



Bolton Metal Products Co. Inc.

Safety Data Sheet

Alloy 4250-2

1. PRODUCT AND COMPANY IDENTIFICATION

Product: This alloy consists of the following elements:
Bismuth, Lead, Tin, and Cadmium

SDS: Alloy 4250-2 Bolton 160/190

Revised Date: June 11, 2018

Product Use: Industrial Use (For various applications)

MANUFACTURER:

Bolton Metal Products Co. Inc.

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2. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF ENTRY:

Eye Inhalation Skin Ingestion

CARCINOGEN LISTED IN:

NTP IARC OSHA Not Listed
(See Section 11)

GHS: This information is provided as basic information. Review individual alloy for applicable information.



Lead, cadmium containing products

Danger: Contains lead and cadmium (See specific alloy for details.)

Hazard statement(s)

H303	Harmful if swallowed
H315	Causes skin irritation
H335	May cause respiratory irritation
H333	Harmful if inhaled
H351	Suspected of causing cancer (lead)
H361	May damage fertility or the unborn child (applicable to lead containing product)
H373	May cause damage to organs through prolonged or repeated exposure (applicable to lead containing product)
H410	Very toxic to aquatic life, may cause long lasting harmful effects to aquatic life (lead)(cadmium) Toxic to aquatic life, may cause long lasting harmful effects to aquatic life (antimony)
H401+H413	
EUH201A	Warning! Contains lead (applicable only to the products that contain lead) Review listing.
EUH207	Warning! Contains cadmium. Dangerous fumes are formed during use. Comply with safety instructions. (Applicable only to cadmium containing products)

Precautionary statement(s)

P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P270	Do not eat, drink or smoke when using this product
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection
P362	Take off contaminated clothing and wash before reuse
P301 + P314	IF Swallowed Get Medical Attention/Advice if you do not feel well
P302 +P352	IF ON SKIN: Wash with plenty of soap and water
P304 +341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305 + 351	IF IN EYES: Rinse continuously with water for several minutes (15 Minutes.)

POTENTIAL HEALTH EFFECTS:

Eye Contact: Contact with dust from alloy or fumes may cause irritation. Severe eye damage may result from hot molten metal being splashed into the eyes. Wear safety glasses and face shield when working with molten metal. Dusts are irritating to eyes.

Ingestion: May be harmful. Ingestion of alloy in any form may cause headache, nausea, abdominal pain, fatigue and pain in the legs, arms and joints.

Inhalation: Inhalation of fume or dust may cause local irritation to the respiratory system. Inhalation of fume or dust may cause headache, nausea, abdominal pain, fatigue and pain in the legs, arms and joints. Inhalation of fumes can cause metal fume fever.

Skin Contact: Normal handling should not cause any adverse health effects. May cause skin irritation. Hot molten metal may cause burns to the skin. Wear protective equipment when handling molten metal.

Chronic: TIN: Has been shown to increase incidence of sarcoma in animal tests. Chronic exposure may result in "stannosis" a mild form of pneumoconiosis.

LEAD: Prolonged exposure to vapors or fumes at higher temperatures may cause respiratory irritation and systematic lead poisoning. Symptoms of lead poisoning include headache, nausea, abdominal pain, muscle and joint pain and damage to the nervous system, blood system and kidneys.

BISMUTH: May cause kidney damage.

CADMIUM: Overexposure can cause damage to the lungs and kidneys. Cadmium is a toxic metal and ingestion or inhalation of fumes and dust can be harmful. Included effects may be obstructive lung disease such as emphysema, bone demineralization, microfractures and osteomalaci, gastrointestinal symptoms, rhinitis and discoloration of the teeth.

PRODUCT DOES NOT CONTAIN ANY EU REPORTABLE SUBSTANCES OF VERY HIGH CONCERN (SVHC)

WARNING: This product contains a chemical(s) known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (lead/cadmium) Prop 65 Safe Drinking Water Standard.

WARNING: This product contains lead. Lead may be harmful to your health. US Federal law prohibits the use of leaded solders in making joints or fittings in any private or public water supply system. Keep out of the reach of children. Not intended for household use and should not be used by children.

3. COMPOSITION/INFORMATION ON INGREDIENTS

The product contains the following elements.

Components	%wt.	CAS Registry#/EINECS	PEL mg/m ³	TLV-TWA mg/m ³	TLV-STEL mg/m ³
Bismuth	42.5	7440-69-9/231-177-4	N.E.	N.E.	N.E.
Lead	37.7	7439-92-1/231-100-4			
		(U.S.)	0.05	0.05	-
		(EU and Mexico)	-	0.15	-
		(Canada)	-	0.05	-
		(Singapore)	0.15	-	-
		(China)	-	0.05(dust)	-
			-	0.03(Fume)	-
Tin	11.3	7440-31-5/231-141-8			
		(US)	2	2	-
		(EU and Canada)	-	2	4
		(Singapore)	2	-	-
Cadmium	8.5	7440-43-9/231-152-8			
		(US)	0.005	0.01	-
		(EU)	0.025	-	-
		(Singapore)	0.05	-	-
		(China)	-	0.01	0.02
		(Canada)	-	0.05	0.2

N.E. (Not Established)

EU (European Union Occupational Exposure Limits)

See specific alloy for the composition.

4. FIRST AID MEASURES

Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion: If patient is conscious, ONLY induce vomiting as directed by trained personnel. NEVER give anything by mouth to an unconscious person. Seek medical attention immediately.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration or oxygen by trained personnel. Seek immediate medical attention.

Skin Contact: Remove contaminated clothing. Wash affected area with soap and water. Wash clothing before reuse. If irritation persists, obtain medical attention.

5. FIRE FIGHTING MEASURES

Flash Point: Not Established **Method:** Not Established

Auto Ignition Temperature: Not Established

Flammable Limits: Limits are not established. Massive metal is not flammable; however dust or powder may be flammable.

Extinguishing Media: Use extinguishers appropriate for the surrounding fire conditions. Do not add water to molten metal.

Special Fire Fighting: Firefighters must wear NIOSH approved self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Contain spill if molten, cool to allow metal to solidify. If a solid metal, wear gloves, pick up and return to process. If dust, wear recommended personal protective equipment including respiratory protection. DO NOT SWEEP. Use a vacuum, place in barrels and return to process if applicable. Use proper ventilation. Otherwise, dispose of following all Federal, State and Local regulations. In the EU refer to the Special Waste Regulations. Metal may have reclaim value.

7. HANDLING AND STORAGE

Handling: Only dry metals should be added to molten bath. If working with molten metals, or exposed to fume or dust, use appropriate personal protective equipment.

Storage Precautions: Store product in a cool, dry area away from incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Exhaust ventilation is recommended to control any air contaminants. Control concentration of all components so that their exposure levels are not exceeded. Use ventilation for example especially during heating, grinding, cutting, sanding, melting and any other types of work where exposure is possible.

Personal protection:

Eyes: Chemical safety glasses/goggles and face shield with molten metal. Safety glasses.

Respirator: An authority approved or compliant marked air-purifying respirator with a fume/dust chemical cartridge is recommended under certain circumstances where airborne concentrations are expected to be elevated. Additional respiratory protection may be required based on the work performed and the area in which the work is performed. Lead or cadmium work requires protection from exposure.

Skin: Gloves-leather or impervious (vinyl) type. Heat resistant gloves if handling hot metal. Safety type boots. Personal protective equipment is recommended when working with molten metal to avoid burns.

Other: Lab coat, safety shower and eye-wash fountain in work area. Avoid the use of contact lenses in high fume areas. Follow OSHA guidelines for lead and cadmium workers.

Work/Hygienic Maintain good housekeeping. Clean up spills immediately. Good personal hygiene is essential. Avoid eating, smoking or drinking in the work area. Wash hands thoroughly with soap and water immediately upon leaving the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Silver gray solid metal

Odor: Odorless

Specific Gravity: 9.4 g/cc

Vapor Pressure: Not applicable

Vapor Density: (air=1) Not applicable

Boiling Point: Not applicable

Melting Point: 160/190 F (71/88 C)

pH: Not applicable

Solubility in Water: Insoluble

Flash Point: Not applicable

10. STABILITY AND REACTIVITY

General: Stable.

Conditions to Avoid: Not established.

Incompatible Materials: Avoid contact with mineral acids.

Hazardous Decomposition / Combustion: Harmful organic fumes and toxic oxide fumes may form at elevated temperatures.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Carcinogenicity: National Toxicity Program (NTP): Yes
Cadmium is listed as a possible carcinogen.

Occupational Safety & Health Administration (OSHA): Yes
Cadmium is listed as a possible carcinogen.

U.N. International Agency for Research on Cancer (IARC): Yes
Lead and Lead compounds are listed as possible carcinogens.
Cadmium is listed as possible carcinogen.

LD50: Not established **LC50:** Not established

Other: Chronic Toxicity: Lead and Cadmium can cause potential harm to the developing fetus.
Bismuth– LD50 oral-rat 5000mg/kg

Lead – Suspected human reproductive toxicant. May cause damage to organs through prolonged or repeated exposure. Reproductive toxicity – rat -inhalation , oral/ effects on newborn.

Cadmium – LD50 Oral – rat 225 mg/kg/ inhalation LC50 – rat – 30h – 25 mg/m³

Cadmium suspected as a human reproductive toxicant. Signs and symptoms of exposure to cadmium: damage to the lungs, kidney injury may occur, prolonged or repeated exposure can cause vomiting/diarrhea/lung irritation.

12. ECOLOGICAL INFORMATION

Product mixtures not tested.

Lead – Toxicity to fish – mortality LOEC – rainbow trout – 1.19 mg/l – 96h. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Bioaccumulation – Oncorhynchus kisutch – 2 weeks Bioconcentration factor (BCF): 12

May contain substances that are harmful to the aquatic environment.

An environmental hazard cannot be excluded in the event of handling or disposing of metal mixtures in an inappropriate manner. Recycle when possible.

Cadmium: toxicity to fish – mortality LOEC-Oncorhynchus myliss (rainbow trout) – 0.0015 mg/l-96h
LC50 – Pimephales promelas (fathead minnow) – 1.0 ug/l – 96h
Toxicity to daphnia and other aquatic invertebrates – mortality NOEC-Daphnia – 0.019 mg/l – 24H/mortality
LOEC-Daphnia- 0.039 mg/l – 24h

13. DISPOSAL CONSIDERATION

Waste Disposal Method: Scrap metal alloy usually has value. Contact us about recycling. Otherwise, dispose of in accordance with all Federal, State and Local environmental regulations.

14. TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.
Not regulated under US DOT (United States Department of Transportation).
Not hazardous under shipping regulations.(ground/sea/air)

UN – none

15. REGULATORY INFORMATION

The information in this Safety Data Sheet meets the requirements of the United States Occupational Safety and Health Act and regulations promulgated hereunder (29 CFR 1910.1200 ET. SEQ.).

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR).

Canadian WHMIS: D2A - Materials Causing Other Toxic Effects - Very Toxic Material (Chronic) (Lead and Cadmium). 028 Materials Causing Other Toxic Effects (irritant).

Tin, Bismuth: Uncontrolled product according to WHMIS classification criteria.

This product has been classified in accordance with the guidelines set by the Dept. of Industrial Health of the Republic of Singapore.

This product has been classified using the Chinese Occupational Exposure Limit for Hazardous Agents in the Workplace, GBZ2-2002.

This product has been classified in accordance with Mexican regulations NOM-018-STPS-2000 and NOM-010-STPS-1999.

California PROP 65 (Safe Drinking Water Standard): WARNING: This product contains a chemical(s) known to the State of California to cause cancer and/or birth defects (or other reproductive harm). (lead/cadmium)

SARA 313 Listing-40 CFR 372.65:Lead CAS# 7439-92-1, Cadmium CAS# 7440-43-9

All ingredients are listed on the US EPA TSCA Inventory.

All ingredients are listed on the Canadian Domestic Substance List, the Chinese Chemical Inventory, the Philippines Inventory of Chemicals, the Korea Inventory of Existing Chemicals, the European Inventory of Existing Commercial Chemical Substances, the New Zealand Inventory of Chemicals and the Australian Inventory of Chemicals.

EPA Genetic Toxicology Program - Lead CAS# 7439-92-1, Cadmium CAS# 7440-43-9

EC Classification Packaging and Labeling Requirements

Symbol and Hazard Classification of Product

Risk Phrases:

- | | |
|-----------|--|
| R20/22 | Harmful by inhalation and if swallowed (lead, cadmium) |
| R23/25 | Toxic by inhalation and if swallowed (cadmium) |
| R26 | Very toxic by inhalation (cadmium) |
| R33 | Danger of cumulative effects (lead) |
| R36/37/38 | Irritating to eyes, respiratory system and skin |
| R40 | Limited evidence of carcinogenic effect (lead) |
| R45 | May cause cancer (cadmium) |
| R48 | Danger of serious damage to health by prolonged exposure (lead) |
| R50/53 | Very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment. (cadmium) (lead) |
| R61 | May cause harm to the unborn child (lead) (cadmium) |

- R62 Possible risk of impaired fertility (cadmium)
- R63 Possible risk of harm to unborn child (cadmium)
- R68 Possible risk of irreversible effects (cadmium)

Safety Phrases:

- S20/21 When using do not eat, drink or smoke
- S22 Do not breathe dust
- S23 Do not breathe fumes
- S24/25 Avoid contact with skin and eyes
- S27 Take off immediately all contaminated clothing
- S28 After contact with skin wash immediately with plenty of soap and water.
- S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- S60 This material and its container must be disposed of as hazardous if it contains lead and or cadmium
- S61 Avoid release into the environment. See handling instructions.
- S62 If swallowed, do not induce vomiting but seek advice immediately and show container or label

16. OTHER INFORMATION

HMIS Hazard Rating: **Health: 2**
Fire: 1
Physical Hazard: 0

Revised Date: **June 11, 2018**
Prepared by: **Gerrit Van Tilburg**
Approved by: **Gerrit Van Tilburg**

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