RioTinto

Section 1. Identification

Product name : Aluminium Unalloyed Metal Ingot, PXXXX, AAXXX Series

Chemical name : Aluminium.

Product code : 162

Other means of identification : P0202A, P0303A, P0404A, P0405A, P0406A, P0506A, P0610A, P1015A, P1020A, P1520A, P1535A, P2055A, P2070A, P2585A, SERIES PXXXXX, AA170, 1070, AA180, AA185, AA190, AA192, AA194, AA196, AA198, SERIES AAXXX

Product type : Massive metal.

Relevant identified uses of the substance or mixture and uses advised against

Material uses : Industrial applications: Primary metal; casting/molten and alloying; processing and manufacturing into articles and semi-fabricated articles, building and construction products, packaging products.

Supplier's details : Rio Tinto Aluminium

North America:
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155 Charlotte Street, Midtown Centre,
Brisbane QLD 4000, Australia
Telephone: +61 7 3625 3003 (BH)

12 Marina Boulevard, #20-01
Marina Bay Financial Centre Tower 3
Singapore 018982
Telephone: +65 6679 9000

e-mail address of person responsible for this SDS : rta.msds@riotinto.com

Emergency telephone number : 1800 074 234 (toll–free number, access from Australia only)
+61 (0) 2 8014 4558 (Rio Tinto Aluminium)
For advice on chemical emergencies, spillages, fires or First Aid.

Section 2. Hazard(s) identification

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : **No signal word.**

Hazard statements : **No known significant effects or critical hazards.**

Precautionary statements

Section 2. Hazard(s) identification

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Supplemental label elements : Not applicable.

Other hazards which do not result in classification : None known.

Section 3. Composition and ingredient information

Substance/mixture : Substance

Chemical identity : Aluminium.

Other means of identification : P0202A, P0303A, P0404A, P0405A, P0406A, P0506A, P0610A, P1015A, P1020A, P1520A, P1535A, P2055A, P2070A, P2585A, SERIES PXXXXX, AA170, 1070, AA180, AA185, AA190, AA192, AA194, AA196, AA198, SERIES AAXXX

CAS number/other identifiers

CAS number : 7429-90-5

EC number : 231-072-3

Ingredient name	% (w/w)	CAS number
Aluminium.	>98.9	7429-90-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Additional information

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of first aid measures

Eye contact : Get medical attention if any damage to the eye is caused by the metal.

Inhalation : For dust exposure: If irritation or other pulmonary symptoms persist, seek medical attention.

Skin contact : Get medical attention if symptoms occur. Cuts should be treated promptly and covered. Heated material can cause thermal burns. In case of burns, immediately cool affected skin with cold water and continue for as long as possible or apply wet cloths to the area until medical attention can be obtained.

Ingestion : Not applicable.

Protection of first-aiders : No special protection is required. See Section 8 for information on appropriate personal protective equipment.

Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Not applicable.

Inhalation : Not applicable.

Skin contact : No known significant effects or critical hazards.

Ingestion : Not applicable.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Section 4. First aid measures

Ingestion : No specific data.

Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically.

Specific treatments : No specific treatment.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media : Not a fire hazard unless in a particle form (small chips, fine turnings, dust). Suspensions of aluminum dust in air may pose a severe explosion hazard, especially in a confined atmosphere. Avoid sparks and prevent electrostatic discharges from accumulating. A potential for explosion exists for a mixture of fine 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.

Unsuitable extinguishing media : Water, foam, halogenated extinguishing agents.

Special hazards arising from the substance or mixture

Hazards from the substance or mixture : No specific fire or explosion hazard.

Hazardous thermal decomposition products : None.

Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Aluminium may lose structural strength when subject to fire and will melt to a hazardous liquid at temperatures in the range of 480 – 660 degrees celsius (dependent on the alloy composition).

Special protective equipment for fire-fighters : No special protection is required.

Hazchem code : Not applicable.

Additional information : Molten aluminium may explode on contact with water or moisture, and may react violently with rust, certain metal oxides and nitrates.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : No specific hazard.

Methods and material for containment and cleaning up

Small spill : Take care with items that are sharp or heavy. Recycle, if possible.

Large spill : Recycle, if possible. Take care with items that are sharp or heavy. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Take care with items that are sharp or heavy.

Advice on general occupational hygiene : Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations.

Section 8. Exposure controls and personal protection

Occupational exposure limits

Ingredient name	Exposure limits
Aluminium.	**Safe Work Australia (Australia, 12/2019).** TWA: 10 mg/m³ 8 hours. Form: Dust TWA: 5 mg/m³, (as Al) 8 hours. Form: Welding fume

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Appropriate engineering controls : If the product is in its solid form: No special ventilation requirements. 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/ft 3).

Environmental exposure controls : Not applicable.

Individual protection measures

Hygiene measures : Wash thoroughly after handling.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. Recommended: face shield

Skin protection

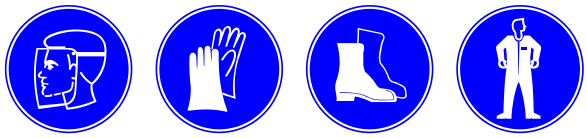
Hand protection : Use strong, cut-resistant gloves suitable for handling metals.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: For handling molten metal: Clothing must be resistant to drops of molten metal and radiant heat. For handling molten metal: Approved safety helmet with neck protection.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: For handling molten metal: Safety boots or shoes with spats.

Respiratory protection : Recommended: If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators.

Personal protective equipment (Pictograms) :



Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Solid. [Metal.]

Colour : Silver grey or grey

Odour : Odourless.

Odour threshold : Not applicable.

pH : Not applicable.

Melting point/freezing point : 660°C (1220°F)

Boiling point, initial boiling point, and boiling range : 2460°C (4460°F)

Flash point : Not applicable.

Evaporation rate : Not applicable.

Flammability : Not applicable.

Lower and upper explosion limit/flammability limit : Not applicable.

Vapour pressure : Not applicable.

Relative vapour density : Not applicable.

Relative density : 2.7

Bulk density : Not applicable.

Granulometry : Not applicable.

Solubility(ies) :

Media	Result
cold water	Not soluble
hot water	Not soluble
methanol	Not soluble
diethyl ether	Not soluble
n-octanol	Not soluble
acetone	Not soluble

Solubility in water : Not applicable.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not applicable.

Viscosity : Not applicable.

Flow time (ISO 2431) : Not available.

Particle characteristics

Median particle size : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : 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. Molten aluminium may react violently if it comes into contact with water.

Section 10. Stability and reactivity

Incompatible materials : 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.Molten aluminium may react violently if it comes into contact with water.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Absorption : Oral uptake <0.1%, nearly insoluble in lung fluids. Most absorbed aluminium is rapidly excreted through urine. Main deposit in body is in bone structure.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
aluminium	LC50 Inhalation Dusts and mists LD50 Oral	Rat Rat	>2350 mg/l >5000 mg/kg	4 hours -

Conclusion/Summary : Contact with hot material causes thermal skin burns.

Irritation/Corrosion

Conclusion/Summary

Skin : Non-irritant to skin.

Eyes : Non-irritating to the eyes.

Respiratory : Non-irritating to the respiratory system.

Sensitisation

Conclusion/Summary

Skin : Non-irritant to skin.

Respiratory : Non-irritating to the respiratory system.

Mutagenicity

Conclusion/Summary : No mutagenic effect.

Carcinogenicity

Conclusion/Summary : No carcinogenic effect.

Reproductive toxicity

Conclusion/Summary : Not considered to be toxic to the reproductive system.

Teratogenicity

Conclusion/Summary : No teratogenic effect.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not applicable.

Information on likely routes of exposure : Routes of entry anticipated: Dermal, Inhalation.

Potential acute health effects

Eye contact : Not applicable.

Inhalation : Not applicable.

Skin contact : No known significant effects or critical hazards.

Ingestion : Not applicable.

Section 11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

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

Short term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Long term exposure

Potential immediate effects : No known significant effects or critical hazards.

Potential delayed effects : No known significant effects or critical hazards.

Potential chronic health effects

Not available.

Conclusion/Summary : Sub acute oral Toxicity: None - Calculated DNEL 3.95 mg/kg bwt/day
Sub acute inhalative Toxicity: None, see occupational exposure limits. Calculated DNEL 3.7 mg/m3 respirable.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Aluminium.	EC50 >100 mg/l	Algae - Selenastrum capricomutum	72 hours
	EC50 >100 mg/l	Daphnia - Daphnia magna	48 hours
	EC50 >100 mg/l	Fish - Salmo trutta	96 hours

Conclusion/Summary : No acute or chronic classification is appropriate for Al metal massive based on non toxic results below the Ecotoxicity Reference Value (ERV) of tests with aluminum metal, oxide and hydroxide at loadings of 100 mg/L at pH 8-8.5 (maximum solubility of Al expected).

Persistence and degradability

Conclusion/Summary : Not applicable

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Aluminium.	-	-	Not readily

Bioaccumulative potential

Not available.

Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : Not mobile under normal environmental conditions. May be leached from the ground at low pH (<5.5) or high pH (>8.5)

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Recycle, if possible.

Section 14. Transport information

	ADG	ADR/RID	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

Special precautions for user : Not applicable.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Section 15. Regulatory information

Not listed.

Inventory list

Australia	:	All components are listed or exempted.
Canada	:	All components are listed or exempted.
China	:	All components are listed or exempted.
Eurasian Economic Union	:	**Russian Federation inventory**: All components are listed or exempted.
Japan	:	**Japan inventory (CSCL)**: Not determined. **Japan inventory (ISHL)**: Not determined.
Malaysia	:	All components are listed or exempted.
New Zealand	:	All components are listed or exempted.
Philippines	:	All components are listed or exempted.
Republic of Korea	:	All components are listed or exempted.
Taiwan	:	All components are listed or exempted.
Thailand	:	All components are listed or exempted.
Turkey	:	All components are listed or exempted.
United States	:	All components are active or exempted.
Viet Nam	:	All components are listed or exempted.

Section 16. Any other relevant information

Date of printing	:	16/08/2022
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Version	:	1.01
Key to abbreviations	:	ADG = Australian Dangerous Goods ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available SGG = Segregation Group SUSMP = Standard Uniform Schedule of Medicine and Poisons UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not classified.	

Indicates information that has changed from previously issued version.

Australia / 4.13 / EN-GB

Disclaimer

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.