

SAFETY DATA SHEET

according to 1907/2006/EC, article 31

TA 3700G, TA 4000G, TA 5000G, TA 6000G, TA 7000G



Revision date: 2019-06-03

Version: 12, revision 11

Replace: 2016-05-27

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

1.1 Product identifier

Product name: TA 3700G, TA 4000G, TA 5000G, TA 6000G, TA 7000G

Substance: 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: Pigment, see exposure scenarios 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:

Dust explosion risk.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical name | Cas-no: | Einecs no: | REACH registration no: | Contents % |
|---------------------------------|--------------------|------------|------------------------|------------|
| Aluminium powder | 7429-90-5 | 231-072-3 | 01-2119529243-45-0051 | > 98 |
| GHS/CLP-classification:* | Flam. Sol. 1, H228 | | | |

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.

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

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SECTION 5. FIRE-FIGHTING 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.

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.

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Occupational exposure limits (limit value - eight hours):

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

| | |
|--|---------------------------|
| Appearance | Powder (fine flakes) gray |
| Odour | Odourless |
| Odour threshold | NA |
| pH | NA |
| Melting point/freezing point (°C) | 660 |
| Initial boiling point/boiling range (°C) | 2467 |
| Flash point (°C) | NA |

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| | |
|---|--|
| Evaporation rate | NA |
| Flammability (solid, gas) | Flammable solid. |
| Upper/lower flammability/explosive limits | > 30 g/m ³ |
| Vapour pressure (kPa) | NA |
| Vapour density (air=1) | NA |
| Density (g/cm ³) | 0,3-0,6 (Density=volume weight) |
| Solubility in water (weight-%) | insoluble |
| Partition coefficient, log Pow | No data |
| Auto-ignition temperature (°C) | Product is not selfigniting. |
| Decomposition temperature (°C) | NA |
| Viscosity | NA |
| Explosive properties | The product is not hazardous in regard of explosions, however, may form explosive dust/air mixtures. |
| Oxidising properties | No |
| 9.2 Other information: | No |

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

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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

| | 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

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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:

Reference: EC no. 1907/2006, EC no. 1272/2008/EC, EC no. 453/2010/EC, (EU) 2015/830, IFA-databases on hazardous substances (GESTIS), CSR for aluminium.

15.2 Chemical safety assessment: Yes

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

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

Revision has been done under following sections 4, 6, 7 and 8. Take the place of 2016-05-27.

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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 Industrial uses: Uses of substances as such or in preparations at industrial sites

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 condition
PROC5 Mixing or blending in batch processes
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC11 Non industrial spraying

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 impregnating products
PC18 Ink and toners
PC11 Explosives

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 inclusion into or onto article, indoor)
ERC2 Formulation into mixture

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.

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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

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 P1. Avoid inhalation of dust / fume / mist.

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

Wash hands and face thoroughly before breaks and shower at the end of the day.

Do not eat, drink, smoke and sniff when handling. Avoid contact with food, beverages and feed.

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.

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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.