

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Barium Sulfide

CAS #: 21109-95-5

Relevant identified uses of the substance: Scientific research and development

Supplier details:

Stanford Advanced Materials

E-mail: sales@samaterials.com

Tel: (949) 407-8904

Address: 23661 Birtcher Dr., Lake Forest, CA 92630 U.S.A.

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Corrosive to metals(Category 1), H290

Acute toxicity, Oral(Category 3), H301

Acute toxicity, Inhalation(Category 4), H332

Skin corrosion(Category 1A), H314

Serious eye damage(Category 1), H318

Acute aquatic toxicity(Category 1), H400

GHS Label elements, including precautionary statements

Pictogram

Signal word

Danger

Hazard statement(s)

H290

May be corrosive to metals.H301

Toxic if swallowed.

H314

Causes severe skin burns and eye damage.

H332

Harmful if inhaled.

H400

Very toxic to aquatic life.

Precautionary statement(s)

P234

Keep only in original container.

P260

Do not breathe dust or mist.

P264

Wash skin thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

P271

Use only outdoors or in a well-ventilated area.

P273

Avoid release to the environment.

P280

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

P301 + P310

IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

P301 + P330 + P331

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/

shower.

P304 + P340

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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/ physician.

P321

Specific treatment (see supplemental first aid instructions on this label).

P363

Wash contaminated clothing before reuse.

P390

Absorb spillage to prevent material damage.

P391

Collect spillage.

P405

Store locked up.

P406

Store in corrosive resistant stainless steel container with a resistant inner liner.

P501

Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS

Contact with acids liberates toxic gas.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: BaS

Molecular weight: 169.39 g/mol

CAS-No.: 21109-95-5

EC-No.: 244-214-4

Index-No.: 016-002-00-X

SECTION 4. FIRST AID MEASURES

Description of 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

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take

victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or

in section 11

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

Dry powder

Special hazards arising from the substance or mixture

Sulphur oxides, Barium oxide

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

No data available

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid dust formation. Avoid breathing Vapors, mist or gas.

Ensure adequate ventilation.

Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the

environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water.

Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.

Further processing of solid materials may result in the formation of combustible dusts. The potential for

combustible dust formation should be taken into consideration before additional processing occurs.

Provide appropriate exhaust

ventilation at places where dust is formed.

For precautions see section 2.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Never allow product to get in contact with water during storage. Do not store near acids.

Keep in a dry place.

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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). Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Form: crystalline, powder

Odor

sulphurous

Odor Threshold

No data available

pH

No data available

Melting point/freezing point

Melting point/range: 1,200 °C (2,192 °F)

Initial boiling point and boiling range

No data available

Flash point

No data available

Evaporation rate

No data available

Flammability (solid, gas)

No data available

Upper/lower flammability or explosive limits

No data available

Vapor pressure

No data available

Vapor density

No data available

Relative density

4.25 g/mL at 15 °C (59 °F)

Water solubility

72.8 g/l at 20 °C (68 °F)-soluble

Partition coefficient: n-octanol/water

No data available

Auto-ignition temperature

No data available

Decomposition temperature

No data available

Viscosity

No data available

Explosive properties

No data available

Oxidizing properties

No data available

Other safety information

No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available

Conditions to avoid

No data available

Incompatible materials

acids, Oxidizing agents, Phosphorous oxides, Lead, Potassium chlorate, Potassium nitrate

Hazardous decomposition products

Other decomposition products-No data available

In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

LD50 Oral-Rat-male and female-271 mg/kg(OECD Test Guideline 401)

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation

Skin-in vitro assay

Result: Causes severe burns.-3 -60 min

(Skin corrosion: Human Skin Model Test)

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

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

No data available

Specific target organ toxicity -single exposure

No data available

Specific target organ toxicity -repeated exposure

No data available

Aspiration hazard

No data availableAdditional Information

RTECS: Not available

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

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

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.

SECTION 14. TRANSPORT INFORMATION

DOT (US)

UN number: 2813

Class: 4.3

Packing group: II

Proper shipping name: Water-reactive solid, n.o.s.(Barium sulphide)

Reportable Quantity(RQ):

Poison Inhalation Hazard: No

IMDG

UN number: 2813

Class: 4.3

Packing group: II

EMS-No: F-G, S-N

Proper shipping name: WATER-REACTIVE SOLID, N.O.S.(Barium sulphide)

IATA

UN number: 2813

Class: 4.3 Packing group: II

Proper shipping name: Water-reactive solid, n.o.s.(Barium sulphide)

SECTION 15. REGULATORY INFORMATION

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

Barium sulphide

CAS-No.

21109-95-5

Revision Date

2007-07-01

SARA 311/312 Hazards

Reactivity Hazard, Acute Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

Barium sulphide

CAS-No.

21109-95-5

Revision Date

2007-07-01

New Jersey Right To Know Components

Barium sulphide

CAS-No.

21109-95-5

Revision Date

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.

SECTION 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.