

GHS SAFETY DATA SHEET

**1. IDENTIFICATION**

**Product Name: Barium Sulfide, All Grades**

SYNONYMS: Barium Sulfide, Grey; Barium Sulfide, Black Ash; Barium Monosulfide

Recommended for industrial use as:

- a component of depilatories for human hair removal
- a raw material for the production of barium chemicals,
- production of substances,
- a component of articles added to provide x-ray opacity.

Industrial uses advised against: None.

MANUFACTURER: Chemical Products Corporation (CPC)  
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**2. HAZARD IDENTIFICATION**



**WARNING**

Acute toxicity, Oral (Category 4), H302  
**HARMFUL IF SWALLOWED**

**HARMFUL IF INHALED** CAN CAUSE EYE AND SKIN IRRITATION  
 Do not eat, drink or smoke when using this product.

Wear protective gloves and eye protection.

Use with adequate ventilation or wear a dust mask if excessive dust is present.

Wash hands and face thoroughly after handling.

Dispose of contents/container in accordance with local, state and federal regulations.

**CONTACT WITH ACID RELEASES POISONOUS AND FLAMMABLE HYDROGEN SULFIDE GAS.**

Alkalinity can cause burns to eyes and mucous membranes.

Very toxic to aquatic organisms.

# Barium Sulfide, All Grades

**Carcinogenicity:** NTP.....: No evidence of carcinogenicity.

IARC.....: Not listed.

OSHA.....: Not regulated.

**Medical Conditions Aggravated by Exposure:** None are known.

## 3. INFORMATION ON INGREDIENTS

<u>COMPONENT</u>	<u>CAS #</u>	<u>EXPOSURE LIMITS</u>	<u>% BY WT</u>
Barium Sulfide	21109-95-5	OSHA PEL: 0.5 mg/cu m as Ba 0.74 mg/cu m as This Product ACGIH TLV-TWA: Same	about 80%

## 4. FIRST AID MEASURES

If swallowed, do not induce vomiting unless directed to do so by medical personnel. Have victim drink as much milk or water as possible. Then give Epsom salts (magnesium sulfate) or Glauber's Salt (sodium sulfate) dissolved in water.

**Physician:** Administer potassium intravenously to counteract the effects of barium. This product is highly alkaline.

For eye contact, flush eyes with large amounts of water for at least 15 minutes and get IMMEDIATE medical attention.

For skin contact, wash with soap and water. Wash clothing before reuse.

## 5. FIRE FIGHTING MEASURES

**Flashpoint:** Non-Flammable under normal conditions.

**Flammability:** Finely divided dust can form combustible mixtures with air.

**Barium Sulfide, All Grades.**

**Autoignition:** Not applicable.

**General Hazard:** Poison, flammable hydrogen sulfide gas will be evolved from this product on exposure to acid. If this product is involved in a fire, toxic sulfur oxide gases may be produced.

**Fire Fighting Instructions:** Limit water runoff if it is likely to contain suspended barium sulfide. Add soluble sulfate such as sodium sulfate to the water to remove dissolved barium. Do not use carbon dioxide fire extinguishers because toxic hydrogen sulfide gas may be liberated from this product.

## **Barium Sulfide, All Grades**

**Fire Fighting Equipment:** No special equipment is required. Wash away any barium sulfide which may contact the body, clothing, or equipment.

**Hazardous Combustion Products:** Poisonous sulfur dioxide gas will be generated if this product burns.

### **6. ACCIDENTAL RELEASE MEASURES**

**General:** Avoid generating dust and keep this product away from acids. Use appropriate Personnel Protective Equipment (PPE). Spilled product is a RCRA hazardous waste because of its soluble barium content and sulfide content.

**Small Spill:** Carefully shovel or sweep up spilled material and place in suitable container.

**Large Spill:** Try to keep material dry and away from acids. Prevent material from entering storm sewers or ditches which lead to natural waterways. Dispose of material in an approved hazardous waste landfill. Mix with excess sulfate to make material non-hazardous.

### **7. HANDLING AND STORAGE**

**Storage Temperature:** Not critical.

**Storage Pressure:** Not critical.

**General:** This product is water-soluble; keep this material dry.

--Keep containers closed.

--Emptied containers may present a toxic hazard; treat or dispose of appropriately.

--Do not store in zinc, aluminum, or copper containers.

--**Danger:** Do not rely upon the sense of smell to detect hydrogen sulfide gas (the ability to smell is rapidly lost).

### **8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Engineering Controls:** Control airborne concentrations below the exposure limits. Use only with adequate ventilation.

**Respiratory Protection:** Use a NIOSH-approved dust mask if excessive dust is present.

**Skin Protection:** Cover exposed skin areas and wear general-purpose gloves.

**Eye Protection:** Wear safety glasses. Use chemical goggles if excessive dust is present.

# Barium Sulfide, All Grades

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Solid.

**Vapor Pressure:** Not applicable.

**Specific Gravity:** 4.2

**Solubility in Water:** 9 grams per 100 ml of water at 21 Deg. C. (70 Deg. F.)

**pH:** Highly alkaline.

**Boiling Point:** Not applicable.

**Melting Point:** About 1200 Deg. C.

**Vapor Density:** Not applicable.

**Evaporation Rate:** Not applicable.

**Odor:** Slight "rotten egg" odor; more pronounced if damp.

**Appearance:** Light gray powder or dark gray coarse powder containing granules.

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Keep away from acids which will cause decomposition. Intense heat may cause decomposition.

**Incompatibility:** Acids will decompose barium sulfide with the liberation of hydrogen sulfide.

**Hazardous Decomposition Products:** Poison hydrogen sulfide gas and another soluble barium salt which is toxic.

**Hazardous Polymerization:** Does not occur.

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

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

Inhalation: No data available

Dermal: No data available

# Barium Sulfide, All Grades

## **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**

Rats and mice exposed to 2500 ppm of barium chloride dihydrate in drinking water for two years showed no evidence of carcinogenic response.

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**

Rats exposed to 2000 ppm of barium chloride dihydrate in their drinking water for thirty days exhibited no teratogenic effects, and no fetotoxicity was noted. No effects were seen on reproductive indices in a mating trial after male rats were exposed to 2000 ppm of barium chloride dihydrate in their drinking water for sixty days and female rats were exposed to 2000 ppm in their drinking water for thirty days..

**Sub-chronic:** Rats and mice exposed to 1,250 ppm of barium chloride dihydrate in their drinking water continuously for two years showed no adverse effects.

**Mutagenic:** Barium chloride dihydrate was not mutagenic in Salmonella typhimurium strains TA 100, TA 1535, TA 1537, TA 97, or TA 98, with or without exogenous metabolic activation (S9).

## **12. ECOLOGICAL INFORMATION**

Very toxic to aquatic life.

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

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## **Barium Sulfide, All Grades**

This product reacts with sulfate ions in the environment to form barium sulfate. Sulfide is part of the naturally-occurring sulfur cycle and is present throughout the lithosphere. No appreciable bioconcentration is expected in the environment, because barium sulfate is naturally present in almost all rocks and soils.

CHEMICAL FATE: The environmental fate of barium sulfide is to become barium sulfate which is insoluble in both water and acids and thus is inert and non-toxic.

### **13. WASTE MANAGEMENT INFORMATION / DISPOSAL**

Waste containing more than 0.2% soluble barium is hazardous under the RCRA criteria. If disposed of in its purchased form, this product would be a characteristic D005 hazardous waste based on barium solubility in the RCRA TCLP test. It would also be a hazardous waste based on its sulfide content. Barium compounds can be rendered non-hazardous by reaction with excess sulfate to form insoluble barium sulfate; any strong oxidizing agent will oxidize sulfide. Any disposal practice must be in compliance with local, state, and federal laws and regulations.

### **14. TRANSPORT INFORMATION**

- D.O.T. Shipping Name**..... : Not Regulated.
- Technical Shipping Name**..... : Barium Compound.
- D.O.T. Hazard Class**.....: None.
- U.N./N.A. Number**..... : None.
- Product R.Q. (lbs)**..... : None.
- D.O.T. Label**..... : None.
- D.O.T. Placard**..... : None.
- Freight Class Bulk**..... : Inorganic Chemical.
- Freight Class Package**..... : Inorganic Chemical.
- Product Label**.....: Barium Sulfide, Grey.  
Barium Sulfide, Black Ash.

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**Barium Sulfide, All Grades**

**15. REGULATORY INFORMATION**

**OSHA Status.....** : This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard, 29 CFR 1910.1200. It is classified as toxic based on the oral rat LD50.

**TSCA Status.....** : Listed on TSCA Inventory

**CERCLA Reportable Quantity.....** : None.

**Massachusetts Right To Know Components**

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

**Pennsylvania Right To Know Components**

Barium sulfide CAS No. 21109-95-5 Revision Date 2007-07-01

**New Jersey Right To Know Components**

Barium sulfide 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.

**SARA Title III:**

Section 302, Extremely Hazardous Substances.... : None.

Section 311/312, Hazard Categories..... : Category 1 (Acute Hazard).

Section 313, Toxics Release Inventory: Barium Compounds, Code N040.

**RCRA Status.....** : If discarded in its purchased form, this product would be a hazardous waste by characteristic because of its soluble Barium content (D005).. Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste under 40 CFR 261.20-24.

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## **Barium Sulfide, All Grades**

### **16. OTHER INFORMATION**

**National Fire Protection Association (NFPA) Ratings:** This information is intended solely for the use of individuals trained in the NFPA system.

**Health: 2**

**Flammability: 1**

**Reactivity: 1**

**Revision Indicator:** This GHS Safety Data Sheet replaces Safety Data Sheet dated August 2014; it contains only minor format changes from the previous Safety Data Sheet.

**Disclaimer:** The information contained herein is accurate to the best knowledge of Chemical Products Corporation. Chemical Products Corporation makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances.