

SAFETY DATA SHEET

according to 1907/2006/EC, article 31

**TPD 181 T, TPD 182 T, TPD 185 T, TPD 188 T, TPD 189 T, TPD 190 T,
TPD 195 T, TPDS 190 T**



Revision date: 2017-03-29

Version: 2, revision 1

Replace: 2016-01-28

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

1.1 Product identifier

Product name: TPD 181 T, TPD 182 T, TPD 185 T, TPD 188 T, TPD 189 T, TPD 190 T, TPD 195 T, TPDS 190 T

Substance: ALUMINIUM PASTE IN DIETHYLENE GLYCOL

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

Identified uses: Aluminium powder: 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.

Diethylene glycol: Industrial use.

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.

Acute tox 4. H302

STOT RE 2. H373

Note T regulation (EC) No 1272/2008: This product 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 dection 16.

2.2 Label elements:

Label elements according to Regulation (EC) No 1272/2008 (CLP).

Hazard pictograms: GHS07, GHS08

SAFETY DATA SHEET

according to 1907/2006/EC, article 31

TPD 181 T, TPD 182 T, TPD 185 T, TPD 188 T, TPD 189 T, TPD 190 T,
TPD 195 T, TPDS 190 T



Revision date: 2017-03-29
Version: 2, revision 1
Replace: 2016-01-28



Signal word: Warning

Hazard Statements:

H302 Harmful if swallowed.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

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

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

P301+312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P330 Rinse mouth.

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:

No additional information available.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures

Chemical name	Cas-no:	Einecs no:	REACH registration no:	Contents %
Aluminium powder	7429-90-5	231-072-3	01-2119529243-45-0051	68-72
GHS/CLP-classification:*	Flam. Sol. 1, H228			

Chemical name	Cas-no:	Einecs no:	REACH registration no:	Contents %
Diethylene glycol	111-46-6	203-872-2	01-2119457857-21-xxxx	27-32
GHS/CLP-classification:*	Acute tox 4. H302, STOT RE 2. H373.			

* See section 16.

SECTION 4. FIRST-AID MEASURES

4.1 Description of first aid measures:

General information: No additional information available.

Inhalation: Fresh air and rest.

SAFETY DATA SHEET

according to 1907/2006/EC, article 31

TPD 181 T, TPD 182 T, TPD 185 T, TPD 188 T, TPD 189 T, TPD 190 T,
TPD 195 T, TPDS 190 T



Revision date: 2017-03-29

Version: 2, revision 1

Replace: 2016-01-28

Skin contact: Take of contaminated clothes, wash skin with water and soap.

Eye contact: Remove any contact lenses. Rinse immediately with plenty of water, also under the eyelids. Call doctor if irritation persists.

Ingestion: If swallowed, seek medical attention. Rinse mouth and drink water.

4.2 Most important symptoms and effects, both acute and delayed: See section 11.

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 fire with sand and mineral wool. Can also be extinguished with foam or carbon dioxide during the first minutes when the solvent in the aluminium paste is burning. After a short time, when the solvent has burned, it is a metal fire, and then only use sand, mineral wool or special powder for metal fires.

Unsuitable extinguishing agents: Do not use water.

5.2 Special hazards arising from the substance or mixture: No further relevant information available.

5.3 Advice for firefighters: No special measures required.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Eliminate fire and explosion risk by keeping ignition sources out of the area.

6.2 Environmental precautions:

Do not allow product to reach sewage system or water resources. Inform authorities in case product reaches water or sewage system.

6.3 Methods and material for containment and cleaning up:

Collect mechanically. Absorb with liquid binding material (sand, diatomite, universal binders, sawdust) and put in a dry receptacle. Do not flush with water or aqueous cleaning agents. Dispose of waste material in accordance with local, state or federal regulations.

6.4 Reference to other sections:

See section 8 for protective equipment. See section 13 for waste treatment methods.

SECTION 7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

Mechanical ventilation and local exhaust can be needed. Keep drums closed as far as possible. Avoid direct contact with aluminium paste. No smoking, fire, sparks or welding. Prevent sparks arising from static electricity.

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:

Store in a cool, dry place in tightly closed containers. Keep away from sources of ignition-No smoking.

7.3 Specific end use(s):

See section 1, identified uses.

SAFETY DATA SHEET

according to 1907/2006/EC, article 31

TPD 181 T, TPD 182 T, TPD 185 T, TPD 188 T, TPD 189 T, TPD 190 T,
TPD 195 T, TPDS 190 T



Revision date: 2017-03-29

Version: 2, revision 1

Replace: 2016-01-28

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.

DNEL diethylene glycol, worker, long-term systemic effects: Inhalation 44 mg/m³. Dermal 43 mg/kg bw/day.

PNEC fresh water 10 mg/l.

Occupational exposure limits (limit value - eight hours):

	Aluminium powder	Diethylene glycol
Austria	10 mg/m ³	10 ppm
Canada - Québec	10 mg/m ³	
Denmark	5 mg/m ³ (inhalable aerosol)	2,5 ppm
	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)	10 ppm
	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)	23 ppm
	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: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. Mask with filter A can be used.

Protection of hands: Wear suitable gloves (EN 374), for example nitrile rubber. Change protective gloves regularly.

Eye protection: Face shield or protective goggles if there is a risk of splashing.

Skin protection: Protective clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

* Refer to diethylene glycol

9.1 Information on basic physical and chemical properties:

Appearance

Paste , gray

SAFETY DATA SHEET

according to 1907/2006/EC, article 31

TPD 181 T, TPD 182 T, TPD 185 T, TPD 188 T, TPD 189 T, TPD 190 T,
TPD 195 T, TPDS 190 T



Revision date: 2017-03-29

Version: 2, revision 1

Replace: 2016-01-28

Odour	* Slight odor.
Odour threshold	* No information
pH	NA
Melting point/freezing point (°C)	* -6,5
Initial boiling point/boiling range (°C)	* 242-252
Flash point (°C)	* > 135
Evaporation rate	* No information
Flammability (solid, gas)	Not classified as flammable solid.
Upper/lower flammability/explosive limits	* 0,7-22 %
Vapour pressure (kPa)	* 0,08 (25 °C)
Vapour density (air=1)	* 3,66
Density (g/cm ³)	0,8-1,2 (Density = volume weight)
Solubility in water (weight-%)	* Soluble
Partition coefficient, log Pow	* -1,98 (25 °C)
Auto-ignition temperature (°C)	* 230
Decomposition temperature (°C)	* No information
Viscosity	NA
Explosive properties	No
Oxidising properties	No
9.2 Other information:	No additional information available.

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 specifications.

10.3 Possibility of hazardous reactions:

Hydrogen development with water, alkali and acid.

10.4 Conditions to avoid:

Keep away from sources of ignition and heat.

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

SAFETY DATA SHEET

according to 1907/2006/EC, article 31

**TPD 181 T, TPD 182 T, TPD 185 T, TPD 188 T, TPD 189 T, TPD 190 T,
TPD 195 T, TPDS 190 T**



Revision date: 2017-03-29

Version: 2, revision 1

Replace: 2016-01-28

11.1 Information on toxicological effects:

Aluminium powder: Oral LD50 (rat) > 2000 mg/kg bw. Inhalation LC50 (rat) > 888 mg/m³. Inhalation NOAEC (rat) = 10 mg/m³.

Diethylene glycol: Dermal LD50 (rabbit) 13300 mg/kg.

Inhalation: Vapour concentrations above recommended exposure levels may cause headache, dizziness and tiredness.

Skin contact: Can cause skin irritation.

Eyes: Causes smart.

Ingestion: Harmful if swallowed. Can cause dizziness, nausea, stomach pain, muscle weakness and loss of consciousness. Kidney damage and possible liver and brain damage may apply.

The aluminium paste does not contain substances which is carcinogenic, mutagenic or toxic to reproduction.

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity:

Aluminium powder is not classified as dangerous for the environment.

Diethylene glycol aquatic acute toxicity

LC50 (fish, pimephales promelas) 96 h: 75 000 mg/l.

EC50 (daphnia magna) 48 h: > 10 000 mg/l.

The product aluminium paste in diethylene glycol is not classified as dangerous for the environment.

12.2 Persistence and degradability:

Diethylene glycol is readily biodegradable. 90-100 % 28 d (OECD TG 301 A).

12.3 Bioaccumulative potential:

Diethylene glycol BCF 100

12.4 Mobility in soil:

Aluminium paste is a solid material and is not expected to penetrate into the soil.

12.5 Results of PBT and vPvB assessments:

This product is not, or does not contain, a substance that is a PBT or a vPvB.

12.6 Other adverse effects:

No additional 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

SAFETY DATA SHEET

according to 1907/2006/EC, article 31

**TPD 181 T, TPD 182 T, TPD 185 T, TPD 188 T, TPD 189 T, TPD 190 T,
TPD 195 T, TPDS 190 T**



Revision date: 2017-03-29
Version: 2, revision 1
Replace: 2016-01-28

	ADR/RID	IATA	IMDG
14.1 UN No			
14.3 Transport hazard class(es)			
14.4 Packing group			
EmS No			
Tunnel category			

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:

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

15.2 Chemical safety assessment: No

SECTION 16. OTHER INFORMATION

H228 Flammable solid.

H302 Harmful if swallowed.

H373 May cause damage to organs through prolonged or repeated exposure.

Flam. Sol. 1 = Flammable solid, category 1

Acute tox 4. = Acute toxicity, category 4

STOT RE 2. = Specific target organ toxicity – repeated exposure, category 2

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

SAFETY DATA SHEET

according to 1907/2006/EC, article 31

**TPD 181 T, TPD 182 T, TPD 185 T, TPD 188 T, TPD 189 T, TPD 190 T,
TPD 195 T, TPDS 190 T**



Revision date: 2017-03-29

Version: 2, revision 1

Replace: 2016-01-28

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 2, 4, 5, 8, 9, 11, 12 and 16. Take the place of 2016-01-28.