

## 1. SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

|            |  |  |
|------------|--|--|
| <b>1.1</b> | <b>Product identifier</b>  |  |
|            | Product name   | Aluminium  |
|            | Trade Name   | Aluminium / Aluminium metal  |
|            | EC No.   | 231-072-3  |
|            | CAS No.  | 7429-90-5  |
|            | REACH Registration No.   | 01-2119529243-45-XXXX  |
| <b>1.2</b> | <b>Relevant identified uses of the substance or mixture and uses advised against</b> |  |
|            | Identified Use(s)  | Casting/molten metal handling.<br>Recycling<br>Processing into semifabricated articles<br>Machinery, equipment, vehicles, electrical and electronic equipment, target<br>Building and constructions products<br>Thermal spraying<br>Surface treatment<br>Packaging: Non-food and pharmaceutical<br>Packaging: Food and beverages<br>Kitchen Utensils and other general products. |
|            | Uses advised against   | This product must not be used for purposes other than those recommended without first seeking the advice of the supplier.  |
| <b>1.3</b> | <b>Details of the supplier of the safety data sheet</b>                              |  |
|            | Company Identification   | Vitol SA<br>Boulevard du Pont d'Arve 28<br>P.O. Box 384<br>1211 Geneva 4<br>Switzerland  |
|            | Telephone  | +31 10 498 7200  |
|            | Fax  | +31 10 452 9545  |
|            | E-mail (competent person)  | <a href="mailto:xreach@vitol.com">xreach@vitol.com</a>   |
| <b>1.4</b> | <b>Emergency telephone number</b>  |  |
|            | Emergency Phone No.  | +44 (0) 1235 239 670, 24/7   |
|            | Language(s) spoken:  | All official European languages.   |

## 2. SECTION 2: HAZARDS IDENTIFICATION

|            |   |  |
|------------|---|--|
| <b>2.1</b> | <b>Classification of the substance or mixture Regulation (EC) No. 1272/2008 (CLP)</b> | Not classified as hazardous for supply/use.      |
| <b>2.2</b> | <b>Label elements</b>   | According to Regulation (EC) No. 1272/2008 (CLP) |
|            | Product name  | Aluminium  |
|            | CAS No.   | 7429-90-5  |
|            | EINECS No.  | 231-072-3  |
|            | Hazard Pictogram(s)   | None assigned                                    |
|            | Signal Word(s)  | None assigned                                    |
|            | Hazard Statement(s)   | None assigned                                    |
|            | Precautionary Statement(s)  | None assigned                                    |
|            | Supplemental information  | Not applicable                                   |
| <b>2.3</b> | <b>Other hazards</b>  | None known                                       |

### 3. SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

| SUBSTANCE          | CAS No.   | EC No.    | REACH Registration No.               | %W/W     |
|--------------------|-----------|-----------|--------------------------------------|----------|
| Aluminium (Note T) | 7429-90-5 | 231-072-3 | 01-2119529243-45-XXXX                | 99 -<100 |
| Iron (Impurity)    | 7439-89-6 | 231-096-4 | Not yet assigned in the supply chain | < 1      |

Note T: This substance may be marketed in a form which does not have the physical hazards as indicated by the classification in the entry in Part 3. If the results of the relevant method or methods in accordance with Part 2 of Annex I of this Regulation show that the specific form of substance marketed does not exhibit this physical property or these physical hazards, the substance shall be classified in accordance with the result or results of this test or these tests. Relevant information, including reference to the relevant test method(s) shall be included in the safety data sheet.

#### 3.2 Mixtures

Not applicable

### 4. SECTION 4: FIRST AID MEASURES



#### 4.1 Description of first aid measures

Self-protection of the first aider

No action should be taken involving personal risk. Use personal protective equipment as required. Ensure adequate ventilation. Avoid all contact. Contaminated clothing should be laundered before reuse.

Inhalation

IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

Skin contact

IF ON SKIN: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention if irritation persists. Consult an ophthalmologist.

Ingestion

IF SWALLOWED: Rinse mouth. Get medical advice/attention if you feel unwell.

#### 4.2 Most important symptoms and effects, both acute and delayed

None anticipated

#### 4.3 Indication of any immediate medical attention and special treatment needed

Unlikely to be required but if necessary treat symptomatically.

Heated product may cause burns. In case of burns immediately cool affected skin as long as possible with cold water.

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

### 5. SECTION 5: FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

Suitable extinguishing media

Extinguish with dry sand or special powder for metal fire .

Unsuitable extinguishing media

Do not use water jet. Direct water jet may spread the fire. Do not use halogenated agents.

#### 5.2 Special hazards arising from the substance or mixture

No fire hazard. Small chips, dust and fines may be ignitable. Buffing and polishing generate finer material than grinding, sawing and cutting. Molten aluminium may explode on contact with water or moisture, and may react violently with rust, certain metal oxides and nitrates (thermite reaction).

#### 5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

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

## 6. SECTION 6: ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures** Ensure suitable personal protection during removal of spillages. Eliminate sources of ignition. Ensure adequate ventilation. Avoid all contact.
- 6.2 Environmental precautions** Avoid release to the environment. Recover or recycle if possible.
- 6.3 Methods and material for containment and cleaning up** Do not attempt to arrest the flow of molten aluminium with shovels, hand tools or footwear. Contain spillages with sand. Allow product to cool/solidify and pick up as a solid. Transfer to a container for disposal. Wash the spillage area with water. Recover or recycle if possible.
- 6.4 Reference to other sections** See Section: 8, 13.

## 7. SECTION 7: HANDLING AND STORAGE

- 7.1 Precautions for safe handling** Use personal protective equipment as required. Ensure adequate ventilation. Avoid all contact. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Storage temperature  
Incompatible materials
- Take care with items that are sharp or heavy. Because of the risk of explosion, aluminum ingots and metal scrap should be thoroughly dried before remelting. Use standard techniques to check metal temperature before handling. Hot aluminum does not present any warning color change.  
Keep container tightly closed. Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources.  
Ambient temperatures.  
Stable under normal conditions  
In the form of particles, may explode when mixed with halogenated acids, halogenated solvents, bromates, iodates or ammonium nitrate. Avoid contact of fine particles in contact with water, flammable gases in hazardous quantities may be released. Molten aluminium may explode on contact with water or moisture, and may react violently with rust, certain metal oxides and nitrates (thermite reaction).  
See Section: 1.2.
- 7.3 Specific end use(s)**

## 8. SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- 8.1 Control parameters**  
**8.1.1 Occupational exposure limits**

United Kingdom

| SUBSTANCE         | CAS No.   | LTEL (8 hr TWA ppm) | LTEL (8 hr TWA mg/m <sup>3</sup> ) | STEL (ppm) | STEL (mg/m <sup>3</sup> ) | Note |
|-------------------|-----------|---------------------|------------------------------------|------------|---------------------------|------|
| Aluminium metal   | 7429-90-5 | -                   | 10                                 | -          | -                         | -    |
| - inhalable dust  |           | -                   | 4                                  | -          | -                         | -    |
| - respirable dust |           | -                   |                                    |            |                           |      |

Source: WEL: Workplace Exposure Limit (UK HSE EH40).

Ireland

| SUBSTANCE       | CAS No.   | Occupational Exposure Limit Value (8-hour reference period) |                   | Occupational Exposure Limit Value (15-minute reference period) |                   | Notes |
|-----------------|-----------|---|-------------------|--|-------------------|-------|
|                 |           | ppm   | mg/m <sup>3</sup> | ppm  | mg/m <sup>3</sup> |       |
| Aluminium metal | 7429-90-5 | -   | 1 (R)             | -  | -                 | -     |

Source: 2021 Code of Practice for Safety, Health and Welfare at Work (Chemical Agents) Regulation (2001 – 2021) and the Safety, Health and Welfare at Work (Carcinogens) Regulations (2001 – 2019); Health and Safety Authority

**Notations:**

R: Respirable Fraction

**8.1.2 Biological Limit Value** Not established

**8.1.3 PNECs and DNELs** Not applicable

**8.2 Exposure controls****8.2.1 Appropriate engineering controls**

Use personal protective equipment as required. Ensure adequate ventilation. Use explosion-proof equipment. Keep away from fire, sparks and heated surfaces. Guarantee that the eye flushing systems and safety showers are located close to the working place.

**8.2.2 Individual protection measures, such as personal protective equipment**

Keep good industrial hygiene. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Remove contaminated clothing and wash it before reuse. Do not eat, drink or smoke at the work place.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

## 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.

Recommended: When molten: Full face shield

## Skin protection



Wear appropriate personal protective equipment.

Recommended: When molten: If splashing is likely, full head and face protection (protective shield and/or safety goggles) should be used. Wear protective clothing for operations with hot material: heat resistant coveralls (with trousers legs over boots and sleeves over cuffs of gloves), heat resistant heavy duty antiskid boots (e. g. leather).

## Respiratory protection



In case of inadequate ventilation wear respiratory protection.

## Thermal hazards

None anticipated

**8.2.3 Environmental exposure controls**

Avoid release to the environment.

**9. SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

|  |                            |
|--|----------------------------|
| Physical state   | Solid- Metal               |
| Colour   | Silver/Grey                |
| Odour  | Odourless                  |
| Melting point/freezing point                             | 660°C                      |
| Boiling point or initial boiling point and boiling range | Not applicable             |
| Flammability   | Non-flammable              |
| Lower and upper explosion limit                          | Not applicable - Solid     |
| Flash point  | Not applicable - Solid     |
| Auto-ignition temperature                                | Not applicable - Solid     |
| Decomposition temperature                                | Not established            |
| pH   | Not applicable - Solid     |
| Kinematic viscosity                                      | Not applicable - Solid     |
| Solubility   | Insoluble (in water)       |
| Partition coefficient: n-octanol/water (log value)       | Not applicable - Inorganic |
| Vapour pressure  | Not applicable - Solid     |
| Density and/or relative density                          | Not applicable             |
| Relative vapour density                                  | Not applicable - Solid     |
| Particle characteristics                                 | Not available              |

**9.2 Other information**

None known

**10. SECTION 10: STABILITY AND REACTIVITY**

|             |   |   |
|-------------|---|---|
| <b>10.1</b> | <b>Reactivity</b>                         | Stable under normal conditions  |
| <b>10.2</b> | <b>Chemical stability</b>                 | Stable under normal conditions  |
| <b>10.3</b> | <b>Possibility of hazardous reactions</b> | Combustible Dust. Dust can form an explosive mixture with air.  |
| <b>10.4</b> | <b>Conditions to avoid</b>                | Stable under normal conditions  |
| <b>10.5</b> | <b>Incompatible materials</b>             | Stable under normal conditions<br>In the form of particles, may explode when mixed with halogenated acids, halogenated solvents, bromates, iodates or ammonium nitrate. Avoid contact of fine particles in contact with water, flammable gases in hazardous quantities may be released. Molten aluminium may explode on contact with water or moisture, and may react violently with rust, certain metal oxides and nitrates (thermite reaction). |
| <b>10.6</b> | <b>Hazardous decomposition products</b>   | None known  |

**11. SECTION 11: TOXICOLOGICAL INFORMATION**

|               |   |  |
|---------------|---|--|
| <b>11.1</b>   | <b>Information on hazard classes as defined in Regulation (EC) No 1272/2008</b> |  |
|               | <b>Acute toxicity - Ingestion</b>   | Based upon the available data, the classification criteria are not met.<br>Result: LD50 (oral) mg/kg: > 2000 (OECD 401)<br>Source: ECHA registration dossier   |
|               | <b>Acute toxicity - inhalation</b>  | Based upon the available data, the classification criteria are not met.<br>Result: No mortality observed. No effects observed at highest dose.<br>Source: ECHA registration dossier  |
|               | <b>Acute toxicity - Skin contact</b>  | Based upon the available data, the classification criteria are not met.<br>No data available   |
|               | <b>Skin corrosion/irritation</b>  | Based upon the available data, the classification criteria are not met.<br>Result: Not irritating to skin (Albino rabbit; OECD 404)<br>Source: ECHA registration dossier   |
|               | <b>Serious eye damage/irritation</b>  | Based upon the available data, the classification criteria are not met.<br>Result: Not irritating to eyes (Albino rabbit)<br>Source: ECHA registration dossier   |
|               | <b>Respiratory or skin sensitisation</b>  | Based upon the available data, the classification criteria are not met.<br>Skin sensitisation:<br>Result: Not sensitising. (Guinea pig; OECD 406)<br>Respiratory sensitization:<br>Result: Not sensitising. (Mouse)<br>Source: ECHA registration dossier |
|               | <b>Germ cell mutagenicity</b>   | Based upon the available data, the classification criteria are not met.<br>Source: ECHA Registration Endpoint summary  |
|               | <b>Carcinogenicity</b>  | Based upon the available data, the classification criteria are not met.<br>Source: ECHA Registration Endpoint summary  |
|               | <b>Reproductive toxicity</b>  | Based upon the available data, the classification criteria are not met.<br>Result: Non-toxic. (Rat; OECD 422)<br>Source: ECHA Registration Endpoint summary  |
|               | <b>STOT - single exposure</b>   | Based upon the available data, the classification criteria are not met.<br>Source: ECHA Registration Endpoint summary  |
|               | <b>STOT - repeated exposure</b>   | Based upon the available data, the classification criteria are not met.<br>NOAEL: 30 mg/kg bw/day (Rat; oral)<br>LOAEC: 50 mg/m <sup>3</sup> (Rat; inhalation)<br>Source: ECHA Registration Endpoint summary   |
|               | <b>Aspiration hazard</b>  | Based upon the available data, the classification criteria are not met.<br>The product is: Solid   |
| <b>11.2</b>   | <b>Information on other hazards</b>   |  |
| <b>11.2.1</b> | <b>Endocrine disrupting properties</b>  | This substance does not have endocrine disrupting properties with respect to humans.   |
| <b>11.2.2</b> | <b>Other information</b>  | None known   |

**12. SECTION 12: ECOLOGICAL INFORMATION**

|      |   |  |
|------|---|--|
| 12.1 | <b>Toxicity</b>                           | Based upon the available data, the classification criteria are not met.<br>By analogy with similar materials:<br>LC50 (Fathead minnow) mg/l: 35 (96h)<br>NOEC (Danio rerio (zebrafish)) mg/l: 0.5483 (33 d)<br>Source: ECHA registration dossier |
| 12.2 | <b>Persistence and degradability</b>      | Testing can be waived because the substance is an inorganic compound   |
| 12.3 | <b>Bioaccumulative potential</b>          | No data available  |
| 12.4 | <b>Mobility in soil</b>                   | Not mobile under normal environmental conditions. May be leached from the ground at low pH (<5.5) or high pH (>8.5)  |
| 12.5 | <b>Results of PBT and vPvB assessment</b> | Not classified as PBT or vPvB. None of the substances in this product fulfil the criteria for being regarded as a PBT or vPvB substance.   |
| 12.6 | <b>Endocrine disrupting properties</b>    | This substance does not have endocrine disrupting properties with respect to non-target organisms.   |
| 12.7 | <b>Other adverse effects</b>              | None known   |

**13. SECTION 13: DISPOSAL CONSIDERATIONS**

|      |                                |   |
|------|--------------------------------|---|
| 13.1 | <b>Waste treatment methods</b> | Disposal should be in accordance with local, state or national legislation. Recover or recycle if possible. |
|------|--------------------------------|---|

**14. SECTION 14: TRANSPORT INFORMATION**

Not classified according to the United Nations 'Recommendations on the Transport of Dangerous Goods'.

|      | <b>ADR/RID</b>   | <b>ADN</b>  | <b>IMDG</b>   | <b>IATA/ICAO</b>  |
|------|--|---|---|---|
| 14.1 | <b>UN number or ID number</b>                                  | Not assigned  | Not assigned  | Not assigned  |
| 14.2 | <b>UN proper shipping name</b>                                 | Not assigned  | Not assigned  | Not assigned  |
| 14.3 | <b>Transport hazard class(es)</b>                              | Not assigned  | Not assigned  | Not assigned  |
| 14.4 | <b>Packing group</b>   | Not assigned  | Not assigned  | Not assigned  |
| 14.5 | <b>Environmental hazards</b>                                   | Not classified as Environmentally hazardous substance | Not classified as Environmentally hazardous substance | Not classified as a Marine Pollutant. Environmentally hazardous substance |
| 14.6 | <b>Special precautions for user</b>                            | See Section: 2  |   |   |
| 14.7 | <b>Maritime transport in bulk according to IMO instruments</b> | No information available.                             | No information available.                             | No information available.   |
| 14.8 | <b>Additional information</b>                                  | None known  |   |   |

**15. SECTION 15: REGULATORY INFORMATION**

|        |   |   |
|--------|---|---|
| 15.1   | <b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>     |   |
| 15.1.1 | <b>EU regulations</b><br>Annex XVII (Restrictions)<br><br>Explosives precursors Regulation (EU) 2019/1148 | Entry 40: Restricted in aerosol dispensers intended for supply to the general public for entertainment and decorative purposes.<br>Annex II; Notes- Aluminium, powders. With a particle size less than 200 µm. As a substance or in mixtures containing 70% w/w or more of aluminium. |
| 15.1.2 | <b>National regulations</b><br>Germany  | Water hazard class: nwg (Self classification)   |
| 15.2   | <b>Chemical Safety Assessment</b>   | A chemical safety assessment is not required under REACH.   |

**16. SECTION 16: OTHER INFORMATION**

The following sections contain revisions or new statements: Not applicable - V1.0

**References:**

Existing ECHA registration(s) for Aluminium (CAS No. 7429-90-5).

EU Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878

## Legend

|       |  |
|-------|--|
| ADR   | ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road           |
| ADN   | ADN: European Agreement on the International Transport of Dangerous Goods by Inland Waterways      |
| CLP   | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| DNEL  | Derived no effect level  |
| IATA  | IATA: International Air Transport Association  |
| ICAO  | ICAO: International Civil Aviation Organization  |
| IMDG  | IMDG: International Maritime Dangerous Goods   |
| LD50  | Lethal dose at which 50% of the population is killed   |
| LC50  | Lethal concentration at which 50% of the population is killed                                      |
| LTEL  | Long term exposure limit   |
| NOEC  | No Observed Effect Concentration   |
| OECD  | Organisation for Economic Cooperation and Development  |
| PBT   | PBT: Persistent, Bioaccumulative and Toxic   |
| PNEC  | Predicted No Effect Concentration  |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals                               |
| RID   | RID: Regulations concerning the international railway transport of dangerous goods                 |
| STEL  | Short term exposure limit  |
| vPvB  | vPvB: very Persistent and very Bioaccumulative   |

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

For more information on the handling and storing of aluminum, consult the following documents published by the Aluminum Association, 1525 Wilson Blvd, Suite 600, Arlington, VA 22209 ([www.aluminium.org](http://www.aluminium.org)):

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

## Disclaimers

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## Annex to the extended Safety Data Sheet (eSDS)

Exposure scenarios for substances in this preparation are not available.