

OCTOLUX



Octopus Products Limited
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Material Safety Data Sheet (MSDS)

Issue Date: January 2005
Revision Date: 06/01/2005
MSDS # AL5

MANUFACTURER: VARIOUS

Section 1: Chemical Product and Company Identification

- Chemical Formula:** • Mixture
Product Name: • Aluminum Alloys 5xxx
Product Use: • Various fabricated aluminum parts and products
Other Designations: • 5xxx Series Alloys, 5005, 5050, 5052, 5657, 5205, 50SF

Phone: Health & Safety 1-800-654-1159 Domestically, 1-231-722-1631 Internationally

Emergency Information: USA: Chemtrec: 1-800-424-9300 or 1-703-527-3887

Section 2: Composition / Information of Ingredients

CAS#	Component	Percent
7429-90-5	Aluminum	>84.9
7439-95-4	Magnesium	<6.6
7440-66-6	Zinc	<4
7439-96-5	Manganese	<1.5
7440-21-3	Silicon	<1.1
7440-02-0	Nickel	0-0.09
7440-47-3	Chromium	<0.6

Section 3: Hazards Identification

EMERGENCY OVERVIEW: Aluminum alloys in their solid state present no inhalation, ingestion or contact health hazard. However, inhaling dusts, fumes or mists which may be generated during certain manufacturing procedures (melting, welding, sawing, brazing, grinding and machining) may be hazardous to your health. Particulate / dusts may also be irritating to unprotected skin or eyes.

POTENTIAL HEALTH EFFECTS / MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Dust and fumes from some manufacturing processes can aggravate pre-existing chronic respiratory conditions (asthma, chronic bronchitis, and emphysema.)

HEALTH EFFECTS OF INGREDIENTS:

Chromium dust. Can cause irritation of eyes, skin and respiratory track. Chromium and trivalent chromium IARC/NTP: Not classified by IARC.

Nickel dust and fumes. Can cause irritation of eyes, skin and respiratory tract. Eye contact: Can cause inflammation of the eyes and eyelids. Skin contact: Can cause sensitization and allergic contact dermatitis. Chronic overexposures: Can cause perforation of the nasal septum, inflammation of the nasal passages, respiratory sensitization, asthma, and scarring of the lungs.) Nickel metal IARC/NTP: Listed as "reasonably anticipated to be a human carcinogen" by the NTP. Listed as possibly carcinogenic to humans by IARC (Group 2B).

Manganese dust or fumes. Chronic overexposures: Can cause inflammation of the lung tissue, scarring of the lungs, central nervous system damage, secondary Parkinson's disease and reproductive harm in males.

Silicon, inert dusts. Chronic overexposures: Can cause chronic bronchitis and narrowing of the airways.



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Aluminum dust, fines and fumes. Low health risk by inhalation. Generally considered to be biologically inert (milling, cutting, grinding.)

ROUTES OF ENTRY: Inhalation (dusts / fumes / mists), contact with skin and eyes (dusts / mists), ingestion (dusts.)

Section 4: First Aid Measures

INHALATION: Immediately remove individual to fresh air. If unconscious or severely injured, check for clear airway, breathing, and presence of pulse. Perform CPR if there is no pulse or respiration. If condition persists, consult physician.
EYE CONTACT: Immediately flush with running water for 15 minutes to remove particulate, consult physician.
SKIN CONTACT: If irritation develops, remove clothing and wash skin with soap and water for at least 15 minutes. If condition persists, contact physician.
INGESTION: Consult physician.
NOTE TO PHYSICIAN: None.

Section 5: Fire Fighting Measures

FLASH POINT: This product does not present fire or explosion hazards as shipped. Small chips, turnings, dust and fines from processing may be readily ignitable.
SPECIAL FIRE FIGHTING INSTRUCTIONS AND EQUIPMENT: Fire fighters should wear NIOSH approved positive pressure, self contained breathing apparatus and full protective clothing when necessary.
AUTOIGNITION TEMPERATURE: N/A
FLAMMABLE LIMITS: Nonflammable.
EXTINGUISHING MEDIA: Use coarse water spray on chips and turnings. Use Class D extinguishing agents on dusts, fines or molten metal. **DO NOT USE:** Halogenated agents on small chips, dusts or fines. **DO NOT USE:** Water around molten metal.
HAZARDOUS COMBUSTION PRODUCTS: Aluminum oxide, hydrogen gas.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None for product as sold.

Section 6: Accidental Release Measures

CLEAN UP PROCEDURES: No special procedures needed for product as sold. Care should be taken when cleaning aluminum dust and fines so that it does not co-mingle with fines of iron, iron oxide (rust) or other metal oxides.
SPECIALIZED EQUIPMENT: None.

Section 7: Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING: Minimize activities that may generate dusts, mists or fumes. Keep areas well ventilated. Use suitable equipment to move materials.
PRECAUTIONS TO BE TAKEN IN STORAGE: None required.

Section 8: Exposure Controls / Personal Protection

RESPIRATORY PROTECTION: Not needed for material as sold. Wear NIOSH approved respirator as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the occupational exposure limits.
EYE/FACE PROTECTION: Wear face shields when welding or burning the material. Wear safety glasses and or goggles during operations that produce chips, fumes or dust.
OTHER PROTECTIVE EQUIPMENT: Use appropriate protective clothing such as welding aprons and gloves when welding or burning.
ENGINEERING CONTROLS: Provide adequate explosion proof ventilation to meet exposure guidelines for operations that generate dust or fumes.

EXPOSURE GUIDELINES:
Component Exposure Limits



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Aluminum (7429-90-5)

ACGIH 10 mg/m³ TWA (metal dust)
OSHA 15 mg/m³ TWA (total dust), 5 mg/m³ TWA (respirable fraction)

Manganese (7439-96-5)

ACGIH 0.2 mg/m³ TWA (metal dust)
OSHA 5 mg/m³ Ceiling (fume)

Silicon (7440-21-3)

ACGIH 10 mg/m³ TWA
OSHA 15 mg/m³ TWA (total dust), 5 mg/m³ TWA (respirable fraction)

Chromium (7440-47-3)

ACGIH 0.5 mg/m³ TWA
OSHA 1 mg/m³ TWA

Nickel (7440-02-0)

ACGIH 1.5 mg/m³ TWA (inhalable fraction)
OSHA 1 mg/m³ TWA

Section 9: Physical and Chemical Properties

APPEARANCE: Metal
AUTOIGNITION TEMPERATURE: N/A
BOILING POINT: N/A
DENSITY: Range generally 2.64-2.72 g/cm³ (0.095-0.098 lb/in³)
EVAPORATION RATE: N/A
MELTING POINT: 482°-660° C
OCTANOL-WATER COEFFICIENT: N/A
ODOR: None
ODOR THRESHOLD: N/A
PARTITION COEFFICIENT: N/A
pH LEVEL: N/A
PHYSICAL STATE: Solid, sheet, coil
SOLUBILITY IN WATER: None
SPECIFIC GRAVITY: See Density
VAPOR DENSITY: N/A
VAPOR PRESSURE: N/A

Section 10: Stability and Reactivity

STABLE (YES/NO) Yes. Stable under normal conditions of use, storage, and transportation as shipped.
CONDITIONS AND MATERIAL TO AVOID: Chips, fines, dust, and molten aluminum are considerably more reactive with the following: water, heat, strong oxidizers, acids and alkalis, halogenated compounds, iron oxide (rust) and other metal oxides (e.g. copper and lead oxides), iron powder and water.
HAZARDOUS DECOMPOSITION PRODUCTS: In the form as sold, no specific decomposition products are known. Aluminum does react with water, strong basic solutions, strong acidic solutions, halogenated acids (e.g. hydrofluoric acid), producing flammable hydrogen gas.

Section 11: Toxicology Information

LETHAL CONCENTRATION (LC50): None established

Component Analysis -- LD50/LC50

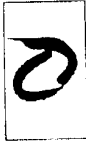
Manganese (7439-96-5)

Oral LD50 Rat: 9 mg/kg

Silicon (7440-21-3)

Oral LD50 Rat: 3160 mg/kg

CARCINOGENIC BY NTP, IARC OR OSHA: Not for material as sold.



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Component Carcinogenicity

Chromium (7440-47-3)

ACGIH A4 – Not Classifiable as a Human Carcinogen
IARC Monograph 49, 1990.

Nickel (7440-02-0)

ACGIH A5 – Not Suspected as a Human Carcinogen
IARC Monograph 49, 1990
NTP Reasonably Anticipated To Be A Carcinogen

Section 12: Ecological Information

For the product as sold, no adverse ecological effects are expected.

The product does contain other component metals that can have aquatic toxicity.

Zinc (7440-66-6)

96 Hr LC50 flathead minnow: 6.4 mg/L
96 Hr EC50 freshwater algae (*Selenastrum capricornutum*): 30 ug/L
72 Hr LC50 water flea: 5 ug/L

Nickel (7440-02-0)

96 Hr LC50 rainbow trout (adults): 31.7 mg/L; 96 Hr LC50 fathead minnow: 3.1 mg/L
72 Hr EC50 freshwater algae (4 species): 0.1 mg/L
96 Hr LC50 water flea: 510 ug/L

Section 13: Disposal Considerations

Recycle or reuse material whenever possible. Aluminum in the form of particles may be reactive. Its hazardous characteristics, including fire and explosion, should be determined prior to disposal. Dispose of waste in accordance with federal, state or local regulations.

Section 14: Transport Information

No special DOT regulations pertaining to this material.

Section 15: Regulatory Information

WHMIS CLASSIFICATION (Canada):

USA REGULATIONS CERCLA

- D2B Toxic material causing other toxic effects (if Chromium (7440-47-3) 0.1%, English Item 399, French Item 561, Aluminum (CAS #4729-90-5) 1%, English Item 47, French Item 197; Manganese (CAS #7439-96-5) 1%, English Item 974, French Item 1077.
- Zinc (7440-66-6) 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches); 454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches)
- Chromium (7440-47-3) 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches)
- Nickel (7440-02-0) 100 lb final RQ (no reporting of releases of



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U.S. REGULATIONS SARA:

STATE REGULATIONS:

this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches); 45.4 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is equal to or exceeds 0.004 inches)

- Some components of this product are classified as toxic by the EPA in 40 CFR 372.65 and subject to reporting requirements of SARA Title III Section 313 and 40 CFR 372.65.
- Some components of this product appear on one or more state hazardous substances lists. Pennsylvania "Special Hazardous Substance": chromium compounds, nickel. Chemical(s) known to the State of California to cause cancer: Hexavalent chromium, nickel, and certain nickel compounds.

Section 16: Other Information

OTHER PRECAUTIONS: Take appropriate precautions when moving or shipping this material to prevent injury to personnel handling it.

MSDS HISTORY:

Original: February 10, 2005
Supercedes Rev. 0, February 10, 1005
Revised: June 1, 2005

DISCLAIMER:

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