Barium Chloride, Dihydrate

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 04/16/2014 Revision date: 03/13/2019 Supersedes: 10/28/2016 Version: 1.2

SECTION 1: Identification

1.1. Identification

Product form	:	Substance
Substance name	:	Barium Chloride, Dihydrate
CAS-No.	:	10326-27-9
Product code	:	LC11560
Formula	:	BaCl2.2H2O
Synonyms	:	barium dichloride, dihydrate / muriate of barium, dihydrate

1.2. Recommended use and restrictions on use

Use of the substance/mixture	:	Chemical intermediate Insecticide

1.3. Supplier

LabChem, Inc.

Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court

Zelienople, PA 16063 - USA

T 412-826-5230 - F 724-473-0647

1.4. Emergency telephone number

Emergency number	:	CHEMTREC: 1-800-424-9300 or +1-703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity (oral) Category 3	H301	Toxic if swallowed
Hazardous to the aquatic environment - Acute Hazard Category 3	H402	Harmful to aquatic life

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

GHS06

Signal word (GHS US) : Danger

Hazard statements (GHS US) :
H301 - Toxic if swallowed
H402 - Harmful to aquatic life

Precautionary statements (GHS US) :
P264 - Wash exposed skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P330 - If swallowed, rinse mouth
P405 - Store locked up.
P501 - Dispose of contents/container to comply with local, state and federal regulations

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification	:	None under normal conditions.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent

Name	Product identifier	%	GHS-US classification
Barium Chloride, Dihydrate (Main constituent)	(CAS-No.) 10326-27-9	100	Acute Tox. 3 (Oral), H301 Aquatic Acute 3, H402

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with labored breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

First-aid measures after eye contact : Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth with water. Give nothing to drink. Victim is fully conscious: immediately induce vomiting. Induce vomiting by giving a 0.9 % saline solution. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.htm). Take the container/vomit to the doctor/hospital. Ingestion of large quantities: immediately to hospital. Doctor: administration of chemical antidote. Doctor: gastric lavage.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing.

Symptoms/effects after eye contact : Redness of the eye tissue.

Symptoms/effects after ingestion : Vomiting. Nausea. Abdominal pain. Blood in stool. Bleeding of the gastrointestinal tract. Increased salivation. Myasthenia. Cramps/uncontrolled muscular contractions. Paralysis. Disturbances of heart rate. High arterial pressure.

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Adapt extinguishing media to the environment for surrounding fires.

5.2. Specific hazards arising from the chemical

Fire hazard : DIRECT FIRE HAZARD. Non combustible.

Reactivity : Reacts with (strong) oxidizers.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Reactivity hazard: compressed air/oxygen apparatus. Reactivity hazard: gas-tight suit.

Emergency procedures	:	Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.
Measures in case of dust release	:	In case of dust production: keep upwind. In case of dust production: consider evacuation. Dust production: have neighbourhood close doors and windows.

6.1.2. For emergency responders

Protective equipment	:	Do not breathe dust. Equip cleanup crew with proper protection.
Emergency procedures	:	Stop release. Ventilate area. If a major spill occurs, all personnel should be immediately evacuated and the area ventilated.

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment	:	Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. If reacting: dilute toxic gas/vapour with water spray. Take account of toxic/corrosive precipitation water.
Methods for cleaning up	:	Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water and soap solution. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	:	Pulverization rapidly increases toxic concentration.
Precautions for safe handling	:	Avoid raising dust. Keep away from naked flames/heat. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep container tightly closed.
Hygiene measures	:	Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Heat-ignition	:	KEEP SUBSTANCE AWAY FROM: heat sources.
Prohibitions on mixed storage	:	KEEP SUBSTANCE AWAY FROM: oxidizing agents. strong acids.
Storage area	:	Store in a dry area. Keep container in a well-ventilated place. Keep locked up. Unauthorized persons are not admitted. Meet the legal requirements.
Special rules on packaging	:	SPECIAL REQUIREMENTS: closing. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	:	SUITABLE MATERIAL: steel. stainless steel. paper with plastic inner lining. cardboard. synthetic material. MATERIAL TO AVOID: aluminium.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Barium Chloride, Dihydrate (10326-27-9)		
ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³
NIOSH	NIOSH REL (TWA) (mg/m³)	0.5 mg/m³

8.2. Appropriate engineering controls

Appropriate engineering controls	:	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Safety glasses. Gloves. Protective clothing. Dust production: dust mask with filter type P3.

Materials for protective clothing:

GIVE GOOD RESISTANCE: butyl rubber. chloroprene rubber. chlorinated polyethylene. neoprene. PVC. viton

Hand protection:

Gloves

Eye protection:

Safety glasses. In case of dust production: protective goggles

Skin and body protection:

Protective clothing

Respiratory protection:

Dust production: dust mask with filter type P3.
High dust production: self-contained breathing apparatus

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Crystalline solid. Powder. Crystalline powder. Grains.
	:	Colourless to white
	:	Odorless
Odor threshold	:	No data available
pH	:	5 - 8 (5 %)
Melting point	:	963 °C
Freezing point	:	No data available
Boiling point	:	1560 °C
Flash point	:	Not applicable
Relative evaporation rate (butyl acetate=1)	:	No data available
Flammability (solid, gas)	:	No data available
Vapor pressure	:	< 0.1 hPa (20 °C)
Relative vapor density at 20 °C	:	Not applicable
Relative density	:	3.1
Specific gravity / density	:	3100 kg/m³
Molecular mass	:	244.28 g/mol
Solubility	:	Soluble in water. Water: 36 g/100ml
Log Pow	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available

9.2. Other information

VOC content : 0 %

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with (strong) oxidizers.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Incompatible materials. Moisture.

10.5. Incompatible materials

Strong oxidizers.

10.6. Hazardous decomposition products

Hydrogen chloride. barium.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact

Acute toxicity : Not classified

Barium Chloride, Dihydrate (10326-27-9)	
LD50 oral rat	118 mg/kg (Rat, Oral)
ATE US (oral)	118 mg/kg body weight

Skin corrosion/irritation : Not classified
pH: 5 - 8 (5 %)

Serious eye damage/irritation : Not classified
pH: 5 - 8 (5 %)

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Toxic if swallowed. Harmful if inhaled.

Symptoms/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Dry/sore throat. Coughing.

Symptoms/effects after eye contact : Redness of the eye tissue.

Symptoms/effects after ingestion : Vomiting. Nausea. Abdominal pain. Blood in stool. Bleeding of the gastrointestinal tract. Increased salivation. Myasthenia. Cramps/uncontrolled muscular contractions. Paralysis. Disturbances of heart rate. High arterial pressure.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.

Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water : Harmful to crustacea. Slightly harmful to fishes. Harmful to aquatic plants. Groundwater pollutant. Mild water pollutant (surface water). Not harmful to bacteria.

Barium Chloride, Dihydrate (10326-27-9)	
LC50 fish 1	870 mg/l (Leuciscus idus)
EC50 Daphnia 1	21.9 mg/l (48 h, Daphnia magna, Anhydrous form)

12.2. Persistence and degradability

Barium Chloride, Dihydrate (10326-27-9)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

Barium Chloride, Dihydrate (10326-27-9)	
Bioaccumulative potential	No bioaccumulation data available.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized dump (Class I). Detoxicate.

Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1564 Barium compounds, n.o.s., 6.1, III

UN-No.(DOT) : UN1564

Proper Shipping Name (DOT) : Barium compounds, n.o.s.

Transport hazard class(es) (DOT) : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Packing group (DOT) : III - Minor Danger

Hazard labels (DOT) : 6.1 - Poison

DOT Packaging Non Bulk (49 CFR 173.xxx) : 213

DOT Packaging Bulk (49 CFR 173.xxx) : 240

DOT Symbols : G - Identifies PSN requiring a technical name

DOT Special Provisions (49 CFR 172.102)	:	IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2). IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner. T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2) TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.
DOT Packaging Exceptions (49 CFR 173.xxx)	:	153
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	100 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	:	200 kg
DOT Vessel Stowage Location	:	A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel.
Other information	:	No supplementary information available.

Transportation of Dangerous Goods

Transport document description	:	UN1564 BARIUM COMPOUND, N.O.S. (Barium Chloride), 6.1, III
UN-No. (TDG)	:	UN1564
Proper Shipping Name (Transportation of Dangerous Goods)	:	BARIUM COMPOUND, N.O.S.
TDG Primary Hazard Classes	:	6.1 - Class 6.1 - Toxic Substances
Packing group	:	III - Minor Danger
TDG Special Provisions	:	16 - (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks). (2) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical name: (a)UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S; (b)UN1851, MEDICINE, LIQUID, TOXIC, N.O.S; (c)UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, LIQUID, N.O.S; (d)UN3248, MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S; or (e)UN3249, MEDICINE, SOLID, TOXIC, N.O.S. An example in Canada is the “Food and Drugs Act”. (3) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a small means of containment: (a)UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS; or (b)UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS. SOR/2014-306
Explosive Limit and Limited Quantity Index	:	5 kg
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index	:	100 kg

Transport by sea

Transport document description (IMDG)	:	UN 1564 barium compound, n.o.s. (Barium Chloride), 6.1, III
UN-No. (IMDG)	:	1564
Proper Shipping Name (IMDG)	:	barium compound, n.o.s.
Class (IMDG)	:	6.1 - Toxic substances
Packing group (IMDG)	:	III - substances presenting low danger
EmS-No. (1)	:	F-A
EmS-No. (2)	:	S-A

Air transport

Transport document description (IATA)	:	UN 1564 Barium compound, n.o.s. (Barium Chloride), 6.1, III
UN-No. (IATA)	:	1564
Proper Shipping Name (IATA)	:	Barium compound, n.o.s.
Class (IATA)	:	6.1 - Toxic Substances
Packing group (IATA)	:	III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

Barium Chloride, Dihydrate (10326-27-9)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311/312 Hazard Classes	Health hazard - Acute toxicity (any route of exposure)

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

Barium Chloride, Dihydrate (10326-27-9)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

Barium Chloride, Dihydrate (10326-27-9)
Listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Revision date : 03/13/2019

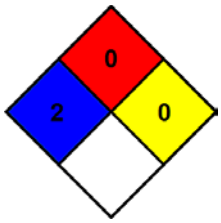
Full text of H-phrases: see section 16:

H301	Toxic if swallowed
H402	Harmful to aquatic life

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : E

E - Safety glasses, Gloves, Dust respirator