

# CHEMICAL PRODUCTS CORPORATION

## SAFETY DATA SHEET

SDS No. 48E

September 28, 2020

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### 1. PRODUCT IDENTIFIER

#### Barium Sulfide

#### 1.1 Trade Name: Barium Sulfide Gray

SYNONYMS: Barium Sulfide (Gray Ash); Barium Sulfide (Black Ash);  
Barium Monosulfide; Barium Sulphide

Molecular formula - BaS  
CAS No. 21109-95-5

#### 1.2 Recommended industrial uses:

- production of barium chemicals
- component of depilatories for human hair removal
- added as component of articles for the purpose of providing x-ray opacity
- manufacture of substances

Industrial uses advised against: None.

#### 1.3 MANUFACTURER:

Chemical Products Corporation  
102 Old Mill Road  
P.O. Box 2470  
Cartersville, Georgia 30120-1688  
Telephone: 1-770-382-2144

1.4 EMERGENCY PHONE NUMBER: CHEMTREC, 800-424-9300  
(24 hours every day)

### 2. HAZARD IDENTIFICATION

#### 2.1 **Classification in accordance with paragraph (d) of §1910.1200**

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 4), H332

Causes serious eye irritation H319

#### 2.2 **Signal word, hazard statement(s), symbol(s) and precautionary statement(s) in accordance with GHS and paragraph (f) of §1910.1200.**



Signal Word     **WARNING**

## Hazard Statements

- H302 Harmful if swallowed
- H332 Harmful if inhaled
- H319 Causes serious eye irritation

## Precautionary Statements

### Prevention

- P264 Wash thoroughly after handling
- P270 Do not eat, drink, or smoke when using this product
- P280 Wear protective gloves/protective clothing/eye protection/face protection
- P271 Use only outdoors or in a well-ventilated area

### Response

- P310 If SWALLOWED: Immediately call a POISON CENTER/doctor/physician.
- P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P330 Rinse mouth.
- p310 IF IN EYES: Immediately call a POISON CENTER/doctor/physician.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing
- P304+P312 IF INHALED: Call a POISON CENTER/doctor/physician if you feel unwell.

## 2.3 Other hazards not otherwise classified that have been identified during the classification process

- Contact with acids liberates toxic gas (Hydrogen Sulfide).
- Toxic to aquatic life

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## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Common Name/Synonyms	CAS#	% by weight
Barium Sulfide	Barium Sulphide	21109-95-5	about 80%

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## 4. FIRST AID MEASURES

### 4.1 Description of necessary 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.

Never give anything by mouth to an unconscious person.

Give Epsom salts (magnesium sulfate) or Glauber's Salt (sodium sulfate)

dissolved in water.

If inhaled

Move person into fresh air. If not breathing, give artificial respiration. Consult a physician if victim feels unwell.

For eye contact

Flush eyes with large amounts of water for at least 15 minutes and get IMMEDIATE medical attention.

For skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician if irritation persists.

#### 4.2 Most important symptoms and effects, both acute and delayed

The main adverse effect caused by ingestion of soluble barium in high concentrations after repeated doses is nephrotoxicity which was observed in animal studies. The high alkalinity of barium sulfide causing painful corrosion to mucus membranes makes ingestion of high concentrations of this product unlikely.

In case of inhalation

- the alkalinity of this product would be highly irritating to mucus membranes in the respiratory tract

In case of eye contact

- physical abrasion of the eye may occur in addition to damage resulting from the alkalinity of this product.

In case of skin contact

-irritating to skin

In case of ingestion

-Acute overexposure will cause severe abdominal pain, violent purging with watery and bloody stools, vomiting, muscle twitching, hypertension, and confusion, followed by transient muscle paralysis including potentially fatal paralysis of the respiratory muscles.

#### 4.3 Indication of any immediate medical attention and special treatment needed, if necessary

- seek medical treatment if you feel unwell after being exposed to this product.

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

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## 5. FIRE FIGHTING MEASURES

### 5.1 Suitable (and unsuitable) extinguishing media.

- Dry powder is the preferred extinguishing media.
- Avoid CO<sub>2</sub> fire extinguishers

### **5.2 Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).**

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

### **5.3 Special protective equipment and precautions for fire-fighters.**

- Wear self-contained breathing apparatus for firefighting.

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## **6. ACCIDENTAL RELEASE MEASURES**

### **6.1 Personal precautions, protective equipment, and emergency procedures.**

- Avoid generating dust and keep this product away from acids because toxic hydrogen sulfide gas will be generated. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Wear respiratory protection. Evacuate personnel to safe areas.

### **6.2 Methods and materials for containment and cleaning up.**

- Do not let product enter drains. Discharge into the environment must be avoided. Pick up and arrange disposal without creating dust. Do not flush with water. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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## **7. HANDLING AND STORAGE**

### **7.1 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.

### **Hygiene measures**

- Eye wash bottles or eye wash stations in compliance with applicable standards should be readily available.
- When using do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.

### **7.2 Conditions for safe storage, including any incompatibilities.**

- **Keep in a dry place.** 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.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV)

- For Barium Sulfide TWA 0.50 mg/m<sup>3</sup> Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

- For Barium Sulfide TWA 0.50 mg/m<sup>3</sup> ACGIH Threshold Limit Values (TLV)

### 8.2 Appropriate engineering controls.

- Control airborne concentrations below the exposure limits. Use only with adequate ventilation.

### 8.3 Individual protection measures, such as personal protective equipment.

- Use a NIOSH-approved dust mask if excessive dust is present. Cover exposed skin areas and wear general-purpose gloves. Wear safety glasses. Use chemical goggles if excessive dust is present or product may enter eyes.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.): Solid. Light gray fine powder.

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

Odor Threshold: No data available.

pH: Highly alkaline. No data available.

Melting point/Freezing point: about 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 – Specific Gravity: about 4.2 at 20 °C (68 °F).

Solubility: about 8 grams per 100 ml of water at 21 °C (70 °F) – soluble.

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

Auto-ignition temperature: No data available.

Decomposition temperatures: No data available.

Viscosity: No data available.

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## 10. STABILITY AND REACTIVITY

## 10.1 Reactivity

- Reacts with acids to release toxic hydrogen sulfide gas. May react with strong oxidizing agents to release toxic sulfur dioxide gas.

## 10.2 Chemical Stability

- Stable under recommended storage conditions.

## 10.3 Possibility of Hazardous Reactions

- No data available.

## 10.4 Conditions to avoid (e.g., static discharge, shock, or vibration)

- No data available.

## 10.5 Incompatible materials

- No data available.

## 10.6 Hazardous decomposition products

- Hazardous decomposition products formed under fire conditions. - Sulfur oxides, Barium oxide

- Other decomposition products - No data available

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# 11. TOXICOLOGICAL INFORMATION

## 11.1 Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact)

- No data available.

## 11.2 Symptoms related to the physical, chemical and toxicological characteristics

- Acute toxicity

LD50 Oral - Rat - male and female - 271 mg/kg of barium sulfide (OECD Test Guideline 401) equals 339 mg/kg of this product.

Inhalation: No data available

Dermal: No data available

## Skin corrosion/irritation

- No data available. High alkalinity expected to be corrosive to mucus membranes.

## Skin - in vitro assay

Result: Causes severe burns. - 3 - 60 min  
(Skin corrosion: Human Skin Model Test)

## 11.3 Delayed and immediate effects and also chronic effects from short- and long-term exposure

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

11.4 Numerical measures of toxicity (such as acute toxicity estimates)

- No data available.

11.5 Whether the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.

- 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

No data available

- Specific target organ toxicity - repeated exposure

No data available

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## 12. ECOLOGICAL INFORMATION

### 12.1 **Ecotoxicity (aquatic and terrestrial, where available)**

- Very toxic to aquatic life. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

### 12.2 **Persistence and degradability**

- No data available. 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.

### 12.3 **Bioaccumulative potential**

- No data available. No appreciable bioconcentration is expected in the

environment, because barium sulfate is naturally present in almost all rocks and soils.

#### **12.4 Mobility in soil**

- No data available. 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.

#### **12.5 Other adverse effects**

- No data available.

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### **13. DISPOSAL CONSIDERATIONS**

If disposed of in its purchased form, this product would be a characteristic D005 hazardous waste (exceeding regulatory limit for soluble barium in the RCRA TCLP test). Any disposal practice must be in compliance with local, state, and federal laws and regulations.

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### **14. TRANSPORT INFORMATION for international shipments**

Proper shipping name: Barium Compounds, n.o.s. (Barium Sulfide)  
U.N./N.A. Number.....: UN1564  
Technical Shipping Name.....: Barium Compound.  
Transport Hazard Class.....: 6.1  
Packing group (PG).....: III  
Product R.Q. (lbs).....: None.  
D.O.T. Label.....: POISON 6, TOXIC 6, or PGIII 6  
D.O.T. Placard.....: POISON 6  
Environmental hazards -  
    Marine pollutant: No

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): This product is not a noxious liquid covered by Annex II.

Special precautions - None.

Freight Class Bulk.....: Inorganic Chemical.

Freight Class Package: Inorganic Chemical.

Product Label.....: Barium Sulfide Gray

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### **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 as ACTIVE

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

**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. Under RCRA, it is the responsibility of the product user to determine, at the time of disposal, whether a waste 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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## 16. OTHER INFORMATION

**NFPA Rating** (National Fire Protection Association):

**Health - 2** (Materials which on intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.)

**Fire - 0** (Materials which are nonflammable).

**Reactivity - 0** (Materials which in themselves are normally stable even under fire exposure conditions, and which are nor reactive with water).

**Special - NA**

**Reason for Issue**..... : 29 CFR 1910 compliance.

**Prepared by**..... : Jerry A. Cook.

**Title**..... : Technical Director.

**Approval Date**..... : September 28, 2020.

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