

MATERIAL SAFETY DATA SHEET**ALUMINUM METAL SHOT**

PRODUCT CODE NUMBER(S): 1110-1

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** *Aluminum metal, shot***Chemical Family:** *Metals***Chemical Formula:** *Al***Product Use:** *Laboratory reagent***Manufacturer's Name and Address:***Caledon Laboratories Ltd.
40 Armstrong Avenue
Georgetown, Ontario L7G 4R9***Telephone No:** *(905) 877-0101***Fax No:** *(905) 877-6666***Emergency Telephone No:** *CANUTEC (613) 996-6666***HAZARDOUS INGREDIENTS OF MATERIALS**

Ingredients	%	TLV Units	CAS No.
<i>Aluminum</i>	<i>>99.9</i>	<i>10 mg/m³ (metal dust)</i>	<i>7429-90-5</i>

PHYSICAL DATA**Physical State:** *Solid***Odour and Appearance:** *Bright, silvery ductile metal, or silver-white to grey powder, odourless***Odour Threshold (ppm):** *Not applicable***Vapour Pressure (mm Hg):** *1 mm Hg at 1284°C***Vapour Density (Air = 1):** *Not applicable***Evaporation Rate:** *Not applicable***Boiling Point (degrees C):** *2327°C***Melting Point (degrees C):** *660°C***pH:** *Not applicable***Specific Gravity:** *2.702 @ 20°C***Coefficient of Water/Oil distribution:** *Not applicable***SHIPPING DESCRIPTION****UN:** *Not regulated***T.D.G. Class:** *Not regulated***Pkg. Group:** *Not regulated***REACTIVITY DATA****Chemical Stability:** *Shot is stable. Dry powder is stable. Dust forms explosive mixtures with air. Bulk dust when damp may heat spontaneously; hazard is greater as size of particles decreases.***Incompatibility with other substances:** *Highly reactive substance. Reacts with acids or bases to release flammable/explosive hydrogen gas; pH values above 9.5 accelerate the rate of hydrogen evolution. Metal oxides mixed with powdered aluminum react vigorously when ignited. Mixtures with halogens may ignite. May react violently or ignite with oxidizing agents. Reacts with alco-**hols when heated, to form alkoxides. Mixtures with halogenated hydrocarbons may explode on heating or friction. Bulk aluminum powder may heat spontaneously when wet, releasing flammable/explosive hydrogen gas; mixtures of aluminum powder and water can explode if detonated. Highly resistant to corrosion, because it develops a thin layer of oxide when exposed to air. However, may corrode metals when wet.***Reactivity:** *Avoid all incompatible materials, excessive heat, moisture, generation of dust.***Hazardous Decomposition Products:** *Flammable hydrogen gas (in presence of water or acids)***FIRE AND EXPLOSION DATA****Flammability:** *Aluminum shot is not expected to be a fire hazard. However, aluminum powder is flammable. Moist aluminum powder may ignite in air, forming flammable hydrogen gas. Combustible as dust; mixtures of dust and air can ignite or explode.***Extinguishing Media:** *Isolate and allow to burn out. Use sand, talc or sodium chloride to smother small fires. DO NOT USE WATER, CO₂, sodium bicarbonate, foam, halogenated extinguishing agents. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes and contact with skin and eyes.***Flash Point (Method Used):** *Not applicable***Autoignition Temperature:** *760°C***Upper Flammable Limit (% by volume):** *Not well defined***Lower Flammable Limit (% by volume):** *30 mg/m³ (6 micrometres)***Hazardous Combustion Products:** *With water, acids or bases can release flammable/explosive hydrogen gas.***Sensitivity to Impact:** *None identified***Sensitivity to Static discharge:** *Metal will not accumulate static charge. Under certain conditions, mixtures of dust and air may be ignited by electrostatic spark or other ignition source.***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** *Not available***LC₅₀:** *Not available***Effects of Acute Exposure to Product:****Inhaled:** *Dust may cause mechanical irritation. No reports of effects following short-term inhalation.***In contact with skin:** *Not irritating to skin, based on animal information; no human information available. Poorly absorbed through skin.***In contact with eyes:** *Dust may cause mechanical irritation, with temporary pain, tearing, redness.*

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Ingested: Not expected to be a health hazard in the workplace. Ingestion of large quantities of aluminum dust may cause gastrointestinal irritation.

Effects of Chronic Exposure to Product:

Prolonged or repeated inhalation may cause scarring of the lung tissue (pulmonary fibrosis). Symptoms include difficulty in breathing, coughing, drowsiness, loss of appetite, rapid breathing. Asthma-like symptoms have been reported in association with inhalation of aluminum fumes from refining or soldering.

Carcinogenicity: Not expected to be carcinogenic in humans or animals

Teratogenicity: Insufficient information available

Reproductive Effects: Insufficient information available

Mutagenicity: Not mutagenic in animal or bacterial studies

Synergistic Products: None known

PREVENTIVE MEASURES

Engineering Controls: Local exhaust ventilation recommended

Respiratory Protection: If dust is present, wear approved dust mask. In emergency situations, such as fire or spill conditions, NIOSH approved supplied-air respirator or positive-pressure, full face-piece self-contained breathing apparatus should be worn.

Eye Protection: Chemical safety glasses

Skin Protection: Protective gloves may be worn to prevent abrasion from dust.

Other Personal Protective Equipment: Safety shower and eye-wash fountain in work area.

Leak and Spill Procedure: Ventilate area. Cleanup personnel must wear protective equipment and clothing sufficient to prevent inhalation and contact with skin and eyes. Sweep, scoop or pick up spilled material. Package for reclamation or recovery. If dust is present, eliminate all ignition sources, keep combustible materials away from area of spill.

Waste Disposal: Follow all federal, provincial and local regulations for disposal.

Handling Procedures and Equipment: REACTIVE. Dust is FLAMMABLE. Workers handling this product must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Follow routine safe handling procedures. Use the smallest amount possible for the purpose. Avoid generating dust. Avoid all inhalation and contact. Avoid prolonged exposure. Keep away from all incompatible materials, including water.

Storage Requirements: Keep in a tightly closed container, stored in a cool, dry, ventilated area, out of direct sunlight and away from water and all other incompatible materials. Protect against physical damage. Keep powdered aluminum dry and away from heat and ignition sources.

FIRST AID MEASURES

Specific Measures:

Eyes: Do not allow victim to rub eyes. Let eyes to water naturally for a few minutes. If particles/dusts are not dislodged, flush eyes thoroughly with gently running water, holding eyelids open while flushing, for five (5) minutes or until particle is removed. Do not attempt to manually remove any remaining particles. Get medical attention if

irritation develops, or if particles cannot be removed by flushing.

Skin: Brush away excess chemical. Wash skin with plenty of running water for five (5) minutes or until chemical is removed. If irritation persists, get medical attention.

Inhalation: Remove to fresh air. Give oxygen and get medical attention for any breathing difficulty.

Ingestion: Probably not applicable; not a normal route of exposure. If victim is alert and not convulsing, rinse mouth thoroughly with water and give 1 to 2 glasses of water to drink to dilute. If victim feels unwell, or if a very large amount has been ingested, get medical attention.

REFERENCES USED

Budavari: The Merck Index, 12th ed., 1997

Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987

Sax: Dangerous Properties of Industrial Materials, 5th ed., 1979

Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: May 6, 1991

Revision: September 2010

MSDS: 1110-1

Proposed WHMIS Designation: B6 (Aluminum powder)

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
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