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

1.1 Product identifier

Product name: A15, A20, A60
Substance: ATOMIZED ALUMINIUM POWDER
Einecs no: 231-072-3
Cas-no: 7429-90-5
REACH registration no: 01-2119529243-45-0051

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

Identified uses: Chemical reactant/physical function, coatings, inks, colorants, metallurgical uses, powder metallurgy, tools manufacturing, refractory, powder applications, building and construction products, consumers articles, kitchen utensils, packaging-food and beverages, packaging - non food and beverages.

1.3 Details of the supplier of the safety data sheet.

Manufacturer: CARLFORS BRUK AB
BOX 44
SE-561 21 HUSKVARNA SWEDEN
Tel: +46 36389500
E-mail: cb@carlfors.se

1.4 Emergency telephone number.

Emergency number: +46 8337043

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

Classification according to: CLP/GHS EC No 1272/2008.
Not classified.
Tests were done according to Transport of dangerous goods, Manual of tests and criteria.
Additional Information: See section 16.

2.2 Label elements:

Label elements according to Regulation (EC) No 1272/2008 (CLP).
Hazard pictograms: -
SAFETY DATA SHEET
generated by 1907/2006/EC, article 31

A15, A20, A60

Signal word: -

Hazard Statements:
-

Precautionary statements:
-

2.3 Other hazards:
-

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Cas-no:</th>
<th>Einecs no:</th>
<th>REACH registration no:</th>
<th>Contents %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atomized aluminium powder</td>
<td>7429-90-5</td>
<td>231-072-3</td>
<td>01-2119529243-45-0051</td>
<td>100</td>
</tr>
</tbody>
</table>

GHS/CLP-classification:*  

3.2 Mixtures

* See section 16.

SECTION 4. FIRST-AID MEASURES

4.1 Description of first aid measures:

General information: No special measures required.

Inhalation: Fresh air.

Skin contact: Wash with soap and water.

Eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.

Ingestion: Rinse the mouth. Call doctor if a large amount have been swallowed.

4.2 Most important symptoms and effects, both acute and delayed: No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed: No further relevant information available.

SECTION 5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing agents: Extinguish with sand and/or mineral wool.

Unsuitable extinguishing agents: Do NOT use water, foam or carbon dioxide.
5.2 **Special hazards arising from the substance or mixture:** Contact with water liberates extremely flammable gas (hydrogen).

5.3 **Advice for firefighters:** No special measures required.

---

### SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 **Personal precautions, protective equipment and emergency procedures:**
Prevent formation of dust and keep away from ignition sources. Wear protective equipment.

6.2 **Environmental precautions:**
Do not allow product to reach sewage system or water resources.

6.3 **Methods and material for containment and cleaning up:**
Sweep up and put in a dry receptacle. Dispose of waste material in accordance with local, state or federal regulations. Do not flush with water or aqueous cleaning agents. Do not use a vacuum cleaner.

6.4 **Reference to other sections:**
See section 7 for safe handling. See section 8 for protective equipment. See section 13 for waste treatment methods.

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### SECTION 7. HANDLING AND STORAGE

7.1 **Precautions for safe handling:**
Prevent formation of dust. Prevent sparks arising from static electricity. No smoking, fire, sparks or welding. Use explosion proof electric equipment. Contact with water liberates extremely flammable gases.

Wash hands during breaks and at the end of the work. Keep away from foodstuffs, beverages and feed. Do not eat, drink, smoke or sniff while working. Water for eye flushing to be available.

7.2 **Conditions for safe storage, including any incompatibilities:**
Keep container tightly closed, cool and dry and protected from direct sunlight. Protect from humidity and keep away from water. Keep away from sources of ignition-No smoking. Do not store together with alkalis, oxidizing and acidic materials.

7.3 **Specific end use(s):**
See section 1, identified uses.

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### SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 **Control parameters:**

DNEL long-term, worker, for aluminium metal powder/dust is 3.72 mg aluminium/m3.

PNEC-values from 46-17800 µg/l depending on water chemistry.

**Occupational exposure limits (limit value - eight hours):**
8.2 Exposure controls:

**General protective and hygienic measures:** Wash hands during breaks and at the end of the work. Keep away from foodstuffs, beverages and feed. Do not eat, drink, smoke or sniff while working.

**Personal protective equipment:**

**Breathing equipment:** Use suitable breathing protection if workplace concentration requires, filter P1. The European standards EN 136, EN 140, EN 143, EN 149 and EN 405 (Respiratory protective devices) inform about requirements, testing, marking.

**Protection of hands:** Use anti-static and fire resistant protective gloves.

**Eye protection:** Use protective goggles if necessary.

**Skin protection:** Use anti-static and fire resistant protective clothing, EN 531, EN 533, EN 1149-1. Use anti-static shoes.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1 Information on basic physical and chemical properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Spherical - needle-shaped grey granules.</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>NA</td>
</tr>
<tr>
<td>pH</td>
<td>NA</td>
</tr>
<tr>
<td>Melting point/freezing point (°C)</td>
<td>660</td>
</tr>
<tr>
<td>Initial boiling point/boiling range (°C)</td>
<td>2467</td>
</tr>
<tr>
<td>Flash point (°C)</td>
<td>NA</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>NA</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

according to 1907/2006/EC, article 31

A15, A20, A60

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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not classified as flammable solid.</td>
</tr>
<tr>
<td>Upper/lower flammability/explosive limits</td>
<td>&gt; 30 g/m3</td>
</tr>
<tr>
<td>Vapour pressure (kPa)</td>
<td>NA</td>
</tr>
<tr>
<td>Vapour density (air=1)</td>
<td>NA</td>
</tr>
<tr>
<td>Density (g/cm³)</td>
<td>0,8-1,2 (density = volume weight)</td>
</tr>
<tr>
<td>Solubility in water (weight-%)</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Partition coefficient, log Pow</td>
<td>No data.</td>
</tr>
<tr>
<td>Auto-ignition temperature (°C)</td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td>Decomposition temperature (°C)</td>
<td>NA</td>
</tr>
<tr>
<td>Viscosity</td>
<td>NA</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>The product is not hazardous in regard of explosions, however, may form explosive dust/air mixtures.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No</td>
</tr>
</tbody>
</table>

**SECTION 10. STABILITY AND REACTIVITY**

10.1 Reactivity:
Not classified as flammable solid.

10.2 Chemical Stability:
The product is stable if used and stored according to the specifications.

10.3 Possibility of hazardous reactions:
Contact with water may release flammable gases (hydrogen). Reacts with acids and alkalis releasing hydrogen.

10.4 Conditions to avoid:
Avoid dust clouds, they may form explosible dust-air-mixture. Risk of dust explosion if enriched with fine dust in presence of air.

10.5 Incompatible material:
Reacts with alkalis, acids, water and oxidizing agents.

10.6 Hazardous decomposition products:
No dangerous decomposition products known.

**SECTION 11. TOXICOLOGICAL INFORMATION**

11.1 Information on toxicological effects:
Oral LD50 (rat) > 2000 mg/kg bw.
Inhalation LC50 (rat) > 888 mg/m³
Inhalation NOAEC (rat) = 10 mg/m³

Inhalation: No effects are known.
Skin contact: No irritant effect.
Eye contact: Causes smart.
Ingestion: No effects known.

Aluminum powder is not carcinogenic, mutagenic or toxic to reproduction.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity:
Aluminium powder is not classified as dangerous for the environment.

12.2 Persistence and degradability:
No further relevant information available.

12.3 Bioaccumulative potential:
No further relevant information available.

12.4 Mobility in soil:
No further relevant information available. See accidental release measures under section 6. Aluminium powder is a solid material and will stay at the source of release. Aluminium is not classified as ectotoxic.

12.5 Results of PBT and vPvB assessments:
NA

12.6 Other adverse affects:
No further relevant information available.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:
Dispose of waste material in accordance with local, state or federal regulations. Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
European waste catalogue: 12 01 04 – Non-ferrous metal dust and particles.
Empty contaminated packaging thoroughly. They can be recycled after thorough and proper cleaning.

SECTION 14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>ADR/RID</th>
<th>IATA</th>
<th>IMDG</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 UN No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.3 Transport hazard class(es)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.4 Packing group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EmS No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunnel category</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Not classified as dangerous goods.

14.2 UN proper shipping name:
- 

14.5 Environmental hazards: No
14.6 Special precautions for user:

Handling and storage according to section 7.

14.7 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code:

NA

SECTION 15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:


15.2 Chemical safety assessment: Yes

SECTION 16. OTHER INFORMATION

List of abbreviations
ADR Accord Européen relatif au transport international des marchandises dangereuses par Route.
CAS No. Chemical abstracts service number.
CLP Regulation on Classification, Labelling and packaging of Substances and Mixtures.
CSR Chemical safety report
DNEL Derived NO-Effect Level.
EINECS European Inventory of Existing Commercial Substances.
EWC European Waste Catalogue.
IATA International Air Transport Association
ICAO International Civil Aviation Organization
IMDG International Maritime Dangerous Goods
IMO International Maritime Organization
LC Lethal Concentration
LD Lethal Dose
Marpol International Convention for the Prevention of Pollution from ships.
NOAI No observable adverse effect level.
NOEL/NOEC No observed – effect level/concentration.
PBT Persistent, biaccumulative, toxic.
PNEC Predicted No-Effect Concentration.
REACH Registration, Evaluation, Authorisation, and restriction of Chemicals.
RID Règlement concernant le transport international ferroviaire de marchandises dangereuses.
TWA Time-weighted average.
vPvB Very persistent, very biaccumulative

Revision has been done under following section 4, 6, 7 and, 8. Take the place of 2017-04-03.