1. Product and Company Identification

Product Name : Rio Tinto Alcan aluminium metal, 242.X, A242.X series alloys

SDS Number : 000182

Synonym (s) : Alloys 24809.

Use (s) : Primary metal.

Appearance and Odour : Grey to silver solid; odorless.

Supplier :

Rio Tinto Alcan (RTA)
Primary Metal
1188 Sherbrooke West
Montréal, Québec H3A 3G2
Canada

Emergency phone : 1-800-567-7455 *
Phone : 514 848-8000
Fax : 514 848-8115/8116

* Please call collect for outside calls of North America.

Prepared by :

Rio Tinto Alcan Toxicology Service
P.O. Box 1500
Jonquière, Québec G7S 4L2
Canada

Phone: 418 699-2707
Fax : 418 699-2993
E-mail : servicetoxico@alcan.com

2. Hazards Identification

Not hazardous in solid form. Fines particles from processing may be readily ignitable. Fine particles and molten metal are highly reactive with water, strong oxidizers, acids and alkalis, halogenated compounds and certain metal oxides

3. Composition / Information on Ingredients

Components:

CAS	EC number	Designation	Content	Classification	R Phrase(s)
7429-90-5	231-072-3	Aluminum	> 87.0 %	-	-
7440-50-8	231-159-6	Copper	3.0 - 5.0 %	-	-
7440-02-0	231-111-4	Nickel	1.5 - 2.5 %	Xn	40, 43
7439-95-4	231-104-6	Magnesium	1.0 - 2.0 %	-	-
7439-89-6	231-096-4	Iron	0.1 – 1.0 %	-	-
7440-21-3	231-130-8	Silicon	0.3 – 0.8 %	-	-
7440-66-6	231-158-0	Zinc	0.05 - 0.40 %	-	-
7439-96-6	231-105-1	Manganese	0.0 - 0.40 %	-	-
7440-47-3	231-157-5	Chromium	0.1 - 0.3 %	-	-
7440-32-6	231-142-3	Titanium	0.05 - 0.3 %	-	-

For more detailed chemical composition, refer to the certificate of analysis.

Identification number of the European Commission relative to EINECS (European INventory of Existing Commercial chemical Substances) or ELINCS (European List of Notified Chemical Substances.).

4. First Aid

Inhalation : In case of discomfort, remove to a ventilated area. If discomfort persists, consult a physician.

Skin Contact : In case of burns with hot metal, rinse with plenty of cold water. If burn is severe, consult a physician.

Eyes Contact : Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation persists, continue flushing for 15 minutes, rinsing from time to time under eyelids. If discomfort continues, consult a physician.

Ingestion : Not applicable

5. Fire Fighting Measure (s)

Extinguishing Media : Not a fire hazard unless in particle form (small chips, fine turnings, dusts). Suspensions of aluminum dust in air may pose a severe explosion hazard, especially in a confined atmosphere. Avoid sparks and prevents electrostatic charges from accumulating. A potential for explosion exists for a mixture of fine and coarse particles if at least 15% to 20% of the material is finer than 44 microns (325 mesh). Buffing and polishing generate finer material than grinding, sawing and cutting. In case of aluminum fires, use a class D dry-powder extinguisher. Do not use water or halogenated extinguishing media.

Hazardous Combustion Product(s) :

Not applicable

6. Accidental Release Measures

Environmental Protection / Cleaning Method(s):

Recycle if possible.

7. Handling and Storage

Handling Precautions : Because of the risk of explosion, aluminum ingots and metal scrap should be thoroughly dried prior to remelting. Use standard techniques to check metal temperature before handling. Hot aluminum does not present any warning color change. Exercise great caution, since the metal may be hot. For more information on the handling and storage of aluminum, consult the following documents published by Aluminum Association, 900 19th St., N.W., Washington D.C., 20006 :

- Guidelines for handling molten aluminum
- Recommendations for storage and handling of aluminum powders and paste
- Guidelines for handling aluminum fines generated during various aluminum fabricating operations

Storage Conditions :

Not applicable

8. Exposure Controls / Personal Protection

Exposure Controls / Personal Protection :

Special ventilation should be used to convey finely divided metallic dust generated by grinding, sawing or polishing operations, in order to eliminate explosion hazards. Maintain dust concentration in ventilation ducts below the lower explosive limit of 40 g/m³ (0.04 oz/ft3). See "National Fire Protection Association Codes": Code 65 "Processing and Finishing of Aluminum", Code 651 "Standard for the Machining and Finishing of Aluminum and the Production and Handling of Aluminum Powder " and code 77 “Static electricity”. Use an approved respirator designed for the hazard, where concentrations exceed exposure limits. The use of both primary and secondary protective equipment is necessary when handling molten metal. Refer to "Aluminum Association" guidelines.

For wetted coil of foil:

Do not cut, transport or even approach any coil giving off a crackling sound or emitting steam vapour.

Once a coil of foil has been partially or completely wetted : **keep the coil cool until the interior is completely dry.** If such cooling is impractical, leave the coil in place and keep people at least 30 meters away from it for at least 72 hours. (See Rio Tinto Alcan publication entitled "Potential Safety Hazards of immersing a coil of Aluminum Foil in water").

Exposure limits :

CAS Number	Designation	Exposure limits				
7429-90-5	Aluminum	**ACGIH (TLV®)**	**TWA :**	10 mg/m^3	**STEL :**	None
	• Total dust	**OSHA (PEL)**	**TWA :**	15 mg/m^3	**CEILING:**	None
	• Respirable dust	**OSHA (PEL)**	**TWA :**	5 mg/m^3	**CEILING:**	None
7440-50-8	Copper	**ACGIH (TLV®)**	**TWA :**	0.2 mg/m^3	**STEL :**	None
	• Fume	**OSHA (PEL)**	**TWA :**	0.1 mg/m^3	**CEILING:**	None
	• Dust and mist	**ACGIH (TLV®)**	**TWA :**	1.0 mg/m^3	**STEL :**	None
		OSHA (PEL)	**TWA :**	1.0 mg/m^3	**CEILING:**	None
7439-96-5	Manganese (Mn and compounds)	**ACGIH (TLV®)**	**TWA :**	0.2 mg/m^3	**STEL :**	None
	• Fume	**OSHA (PEL)**	**TWA :**	None	**CEILING:**	5 mg/m^3
1309-48-4	Magnesium oxide	**ACGIH (TLV®)**	**TWA :**	10 mg/m^3	**STEL :**	None
	• Total dust	**OSHA (PEL)**	**TWA :**	15 mg/m^3	**CEILING :**	None
7440-47-3	Chromium (metal)	**ACGIH (TLV®)**	**TWA :**	0.5 mg/m^3	**STEL :**	None
		OSHA (PEL)	**TWA :**	1 mg/m^3	**CEILING :**	None
1314-13-2	Zinc oxide	**ACGIH (TLV®)**	**TWA :**	2 mg/m^3	**STEL :**	10 mg/m^3
	• Respirable dust	**OSHA (PEL)**	**TWA :**	5 mg/m^3	**CEILING :**	None
	• Fume	**OSHA (PEL)**	**TWA :**	5 mg/m^3	**CEILING :**	None
	• Total dust	**OSHA (PEL)**	**TWA :**	15 mg/m^3	**CEILING :**	None
7440-21-3	Silicon	**ACGIH (TLV®)**	**TWA :**	10 mg/m^3	**STEL :**	None
	• Total dust	**OSHA (PEL)**	**TWA :**	15 mg/m^3	**CEILING :**	None
	• Respirable dust	**OSHA (PEL)**	**TWA :**	5 mg/m^3	**CEILING :**	None
1309-37-1	Iron oxide	**ACGIH (TLV®)**	**TWA :**	1 mg/m^3	**STEL :**	None
		OSHA (PEL)	**TWA :**	1 mg/m^3	**CEILING :**	None
7440-02-0	Nickel	**ACGIH (TLV®)**	**TWA :**	1.5 mg/m^3	**STEL :**	None
	• Total dust	**OSHA (PEL)**	**TWA :**	1 mg/m^3	**CEILING :**	None

(ACGIH = American Conference of Governmental Industrial Hygienists; TLV = Threshold Limit Value; OSHA = Occupational Safety and Health Administration [USA]; PEL = Permissible Exposure Limit; TWA = Time-Weighted Average; STEL = Short Term Exposure Limit; C = Ceiling value)

9. Physical and Chemical Properties

pH :	Not applicable	**Flash Point :**	Not applicable
Boiling Point :	Not applicable	**Autoignition Temperature :**	Not applicable
Melting Point :	530 – 570 ºC	**Lower Flammable Limit :**	Not applicable
Vapour Pressure :	Not applicable	**Higher Flammable Limit :**	Not applicable
Vapour Density (air=1):	Not applicable	**Explosive Properties :**	Not applicable
Evaporation Rate :	Not applicable	**NFPA Fire Code :**	0
Relative Density (water=1) :	2.8	**Oxidizing Properties :**	Not applicable
Water Solubility :	Not applicable	**Partition Coefficient (n-octanol/water) :**	Not applicable
Odour Threshold :	Not applicable		

10. Stability and Reactivity

Massive metal is stable and non reactive under normal conditions of use, storage and transport.

Conditions and Material to Avoid :

Molten aluminum may explode on contact with water. In the form of particles, may explode when mixed with halogenated acids, halogenated solvents, bromates, iodates or ammonium nitrate. Aluminum particles on contact with copper, lead, or iron oxides can react vigorously with release of heat if there is a source of ignition or intense heat.

Hazardous Decomposition Product(s) :

In the form of particles (small chips, fine turnings, dusts), aluminum reacts with water and air humidity, strong basic solutions, strong acidic solutions, halogenated acids (eg.: hydrofluoric acid), producing flammable hydrogen gas.

11. Toxicological Information

Acute Effects :

LD_{50} / LC_{50} :

CAS	Designation	LD 50 (oral rat)	LC 50
7439-86-6	Iron	30 g /kg	Unknown
7439-96-5	Manganese	9000 mg/kg	Unknown
7440-21-3	Silicon	3160mg/kg	Unknown

Solid aluminum does not present any acute health effects.

Inhalation : Aluminum dusts generated during specific operations are considered as nuisance particulates.

Skin Contact : Skin contact with hot metal can cause burns.

Eyes Contact : Aluminum dust can irritate the eyes (mechanical abrasion).

Ingestion : Not applicable

Chronic Effects :

Solid aluminum does not present any chronic health effects.

Skin Contact : Skin sensitization to nickel may result in chronic eczema: "Nickel itch".

Medical Conditions Aggravated by Exposure to the Product :

Not applicable

Carcinogenicity : Nickel, chromium and some of their compounds are listed in the current "Annual Report on Carcinogens" prepared by the "National Toxicology Program" (NTP). Does not contain any other carcinogen or potential carcinogen (IARC, NTP, OSHA).

(IARC = International Agency for Research on Cancer; NTP = National Toxicology Program [USA]; OSHA = Occupational Safety and Health Administration [USA])

Mutagenicity : No data available.

Reproductive Toxicity :

No data available.

Supplementary Information :

Aluminum fumes generated during welding or melting present low health risks. Welding or plasma arc cutting of aluminum alloys can generate ozone, nitric oxides and ultraviolet radiation. Ozone overexposure may result in mucous membrane irritation or pulmonary discomfort. UV radiation can cause skin erythema and welders flash. High concentrations of freshly-formed fumes of copper, magnesium and manganese oxides can produce symptoms of metal fume fever. High concentrations of manganese dust can affect the central nervous system (apathy, drowsiness, weakness and other symptoms resembling to Parkinson's disease). High concentrations of copper dust can cause irritation of the upper respiratory tract.

12. Ecological Information

Ecotoxicity : Aluminum ecotoxicity has not been demonstrated using standard OECD test protocols.

Mobility : Aluminum is not mobile in the environment, unless it comes into contact with an aqueous environment with a pH below 5.5 or above 8.5.

Persistence/ Biodegradability :

Not relevant for metals.

Bioaccumulation : Minimal.

13. Disposal Considerations

Methods of Disposal :

Recycle. 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.

Note : Reference to the European Waste Catalog (EWC) in section 15.

14. Transport Information

TDGR: not regulated ; ADR : not regulated ;CFR 49: not regulated ; IMO: not regulated ; ICAO: not regulated ; IATA: not regulated .

(TDGR = Transport of Dangerous Good Regs.(Canada). ADR : European agreement relative to international transport of dangerous goods by road. CFR 49 = Code of Federal Regs.(USA). IMO = International Maritime Organization. ICAO = International Civil Aviation Organization. IATA = International Air Transport Association.)

15. Regulatory Information

Canadian Regulation :

WHMIS Classification :

D2B Toxic material causing other toxic effects.

WHMIS : Workplace Hazardous Materials Information System.

European Union Classification :

Warning Symbol(s) :

Xn

Harmful

Risk Phrase(s) :

R40 : Limited evidence of a carcinogenic effect.

R43: May cause sensitization by skin contact.

Safety Phrase(s) :

S22 : Do not breathe dust.

S36 : Wear suitable protective clothing.

References :

Directive 67/548/EC on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances.

Directive 1999/45/EC concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labeling of dangerous preparations

European Waste Catalog (EWC) :

EU 12 01 03* : Wastes from shaping and physical and mechanical surface treatment of metals and plastics; non-ferrous metal filings and turnings.

(Reference : Decree No. 2002-540 of April 18, 2002 relative to the classification of wastes.)

USA Regulation(s) :

Supplier notification

This product may contain trace amounts of lead, which concentration does not meet the disclosure requirements of the "Hazard Communication Standard" (HCS) of the United States or the Canadian "Workplace Hazardous Material Information System" (WHMIS). Any process resulting in exposure to more than 0.5 mg/m^3 of metal dust per day may result in a daily dose of lead of over 0.5 µg/day, the dose above which the "California Safe Drinking Water and Toxic Enforcement Act" of 1986 requires notification. Refer to the appropriate regulation notification wording guidelines.

Section 313

This product may contain the following toxic chemical(s) subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (Title III of SARA) and of 40 CFR 372. (This information must be included in all SDSs that are copied and distributed for this material).

Chemical Name	CAS number
Chromium	7440-47-3
Copper	7440-50-8
Nickel	7440-02-0

16. Other Information

Although the information in this SDS was obtained from sources which we believe to be reliable, it cannot be guaranteed. In addition, this information may be used in a manner beyond our knowledge or control. The information is therefore provided for advice purposes only, without any representation or warranty express or implied.

This safety data sheet is in accordance with WHMIS, Directive 2001/58/CE and ANSI Z400.1-2003.

Date of the previous revision: 2006-12-20

Reason for revision: Modification in section 1.