

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Identifier: Barium Isopropoxide Solution (~20% in isopropanol)

Product Code: BA-IP-01-SOL

CAS Number: 24363-37-9

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
Fax: +1 310-208-0351
Emergency telephone number:
+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS02 Flame

Flam. Sol. 2 H228 Flammable solid.

Self-heat. 2 H252 Self-heating in large quantities; may catch fire.

GHS05 Corrosion

Skin Corr. 1C H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.

GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Hazards not otherwise classified No data available

GHS label elements, including precautionary statements



Hazard pictograms

GHS02 GHS05 GHS07

Signal word Danger

Hazard statements

H228 Flammable solid.

H252 Self-heating in large quantities; may catch fire.

H302+H332 Harmful if swallowed or if inhaled.

H314 Causes severe skin burns and eye damage.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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/doctor

P302+P352 IF ON SKIN: Wash with plenty of water

WHMIS classification

B6 - Reactive flammable material

D2B - Toxic material causing other toxic effects

E - Corrosive material

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

2

2

1

Health (acute effects) = 2

Flammability = 2

Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

CAS No. / Substance Name:

24363-37-9 Barium isopropoxide

SECTION 4. FIRST AID MEASURES

Description of first aid measures

General information Immediately remove any clothing soiled by the product.

If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:
Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed
Causes severe skin burns.
Causes serious eye damage.
Indication of any immediate medical attention and special treatment needed:
No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media
Suitable extinguishing agents CO₂, sand, extinguishing powder. Do not use water.
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Barium oxide
Carbon monoxide and carbon dioxide
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Keep away from ignition sources
Environmental precautions: Do not allow material to be released to the environment without official permits.
Methods and materials for containment and cleanup:
Keep away from ignition sources.
Use neutralizing agent.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.
Prevention of secondary hazards: Keep away from ignition sources.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Handling
Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Information about protection against explosions and fires: Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities
Requirements to be met by storerooms and receptacles: Store in a cool location.
Information about storage in one common storage facility:
Store away from oxidizing agents.
Store away from air.
Store away from water/moisture.
Further information about storage conditions:
Store under dry inert gas.
This product is moisture sensitive.
This product is air sensitive.
Keep container tightly sealed.
Store in cool, dry conditions in well-sealed containers.
Protect from humidity and water.
Specific end use(s) No data available

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Control parameters
Components with limit values that require monitoring at the workplace:
Barium, and soluble compounds, as Ba
mg/m³
ACGIH TLV 0.5; Not classified as a human carcinogen
Austria MAK 0.5
Belgium TWA 0.5
Denmark TWA 0.5
Finland TWA 0.5
Germany MAK 0.5 (total dust)
Hungary 0.5-STEEL
Ireland TWA 0.5
Korea TLV 0.5
Netherlands MAC-TGG 0.5
Norway TWA 0.5
Poland TWA 0.5; 1.5-STEEL
Sweden TWA 0.5
Switzerland MAK-W 0.5
United Kingdom LTEL 0.5
USA PEL 0.5
Additional information: No data
Exposure controls
Personal protective equipment
Follow typical protective and hygienic practices for handling chemicals.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.
Breathing equipment: Use suitable respirator when high concentrations are present.
Protection of hands:
Impervious gloves
Inspect gloves prior to use.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection:

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Powder

Color: White

Odor: No data available

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 200 °C (392 °F) (dec)

Boiling point/Boiling range: No data available

Sublimation temperature / start: No data available

Flash point: N/A

Flammability (solid, gas) Highly flammable.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: No data available.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure: N/A

Density: No data available

Relative density No data available.

Vapor density N/A

Evaporation rate N/A

Solubility in / Miscibility with

Water: Reacts

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Other information No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity No data available

Chemical stability Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions Reacts with water and acids

Conditions to avoid No data available

Incompatible materials:

Oxidizing agents

Air
Water/moisture
Hazardous decomposition products:
Barium oxide
Carbon monoxide and carbon dioxide

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

Harmful if inhaled.

Harmful if swallowed.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

LD/LC50 values that are relevant for classification: No data

Skin irritation or corrosion: Causes severe skin burns.

Eye irritation or corrosion: Causes serious eye damage.

Sensitization: No sensitizing effects known.

Germ cell mutagenicity: No effects known.

Carcinogenicity:

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

EPA-NL: Not likely to be carcinogenic to humans.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

Reproductive toxicity: No effects known.

Specific target organ system toxicity - repeated exposure: No effects known.

Specific target organ system toxicity - single exposure: No effects known.

Aspiration hazard: No effects known.

Subacute to chronic toxicity:

Barium compounds may cause severe gastroenteritis, including abdominal pain, vomiting and diarrhea, tremors, faintness, paralysis of the arms and legs, and slow or irregular heartbeat. Severe cases may produce collapse and death due to respiratory failure.

Soluble barium compounds are more likely to cause these effects than insoluble compounds. Inhalation of fumes may cause sore throat, coughing, labored breathing, and irritation of the respiratory tract as well as the above symptoms.

Subacute to chronic toxicity: No effects known.

Subacute to chronic toxicity:

Isopropyl alcohol, if formed, may act as a local irritant and in high concentrations as a narcotic with symptoms such as headache, nausea, dizziness, vomiting, mental depression, anesthesia, and coma. Similar symptoms may be caused by ingestion. It can cause corneal burns on contact with the eyes and has caused teratogenic, mutagenic and reproductive effects in laboratory animals.

Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: No data available

Persistence and degradability No data available

Bioaccumulative potential No data available

Mobility in soil No data available

Additional ecological information:

Do not allow material to be released to the environment without official permits.

Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT: N/A

vPvB: N/A

Other adverse effects No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number

DOT, IMDG, IATA UN3205

UN proper shipping name

DOT Alkaline earth metal alcoholates, n.o.s.

IMDG, IATA ALKALINE EARTH METAL ALCOHOLATES, N.O.S.

Transport hazard class(es)

DOT

Class 4.2 Substances liable to spontaneous combustion.

Label 4.2

Class 4.2 (S4) Substances liable to spontaneous combustion

Label 4.2

IMDG, IATA

Class 4.2 Substances liable to spontaneous combustion.

Label 4.2

Packing group

DOT, IMDG, IATA III

Environmental hazards: N/A

Special precautions for user Warning: Substances liable to spontaneous combustion

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A

Transport/Additional information:

DOT

Marine Pollutant (DOT): No

UN "Model Regulation": UN3205, Alkaline earth metal alcoholates, n.o.s., 4.2, III

SECTION 15. REGULATORY INFORMATION

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

GHS label elements, including precautionary statements

Hazard pictograms
GHS02 GHS05 GHS07
Signal word Danger
Hazard statements
H228 Flammable solid.
H252 Self-heating in large quantities; may catch fire.
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P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
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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/doctor
P302+P352 IF ON SKIN: Wash with plenty of water
National regulations
This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only. This product must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.
SARA Section 313 (specific toxic chemical listings)
24363-37-9 Barium isopropoxide
California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity Substance is not listed.
Prop 65 - Developmental toxicity, female Substance is not listed.
Prop 65 - Developmental toxicity, male Substance is not listed.
Information about limitation of use:
For use only by technically qualified individuals.
This product contains barium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for

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