CHEMICAL PRODUCTS CORPORATION SDS No. 42E

Revision date May 2015

GHS SAFETY DATA SHEET

1. IDENTIFICATION

PRODUCT NAME: Barium Chloride Crystal

SYNONYMS: Barium Chloride dihydrate; Barium salt of hydrochloric acid

Recommended for industrial use:
in the manufacture of substances, including zeolites and anhydrous barium chloride;
treatment of wastewater for removal of radium;
as a fluxing agent.

Industrial uses advised against: None.

MANUFACTURER: Chemical Products Corporation (CPC)
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TRANAPORTATION EMERGENCY: CHEMTREC, 800-424-9300

CAS number: 10361-37-2 for barium chloride; 10326-27-9 for $BaCl_2 \cdot 2H2O$

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2. HAZARDS IDENTIFICATION

DANGER!

Toxic if swallowed.
Causes serious eye irritation.
Harmful if inhaled.

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.

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. Barium is eliminated from the body over several days.

Hypokalemia is usually present in cases of ingestion; potassium should be administered - high doses may be required.

Chronic Ingestion: Kidney effects were observed in rats and mice after prolonged exposure to high levels of soluble barium.

Carcinogenicity: NTP.....: No evidence of carcinogenicity.
IARC.....: Not listed.
OSHA.....: Not regulated as a carcinogen.

Medical Conditions Aggravated by Exposure: None are known.

3. COMPOSITION / INFORMATION ON INGREDIENTS

C0MPONENT	CAS #	EXPOSURE LIMITS	% BY WT
Barium Chloride	10361-37-2	OSHA PEL: 0.5 mg/cu. m. as Ba; 0.89 mg/cu. m. as this prod; ACGIH TLV-TWA: Same	ca 85.0
Water	7732-18-5	N/A	ca 15.0

4. FIRST AID MEASURES

If swallowed, induce vomiting immediately, as directed by medical personnel. Give Epsom salts (magnesium sulfate) or Glauber's Salt (sodium sulfate) dissolved in water. **Never give anything by mouth to an unconscious person.**

If inhaled, remove to fresh air. Get medical attention immediately and contact a poison control center.

Physician: Administer potassium intravenously to counteract the effect of barium.

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

For skin contact, wash with soap and water. Do not eat, drink,or smoke before washing to remove barium chloride from skin.

Immediately remove contaminated clothing and wash clothing before reuse.

5. FIRE FIGHTING MEASURES

Flashpoint: Nonflammable.

Flammability: Nonflammable.

Autoignition: Nonflammable.

General Hazard: No fire hazard. Will release water vapor with popping when heated. This product is soluble in water and is harmful if swallowed or inhaled.

Fire Fighting Instructions: Limit water runoff if it is likely to contain this material, then add a soluble sulfate such as sodium sulfate to the water to form harmless barium sulfate.

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

Hazardous Combustion Products: None.

6. ACCIDENTAL RELEASE MEASURES

General: Avoid generating dust. Use appropriate Personal Protective Equipment (PPE). Spilled product could be a RCRA D005 characteristic hazardous waste because of its soluble barium content. Do not dump into sewers, on the ground, or into any body of water.

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

Large Spill: Try to keep material dry and prevent material from entering storm sewers or ditches leading to natural waterways. Mix with excess sulfate to make the material nonhazardous, or dispose of large amounts of this material in an approved hazardous waste landfill.

7. HANDLING AND STORAGE

Storage Temperature: Ambient.

Storage Pressure: Ambient.

General: This material is water-soluble. Keep it dry. Keep containers closed. Emptied containers may still contain harmful amounts of this material; treat or dispose of appropriately.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid.

Vapor Pressure: Not applicable.

Specific Gravity: 3.1.

Solubility in Water: 43 g per 100 ml at 30 Degrees C.

pH: (1% solution in water) - pH approximately 7.

Boiling Point: 1560 Degrees C.

Melting Point: This product, containing water of hydration, looses water at 113 degrees C. The resulting anhydrous barium chloride melts at 963 degrees C.

Vapor Density: Not applicable.

Evaporation Rate: Not applicable.

Odor: None.

Appearance: Colorless to white crystalline granules.

10. STABILITY AND REACTIVITY

Chemical Stability: Keep away from intense heat. Product loses water of crystallization (hydration) at 113 Degrees C (235 Degrees F) and may "pop" and "spit" when heated rapidly.

Incompatibility: None.

Hazardous Decomposition Products: None.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Skin: Contact may be slightly irritating. Barium ion is not expected to pass through intact skin

Eye: The dust is expected to be slightly to moderately irritating.

Ingestion: The Oral LD_{50} for rats is about 400 mg/kg. A National Toxicology Program study found no decrease in two-year survival for rats consuming 110 mg/kg/day for the entire two year period (lifetime exposure).

Inhalation: No studies. Inhaled dust is expected to exhibit the same systemic toxicity as ingestion as barium chloride is cleared from the lungs into the bloodstream.

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 (NIH Pub. No. 94-3163).

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

Teratogenic: Rats exposed to 2000 ppm of barium chloride dihydrate in their drinking water for thirty days exhibited no teratogenic effects, and no fetotoxicity was detected.

Reproductive: 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..

Mutagenicity: 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). See NTP Technical Report No. 432.

12. ECOLOGICAL INFORMATION

TOXICITY: In turbid water at 20 Deg. C, the 96 hour TLM is 1930 mg/l for Mosquito Fish (Gambusia Affinis).

DISTRIBUTION: Soluble barium chloride is expected to be precipitated from ground and surface waters by sulfate ions in the environment, to form insoluble barium sulfate. No appreciable bioconcentration is expected in the environment because barium sulfate is naturally present in rocks and soils.

CHEMICAL FATE: Soluble barium chloride is expected to be precipitated by sulfate in the environment to yield barium sulfate which is insoluble, inert, and nontoxic.

13. WASTE MANAGEMENT INFORMATION - DISPOSAL

Waste containing more than 0.2% soluble barium is hazardous under the RCRA criteria. Soluble barium can be rendered nonhazardous by reaction with excess sulfate to form insoluble barium sulfate. Any disposal practice must be in compliance with local, state, and federal laws and regulations. (Contact local or state environmental agency for specific rules). Do not dump into sewers, on the ground, or into any body of water.

14. TRANSPORT INFORMATION

Chemical Products Corporation's barium chloride crystal product is transported as a non-hazardous material in the U.S. and on Chemical Products Corporation's bills of lading originating in the U.S.A., elsewhere it is classified as hazardous for land transport (ADR (Road)/ RID (Rail)), inland waterway transport (AND(R)), marine transport (IMDG) and air transport (ICAO/ IATA).

UN Number: 1564

UN proper shipping name: Barium compound, n.o.s. (Barium chloride)

Transport hazard class: 6.1

Packing group: III

IMDG Marine Pollutant: NO

ADR/RID and GGVS/GGVE land transport (cross-border/ domestic) Class - 6.1 (T5) Toxic substances

Hazard Identification Number (Kemler Number) - 60

Freight Class Package..... : Inorganic Chemical.

Product Label..... : Barium Chloride Crystal

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 LD_{50}.

TSCA Status..... : On TSCA Inventory.

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 material containing the product or derived from the product should be classified as a hazardous waste under 40 CFR 261.20-24.

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: 0
Reactivity: 0

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

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