

## SAFETY DATA SHEET

according to 1907/2006/EC, article 31

TA 12F, TA 15F, TA 17F, TA 19F, TA 23F, TA 24F, TA 25F, TA 17FH,  
TA 19FH



Revision date: 2021-01-14

Version: 13, revision 12

Replace: 2019-06-03

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

#### 1.1 Product identifier

Product name: TA 12F, TA 15F, TA 17F, TA 19F, TA 23F, TA 24F, TA 25F, TA 17FH, TA 19FH  
Substance: ALUMINIUM POWDER  
Einesc 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: Pigment, see exposure scenario in annex.

#### 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.

Flam. Sol. 1. H228

Note T regulation (EC) No 1272/2008: This substance may be marketed in a form which does not have the physical hazards as indicated in the entry in part 3. 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: GHS02

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**Signal word:** Danger

### Hazard Statements:

H228 Flammable solid

### Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof electrical/ventilation/lighting/ equipment

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P370 + P378 In case of fire: Use sand, mineral wool or special powder for metal fire, never use water, halones, foam or carbon dioxide.

P402 + P404 Store in a dry place. Store in a closed container.

### 2.3 Other hazards:

May form explosible dust-air mixture. Aluminium powder is not dangerous for the environment.

## SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1 Substances

Chemical name	Cas-no:	Einecs no:	REACH registration no:	Contents %
Aluminium powder (stabilized)	7429-90-5	231-072-3	01-2119529243-45-0051	> 98
<b>GHS/CLP-classification:*</b>	Flam. Sol. 1, H228. refer to note T in EC 1272/2008. Test method in Transport of dangerous goods, Manual of tests and criteria section 33.4, has been used.			

### 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.

**4.2 Most important symptoms and effects, both acute and delayed:** High amounts of aluminium dust can cause coughing and irritation. Additional information under section 11.

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**4.3 Indication of any immediate medical attention and special treatment needed:** No special measures required.

### SECTION 5. FIREFIGHTING MEASURES

#### 5.1 Extinguishing media:

**Suitable extinguishing agents:** Extinguish with dry sand and/or mineral wool, or special powder for metal fires.

**Unsuitable extinguishing agents:** Do NOT use water, foam or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture:** Prevent formation of dust. 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 use a vacuum cleaner. Do not flush with water or aqueous cleaning agents.

#### 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.

### SECTION 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling:

Prevent formation of dust. Dust in combination with air can form an explosive mixture. Any deposit of dust which cannot be avoided must be removed regularly. Prevent sparks arising from static electricity. No smoking, fire, sparks or welding. Use explosion proof electric equipment. Water for eye flushing to be available. 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.

See also exposure scenarios after section 16.

### SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### 8.1 Control parameters:

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DNEL long-term, worker, for aluminium metal powder/dust is 3,72 mg aluminium/m<sup>3</sup>.

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

### Occupational exposure limits ( limit value - eight hours):

	Aluminium powder (stabilized)
Austria	10 mg/m <sup>3</sup>
Canada - Québec	10 mg/m <sup>3</sup>
Denmark	5 mg/m <sup>3</sup> (inhalable aerosol) 2 mg/m <sup>3</sup> (respirable)
France	10 mg/m <sup>3</sup> (inhalable aerosol) 5 mg/m <sup>3</sup> (respirable aerosol)
Germany	4 mg/m <sup>3</sup> (inhalable aerosol) 1,5 mg/m <sup>3</sup> (respirable aerosol)
Hungary	6 mg/m <sup>3</sup> (respirable aerosol)
Spain	5 mg/m <sup>3</sup> (respirable aerosol) 10 mg/m <sup>3</sup> (inhalable aerosol)
United Kingdom	4 mg/m <sup>3</sup> (respirable aerosol) 10 mg/m <sup>3</sup> (inhalable aerosol)
USA	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable dust)

### 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 P2. 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:

Physical state	Powder (fine flakes)
Colour	Grey
Odour	Odorless
Melting point/freezing point (°C)	660
Initial boiling point/boiling range (°C)	2467
Flammability (solid, gas)	Flammable solid.

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<b>Lower and upper explosion limit</b>	> 30 g/m <sup>3</sup>
<b>pH</b>	NA
<b>Solubility in water (weight-%)</b>	Insoluble
<b>Partition coefficient, log Pow (log value)</b>	No data
<b>Density (g/cm<sup>3</sup>)</b>	0,3-0,6 (Density=volume weight)
<b>Particle characteristics</b>	Average diameter varies between 9-100 micrometers. Measuring instrument Malvern. See technical data sheet for further information.
<b>9.2 Other information:</b>	The product is classified as a flammable solid. See section 14 for more information.

### SECTION 10. STABILITY AND REACTIVITY

#### 10.1 Reactivity:

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 hazard classes as defined in Regulation (EC) No 1272/2008:

Oral LD50 (rat) > 2000 mg/kg bw.

Inhalation LC50 (rat) > 888 mg/m<sup>3</sup>

Inhalation NOAEC (rat) = 10 mg/m<sup>3</sup>

Inhalation: High amounts of aluminium dust can cause coughing and irritation.

Skin contact: No irritant effect.

Eye contact: Causes smart.

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Ingestion: No effects known.

Aluminium powder:

Skin corrosion/irritation. Based on available data the classification criteria are not met.

Serious eye damage/irritation: Based on available data the classification criteria are not met.

Respiratory or skin sensitization: Based on available data the classification criteria are not met.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction): Based on available data the classification criteria are not met.

STOT – single and repeated exposure: Based on available data the classification criteria are not met.

Aspiration hazard: Based on available data the classification criteria are not met.

### 11.2 Information on other hazards:

No further information.

## 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 Endocrine disrupting properties:

Aluminium powder is non-endocrine disrupting.

### 12.7 Other adverse effects.

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

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	ADR/RID	IATA	IMDG
14.1 UN No	1309	1309	1309
14.3 Transport hazard class(es)	4.1	4.1	4.1
14.4 Packing group	II	II	II
EmS No			F-G, S-G
Tunnel category	E		

### 14.2 UN proper shipping name:

Aluminium powder, coated

### 14.5 Environmental hazards: No

### 14.6 Special precautions for user:

Handling and storage according to section 7.

### 14.7 Maritime transport in bulk according to IMO instruments:

NA

## SECTION 15. REGULATORY INFORMATION

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

Reference: EC no. 1907/2006, EC no. 1272/2008, (EU) 2020/878, IFA-databases on hazardous substances (GESTIS), CSR for aluminium.

### 15.2 Chemical safety assessment: Yes

#### Regulated explosive precursors:

"This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point. Please see [https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/crisis-and-terrorism/explosives/explosives-precursors/docs/list\\_of\\_competent\\_authorities\\_and\\_national\\_contact\\_points\\_en.pdf](https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/crisis-and-terrorism/explosives/explosives-precursors/docs/list_of_competent_authorities_and_national_contact_points_en.pdf)."

## SECTION 16. OTHER INFORMATION

H228 Flammable solid.

Flam. Sol. 1 = Flammable solid, category 1

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

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IMO International Maritime Organization

LC Lethal Concentration

LD Lethal Dose

Marpol International Convention for the Prevention of Pollution from ships.

NOAL 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

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Revision has been done under following sections 2, 7, 9, 11, 12 and 15. Take the place of 2019-06-03.



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### Annex: Exposure scenario

#### Short title of the exposure scenario.

#### Sector of Use (SU)

SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU7 Printing and reproduction of recorded media

SU11 Manufacture of rubber products

SU13 Manufacture of other non-metallic mineral products, e.g. plasters, cement

SU3 Ind

#### Process category (PROC)

PROC10 Roller application or brushing

PROC13 Treatment of articles by dipping and pouring

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment c

#### Product category (PC)

PC9a Coatings and paints, thinners, paint removers

PC9b Fillers, putties, plasters, modelling clay

PC14 Metal surface treatment products

PC15 Non-metal-surface treatment products

PC32 Polymer preparations and compounds

PC34 Textile dyes, and impregna

#### Article category (AC)

AC8 Paper articles

AC13 Plastic articles

AC5 Fabrics, textiles and apparel

AC1 Vehicles

AC4 Stone, plaster, cement, glass and ceramic articles

#### Environmental release category (ERC)

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

ERC1 Manufacture of the substance

ERC8c Widespread use leading to inclusion into/onto article (indoor)

ERC8b Widespread use of reactive processing aid (no i

#### Conditions of use

Duration and frequency: 5 workdays/week.

Worker: Permanent use with exposure up to 8 hrs every work day of the week.

#### Environment

Avoid contact to soil and / or ground water during application.

The product may not be released into the environment without control.

#### Physical state

Powder

Solid.

#### Used amount per time or activity

1000 tons per year

#### Other operational conditions.

Observe the normal safety regulations when handling chemicals

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### Other operational conditions affecting worker exposure

Keep container tightly closed and dry.

Do not breathe dust.

Take precautionary measures against static discharge.

Keep away from sources of ignition - No smoking.

### Other operational conditions affecting environmental exposure.

Observe section 6 of the Safety Data Sheet (Accidental release measures).

### Other operational conditions affecting consumer exposure.

No special measures required.

### Risk management measures.

Worker. Organisational protective measures

Work clothes must not consist of textiles that exhibit dangerous melting behaviour in case of fire.

Keep away from food, beverages and animal feed.

Keep good industrial hygiene.

### Technical protective measures.

Effective cleaning. Avoid dust formation.

Take measures so that static electricity does not occur. Use explosion-proof equipment.

Store cool and dry in tightly closed containers.

### Personal protective measures / Protective equipment

Use appropriate respiratory protection if the workplace contents require this. Filter P2. Avoid inhalation of dust / fume / mist.

Work clothes must be stored separately from private clothing. Observe good order and cleanliness.

Wash hands and face thoro

### Measures for consumer protection.

Ensure adequate labelling.

### Environmental protection measures.

Water: Prevent discharge into drains and watercourses.

Soil: Collect any spillage according to section 6 of the safety data sheet.

### Waste type

Solid product residues

Partially emptied and uncleaned packaging

### Exposure estimation

#### Worker (dermal)

The highest dermal exposure to be expected is 0.069 mg / kg / day.

The exposure estimation was carried out in accordance with ECETOC TRA.

#### Worker (inhalation)

The highest inhalative exposure to be expected is 0.111 ppm.

The exposure estimation was carried out in accordance with ECETOC TRA.

#### Consumer

Not relevant for this Exposure Scenario.

### Guidance for downstream users.

Whether the downstream user acts within the scope of the Exposure Scenario can be verified based on the information in sections 1 to 8.