

SAFETY DATA SHEET

Preparation Date: 6/7/2017

Revision Date: 6/7/2017

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: B1110
Product Name: BISMUTH CHLORIDE, REAGENT

Other means of identification

Synonyms: Bismuth trichloride
 Bismuthine, trichloro-
 Trichlorobismuth
 Trichlorobismuthine
 Bismuth (III) chloride

CAS #: 7787-60-2
RTECS # EB2690000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000.

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300

Contact Person: Martin LaBenz (West Coast)

Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous according to the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1

Label elements

Danger

Hazard statements

Causes severe skin burns and eye damage

**Hazards not otherwise classified (HNOC)**

Not Applicable

Other hazards

May be harmful if swallowed

May be harmful if inhaled

Precautionary Statements - Prevention

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

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

Precautionary Statements - Response*Immediately call a POISON CENTER or doctor/physician*

Absorb spillage to prevent material damage

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor/physician.

Call a POISON CENTER or doctor/physician if you feel unwell

Wash contaminated clothing before reuse

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

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Bismuth Chloride	7787-60-2	100

4. FIRST AID MEASURES**First aid measures****General Advice:**

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact:

Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician immediately.

Eye Contact:

Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. Call a physician immediately.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If victim is conscious, give water or milk. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms Severe skin and eye irritation or burns. Causes digestive (gastrointestinal) tract irritation. May cause gastrointestinal (digestive) tract burns. May cause abdominal pain, nausea, vomiting, diarrhea. May cause anorexia. May cause gingivitis, foul breath, ulcerative stomatitis. Chronic exposure to large amounts of Bismuth and Bismuth salts/compounds may also cause Bismuth encephalopathy which is characterized by mental confusion, ataxia, myoclonus (myoclonic jerks), and dysarthria. Dark line in the gums may also be produced in cases of chronic Bismuth poisoning. It may affect the kidneys. May affect the liver.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: If it is involved in a fire the following can be released: bismuth oxides. Hydrogen Chloride Gas.

Specific hazards: No information available.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Environmental precautions Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Use appropriate tools to put the spilled solid in a suitable waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Use only in area provided with appropriate exhaust ventilation. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapors/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Deliquescent. Protect from moisture. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:

Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
Bismuth Chloride	7787-60-2	None	None	None	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Bismuth Chloride	7787-60-2	None	None	None	None

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Bismuth Chloride	7787-60-2	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Face-shield

Skin and body protection: Chemical resistant protective suit
Gloves
Boots

Respiratory protection: Wear respirator with dust filter.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid

Appearance:
Crystals.

Color:
White. Yellowish.

Odor:
Hydrogen chloride-like.

Taste
No information available.

Formula:
BiCl₃

Molecular/Formula weight:
315.34

Flammability:
No information available

Flashpoint (°C/°F):
No information available.

Flash Point Tested according to:
Not available

Autoignition Temperature (°C/°F):
No information available

Lower Explosion Limit (%):
No information available

Upper Explosion Limit (%):
No information available

Melting point/range(°C/°F):
227-232 °C/440.6-450 °F

Decomposition temperature(°C/°F):
No information available

Boiling point/range(°C/°F):
448 °C/836.6 °F

Bulk density:
No information available

Density (g/cm³):
No information available

Specific gravity:
4.56-4.75

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
No information available

Viscosity:
No information available

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Miscibility:
No information available

Solubility:
Decomposes in water
Soluble in hydrogen chloride
Soluble in Nitric acid
Soluble in Acetone

10. STABILITY AND REACTIVITY

Reactivity
No information available

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Exposure to moisture. Exposure to water. Incompatible materials.

Incompatible Materials: Strong oxidizing agents

Hazardous decomposition products: Sodium oxides.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: Very caustic to aluminum and other metals in the presence of moisture

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Skin. Inhalation. Ingestion.

Acute Toxicity

Component Information

Bismuth Chloride	
CAS-No.	7787-60-2

LD50/oral/rat = 3334 mg/kg Oral LD50 Rat
LD50/oral/mouse = 2250 mg/kg
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 3334 mg/kg

LD50/oral/mouse =

Product code: B1110

Product name: BISMUTH
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Value - Acute Tox Oral = 2250 mg/kg

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Severe skin irritation. Causes skin burns.

Eye Contact: Severe eye irritation. Causes eye burns.

Inhalation May cause irritation of respiratory tract.

Ingestion Ingestion of Bismuth compounds can cause gingivitis, stomatitis, severe irritation of the gastrointestinal tract with nausea, vomiting, cramping, diarrhea, colitis, possible gastrointestinal bleeding, and possible corrosion and permanent tissue damage of the esophagus and digestive tract. Bismuth compounds are considered poorly to moderately absorbed following ingestion. If absorption occur, it may cause loss of appetite, kidney toxicity/damage (albuminuria, hematuria, nephritis), liver toxicity/damage (jaundice, hepatitis).

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Chronic exposures to large amounts of Bismuth or Bismuth salts/compounds are associated with Bismuth lines (a blue-black lines) on the gums, foul breath (halitosis), gastric irritation, diarrhea, gingivitis, ulcerative stomatitis, nausea, decrease or loss of appetite and weight, headache, joint pains (rheumatic pain), diarrhea, and liver and kidney damage. The kidneys are the site of highest concentration with the liver being considerably lower. There may also be mental changes (memory loss, confusion, delirium, disorientation, delusions, psychosis, depression), insomnia, difficulty in concentration, tremor, abnormal coordination, nervousness), blood changes (lymphocytosis, agranulocytosis, aplastic anemia) and bone marrow depression. It may also cause Bismuth encephalopathy which is characterized by mental confusion, ataxia (disordered gait), myoclonus (myoclonic jerks), and dysarthria.

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH -	NTP	OSHA HCS -	Australia -	Australia -
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			Carcinogens		Carcinogens	Notifiable Carcinogenic Substances	Prohibited Carcinogenic Substances
Bismuth Chloride	7787-60-2	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity

No data is available

Reproductive Effects:
Developmental Effects:
Teratogenic Effects:

No information available
No information available
No information available

Specific Target Organ Toxicity

STOT - single exposure
STOT - repeated exposure
Target Organs:

No information available.
No information available.
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects:

No data available.

Persistence and degradability:

No information available

Bioaccumulative potential:

No information available.

Mobility:

No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Bismuth Chloride	7787-60-2	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No:

UN3260

Proper Shipping Name:

Corrosive solid, acidic, inorganic, n.o.s.(bismuth (III) chloride)

Hazard Class:

8

Product code: B1110

Product name: BISMUTH
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Subsidiary Class No information available
Packing group: III
Emergency Response Guide Number 154
Marine Pollutant Severe Marine Pollutant
DOT RQ (lbs): No information available
Special Provisions IB8, IP3, T1, TP33
Symbol(s): No information available
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III

TDG (Canada)

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.(bismuth (III) chloride)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant No Information available
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III

ADR

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.(bismuth (III) chloride)
Hazard Class: 8
Packing Group: III
Subsidiary Risk: No information available
Special Provisions 274
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III

IMO / IMDG

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.(bismuth (III) chloride)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant No information available
EMS: F-A
Special Provisions 223, 274
Description UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (BISMUTH CHLORIDE), 8, III

RID

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.(bismuth (III) chloride)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Special Provisions 274
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III

ICAO

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.(bismuth (III) chloride)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III
Special Provisions A3

IATA

Product code: B1110

Product name: BISMUTH
CHLORIDE, REAGENT

UN-No: UN3260
Proper Shipping Name: Corrosive solid, acidic, inorganic, n.o.s.(bismuth (III) chloride)
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 8L
Special Provisions No information available
Description: UN3260, CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S., 8, III

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Bismuth Chloride</i>	7787-60-2	Present	Present KE-03363	Not present	Present (1)-1032	Present	Present	Present 232-123-2

U.S. Regulations

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Bismuth Chloride</i>	7787-60-2	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
<i>Bismuth Chloride</i>	7787-60-2	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Bismuth Chloride</i>	7787-60-2	Not Applicable	Not Applicable

Canada

WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHMIS 1988 Hazard Class

Non-controlled

Components
Bismuth ChlorideWHMIS 1988
Uncontrolled product according to WHMIS classification
criteria**Canada Controlled Products Regulation:**

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Bismuth Chloride	7787-60-2	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Bismuth Chloride	7787-60-2	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Bismuth Chloride	7787-60-2	Not listed

EU Classification**EU GHS - SV - CLP 172/2008**

Components	CAS-No.	EU GHS - SV - CLP (172/2008)
Bismuth Chloride	7787-60-2	No information

EU - CLP (1272/2008)**R-phrase(s)**

Not determined

S -phrase(s)

none

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
Bismuth Chloride	7787-60-2		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC**Indication of danger:**

not determined

16. OTHER INFORMATION

Preparation Date: 6/7/2017
Revision Date: 6/7/2017
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications.

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End of Safety Data Sheet