ingestion** May be harmful if swallowed. Causes burns.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

CAS-No.	EC-No.	Index-No.	Concentration
<b>Nitric acid</b>			
7697-37-2	231-714-2	007-004-00-1	2 %
<b>Barium nitrate</b>			
10022-31-8	233-020-5	056-002-00-7	>= 0.1 - <= 0.2 %
<b>Water</b>			
7732-18-5	231-791-2	-	>= 97.8 - <= 97.9 %

**4. FIRST AID MEASURES**

**General advice**  
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**If inhaled**  
If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

**In case of skin contact**  
Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**  
Continue rinsing eyes during transport to hospital. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**  
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**5. FIRE-FIGHTING MEASURES**

**Suitable extinguishing media**  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special protective equipment for fire-fighters**  
Wear self contained breathing apparatus for fire fighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**  
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

**Environmental precautions**  
Do not let product enter drains.

**Methods and materials for containment and cleaning up**  
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**  
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Normal measures for preventive fire protection.

**Conditions for safe storage**  
Keep container tightly closed in a dry and well-ventilated place.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Nitric acid	7697-37-2	TWA	2 ppm	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Eye & Upper Respiratory Tract irritation Dental erosion				
		STEL	4 ppm	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)
	Eye & Upper Respiratory Tract irritation Dental erosion				
		TWA	2 ppm 5 mg/m3	1989-01-19	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	4 ppm	1989-01-19	USA. OSHA - TABLE Z-1 Limits for Air

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			10 mg/m3		Contaminants - 1910.1000
		TWA	2 ppm 5 mg/m3	1997-08-04	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
The value in mg/m3 is approximate.					
		TWA	2 ppm 5 mg/m3	2005-09-01	USA, NIOSH Recommended Exposure Limits
		ST	4 ppm 10 mg/m3	2005-09-01	USA, NIOSH Recommended Exposure Limits

#### Personal protective equipment

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Hand protection

Handle with gloves.

##### Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum).

##### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

##### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Appearance

Form	clear, liquid
Colour	colourless

#### Safety data

pH	no data available
Melting point	no data available
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	no data available

## 10. STABILITY AND REACTIVITY

#### Chemical stability

Stable under recommended storage conditions.

#### Conditions to avoid

no data available

#### Materials to avoid

Gives off hydrogen by reaction with metals.

#### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions, - nitrogen oxides (NOx)

## 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

no data available

#### Skin corrosion/irritation

no data available

#### Serious eye damage/eye irritation

Eyes: no data available

#### Respiratory or skin sensitization

no data available

#### Germ cell mutagenicity

no data available

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity

no data available

#### Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

#### Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

#### Aspiration hazard

no data available

#### Potential health effects

<b>Inhalation</b>	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
<b>Ingestion</b>	May be harmful if swallowed. Causes burns.
<b>Skin</b>	May be harmful if absorbed through skin. Causes skin burns.
<b>Eyes</b>	Causes eye burns.

#### Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### Additional Information

## 12. ECOLOGICAL INFORMATION

#### Toxicity

no data available

#### Persistence and degradability

no data available

#### Bioaccumulative potential

no data available

#### Mobility in soil

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

no data available

**13. DISPOSAL CONSIDERATIONS**

**Product**

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION**

**DOT (US)**

UN-Number: 3264 Class: 8 Packing group: III  
Proper shipping name: Corrosive, liquid, acidic, inorganic, n.o.s.  
Reportable Quantity (RQ): 50000 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN-Number: 3264 Class: 8 Packing group: III EMS-No: F-A, S-B  
Proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  
Marine pollutant: No

**IATA**

UN-Number: 3264 Class: 8 Packing group: III  
Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s.

**15. REGULATORY INFORMATION**

**OSHA Hazards**

Target Organ Effect, Corrosive

**DSL Status**

All components of this product are on the Canadian DSL list.

**SARA 302 Components**

	CAS-No.	Revision Date
Nitric acid	7697-37-2	2007-07-01

**SARA 313 Components**

	CAS-No.	Revision Date
Nitric acid	7697-37-2	2007-07-01

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
Nitric acid	7697-37-2	2007-07-01

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Water	7732-18-5	2007-07-01
Nitric acid	7697-37-2	2007-07-01

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Water	7732-18-5	2007-07-01
Nitric acid	7697-37-2	2007-07-01

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**16. OTHER INFORMATION**

**Further information**

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