

Safety Data Sheet

acc. to OSHA HCS

Printing date 03/08/2022

Reviewed on 03/08/2022

1 Identification

- **Product identifier**
- **Trade name:** Aluminum
- **Article number:** 80074-AL, 80075-AL
- **CAS Number:**
7429-90-5
- **EC number:**
231-072-3
- **Index number:**
013-001-00-6
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Substances and mixtures which, in contact with water, emit flammable gases 2 H261 In contact with water releases flammable gas.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**
In contact with water releases flammable gas.
- **Precautionary statements**
Do not allow contact with water.
Handle under inert gas. Protect from moisture.
Wear protective gloves / eye protection / face protection.
Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
In case of fire: Use CO2, sand, extinguishing powder to extinguish.
Store in a dry place. Store in a closed container.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



The substance demonstrates unusual reactivity with water.

- **HMIS-ratings (scale 0 - 4)**

HEALTH	0	Health = 0
FIRE	0	Fire = 0
REACTIVITY	2	Reactivity = 2

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
7429-90-5 aluminium
- **Identification number(s)**
- **EC number:** 231-072-3
- **Index number:** 013-001-00-6

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, sand, extinguishing powder. Do not use water.
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** Water
- **Special hazards arising from the substance or mixture** No further relevant information available.

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- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

· PAC-1:
Substance is not listed.

· PAC-2:
Substance is not listed.

· PAC-3:
Substance is not listed.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

7429-90-5 aluminium

PEL	Long-term value: 15*; 5** mg/m ³ *Total dust; ** Respirable fraction
REL	Long-term value: 10* 5** mg/m ³ as Al*Total dust**Respirable/pyro powd./welding f.
TLV	Long-term value: 1* mg/m ³ as Al; *as respirable fraction, A4

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:** Wash hands before breaks and at the end of work.

· **Breathing equipment:** Not required.

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Not required.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Solid

Color: Not determined.

· **Odor:** Characteristic

· **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range: 660 °C (1,220 °F)

Boiling point/Boiling range: 2,500 °C (36.500 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Contact with water liberates extremely flammable gases.

· **Ignition temperature:** 400 °C (752 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

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· Danger of explosion:	Not determined.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure:	Not applicable.
· Density at 20 °C (68 °F):	2.7 g/cm ³ (22.5315 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Insoluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
VOC content:	0.00 %
Solids content:	99.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Contact with water releases flammable gases.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

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- **OSHA-Ca (Occupational Safety Health Administration)**
- Substance is not listed.


12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|---|---|
| UN-Number | UN1396 |
| DOT, ADR, IMDG, IATA | |
| UN proper shipping name | Aluminum powder, uncoated |
| DOT | 1396 ALUMINIUM POWDER, UNCOATED |
| ADR | ALUMINIUM POWDER, UNCOATED |
| IMDG, IATA | |
| Transport hazard class(es) | |
| DOT | |
|  | |
| Class | 4.3 Substances which, in contact with water, emit flammable gases |

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· Label	4.3
· ADR, IMDG, IATA	
	
· Class	4.3 Substances which, in contact with water, emit flammable gases
· Label	4.3
· Packing group	
· DOT, ADR, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Substances which, in contact with water, emit flammable gases
· Hazard identification number (Kemler code):	423
· EMS Number:	4.3-06
· Segregation groups	Powdered metals
· Stowage Category	A
· Handling Code	H1 Keep as dry as reasonably practicable
· Segregation Code	SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained. SG32 Stow "away from" SGG10-liquid halogenated hydrocarbons SG35 Stow "separated from" SGG1-acids SG36 Stow "separated from" SGG18-alkalis.
· Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 15 kg On cargo aircraft only: 50 kg
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· IMDG	
· Limited quantities (LQ)	500 g
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN 1396 ALUMINIUM POWDER, UNCOATED, 4.3, II

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

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· **Sara**· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is listed.

· **TSCA (Toxic Substances Control Act):**

ACTIVE

· **Hazardous Air Pollutants**

Substance is not listed.

· **Proposition 65**· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **TLV (Threshold Limit Value)**

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).· **Hazard pictograms**

GHS02

· **Signal word** Danger· **Hazard statements**

In contact with water releases flammable gas.

· **Precautionary statements**

Do not allow contact with water.

Handle under inert gas. Protect from moisture.

Wear protective gloves / eye protection / face protection.

Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.

In case of fire: Use CO₂, sand, extinguishing powder to extinguish.

Store in a dry place. Store in a closed container.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:**

· **Date of preparation / last revision** 03/08/2022 / -

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

*OSHA: Occupational Safety **Health***

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Substances and mixtures which, in contact with water, emit flammable gases 2: Substances and mixtures which in contact with water emit flammable gases – Category 2

US

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Revision: 08.03.2022

1 Identification

- **Product identifier**
- **Trade name:** Aluminum
- **Article number:** 80074-AL, 80075-AL
- **CAS Number:**
7429-90-5
- **EC number:**
231-072-3
- **Index number:**
013-001-00-6
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- ProSciTech Pty Ltd
11 Carlton Street, Kirwan QLD 4817 Australia
Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
Website: ems.proscitech.com
- Emgrid Australia Pty. Ltd.
P.O. Box 118
The Patch VIC 3792
Australia
Tel: 03 9752 1785
Fax: 03 9752 1784
Website: www.emgrid.com.au
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard(s) Identification

- **Classification of the substance or mixture**



GHS02 flame

Water-react. 2 H261 In contact with water releases flammable gases.

- **Label elements**
- **GHS label elements**
The substance is classified and labelled according to the Globally Harmonised System (GHS).

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- **Hazard pictograms**



GHS02

- **Signal word** *Danger*

- **Hazard statements**

In contact with water releases flammable gases.

- **Precautionary statements**

Keep away from any possible contact with water, because of violent reaction and possible flash fire.

Handle and store contents under inert gas. Protect from moisture.

Wear protective gloves / eye protection / face protection.

Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.

In case of fire: Use CO₂, sand, extinguishing powder for extinction.

Store in a dry place. Store in a closed container.

Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

3 Composition and Information on Ingredients

- **Chemical characterisation: Substances**

- **CAS No. Description**

7429-90-5 aluminium

- **Identification number(s)**

- **EC number:** 231-072-3

- **Index number:** 013-001-00-6

4 First Aid Measures

- **Description of first aid measures**

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.

- **After skin contact:** Generally the product does not irritate the skin.

- **After eye contact:** Rinse opened eye for several minutes under running water.

- **After swallowing:** If symptoms persist consult doctor.

- **Information for doctor:**

- **Most important symptoms and effects, both acute and delayed** No further relevant information available.

- **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

5 Fire Fighting Measures

- **Extinguishing media**

- **Suitable extinguishing agents:**

CO₂, sand, extinguishing powder. Do not use water.

Use fire extinguishing methods suitable to surrounding conditions.

- **For safety reasons unsuitable extinguishing agents:** Water

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- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and Storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls and personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

7429-90-5 aluminium

WES	Long-term value: 10* 5** mg/m ³ *metal dust; **welding, pyro powders
-----	--

- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Not required.
- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Not required.

9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· Form:	Solid
· Colour:	Not determined.
· Odour:	Characteristic
· Odour threshold:	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

· Melting point/freezing point:	660 °C
· Initial boiling point and boiling range:	2,500 °C

· **Flash point:** Not applicable.

· **Flammability (solid, gas):** Contact with water liberates extremely flammable gases.

· **Ignition temperature:** 400 °C

· **Decomposition temperature:** Not determined.

· **Auto-ignition temperature:** Not determined.

· **Explosive properties:** Not determined.

· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapour pressure:** Not applicable.

· Density at 20 °C:	2.7 g/cm ³
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.

· **Solubility in / Miscibility with water:**

Insoluble.

· **Partition coefficient: n-octanol/water:** Not determined.

· **Viscosity:**

· Dynamic:	Not applicable.
· Kinematic:	Not applicable.

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Solids content:	99.0 %
Other information	No further relevant information available.

10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Contact with water releases flammable gases.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**
- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** No irritating effect.
- **Respiratory or skin sensitisation** No sensitising effects known.

12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number · ADG, IMDG, IATA	UNI396
· UN proper shipping name · ADG · IMDG, IATA	1396 ALUMINIUM POWDER, UNCOATED ALUMINIUM POWDER, UNCOATED
· Transport hazard class(es) · ADG, IMDG, IATA	
	
· Class · Label	4.3 Substances which, in contact with water, emit flammable gases. 4.3
· Packing group · ADG, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Handling Code · Segregation Code	Warning: Substances which, in contact with water, emit flammable gases. 423 4.3-06 Powdered metals A H1 Keep as dry as reasonably practicable SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained. SG32 Stow "away from" SGG10-liquid halogenated hydrocarbons SG35 Stow "separated from" SGG1-acids SG36 Stow "separated from" SGG18-alkalis.
· Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADG · Limited quantities (LQ) · Excepted quantities (EQ)	500 g Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· Transport category	2

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· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	500 g
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN 1396 ALUMINIUM POWDER, UNCOATED, 4.3, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Australian Inventory of Industrial Chemicals**

Substance is listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**

Substance is not listed.

· **Australia: Priority Existing Chemicals**

Substance is not listed.

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS02

· **Signal word** *Danger*

· **Hazard statements**

In contact with water releases flammable gases.

· **Precautionary statements**

Keep away from any possible contact with water, because of violent reaction and possible flash fire.

Handle and store contents under inert gas. Protect from moisture.

Wear protective gloves / eye protection / face protection.

Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.

In case of fire: Use CO₂, sand, extinguishing powder for extinction.

Store in a dry place. Store in a closed container.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Contact:**

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

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*IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Water-react. 2: Substances and mixtures which in contact with water emit flammable gases – Category 2*

AU

Safety Data Sheet

according to HPR, Schedule 1

Printing date 03/08/2022

Reviewed on 03/08/2022

1 Identification

- **Product identifier**
- **Trade name:** Aluminum
- **Article number:** 80074-AL, 80075-AL
- **CAS Number:**
7429-90-5
- **EC number:**
231-072-3
- **Index number:**
013-001-00-6
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard identification

- **Classification of the substance or mixture**



GHS02 Flame

Substances and Mixtures Which, in Contact with Water, H261 In contact with water releases flammable gas.
Emit Flammable Gases - Category 2

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02

- **Signal word** Danger
- **Hazard statements**
In contact with water releases flammable gas.
- **Precautionary statements**
Do not allow contact with water.
Handle and store contents under inert gas. Protect from moisture.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN: Brush off loose particles from skin. Immerse in cool water.
In case of fire: Use CO2, sand, extinguishing powder to extinguish.
Store in a dry place. Store in a closed container.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 2

The substance demonstrates unusual reactivity with water.

- **HMIS-ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 2

3 Composition/Information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
7429-90-5 aluminium
- **Identification number(s)**
- **EC number: 231-072-3**
- **Index number: 013-001-00-6**

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, sand, extinguishing powder. Do not use water.
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** Water
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

CA

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Reviewed on 03/08/2022

Trade name: Aluminum

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6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

7429-90-5 aluminium

EL TWA: 1.0 mg/m³
respirable, as Al

EV TWA: 5 mg/m³
aluminium-containing (as aluminium)

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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Trade name: Aluminum

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- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:** Not required.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Solid
Color:	Not determined.
Odor:	Characteristic
Odor threshold:	Not determined.

- **pH-value:** Not applicable.

- **Change in condition**

Melting point/Melting range:	660 °C
Boiling point/Boiling range:	2,500 °C

- **Flash point:** Not applicable.

- **Flammability (solid, gaseous):** Contact with water liberates extremely flammable gases.

- **Ignition temperature:** 400 °C

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Not determined.

- **Danger of explosion:** Not determined.

- **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

- **Vapor pressure:** Not applicable.

Density at 20 °C:	2.7 g/cm ³
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.

- **Solubility in / Miscibility with**

Water: Insoluble.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

Dynamic:	Not applicable.
Kinematic:	Not applicable.

Solids content: 99.0 %

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Trade name: Aluminum

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· **Other information** No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** Contact with water releases flammable gases.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
- Water hazard class 1 (Assessment by list): slightly hazardous for water
- Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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Reviewed on 03/08/2022



Trade name: Aluminum

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13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|--|---|
| · UN-Number | |
| · DOT/TDG, ADR, IMDG, IATA | UNI396 |
| · UN proper shipping name | Aluminum powder, uncoated |
| · DOT/TDG | 1396 ALUMINIUM POWDER, UNCOATED |
| · ADR | ALUMINIUM POWDER, UNCOATED |
| · IMDG, IATA | |
| · Transport hazard class(es) | |
| · DOT/TDG (Transport dangerous goods): | |
| |  |
| · Class | 4.3 Substances which, in contact with water, emit flammable gases |
| · Label | 4.3 |
| · ADR, IMDG, IATA | |
| |  |
| · Class | 4.3 Substances which, in contact with water, emit flammable gases |
| · Label | 4.3 |
| · Packing group | |
| · DOT/TDG, ADR, IMDG, IATA | II |
| · Environmental hazards: | Not applicable. |
| · Special precautions for user | Warning: Substances which, in contact with water, emit flammable gases |
| · Hazard identification number (Kemler code): | 423 |
| · EMS Number: | 4.3-06 |
| · Segregation groups | Powdered metals |
| · Stowage Category | A |
| · Handling Code | H1 Keep as dry as reasonably practicable |

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· Segregation Code	SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained. SG32 Stow "away from" SGG10-liquid halogenated hydrocarbons SG35 Stow "separated from" SGG1-acids SG36 Stow "separated from" SGG18-alkalis.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT/TDG	
· Quantity limitations	On passenger aircraft/rail: 15 kg On cargo aircraft only: 50 kg
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· IMDG	
· Limited quantities (LQ)	500 g
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN 1396 ALUMINIUM POWDER, UNCOATED, 4.3, II

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture	No further relevant information available.
· Sara	
· Section 355 (extremely hazardous substances):	Substance is not listed.
· Section 313 (Specific toxic chemical listings):	Substance is listed.
· TSCA (Toxic Substances Control Act):	ACTIVE
· Canadian substance listings:	
· Canadian Domestic Substances List (DSL)	Substance is listed.
· Canadian Non-Domestic Substances List (NDSL)	Substance is not listed.
· Canadian Ingredient Disclosure list (limit 0.1%)	Substance is not listed.
· Canadian Ingredient Disclosure list (limit 1%)	Substance is listed.
· GHS label elements	The substance is classified and labeled according to the Globally Harmonized System (GHS).

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· Hazard pictograms

GHS02

· Signal word Danger**· Hazard statements***In contact with water releases flammable gas.***· Precautionary statements***Do not allow contact with water.**Handle and store contents under inert gas. Protect from moisture.**Wear protective gloves/protective clothing/eye protection/face protection.**IF ON SKIN: Brush off loose particles from skin. Immerse in cool water.**In case of fire: Use CO₂, sand, extinguishing powder to extinguish.**Store in a dry place. Store in a closed container.**Dispose of contents/container in accordance with local/regional/national/international regulations.***· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Contact:**· Date of the latest revision of the safety data sheet 03/08/2022 / -****· Abbreviations and acronyms:***IMDG: International Maritime Code for Dangerous Goods**DOT: US Department of Transportation**IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative*

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 08.03.2022

Revision: 08.03.2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** Aluminum
- **Article number:** 80074-AL, 80075-AL
- **CAS Number:**
7429-90-5
- **EC number:**
231-072-3
- **Index number:**
013-001-00-6
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



flame

Water-react. 2 H261 In contact with water releases flammable gases.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS02

- **Signal word** *Danger*
- **Hazard statements**
H261 In contact with water releases flammable gases.
- **Precautionary statements**
P223 Do not allow contact with water.
P231+P232 Handle and store contents under inert gas. Protect from moisture.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P370+P378 In case of fire: Use CO2, sand, extinguishing powder to extinguish.

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*P402+P404 Store in a dry place. Store in a closed container.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.***· Additional information:***Product contains: Reportable explosives precursors. Making available, introduction, possession and use according to Regulation (EU) 2019/1148, Article 9.***· 2.3 Other hazards****· Results of PBT and vPvB assessment****· PBT:** Not applicable.**· vPvB:** Not applicable.**SECTION 3: Composition/information on ingredients****· 3.1 Chemical characterisation: Substances****· CAS No. Description***7429-90-5 aluminium***· Identification number(s)****· EC number:** 231-072-3**· Index number:** 013-001-00-6**SECTION 4: First aid measures****· 4.1 Description of first aid measures****· After inhalation:** Supply fresh air; consult doctor in case of complaints.**· After skin contact:** Generally the product does not irritate the skin.**· After eye contact:** Rinse opened eye for several minutes under running water.**· After swallowing:** If symptoms persist consult doctor.**· 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: Firefighting measures**· 5.1 Extinguishing media****· Suitable extinguishing agents:***CO2, sand, extinguishing powder. Do not use water.**Use fire extinguishing methods suitable to surrounding conditions.***· For safety reasons unsuitable extinguishing agents:** Water**· 5.2 Special hazards arising from the substance or mixture** No further relevant information available.**· 5.3 Advice for firefighters****· Protective equipment:** No special measures required.**SECTION 6: Accidental release measures****· 6.1 Personal precautions, protective equipment and emergency procedures***Wear protective equipment. Keep unprotected persons away.***· 6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.**· 6.3 Methods and material for containment and cleaning up:***Ensure adequate ventilation.**Do not flush with water or aqueous cleansing agents***· 6.4 Reference to other sections***See Section 7 for information on safe handling.*

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See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Additional information about design of technical facilities:** No further data; see item 7.

· **Ingredients with limit values that require monitoring at the workplace:**

7429-90-5 aluminium

WEL	Long-term value: 10^{-4} mg/m ³ *inhalable dust **respirable dust
-----	---

- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Respiratory protection:** Not required.
- **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Not required.

GB

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Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 08.03.2022

Revision: 08.03.2022

Trade name: Aluminum

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SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· Appearance:

· Form:	Solid
· Colour:	Not determined.
· Odour:	Characteristic
· Odour threshold:	Not determined.

· pH-value: Not applicable.

· Change in condition

· Melting point/freezing point:	660 °C
· Initial boiling point and boiling range:	2,500 °C

· Flash point: Not applicable.

· Flammability (solid, gas): Contact with water liberates extremely flammable gases.

· Ignition temperature: 400 °C

· Decomposition temperature: Not determined.

· Auto-ignition temperature: Not determined.

· Explosive properties: Not determined.

· Explosion limits:

· Lower:	Not determined.
· Upper:	Not determined.

· Vapour pressure: Not applicable.

· Density at 20 °C:	2.7 g/cm ³
· Relative density	Not determined.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.

· Solubility in / Miscibility with water: Insoluble.

· Partition coefficient: n-octanol/water: Not determined.

· Viscosity:

· Dynamic:	Not applicable.
· Kinematic:	Not applicable.

· Solids content: 99.0 %

· 9.2 Other information: No further relevant information available.

SECTION 10: Stability and reactivity

· 10.1 Reactivity: No further relevant information available.

· 10.2 Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· 10.3 Possibility of hazardous reactions: Contact with water releases flammable gases.

· 10.4 Conditions to avoid: No further relevant information available.

· 10.5 Incompatible materials: No further relevant information available.

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Trade name: Aluminum

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- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **Primary irritant effect:**
- **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 sensitisation** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **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.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|---------------------------------------|---------------------------------|
| · 14.1 UN-Number | |
| · ADR, IMDG, IATA | UN1396 |
| · 14.2 UN proper shipping name | |
| · ADR | 1396 ALUMINIUM POWDER, UNCOATED |

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· IMDG, IATA	ALUMINIUM POWDER, UNCOATED
· 14.3 Transport hazard class(es) · ADR, IMDG, IATA	
	
· Class	4.3 Substances which, in contact with water, emit flammable gases.
· Label	4.3
· 14.4 Packing group · ADR, IMDG, IATA	II
· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category · Handling Code · Segregation Code	Warning: Substances which, in contact with water, emit flammable gases. 423 4.3-06 Powdered metals A H1 Keep as dry as reasonably practicable SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained. SG32 Stow "away from" SGG10-liquid halogenated hydrocarbons SG35 Stow "separated from" SGG1-acids SG36 Stow "separated from" SGG18-alkalis.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR · Limited quantities (LQ) · Excepted quantities (EQ)	500 g Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· Transport category · Tunnel restriction code	2 D/E
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	500 g Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN 1396 ALUMINIUM POWDER, UNCOATED, 4.3, II

GB

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 08.03.2022

Revision: 08.03.2022

Trade name: Aluminum

(Contd. of page 6)

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I Substance is not listed.**
- **15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Water-react. 2: Substances and mixtures which in contact with water emit flammable gases – Category 2

GB

Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 08.03.2022

Herziening van: 08.03.2022

RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

- **1.1 Productidentificatie**
- **Handelsnaam:** Aluminum
- **Artikelnummer:** 80074-AL, 80075-AL
- **CAS-nummer:**
7429-90-5
- **EC-nummer:**
231-072-3
- **Catalogusnummer:**
013-001-00-6
- **UFI:** C190-A07R-600H-9VT5
- **1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik**
Geen verdere relevante informatie verkrijgbaar.
- **Toepassing van de stof / van de bereiding** Laboratoriumchemicaliën
- **1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad**
- **Fabrikant/leverancier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Aurion**
Binnenhaven 5
6709 PD Wageningen
The Netherlands
Tel: 31 317 415094
Fax: 31 317 415955
email: info@aurion.nl
- **Inlichtingengevende sector:** Product safety department
- **1.4 Telefoonnummer voor noodgevallen:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

RUBRIEK 2: Identificatie van de gevaren

- **2.1 Indeling van de stof of het mengsel**
- **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



Water-react. 2 H261 In contact met water komen ontvlambare gassen vrij.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**
De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



(Vervolg op blz. 2)

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(Vervolg van blz. 1)

- **Signaalwoord** Gevaar
- **Gevarenaanduidingen**
H261 In contact met water komen ontvlambare gassen vrij.
- **Veiligheidsaanbevelingen**
P223 Contact met water vermijden.
P231+P232 Inhoud onder inert gas gebruiken en bewaren. Tegen vocht beschermen.
P280 Draag beschermende handschoenen/beschermende kleding/oogbescherming/gelaatsbescherming/gehoorbescherming.
P370+P378 In geval van brand: blussen met CO₂, zand, bluspoeder.
P402+P404 Op een droge plaats bewaren. In gesloten verpakking bewaren.
P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.
- **Aanvullende gegevens:**
Produkt bevat: Precursoren voor explosieven die moeten worden gemeld. Aanbieden, binnenbrengen, bezit en gebruik volgens Verordening (EU) 2019/1148, Artikel 9.
- **2.3 Andere gevaren**
- **Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.

RUBRIEK 3: Samenstelling en informatie over de bestanddelen

- **3.1 Chemische karakterisering: Stoffen**
- **CAS-Nr. omschrijving**
7429-90-5 aluminiumpoeder (niet gestabiliseerd)
- **Identificatienummer(s)**
- **EC-nummer:** 231-072-3
- **Catalogusnummer:** 013-001-00-6

RUBRIEK 4: Eerstehulpmaatregelen

- **4.1 Beschrijving van de eerstehulpmaatregelen**
- **Na het inademen:** Frisse lucht toedienen; bij klachten arts ontbieden.
- **Na huidcontact:** Over het algemeen is het produkt niet prikkelend voor de huid
- **Na oogcontact:** Ogen bij geopend ooglid meerdere minuten met stromend water spoelen
- **Na inslikken:** Als de klachten niet minderen, een arts raadplegen
- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** Geen verdere relevante informatie verkrijgbaar.
- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**
Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**
- **Geschikte blusmiddelen:**
CO₂, zand, bluspoeder. Geen water gebruiken.
Brandblusmaatregelen op omgeving afstemmen.
- **Blusmiddelen die uit veiligheidsoogpunt niet geschikt zijn:** Water
- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**
Geen verdere relevante informatie verkrijgbaar.

(Vervolg op blz. 3)

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(Vervolg van blz. 2)

- **5.3 Advies voor brandweerlieden**
- **Speciale beschermende kleding:** Geen bijzondere maatregelen nodig.

RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermingsmiddelen en noodprocedures**
Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.
- **6.2 Milieuvorzorgsmaatregelen:** Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.
- **6.3 Insluitings- en reinigingsmethoden en -materiaal:**
Voor voldoende ventilatie zorgen.
Niet met water of waterachtige reinigingsmiddelen wegspoelen.
- **6.4 Verwijzing naar andere rubrieken**
Informatie inzake veilig gebruik - zie hoofdstuk 7.
Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.
Informatie inzake berging - zie hoofdstuk 13.

RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**
Bij een deskundig gebruik zijn geen bijzondere maatregelen vereist.
- **Informatie m.b.t. brand- en ontploffingsgevaar:**
Onststekingsbronnen op afstand houden - niet roken.
Maatregelen treffen tegen ontlading van statische elektriciteit.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Geen bijzondere eisen.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:**
Tanks ondoordringbaar gesloten houden.
Koel en droog bewaren in goed gesloten vaten.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **8.1 Controleparameters**
- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.

- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:**

7429-90-5 aluminiumpoeder (niet gestabiliseerd)	
WGW	Lange termijn waarde: 0,05* mg/m ³
	*Metaal en onoplosbare verb., inadembaar (privaat)

- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.

- **8.2 Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**
Vóór de pauze en aan het einde van werktijd handen wassen.
- **Ademhalingsbescherming:** Niet noodzakelijk.
- **Handbescherming:**
Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.

(Vervolg op blz. 4)

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Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.

Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.

- **Handschoenmateriaal**

De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschil van fabrikant tot fabrikant.

- **Doordringingstijd van het handschoenmateriaal**

De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

- **Oogbescherming:** Niet noodzakelijk.

RUBRIEK 9: Fysische en chemische eigenschappen

- **9.1 Informatie over fysische en chemische basiseigenschappen**

- **Algemene gegevens**

- **Voorkomen:**

Vorm:	Vast
Kleur:	Niet bepaald.
Geur:	Karakteristiek
Geurdrempelwaarde:	Niet bepaald.

- **pH-waarde:** Niet bruikbaar.

- **Toestandsverandering**

Smelt-/vriespunt:	660 °C
Beginkookpunt en kooktraject:	2.500 °C

- **Vlampunt:** Niet bruikbaar.

- **Ontvlambaarheid (vast, gas):** Vormt zeer licht ontvlambaar gas in contact met water.

- **Ontstekingstemperatuur:** 400 °C

- **Ontledingstemperatuur:** Niet bepaald.

- **Zelfontbrandingstemperatuur:** Niet bepaald.

- **Ontploffingseigenschappen:** Niet bepaald.

- **Ontploffingsgrenzen:**

Onderste:	Niet bepaald.
Bovenste:	Niet bepaald.

- **Dampspanning:** Niet bruikbaar.

Dichtheid bij 20 °C:	2,7 g/cm ³
Relatieve dichtheid	Niet bepaald.
Dampdichtheid	Niet bruikbaar.
Verdampingssnelheid	Niet bruikbaar.

- **Oplosbaarheid in/mengbaarheid met**

Water: Niet oplosbaar.

- **Verdelingscoëfficiënt: n-octanol/water:** Niet bepaald.

- **Viscositeit**

Dynamisch:	Niet bruikbaar.
Kinematisch:	Niet bruikbaar.

Gehalte aan vaste bestanddelen: 99,0 %

(Vervolg op blz. 5)

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Handelsnaam: *Aluminium*

(Vervolg van blz. 5)

RUBRIEK 13: Instructies voor verwijdering

- 13.1 Afvalverwerkingsmethoden
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terecht komen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

RUBRIEK 14: Informatie met betrekking tot het vervoer

- | | |
|---|---|
| · 14.1 VN-nummer | UNI396 |
| · ADR, IMDG, IATA | |
| · 14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN | 1396 ALUMINIUMPOEDER, NIET GECOAT |
| · ADR | ALUMINIUM POWDER, UNCOATED |
| · IMDG, IATA | |
| · 14.3 Transportgevarenklasse(n) | |
| · ADR, IMDG, IATA | |
|  | |
| · klasse | 4.3 Stoffen die in contact met water brandbare gassen ontwikkelen |
| · Etiket | 4.3 |
| · 14.4 Verpakkingsgroep: | |
| · ADR, IMDG, IATA | II |
| · 14.5 Milieugevaren: | Niet bruikbaar. |
| · 14.6 Bijzondere voorzorgen voor de gebruiker | Waarschuwing: Stoffen die in contact met water brandbare gassen ontwikkelen |
| · Gevaarsidentificatienummer (Kemler-getal): | 423 |
| · EMS-nummer: | 4.3-06 |
| · Segregation groups | Powdered metals |
| · Stowage Category | A |
| · Handling Code | H1 Keep as dry as reasonably practicable |
| · Segregation Code | SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained.
SG32 Stow "away from" SGG10-liquid halogenated hydrocarbons
SG35 Stow "separated from" SGG1-acids
SG36 Stow "separated from" SGG18-alkalis. |
| · 14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code | Niet bruikbaar. |

(Vervolg op blz. 7)

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(Vervolg van blz. 6)

· **Transport/verdere gegevens:**

· **ADR**

· **Beperkte hoeveelheden (LQ)**

500 g

· **Uitgezonderde hoeveelheden (EQ)**

Code: E2

Grootste netto hoeveelheid per binnenverpakking: 30 g

Grootste netto hoeveelheid per buitenverpakking: 500 g

· **Vervoerscategorie**

2

· **Tunnelbeperkingscode**

D/E

· **IMDG**

· **Limited quantities (LQ)**

500 g

· **Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 500 g

· **VN "Model Regulation":**

UN 1396 ALUMINIUMPOEDER, NIET GECOAT, 4.3, II

RUBRIEK 15: Regelgeving

· **15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**

· **SZW-lijst van kankerverwekkende stoffen**

De stof is niet aanwezig.

· **SZW-lijst van mutagene stoffen**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling**

De stof is niet aanwezig.

· **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding**

De stof is niet aanwezig.

· **Lijst Zeer Zorgwekkende Stoffen (ZZS)**

De stof is niet aanwezig.

· **Lijst van Potentieel Zeer Zorgwekkende Stoffen**

De stof is niet aanwezig.

· **Richtlijn 2012/18/EU**

· **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** De stof is niet aanwezig.

· **Verordening (EG) nr. 1907/2006 BIJLAGE XVII** Beperkingsvoorwaarden: 40

· **Richtlijn 2011/65/EU betreffende beperking van het gebruik van bepaalde gevaarlijke stoffen in elektrische en elektronische apparatuur - Bijlage II**

De stof is niet aanwezig.

· **VERORDENING (EU) 2019/1148**

· **Bijlage I - PRECURSOREN VOOR EXPLOSIEVEN WAARVOOR EEN BEPERKING GELDT (Bovengrenswaarde ten behoeve van vergunningverlening op grond van artikel 5, lid 3)**

De stof is niet aanwezig.

· **Bijlage II - PRECURSOREN VOOR EXPLOSIEVEN DIE MOETEN WORDEN GEMELD**

De stof is aanwezig.

(Vervolg op blz. 8)

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(Vervolg van blz. 7)

· **Verordening (EG) nr. 273/2004 inzake drugsprecursoren**

De stof is niet aanwezig.

· **Verordening (EG) Nr. 111/2005 houdende voorschriften voor het toezicht op de handel tussen de Gemeenschap en derde landen in drugsprecursoren**

De stof is niet aanwezig.

· **Nationale voorschriften:**

· **Gevaarklasse v. water:**

Waterbezwaarlijkheid (NL): A(4) Weinig schadelijk voor in water levende organismen kan in het aquatische milieu op lange termijn schadelijke effecten veroorzaken

· **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

· **Afkortingen en acroniemen:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Water-react. 2: Stoffen en mengsels die in contact met water ontvlambare gassen ontwikkelen – Categorie 2

NL

Fiche de données de sécurité

selon 1907/2006/CE, Article 31

Date d'impression : 08.03.2022

Révision: 08.03.2022

RUBRIQUE 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** Aluminum
- **Code du produit:** 80074-AL, 80075-AL
- **No CAS:**
7429-90-5
- **Numéro CE:**
231-072-3
- **Numéro index:**
013-001-00-6
- **UFI:** C190-A07R-600H-9VT5
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**
Pas d'autres informations importantes disponibles.
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

RUBRIQUE 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS02 flamme

Water-react. 2 H261 Dégage au contact de l'eau des gaz inflammables.

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** La substance est classifiée et étiquetée selon le règlement CLP.
- **Pictogrammes de danger**



GHS02

- **Mention d'avertissement** Danger
- **Mentions de danger**
H261 Dégage au contact de l'eau des gaz inflammables.
- **Conseils de prudence**
P223 Éviter tout contact avec l'eau.
P231+P232 Manipuler et stocker le contenu sous gaz inerte. Protéger de l'humidité.
P280 Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage/une protection auditive.

(suite page 2)

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P370+P378 *En cas d'incendie: Utiliser du CO₂, du sable, de la poudre d'extinction pour l'extinction.*

P402+P404 *Stocker dans un endroit sec. Stocker dans un récipient fermé.*

P501 *Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale/internationale.*

· **Indications complémentaires:**

Le produit contient: Précurseurs d'explosifs devant faire l'objet d'un signalement. Mise à disposition, introduction, détention et utilisation selon règlement (UE) 2019/1148, article 9.

· **2.3 Autres dangers**

· **Résultats des évaluations PBT et vPvB**

· **PBT:** Non applicable.

· **vPvB:** Non applicable.

RUBRIQUE 3: Composition/informations sur les composants

· **3.1 Caractérisation chimique: Substances**

· **No CAS Désignation**

7429-90-5 aluminium en poudre (pyrophorique)

· **Code(s) d'identification**

· **Numéro CE:** 231-072-3

· **Numéro index:** 013-001-00-6

RUBRIQUE 4: Premiers secours

· **4.1 Description des premiers secours**

· **Après inhalation:** Donner de l'air frais, consulter un médecin en cas de troubles.

· **Après contact avec la peau:** En règle générale, le produit n'irrite pas la peau.

· **Après contact avec les yeux:**

Rincer les yeux, sous l'eau courante, pendant plusieurs minutes, en écartant bien les paupières.

· **Après ingestion:** Si les troubles persistent, consulter un médecin.

· **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.

· **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**

Pas d'autres informations importantes disponibles.

RUBRIQUE 5: Mesures de lutte contre l'incendie

· **5.1 Moyens d'extinction**

· **Moyens d'extinction:**

CO₂, sable, poudre d'extinction. Ne pas utiliser d'eau.

Adapter les mesures d'extinction d'incendie à l'environnement.

· **Produits extincteurs déconseillés pour des raisons de sécurité:** Eau

· **5.2 Dangers particuliers résultant de la substance ou du mélange**

Pas d'autres informations importantes disponibles.

· **5.3 Conseils aux pompiers**

· **Équipement spécial de sécurité:** Aucune mesure particulière n'est requise.

RUBRIQUE 6: Mesures à prendre en cas de dispersion accidentelle

· **6.1 Précautions individuelles, équipement de protection et procédures d'urgence**

Porter un équipement de sécurité. Eloigner les personnes non protégées.

· **6.2 Précautions pour la protection de l'environnement:**

Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.

(suite page 3)

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Révision: 08.03.2022

Nom du produit: **Aluminium**

(suite de la page 2)

· **6.3 Méthodes et matériel de confinement et de nettoyage:**

Assurer une aération suffisante.

Ne pas rincer à l'eau ou aux produits nettoyants aqueux.

· **6.4 Référence à d'autres rubriques**

Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.

Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.

Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

RUBRIQUE 7: Manipulation et stockage

· **7.1 Précautions à prendre pour une manipulation sans danger**

Aucune mesure particulière n'est nécessaire en cas de bonne utilisation.

· **Préventions des incendies et des explosions:**

Tenir à l'abri des sources d'inflammation - ne pas fumer.

Prendre des mesures contre les charges électrostatiques.

· **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**

· **Stockage:**

· **Exigences concernant les lieux et conteneurs de stockage:** Aucune exigence particulière.

· **Indications concernant le stockage commun:** Pas nécessaire.

· **Autres indications sur les conditions de stockage:**

Tenir les emballages hermétiquement fermés.

Stocker au frais et au sec dans des fûts bien fermés.

· **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

· **8.1 Paramètres de contrôle**

· **Indications complémentaires pour l'agencement des installations techniques:**

Sans autre indication, voir point 7.

· **Composants présentant des valeurs-seuil à surveiller par poste de travail:**

7429-90-5 aluminium en poudre (pyrophorique)

VLEP Valeur à long terme: 5* 10** mg/m³

*pulvérulent **métal

· **Remarques supplémentaires:**

Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.

· **8.2 Contrôles de l'exposition**

· **Équipement de protection individuel:**

· **Mesures générales de protection et d'hygiène:** Se laver les mains avant les pauses et en fin de travail.

· **Protection respiratoire:** N'est pas nécessaire.

· **Protection des mains:**

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.

À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.

Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

· **Matériau des gants**

Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.

· **Temps de pénétration du matériau des gants**

Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

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· **Protection des yeux:** Pas nécessaire.

RUBRIQUE 9: Propriétés physiques et chimiques

· 9.1 Informations sur les propriétés physiques et chimiques essentielles

· Indications générales

· Aspect:

Forme:	Solide
---------------	--------

Couleur:	Non déterminé.
-----------------	----------------

Odeur:	Caractéristique
---------------	-----------------

Seuil olfactif:	Non déterminé.
------------------------	----------------

valeur du pH:	Non applicable.
----------------------	-----------------

· Changement d'état

Point de fusion/point de congélation:	660 °C
--	--------

Point initial d'ébullition et intervalle d'ébullition:	2.500 °C
---	----------

Point d'éclair	Non applicable.
-----------------------	-----------------

Inflammabilité (solide, gaz):	Au contact de l'eau, dégage des gaz extrêmement inflammables.
--------------------------------------	---

Température d'inflammation:	400 °C
------------------------------------	--------

Température de décomposition:	Non déterminé.
--------------------------------------	----------------

Température d'auto-inflammabilité:	Non déterminé.
---	----------------

Propriétés explosives:	Non déterminé.
-------------------------------	----------------

· Limites d'explosion:

Inférieure:	Non déterminé.
--------------------	----------------

Supérieure:	Non déterminé.
--------------------	----------------

Pression de vapeur:	Non applicable.
----------------------------	-----------------

Densité à 20 °C:	2,7 g/cm ³
-------------------------	-----------------------

Densité relative	Non déterminé.
-------------------------	----------------

Densité de vapeur:	Non applicable.
---------------------------	-----------------

Taux d'évaporation:	Non applicable.
----------------------------	-----------------

Solubilité dans/miscibilité avec l'eau:	Insoluble
--	-----------

Coefficient de partage: n-octanol/eau:	Non déterminé.
---	----------------

· Viscosité:

Dynamique:	Non applicable.
-------------------	-----------------

Cinématique:	Non applicable.
---------------------	-----------------

Teneur en substances solides:	99,0 %
--------------------------------------	--------

9.2 Autres informations	Pas d'autres informations importantes disponibles.
--------------------------------	--

RUBRIQUE 10: Stabilité et réactivité

· 10.1 Réactivité Pas d'autres informations importantes disponibles.

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- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Un contact avec l'eau provoque la libération de gaz combustibles.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

RUBRIQUE 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**
- **Toxicité aiguë** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Lésions oculaires graves/irritation oculaire**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Sensibilisation respiratoire ou cutanée**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Indications toxicologiques complémentaires:**
- **Effets CMR (cancérogène, mutagène et toxique pour la reproduction)**
- **Mutagénicité sur les cellules germinales**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Cancérogénicité** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité pour la reproduction**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité spécifique pour certains organes cibles - exposition unique**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Toxicité spécifique pour certains organes cibles - exposition répétée**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Danger par aspiration** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

RUBRIQUE 12: Informations écologiques

- **12.1 Toxicité**
- **Toxicité aquatique:** Pas d'autres informations importantes disponibles.
- **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.
- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:**
Catégorie de pollution des eaux 1 (D) (classification selon liste): peu polluant
Ne pas laisser le produit, non dilué ou en grande quantité, pénétrer la nappe phréatique, les eaux ou les canalisations.
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

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RUBRIQUE 13: Considérations relatives à l'élimination

- **13.1 Méthodes de traitement des déchets**
- **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.

RUBRIQUE 14: Informations relatives au transport

- | | |
|---|---|
| <ul style="list-style-type: none"> · 14.1 Numéro ONU · ADR, IMDG, IATA | <p style="text-align: right;">UN1396</p> |
| <ul style="list-style-type: none"> · 14.2 Désignation officielle de transport de l'ONU · ADR · IMDG, IATA | <p style="text-align: right;">1396 ALUMINIUM EN POUDRE NON ENROBÉ
ALUMINIUM POWDER, UNCOATED</p> |
| <ul style="list-style-type: none"> · 14.3 Classe(s) de danger pour le transport · ADR, IMDG, IATA | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> · Classe · Étiquette | <p style="text-align: right;">4.3 Matières qui, au contact de l'eau, dégagent des gaz inflammables.
4.3</p> |
| <ul style="list-style-type: none"> · 14.4 Groupe d'emballage · ADR, IMDG, IATA | <p style="text-align: right;">II</p> |
| <ul style="list-style-type: none"> · 14.5 Dangers pour l'environnement: | <p style="text-align: right;">Non applicable.</p> |
| <ul style="list-style-type: none"> · 14.6 Précautions particulières à prendre par l'utilisateur · Numéro d'identification du danger (Indice Kemler): · No EMS: · Segregation groups · Stowage Category · Handling Code · Segregation Code | <p style="text-align: right;">Attention: Matières qui, au contact de l'eau, dégagent des gaz inflammables.
423
4.3-06
Powdered metals
A
H1 Keep as dry as reasonably practicable
SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained.
SG32 Stow "away from" SGG10-liquid halogenated hydrocarbons
SG35 Stow "separated from" SGG1-acids
SG36 Stow "separated from" SGG18-alkalis.</p> |
| <ul style="list-style-type: none"> · 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC | <p style="text-align: right;">Non applicable.</p> |

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· **Indications complémentaires de transport:**

· **ADR**

· **Quantités limitées (LQ)**

500 g

· **Quantités exceptées (EQ)**

Code: E2

Quantité maximale nette par emballage intérieur: 30 g

Quantité maximale nette par emballage extérieur: 500 g

· **Catégorie de transport**

2

· **Code de restriction en tunnels**

D/E

· **IMDG**

· **Limited quantities (LQ)**

500 g

· **Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 500 g

· **"Règlement type" de l'ONU:**

UN 1396 ALUMINIUM EN POUDRE NON ENROBÉ,
4.3, II

RUBRIQUE 15: Informations relatives à la réglementation

· **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**

· **Directive 2012/18/UE**

· **Substances dangereuses désignées - ANNEXE I** la substance n'est pas comprise

· **RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII** Conditions de limitation: 40

· **Directive 2011/65/UE relative à la limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques – Annexe II**

la substance n'est pas comprise

· **RÈGLEMENT (UE) 2019/1148**

· **Annexe I - PRÉCURSEURS D'EXPLOSIFS FAISANT L'OBJET DE RESTRICTIONS (Valeur limite maximale aux fins de l'octroi d'une licence en vertu de l'article 5, paragraphe 3)**

la substance n'est pas comprise

· **Annexe II - PRÉCURSEURS D'EXPLOSIFS DEVANT FAIRE L'OBJET D'UN SIGNALLEMENT**

la substance est comprise

· **Règlement (CE) n° 273/2004 relatif aux précurseurs de drogues**

la substance n'est pas comprise

· **Règlement (CE) n° 111/2005 fixant des règles pour la surveillance du commerce des précurseurs des drogues entre la Communauté et les pays tiers**

la substance n'est pas comprise

· **15.2 Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

RUBRIQUE 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

· **Acronymes et abréviations:**

ADR: Accord relatif au transport international des marchandises dangereuses par route

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

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*GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Water-react. 2: Substances et mélanges qui, au contact de l'eau, dégagent des gaz inflammables – Catégorie 2*

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ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens

· **1.1 Produktidentifikator**

· **Handelsname:** Aluminum

· **Artikelnummer:** 80074-AL, 80075-AL

· **CAS-Nummer:**

7429-90-5

· **EG-Nummer:**

231-072-3

· **Indexnummer:**

013-001-00-6

· **UFI:** C190-A07R-600H-9VT5

· **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**

Keine weiteren relevanten Informationen verfügbar.

· **Verwendung des Stoffes / des Gemisches** Laborchemikalien

· **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**

· **Hersteller/Lieferant:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: info@emsdiasum.com

www.emsdiasum.com

Science Services GmbH

Unterhachinger Str. 75

81737 München Germany

Tel: +49(0)89 18 93 668-0

safety@scienceservices.de

Deutschland: +49 (0)89 19240, 24h Giftnotruf Munchen, www.toxinfo.org

Osterreich: +43 1406 43 43, Gesundheit Osterreich GmbH, 24 h

· **Auskunftgebender Bereich:** Product safety department

· **1.4 Notrufnummer:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

ABSCHNITT 2: Mögliche Gefahren

· **2.1 Einstufung des Stoffs oder Gemischs**

· **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS02 Flamme

Water-react. 2 H261 In Berührung mit Wasser entstehen entzündbare Gase.

· **2.2 Kennzeichnungselemente**

· **Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008**

Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

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· Gefahrenpiktogramme

GHS02

· Signalwort Gefahr**· Gefahrenhinweise***H261 In Berührung mit Wasser entstehen entzündbare Gase.***· Sicherheitshinweise***P223 Keinen Kontakt mit Wasser zulassen.**P231+P232 Inhalt unter inertem Gas handhaben und aufbewahren. Vor Feuchtigkeit schützen.**P280 Schutzhandschuhe/ Schutzkleidung/ Augenschutz/ Gesichtsschutz/ Gehörschutz tragen.**P370+P378 Bei Brand: CO₂, Sand, Löschpulver zum Löschen verwenden.**P402+P404 An einem trockenen Ort aufbewahren. In einem geschlossenen Behälter aufbewahren.**P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.***· Zusätzliche Angaben:***Das Produkt enthält: Meldepflichtige Ausgangsstoffe für Explosivstoffe. Bereitstellung, Verbringung, Besitz und Verwendung gemäß Verordnung (EU) 2019/1148, Artikel 9.***· 2.3 Sonstige Gefahren****· Ergebnisse der PBT- und vPvB-Beurteilung****· PBT:** Nicht anwendbar.**· vPvB:** Nicht anwendbar.

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

· 3.1 Chemische Charakterisierung: Stoffe**· CAS-Nr. Bezeichnung***7429-90-5 Aluminium***· Identifikationsnummer(n)****· EG-Nummer:** 231-072-3**· Indexnummer:** 013-001-00-6

ABSCHNITT 4: Erste-Hilfe-Maßnahmen

· 4.1 Beschreibung der Erste-Hilfe-Maßnahmen**· Nach Einatmen:** Frischluftzufuhr, bei Beschwerden Arzt aufsuchen.**· Nach Hautkontakt:** Im allgemeinen ist das Produkt nicht hautreizend.**· Nach Augenkontakt:** Augen bei geöffnetem Lidspalt mehrere Minuten mit fließendem Wasser spülen.**· Nach Verschlucken:** Bei anhaltenden Beschwerden Arzt konsultieren.**· 4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen***Keine weiteren relevanten Informationen verfügbar.***· 4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung***Keine weiteren relevanten Informationen verfügbar.*

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ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

- **5.1 Löschmittel**
- **Geeignete Löschmittel:**
CO₂, Sand, Löschpulver. Kein Wasser verwenden.
Feuerlöschrmaßnahmen auf die Umgebung abstimmen.
- **Aus Sicherheitsgründen ungeeignete Löschmittel:** Wasser
- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**
Keine weiteren relevanten Informationen verfügbar.
- **5.3 Hinweise für die Brandbekämpfung**
- **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**
Schutzausrüstung tragen. Ungeschützte Personen fernhalten.
- **6.2 Umweltschutzmaßnahmen:** Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.
- **6.3 Methoden und Material für Rückhaltung und Reinigung:**
Für ausreichende Lüftung sorgen.
Nicht mit Wasser oder wässrigen Reinigungsmitteln wegspülen.
- **6.4 Verweis auf andere Abschnitte**
Informationen zur sicheren Handhabung siehe Abschnitt 7.
Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.
Informationen zur Entsorgung siehe Abschnitt 13.

ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung**
Bei sachgemäßer Verwendung keine besonderen Maßnahmen erforderlich.
- **Hinweise zum Brand- und Explosionsschutz:**
Zündquellen fernhalten - nicht rauchen.
Maßnahmen gegen elektrostatische Aufladung treffen.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** Keine besonderen Anforderungen.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:**
Behälter dicht geschlossen halten.
In gut verschlossenen Gebinden kühl und trocken lagern.
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** -
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **8.1 Zu überwachende Parameter**
- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.

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· **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:**

7429-90-5 Aluminium

AGW Langzeitwert: $1,25 \cdot 10^{**} \text{ mg/m}^3$
2(II); *alveolengängig**einatembar; AGS, DFG, Y

· **Bestandteile mit biologischen Grenzwerten:**

7429-90-5 Aluminium

BGW 50 µg/g Kreatinin
Untersuchungsmaterial: Urin
Probennahmezeitpunkt: bei Langzeitexposition: am Schichtende nach mehreren vorangegangenen Schichten
Parameter: Aluminium

· **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.

· **8.2 Begrenzung und Überwachung der Exposition**

· **Persönliche Schutzausrüstung:**

· **Allgemeine Schutz- und Hygienemaßnahmen:** Vor den Pausen und bei Arbeitsende Hände waschen.

· **Atemschutz:** Nicht erforderlich.

· **Handschutz:**

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.

Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

· **Handschuhmaterial**

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.

· **Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

· **Augenschutz:** Nicht erforderlich.

ABSCHNITT 9: Physikalische und chemische Eigenschaften

· **9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**

· **Allgemeine Angaben**

· **Aussehen:**

Form: Fest
Farbe: Nicht bestimmt.
Geruch: Charakteristisch
Geruchsschwelle: Nicht bestimmt.

· **pH-Wert:** Nicht anwendbar.

· **Zustandsänderung**

Schmelzpunkt/Gefrierpunkt: 660 °C
Siedebeginn und Siedebereich: 2.500 °C

· **Flammpunkt:** Nicht anwendbar.

· **Entzündbarkeit (fest, gasförmig):** Reagiert mit Wasser unter Bildung hochentzündlicher Gase.

· **Zündtemperatur:** 400 °C

· **Zersetzungstemperatur:** Nicht bestimmt.

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· Selbstentzündungstemperatur:	Nicht bestimmt.
· Explosive Eigenschaften:	Nicht bestimmt.
· Explosionsgrenzen:	
Untere:	Nicht bestimmt.
Obere:	Nicht bestimmt.
· Dampfdruck:	Nicht anwendbar.
· Dichte bei 20 °C:	2,7 g/cm ³
· Relative Dichte	Nicht bestimmt.
· Dampfdichte	Nicht anwendbar.
· Verdampfungsgeschwindigkeit	Nicht anwendbar.
· Löslichkeit in / Mischbarkeit mit Wasser:	Unlöslich.
· Verteilungskoeffizient: n-Octanol/Wasser:	Nicht bestimmt.
· Viskosität:	
Dynamisch:	Nicht anwendbar.
Kinematisch:	Nicht anwendbar.
· Festkörpergehalt:	99,0 %
· 9.2 Sonstige Angaben	Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität** Keine weiteren relevanten Informationen verfügbar.
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Kontakt mit Wasser setzt brennbare Gase frei.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Schwere Augenschädigung/-reizung** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Sensibilisierung der Atemwege/Haut** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Zusätzliche toxikologische Hinweise:**
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
- **Keimzell-Mutagenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Karzinogenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Reproduktionstoxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Spezifische Zielorgan-Toxizität bei einmaliger Exposition**
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

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- **Spezifische Zielorgan-Toxizität bei wiederholter Exposition**
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Aspirationsgefahr** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.


ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**
Wassergefährdungsklasse 1 (Listeneinstufung): schwach wassergefährdend
Nicht unverdünnt bzw. in größeren Mengen in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

ABSCHNITT 14: Angaben zum Transport

- | | |
|---|---|
| · 14.1 UN-Nummer | |
| · ADR, IMDG, IATA | UN1396 |
| · 14.2 Ordnungsgemäße UN-Versandbezeichnung | |
| · ADR | 1396 ALUMINIUM-PULVER, NICHT ÜBERZOGEN |
| · IMDG, IATA | ALUMINIUM POWDER, UNCOATED |
| · 14.3 Transportgefahrenklassen | |
| · ADR, IMDG, IATA | |
|  | |
| · Klasse | 4.3 Stoffe, die in Berührung mit Wasser entzündbare Gase entwickeln |
| · Gefahrzettel | 4.3 |
| · 14.4 Verpackungsgruppe | |
| · ADR, IMDG, IATA | II |

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· 14.5 Umweltgefahren:	Nicht anwendbar.
· 14.6 Besondere Vorsichtsmaßnahmen für den Verwender	Achtung: Stoffe, die in Berührung mit Wasser entzündbare Gase entwickeln
· Nummer zur Kennzeichnung der Gefahr (Kemler-Zahl):	423
· EMS-Nummer:	4.3-06
· Segregation groups	Powdered metals
· Stowage Category	A
· Handling Code	H1 Keep as dry as reasonably practicable
· Segregation Code	SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained. SG32 Stow "away from" SGG10-liquid halogenated hydrocarbons SG35 Stow "separated from" SGG1-acids SG36 Stow "separated from" SGG18-alkalis.
· 14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code	Nicht anwendbar.
· Transport/weitere Angaben:	
· ADR	
· Begrenzte Menge (LQ)	500 g
· Freigestellte Mengen (EQ)	Code: E2 Höchste Nettomenge je Innenverpackung: 30 g Höchste Nettomenge je Außenverpackung: 500 g
· Beförderungskategorie	2
· Tunnelbeschränkungscode	D/E
· IMDG	
· Limited quantities (LQ)	500 g
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN 1396 ALUMINIUM-PULVER, NICHT ÜBERZOGEN, 4.3, II

ABSCHNITT 15: Rechtsvorschriften

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
- **Richtlinie 2012/18/EU**
- **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.
- **VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII** Beschränkungsbedingungen: 40
- **Richtlinie 2011/65/EU zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten – Anhang II**
- Der Stoff ist nicht enthalten.

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- **VERORDNUNG (EU) 2019/1148**

- **Anhang I - BESCHRÄNKTE AUSGANGSSTOFFE FÜR EXPLOSIVSTOFFE (Oberer Konzentrationsgrenzwert für eine Genehmigung nach Artikel 5 Absatz 3)**

Der Stoff ist nicht enthalten.

- **Anhang II - MELDEPFLICHTIGE AUSGANGSSTOFFE FÜR EXPLOSIVSTOFFE**

Der Stoff ist enthalten.

- **Verordnung (EG) Nr. 273/2004 betreffend Drogenerausgangsstoffe**

Der Stoff ist nicht enthalten.

- **Verordnung (EG) Nr. 111/2005 zur Festlegung von Vorschriften für die Überwachung des Handels mit Drogenerausgangsstoffen zwischen der Gemeinschaft und Drittländern**

Der Stoff ist nicht enthalten.

- **Nationale Vorschriften:**

- **Wassergefährdungsklasse: WGK 1 (Listeneinstufung):** schwach wassergefährdend.

- **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

- **Abkürzungen und Akronyme:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Water-react. 2: Stoffe und Gemische, die in Berührung mit Wasser entzündbare Gase entwickeln – Kategorie 2

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SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** Aluminum

· **Articolo numero:** 80074-AL, 80075-AL

· **Numero CAS:**

7429-90-5

· **Numeri CE:**

231-072-3

· **Numero indice:**

013-001-00-6

· **UFI:** C190-A07R-600H-9VT5

· **1.2 Usi identificati pertinenti della sostanza o della miscela e usi sconsigliati**

Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: info@emsdiasum.com

www.emsdiasum.com

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS02 fiamma

Water-react. 2 H261 A contatto con l'acqua libera gas infiammabili.

· **2.2 Elementi dell'etichetta**

· **Etichettatura secondo il regolamento (CE) n. 1272/2008**

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

· **Pittogrammi di pericolo**



GHS02

· **Avvertenza Pericolo**

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- **Indicazioni di pericolo**
H261 A contatto con l'acqua libera gas infiammabili.
- **Consigli di prudenza**
P223 Evitare qualunque contatto con l'acqua.
P231+P232 Manipolare e conservare in atmosfera di gas inerte. Tenere al riparo dall'umidità.
P280 Indossare guanti/indumenti protettivi/proteggere gli occhi/proteggere il viso/proteggere l'udito.
P370+P378 In caso d'incendio: utilizzare CO2, sabbia, polvere per estintore per estinguere.
P402+P404 Conservare in luogo asciutto e in recipiente chiuso.
P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.
- **Ulteriori dati:**
Il prodotto contiene: Precursori di esplosivi soggetti a segnalazione. Messa a disposizione, introduzione, detenzione e uso ai sensi del regolamento (UE) 2019/1148, articolo 9.
- **2.3 Altri pericoli**
- **Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.

SEZIONE 3: Composizione/informazioni sugli ingredienti

- **3.1 Caratteristiche chimiche: Sostanze**
- **Numero CAS**
7429-90-5 alluminio
- **Numero/i di identificazione**
- **Numeri CE:** 231-072-3
- **Numero indice:** 013-001-00-6

SEZIONE 4: Misure di primo soccorso

- **4.1 Descrizione delle misure di primo soccorso**
- **Inalazione:** Portare in zona ben areata, in caso di disturbi consultare il medico.
- **Contatto con la pelle:** Generalmente il prodotto non è irritante per la pelle.
- **Contatto con gli occhi:** Lavare con acqua corrente per alcuni minuti tenendo le palpebre ben aperte.
- **Ingestione:** Se il dolore persiste consultare il medico.
- **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.
- **4.3 Indicazione dell'eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**
Non sono disponibili altre informazioni.

SEZIONE 5: Misure antincendio

- **5.1 Mezzi di estinzione**
- **Mezzi di estinzione idonei:**
CO2, sabbia, polvere. Non usare acqua.
Adottare provvedimenti antiincendio nei dintorni della zona colpita.
- **Mezzi di estinzione inadatti per motivi di sicurezza:** *Acqua*
- **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.
- **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**
- **Mezzi protettivi specifici:** Non sono richiesti provvedimenti particolari.

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SEZIONE 6: Misure in caso di rilascio accidentale

- **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza**
Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.
- **6.2 Precauzioni ambientali:** Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.
- **6.3 Metodi e materiali per il contenimento e per la bonifica:**
Provvedere ad una sufficiente areazione.
Non dilavare con acqua o detergenti liquidi.
- **6.4 Riferimento ad altre sezioni**
Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.
Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.
Per informazioni relative allo smaltimento vedere Capitolo 13.

SEZIONE 7: Manipolazione e immagazzinamento

- **7.1 Precauzioni per la manipolazione sicura** Per un uso corretto non sono necessari provvedimenti particolari.
- **Indicazioni in caso di incendio ed esplosione:**
Tenere lontano da fonti di calore, non fumare.
Adottare provvedimenti contro cariche elettrostatiche.
- **7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Non sono richiesti requisiti particolari.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:**
Mantenere i recipienti ermeticamente chiusi.
Conservare in luogo fresco e asciutto in fusti ben chiusi.
- **7.3 Usi finali particolari** Non sono disponibili altre informazioni.

SEZIONE 8: Controllo dell'esposizione/protezione individuale

- **8.1 Parametri di controllo**
- **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.

· **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:**

7429-90-5 alluminio

TWA	Valore a lungo termine: 1 mg/m ³ A4, (j); metallico e composti insolubili
-----	---

- **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.
- **8.2 Controlli dell'esposizione**
- **Mezzi protettivi individuali:**
- **Norme generali protettive e di igiene del lavoro:** Lavarsi le mani prima dell'intervallo o a lavoro terminato.
- **Maschera protettiva:** Non necessario.
- **Guanti protettivi:**
Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.
A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.
Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.
- **Materiale dei guanti**
La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.

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- **Tempo di permeazione del materiale dei guanti**
Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.
- **Occhiali protettivi:** Non necessario.

SEZIONE 9: Proprietà fisiche e chimiche

· 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali

· Indicazioni generali

· Aspetto:

· Forma:	Solido
· Colore:	Non definito.
· Odore:	Caratteristico
· Soglia olfattiva:	Non definito.

· **valori di pH:** Non applicabile.

· Cambiamento di stato

· Punto di fusione/punto di congelamento:	660 °C
· Punto di ebollizione iniziale e intervallo di ebollizione:	2.500 °C

· **Punto di infiammabilità:** Non applicabile.

· **Infiammabilità (solidi, gas):** A contatto con l'acqua libera gas estremamente infiammabili.

· **Temperatura di accensione:** 400 °C

· **Temperatura di decomposizione:** Non definito.

· **Temperatura di autoaccensione:** Non definito.

· **Proprietà esplosive:** Non definito.

· Limiti di infiammabilità:

· Inferiore:	Non definito.
· Superiore:	Non definito.

· **Tensione di vapore:** Non applicabile.

· Densità a 20 °C:	2,7 g/cm ³
· Densità relativa	Non definito.
· Densità di vapore:	Non applicabile.
· Velocità di evaporazione	Non applicabile.

· **Solubilità in/Miscibilità con acqua:** Insolubile.

· **Coefficiente di ripartizione: n-ottanolo/acqua:** Non definito.

· Viscosità:

· Dinamica:	Non applicabile.
· Cinematica:	Non applicabile.

· **Contenuto solido:** 99,0 %

· **9.2 Altre informazioni** Non sono disponibili altre informazioni.

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SEZIONE 10: Stabilità e reattività

- **10.1 Reattività** Non sono disponibili altre informazioni.
- **10.2 Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- **10.3 Possibilità di reazioni pericolose** Il contatto con acqua libera gas infiammabili.
- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili:** Non sono disponibili altre informazioni.
- **10.6 Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

SEZIONE 11: Informazioni tossicologiche

- **11.1 Informazioni sugli effetti tossicologici**
- **Tossicità acuta** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Lesioni oculari gravi/irritazioni oculari gravi**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Sensibilizzazione respiratoria o cutanea**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Ulteriori dati tossicologici:**
- **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**
- **Mutagenicità delle cellule germinali**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Cancerogenicità** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità per la riproduzione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione singola**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Pericolo in caso di aspirazione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

SEZIONE 12: Informazioni ecologiche

- **12.1 Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**
Pericolosità per le acque classe 1 (D) (Classif. secondo le liste): poco pericoloso
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.

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SEZIONE 13: Considerazioni sullo smaltimento

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.

SEZIONE 14: Informazioni sul trasporto

- | | |
|---|--|
| · 14.1 Numero ONU
· ADR, IMDG, IATA | UNI396 |
| · 14.2 Nome di spedizione dell'ONU
· ADR
· IMDG, IATA | 1396 ALLUMINIO IN POLVERE, NON RIVESTITO
ALUMINIUM POWDER, UNCOATED |
| · 14.3 Classi di pericolo connesso al trasporto
· ADR, IMDG, IATA | |
|  | |
| · Classe
· Etichetta | 4.3 Materie che, a contatto con l'acqua, sviluppano gas infiammabili
4.3 |
| · 14.4 Gruppo di imballaggio
· ADR, IMDG, IATA | II |
| · 14.5 Pericoli per l'ambiente: | Non applicabile. |
| · 14.6 Precauzioni speciali per gli utilizzatori
· N° identificazione pericolo (Numero Kemler):
· Numero EMS:
· Segregation groups
· Stowage Category
· Handling Code
· Segregation Code | Attenzione: Materie che, a contatto con l'acqua, sviluppano gas infiammabili
423
4.3-06
Powdered metals
A
H1 Keep as dry as reasonably practicable
SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained.
SG32 Stow "away from" SGG10-liquid halogenated hydrocarbons
SG35 Stow "separated from" SGG1-acids
SG36 Stow "separated from" SGG18-alkalis. |
| · 14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL ed il codice IBC | Non applicabile. |

(continua a pagina 7)

IT

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 08.03.2022

Revisione: 08.03.2022

Denominazione commerciale: Aluminum

(Segue da pagina 6)

· **Trasporto/ulteriori indicazioni:**· **ADR**· **Quantità limitate (LQ)**

500 g

· **Quantità esenti (EQ)**

Codice: E2

Quantità massima netta per imballaggio interno: 30 g

Quantità massima netta per imballaggio esterno: 500 g

· **Categoria di trasporto**

2

· **Codice di restrizione in galleria**

D/E

· **IMDG**· **Limited quantities (LQ)**

500 g

· **Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 g

Maximum net quantity per outer packaging: 500 g

· **UN "Model Regulation":**UN 1396 ALLUMINIO IN POLVERE, NON RIVESTITO, 4.3,
II**SEZIONE 15: Informazioni sulla regolamentazione**· **15.1 Disposizioni legislative e regolamentari su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**· **Direttiva 2012/18/UE**· **Sostanze pericolose specificate - ALLEGATO I** La sostanza non è contenuta· **REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII** Restrizioni: 40· **Direttiva 2011/65/UE sulla restrizione dell'uso di determinate sostanze pericolose nelle apparecchiature elettriche ed elettroniche - Allegato II**

La sostanza non è contenuta

· **REGOLAMENTO (UE) 2019/1148**· **Allegato I - PRECURSORI DI ESPLOSIVI SOGGETTI A RESTRIZIONI (Valore limite superiore ai fini della concessione di licenze a norma dell'articolo 5, paragrafo 3)**

La sostanza non è contenuta

· **Allegato II - PRECURSORI DI ESPLOSIVI SOGGETTI A SEGNALAZIONE**

La sostanza è contenuta

· **Regolamento (CE) n. 273/2004 relativo ai precursori di droghe**

La sostanza non è contenuta

· **Regolamento (CE) N. 111/2005 recante norme per il controllo del commercio dei precursori di droghe tra la Comunità e i paesi terzi**

La sostanza non è contenuta

· **15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.**SEZIONE 16: Altre informazioni**

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

· **Abbreviazioni e acronimi:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

(continua a pagina 8)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 08.03.2022

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(Segue da pagina 7)

*IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Water-react. 2: Sostanze e miscele che, a contatto con l'acqua, sviluppano gas infiammabili – Categoria 2*

IT

물질안전보건자료

GHS에 따라

인쇄일자: 2022.03.08

개정: 2022.03.08

1 화학제품과 회사에 관한 정보

- 제품 식별자
- 제품명: **Aluminum**
- 상품번호: 80074-AL, 80075-AL
- CAS-번호
7429-90-5
- EC 의번호:
231-072-3
- 색인 번호:
013-001-00-6
- 해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도
- 제품의 권고 용도와 사용상의 제한: Aluminum
- 제품의 권고 용도와 사용상의 제한: 실험실 화학품
- 안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보
- 제조자/수입자/유통업자 정보:
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- Samchang Commercial Co., Ltd.
Yeo Eui Do
PO Box 1110
Seoul, Korea
Tel: 82 2 703 3040
Fax: 82 2 717 3298
-
- Daedok Science, Co. Ltd.
34141 E10 Korea Advanced Institute of Science
Guseong-Dong, Yuseong-gu, Daejeon,
Korea
Phone: 82 42 710 2091
Fax: 82 42 367 0005
Website: www.labsmro.com
- 추가적인 정보 획득 가능: Product safety department
- 비상연락 전화번호:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 유해성·위험성

- 순물질 또는 혼합물의 분류



화염

물반응성 물질 및 혼합물 – 구분2 H261 물과 접촉 시 인화성 가스를 발생시킴

- 라벨표기 요소
- **GHS 라벨 요소** 본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

(2 쪽에 계속)

KR

물질안전보건자료 GHS에 따라

인쇄일자: 2022.03.08

개정: 2022.03.08

제품명: Aluminum

(1 쪽부터계속)

· **GHS 그림문자**



GHS02

- **신호어 위험**
- **유해·위험문구**
물과 접촉 시 인화성 가스를 발생시킴
- **예방조치문구**
격렬한 반응 및 화재의 가능성이 있으므로 물과 접촉하지 않게 하시오.
불활성 기체 하에서 취급하고, 습기를 방지하십시오.
보호장갑·보호의·보안경·안면보호구를 착용하십시오.
화재 시 불을 끄기 위해 이산화탄소, 모래, 소화 파우더 을(를) 사용하십시오.
건조한 장소에 보관하십시오. 밀폐된 용기에 보관하십시오.
(지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하십시오.
- **기타 유해성**
- **PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과**
- **PBT(잔류성, 생물농축성, 독성 물질):** 해당사항 없음.
- **vPvB(고 잔류성, 고 생물농축성 물질):** 해당사항 없음.

3 구성성분의 명칭 및 함유량

- **화 학 적 특 성:** 화학물질
- **CAS-번호표시**
7429-90-5 aluminium
- **식별 번호**
- **EC 의번호:** 231-072-3
- **색인 번호:** 013-001-00-6

4 응급조치 요령

- **응급조치요령 내용**
- **흡입했을 때:** 신선한 공기를 쐬고, 통증이 있을 때는 의료진의 도움을 구한다.
- **피부에 접촉했을 때:** 일반적으로 이 제품은 피부에 자극적이지 않다.
- **눈에 들어갔을 때:** 흐르는 물에 눈을 몇분동안 씻어낸다.
- **먹었을 때:** 증상이 지속될 경우에는 의사와 상담한다.
- **기타 의사의 주의사항:**
- **가장 중요한 급·만성 증상 및 영향** 추가적인 정보가 존재하지 않습니다.
- **즉각적인 의료처치 및 특별치료가 필요함을 시사하는 징후** 추가적인 정보가 존재하지 않습니다.

5 폭발·화재시 대처방법

- **소화제**
- **적절한 소화제:**
이산화탄소, 모래, 석회가루를 사용하고, 물을 사용하지 않는다.
주변 환경에 맞는 화재진화방법을 사용한다.
- **부적절한 소화제:** 물
- **본 화학물질이나 혼합물에서 발생하는 특별 유해성** 추가적인 정보가 존재하지 않습니다.

(3 쪽에계속)

물질안전보건자료 GHS에 따라

인쇄일자: 2022.03.08

개정: 2022.03.08

제품명: Aluminum

- 소방관에 대한 권고사항
- 화재 진압 시 착용할 보호구 및 예방조치: 특별한 조치가 필요없음.

(2 쪽부터 계속)

6 누출 사고 시 대처방법

- 개인적 예방조치, 보호장비 및 응급처치 절차 안전장비 착용하고, 무방비의 사람은 격리시킨다.
- 환경 관련 예방조치: 하수도망/해수면위의물/지하수로도달하지않게한다.
- 밀폐 및 정화 방법과 소재:
 - 충분한 환기가 되도록 한다.
 - 물이나 묽은 세척제로 씻어 내지 마십시오
- 타 섹션 참조
 - 안전 관리에 대한 정보는 제7 장 을 참고하십시오.
 - 개인 보호 장비에 대한 정보는 제8 장 을 참고하십시오.
 - 쓰레기 처리에 대한 정보는 제13 장 을 참고하십시오.

7 취급 및 저장방법

- 취급:
 - 안전 취급을 위한 예방조치 올바르게 사용할 경우에는 특별한 주의가 필요없다.
- 화재 및 폭발 사고 예방대책에 관한 정보:
 - 발화 요소는 멀리 둔다-금연.
 - 정전기의 충전으로부터 보호한다.
- 혼합위험성 등 안전 저장 조건
- 보관:
 - 안전한 저장 방법: 특별한 요구사항이 없음.
 - 하나의 공동 보관 시설에 대한 보관 관련 정보: 필요없음
 - 보관 조건에 관한 추가적인 정보:
 - 용기를새지않게밀폐한채보관한다.
 - 밀폐된 용기속에서늘하고건조하게보관한다.
- 구체적 최종 사용자 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

- 첨단시설 디자인에 대한 추가정보: 더 이상의 자료는 없음. 항목 7 을 참고하십시오.
- 통제 변수

· 화학물질의 노출기준, 생물학적 노출기준 등:

7429-90-5 aluminium

OELV (KR)	장기간의값: 10* 5** mg/m ³ *금속분진 **용접 흄
PEL (US)	장기간의값: 15*; 5** mg/m ³ *Total dust; ** Respirable fraction
REL (US)	장기간의값: 10* 5** mg/m ³ as Al*Total dust**Respirable/pyro powd./welding f.
TLV (US)	장기간의값: 1* mg/m ³ as Al; *as respirable fraction, A4

- 추가 정보: 제조할 당시에 유효한 목록을 기초로 사용했다.

(4 쪽에 계속)

물질안전보건자료 GHS에 따라

인쇄일자: 2022.03.08

개정: 2022.03.08

제품명: Aluminum

(3 쪽부터계속)

- 노출 통제
- 개인 보호구
- 일반적보호조치및위생조치: 휴 식 전 이 나 작업이 끝날때마다 손을 씻는다.
- 호흡기 보호: 필 요없음.
- 손 보호:
장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.
테 슷 를 하 지 않 았기 때문에 제 품 / 조 제 / 화 학 혼 합 물에 적합한 장갑재질에 대한 추천이 없다.
투과 시간, 침 투 율 과 저하를 고 려해서 장 갑 재 료를 선택한다.
- 장갑의재료
적합한장갑의선택은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다르게선정되어야한다.
- 장 갑 재 료 의 투과시 간 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.
- 눈 보호: 필 요 없음.

9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보	
· 일반정보	
· 외형	
물리적 상태:	고체
색:	알맞지않다.
· 냄새:	특색있는
· 후각역치	알맞지않다.
· pH:	해당사항 없음.
· 상태변화	
녹는점/어는점:	660 °C
초기 끓는점과 끓는점 범위:	2,500 °C
· 인화점:	해당사항 없음.
· 인화성(고체, 기체):	발화성이높은가스가만들어진상태에서물에반응한다.
· 점화온도:	400 °C
· 분해 온도:	알맞지않다.
· 자기점화:	알맞지않다.
· 폭발위험:	알맞지않다.
· 인화 또는 폭발 범위의 상한/하한	
아래로:	알맞지않다.
위로:	알맞지않다.
· 증기압:	해당사항 없음.
· 밀도 의경우 20 °C:	2.7 g/cm ³
· 비중:	알맞지않다.
· 증기밀도:	해당사항 없음.
· 증발 속도:	해당사항 없음.
· 용해도:	
물:	불용해성의
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도:	
역학적:	해당사항 없음.

(5 쪽에계속)

물질안전보건자료 GHS에 따라

인쇄일자: 2022.03.08

개정: 2022.03.08

제품명: Aluminum

(4 쪽부터계속)

동점성:	해당사항 없음.
고체의 함량:	99.0 %
· 기타 정보	추가적인 정보가 존재하지 않습니다.

10 안정성 및 반응성

- 반응성 추가적인 정보가 존재하지 않습니다.
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건: 규정에따라서사용할경우해체는없다
- 유해반응 가능성 물과접촉시인화성가스가방출된다.
- 피해야 할 조건 추가적인 정보가 존재하지 않습니다.
- 혼합 금지 물질: 추가적인 정보가 존재하지 않습니다.
- 유해분해물질: 위험성있는분해물들은알려지지않았다.

11 독성에 관한 정보

- 독성학적 영향에 대한 정보
- 급성 독성:
- 일차적 자극 효과:
- 피부 부식성 또는 자극성: 무자극
- 심한 눈 손상 또는 자극성: 무자극.
- 감각화: 민감한영향이없는것으로알려져있다.

12 환경에 미치는 영향

- 독성
- 수생독성: 추가적인 정보가 존재하지 않습니다.
- 지속성 및 분해성 추가적인 정보가 존재하지 않습니다.
- 환경 시스템에서의 행동:
- 생물농축 잠재성 추가적인 정보가 존재하지 않습니다.
- 토양내 이동성 추가적인 정보가 존재하지 않습니다.
- 추가적인 생태학 정보:
- 일반 특징:
 - 수질오염등급 1 (목록분류): 약하게수질오염이된
 - 희석시키지않은채대량으로지하수나, 하천으로그리고하수도망에도달하지않게한다.
- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과
- PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
- vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.
- 기타 부작용 추가적인 정보가 존재하지 않습니다.

13 폐기시 주의사항

- 폐기물 처리 방법
- 권고: 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.

(6 쪽에계속)

물질안전보건자료 GHS에 따라

인쇄일자: 2022.03.08

개정: 2022.03.08

제품명: Aluminum

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- 비위생적 포장:
- 권고: 당국의지침에입각한쓰레기처리.

14 운송에 필요한 정보

<ul style="list-style-type: none"> · 유엔 번호 · ADR, IMDG, IATA 	UN1396
<ul style="list-style-type: none"> · UN 적정 선적명 · ADR · IMDG, IATA 	1396 ALUMINIUM POWDER, UNCOATED ALUMINIUM POWDER, UNCOATED
<ul style="list-style-type: none"> · 교통 위험 클래스 · ADR, IMDG, IATA 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · 등급 · 위험물 라벨 	4.3 물질접촉시발화성가스를발생시키는물질 4.3
<ul style="list-style-type: none"> · 용기등급 · ADR, IMDG, IATA 	II
<ul style="list-style-type: none"> · 환경적 유해물질: 	해당사항 없음.
<ul style="list-style-type: none"> · 이용자 특별 예방조치 · 위험 코드: · EMS-번호: · Segregation groups · Stowage Category · Handling Code · Segregation Code 	경고: 물질접촉시발화성가스를발생시키는물질 423 4.3-06 Powdered metals A H1 Keep as dry as reasonably practicable SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained. SG32 Stow "away from" SGG10-liquid halogenated hydrocarbons SG35 Stow "separated from" SGG1-acids SG36 Stow "separated from" SGG18-alkalis.
<ul style="list-style-type: none"> · MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송 	해당사항 없음.
<ul style="list-style-type: none"> · 운 송/추가 정보: 	<ul style="list-style-type: none"> · ADR · 한정 수량 (LQ) · Excepted quantities (EQ)
<ul style="list-style-type: none"> · 운송 구분 	500 g Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g 2

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물질안전보건자료 GHS에 따라

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제품명: Aluminum

(6 쪽부터계속)

· 터널 제한 코드	D/E
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	500 g Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· UN "모범 규제":	UN 1396 ALUMINIUM POWDER, UNCOATED, 4.3, II

15 법적 규제현황

· 산업안전보건법에 의한 규제:	
· 제조 등 금지물질: 성분이포함되어있지않다	
· 허가대상물질: 성분이포함되어있지않다	
· 관리대상유해물질: 성분이포함되어있다	
· 작업환경측정 대상 유해인자	1B12
· 특수건강진단 대상 유해인자	1B10
· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률 추가적인 정보가 존재하지 않습니다.	
· Korean Existing Chemical Inventory	KE-00881
· 화학물질관리법	
· 사고대비물질 성분이포함되어있지않다	
· 금지물질 성분이포함되어있지않다	
· 제한물질 성분이포함되어있지않다	
· 유독물질 성분이포함되어있지않다	
· 허가물질 성분이포함되어있지않다	
· 등록 또는 신고 면제대상 화학물질 성분이포함되어있지않다	
· ‘21년까지 등록하여야 할 암, 돌연변이, 생식능력 이상을 일으키거나 일으킬 우려가 있는 기존화학물질 성분이포함되어있지않다	
· 중점관리물질의 지정	
· 표1 중점관리물질(제2조 관련) 성분이포함되어있지않다	

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물질안전보건자료 GHS에 따라

인쇄일자: 2022.03.08

개정: 2022.03.08

제품명: Aluminum

(7 쪽부터계속)

· 표2 중점관리물질(제2조 관련)

성분이포함되어있지않다

· **GHS 라벨 요소** 본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· **GHS 그림문자**



GHS02

· **신호어 위험**

· **유해·위험문구**

물과 접촉 시 인화성 가스를 발생시킴

· **예방조치문구**

격렬한 반응 및 화재의 가능성이 있으므로 물과 접촉하지 않게 하시오.

불활성 기체 하에서 취급하고, 습기를 방지하십시오.

보호장갑·보호의·보안경·안면보호구를 착용하십시오.

화재 시 불을 끄기 위해 이산화탄소, 모래, 소화 파우더 을(를) 사용하십시오.

건조한 장소에 보관하십시오. 밀폐된 용기에 보관하십시오.

(지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하십시오.

· **화학물질 안전성 평가:** 화학물질 안전성 평가가 수행되지 않음

16 그 밖의 참고사항

이 보고는 우리 지식에 대한 오늘날의 상태에 대하여 평가하고 있다

하지만 이 보고서는 생산 특성에 관한 보증은 기술하지 않았으며 계약적인 법률 관계에 기반을 두고 있지 않다

· **담당자:**

· **최초 작성일자:** 2022.03.08

· **개정 횟수 및 최종 개정일자:** 1 / 2022.03.08

· **약어와 두문자어:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 08.03.2022

Revisión: 08.03.2022

SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

- **1.1 Identificador del producto**
- **Nombre comercial:** Aluminum
- **Número del artículo:** 80074-AL, 80075-AL
- **Número CAS:**
7429-90-5
- **Número CE:**
231-072-3
- **Número de clasificación:**
013-001-00-6
- **UFI:** C190-A07R-600H-9VT5
- **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**
No existen más datos relevantes disponibles.
- **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio
- **1.3 Datos del proveedor de la ficha de datos de seguridad**
- **Fabricante/distribuidor:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: info@emsdiasum.com
www.emsdiasum.com
- **Aname**
C/ Perez Galdos no. 2
28693 Quijorna
Madrid, Spain
Tel: +34.91.816.89.50
Fax: +34.91.816.85.94
email: ventas@aname.es
- **Área de información:** Product safety department
- **1.4 Teléfono de emergencia:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

SECCIÓN 2: Identificación de los peligros

- **2.1 Clasificación de la sustancia o de la mezcla**
- **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS02 llama

Water-react. 2 H261 En contacto con el agua desprende gases inflamables.

- **2.2 Elementos de la etiqueta**
- **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**
La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.
- **Pictogramas de peligro**



GHS02

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- **Palabra de advertencia** Peligro
- **Indicaciones de peligro**
H261 En contacto con el agua desprende gases inflamables.
- **Consejos de prudencia**
P223 Evitar el contacto con el agua.
P231+P232 Manipular y almacenar el contenido en un medio de gas inerte. Proteger de la humedad.
P280 Llevar guantes/ropa de protección/equipo de protección para los ojos/la cara/los oídos.
P370+P378 En caso de incendio: Utilizar CO₂, arena, polvo extintor para la extinción.
P402+P404 Almacenar en un lugar seco. Almacenar en un recipiente cerrado.
P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.
- **Datos adicionales:**
El producto contiene: Precursores de explosivos notificables. Puesta a disposición, introducción, posesión y utilización según Reglamento (UE) 2019/1148, Artículo 9.
- **2.3 Otros peligros**
- **Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.

SECCIÓN 3: Composición/información sobre los componentes

- **3.1 Caracterización química: Sustancias**
- **Denominación N° CAS**
7429-90-5 Aluminio en polvo (pirofórico)
- **Número(s) de identificación**
- **Número CE:** 231-072-3
- **Número de clasificación:** 013-001-00-6

SECCIÓN 4: Primeros auxilios

- **4.1 Descripción de los primeros auxilios**
- **En caso de inhalación del producto:** Suministrar aire fresco. En caso de trastornos, consultar al médico.
- **En caso de contacto con la piel:** Por regla general, el producto no irrita la piel.
- **En caso de con los ojos:** Limpiar los ojos abiertos durante varios minutos con agua corriente.
- **En caso de ingestión:** Consultar un médico si los trastornos persisten.
- **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.
- **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**
No existen más datos relevantes disponibles.

SECCIÓN 5: Medidas de lucha contra incendios

- **5.1 Medios de extinción**
- **Sustancias extintoras apropiadas:**
CO₂, arena, polvo extintor. No utilizar agua.
Combatir los incendios con medidas adaptados al ambiente circundante.
- **Sustancias extintoras inapropiadas por razones de seguridad:** Agua
- **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.
- **5.3 Recomendaciones para el personal de lucha contra incendios**
- **Equipo especial de protección:** No se requieren medidas especiales.

ES

(se continua en página 3)

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SECCIÓN 6: Medidas en caso de vertido accidental

- **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia**
Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.
- **6.2 Precauciones relativas al medio ambiente:**
Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.
- **6.3 Métodos y material de contención y de limpieza:**
Asegurar suficiente ventilación.
No enjuagar con agua ni productos de limpieza acuosos.
- **6.4 Referencia a otras secciones**
Ver capítulo 7 para mayor información sobre una manipulación segura.
Ver capítulo 8 para mayor información sobre el equipo personal de protección.
Para mayor información sobre cómo desechar el producto, ver capítulo 13.

SECCIÓN 7: Manipulación y almacenamiento

- **7.1 Precauciones para una manipulación segura**
Si se manipulan correctamente, no se requieren medidas especiales.
- **Prevención de incendios y explosiones:**
Mantener alejadas las fuentes de encendido. No fumar.
Tomar medidas contra las cargas electrostáticas.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** No se requieren medidas especiales.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**
Mantener el recipiente cerrado herméticamente.
Almacenarlo en envases bien cerrados en un lugar fresco y seco.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

SECCIÓN 8: Controles de exposición/protección individual

- **8.1 Parámetros de control**
- **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**
Sin datos adicionales, ver punto 7.

· **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:**

7429-90-5 Aluminio en polvo (pirofórico)

LEP	Valor de larga duración: 1 mg/m ³ d, fracción respirable
-----	--

· **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.

- **8.2 Controles de la exposición**
- **Equipo de protección individual:**
- **Medidas generales de protección e higiene:** Lavarse las manos antes de las pausas y al final del trabajo.
- **Protección respiratoria:** No es necesario.
- **Protección de manos:**

El material del guante deberá ser impermeable y resistente al producto / substancia / preparado.

Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

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· **Material de los guantes**

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.

· **Tiempo de penetración del material de los guantes**

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

· **Protección de ojos:** No es necesario.

SECCIÓN 9: Propiedades físicas y químicas

· **9.1 Información sobre propiedades físicas y químicas básicas**

· **Datos generales**

· **Aspecto:**

· Forma:	Sólido
· Color:	No determinado.
· Olor:	Característico
· Umbral olfativo:	No determinado.

· **valor pH:** No aplicable.

· **Cambio de estado**

· Punto de fusión/punto de congelación:	660 °C
· Punto inicial de ebullición e intervalo de ebullición:	2.500 °C

· **Punto de inflamación:** No aplicable.

· **Inflamabilidad (sólido, gas):** Reacciona con el agua liberando gases extremadamente inflamables.

· **Temperatura de ignición:** 400 °C

· **Temperatura de descomposición:** No determinado.

· **Temperatura de auto-inflamación:** No determinado.

· **Propiedades explosivas:** No determinado.

· **Límites de explosión:**

· Inferior:	No determinado.
· Superior:	No determinado.

· **Presión de vapor:** No aplicable.

· Densidad a 20 °C:	2,7 g/cm ³
· Densidad relativa	No determinado.
· Densidad de vapor	No aplicable.
· Tasa de evaporación:	No aplicable.

· **Solubilidad en / miscibilidad con agua:** Insoluble.

· **Coefficiente de reparto: n-octanol/agua:** No determinado.

· **Viscosidad:**

· Dinámica:	No aplicable.
· Cinemática:	No aplicable.

· **Contenido de cuerpos sólidos:** 99,0 %

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· 9.2 Otros datos

No existen más datos relevantes disponibles.

SECCIÓN 10: Estabilidad y reactividad

- **10.1 Reactividad** No existen más datos relevantes disponibles.
- **10.2 Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:** No se descompone al emplearse adecuadamente.
- **10.3 Posibilidad de reacciones peligrosas** Al entrar en contacto con agua se liberan gases inflamables.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

SECCIÓN 11: Información toxicológica

- **11.1 Información sobre los efectos toxicológicos**
- **Toxicidad aguda** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Lesiones o irritación ocular graves**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Sensibilización respiratoria o cutánea**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Indicaciones toxicológicas adicionales:**
- **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**
- **Mutagenicidad en células germinales**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Carcinogenicidad** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad para la reproducción** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad específica en determinados órganos (STOT) – exposición única**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad específica en determinados órganos (STOT) – exposición repetida**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Peligro de aspiración** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**
Nivel de riesgo para el agua 1 (clasificación de listas): escasamente peligroso para el agua
En estado no diluido o no neutralizado, no dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.

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· **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

SECCIÓN 13: Consideraciones relativas a la eliminación

· **13.1 Métodos para el tratamiento de residuos**

· **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.

· **Embalajes sin limpiar:**

· **Recomendación:** Eliminar conforme a las disposiciones oficiales.

SECCIÓN 14: Información relativa al transporte

· **14.1 Número ONU**
· **ADR, IMDG, IATA**

UN1396

· **14.2 Designación oficial de transporte de las Naciones Unidas**

· **ADR**

1396 ALUMINIO EN POLVO, NO RECUBIERTO

· **IMDG, IATA**

ALUMINIUM POWDER, UNCOATED

· **14.3 Clase(s) de peligro para el transporte**

· **ADR, IMDG, IATA**



· **Clase**

4.3 Materias que en contacto con el agua desprenden gases inflamables

· **Etiqueta**

4.3

· **14.4 Grupo de embalaje**

· **ADR, IMDG, IATA**

II

· **14.5 Peligros para el medio ambiente:**

No aplicable.

· **14.6 Precauciones particulares para los usuarios**

Atención: Materias que en contacto con el agua desprenden gases inflamables

· **Número de identificación de peligro (Número Kemler):**

423

· **Número EMS:**

4.3-06

· **Segregation groups**

Powdered metals

· **Stowage Category**

A

· **Handling Code**

H1 Keep as dry as reasonably practicable

· **Segregation Code**

SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained.

SG32 Stow "away from" SGG10-liquid halogenated hydrocarbons

SG35 Stow "separated from" SGG1-acids

SG36 Stow "separated from" SGG18-alkalis.

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· 14.7 Transporte a granel con arreglo al anexo II del Convenio MARPOL y el Código IBC	No aplicable.
· Transporte/datos adicionales:	
· ADR	
· Cantidades limitadas (LQ)	500 g
· Cantidades exceptuadas (EQ)	Código: E2 Cantidad neta máxima por envase interior: 30 g Cantidad neta máxima por embalaje exterior: 500 g
· Categoría de transporte	2
· Código de restricción del túnel	D/E
· IMDG	
· Limited quantities (LQ)	500 g
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· "Reglamentación Modelo" de la UNECE:	UN 1396 ALUMINIO EN POLVO, NO RECUBIERTO, 4.3, II

SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**
- **Directiva 2012/18/UE**
- **Sustancias peligrosas nominadas - ANEXO I** No contiene la sustancia.
- **REGLAMENTO (CE) n° 1907/2006 ANEXO XVII** Restricciones: 40
- **Directiva 2011/65/UE sobre restricciones a la utilización de determinadas sustancias peligrosas en aparatos eléctricos y electrónicos - Anexo II**
No contiene la sustancia.
- **REGLAMENTO (UE) 2019/1148**
- **Anexo I - PRECURSORES DE EXPLOSIVOS RESTRINGIDOS (Valor límite superior a efectos de la concesión de licencias con arreglo al artículo 5, apartado 3)**
No contiene la sustancia.
- **Anexo II - PRECURSORES DE EXPLOSIVOS NOTIFICABLES**
Contiene la sustancia.
- **Reglamento (CE) no 273/2004 sobre precursores de drogas**
No contiene la sustancia.
- **Reglamento (CE) N o 111/2005 por el que establecen normas para la vigilancia del comercio de precursores de drogas entre la Comunidad y terceros países**
No contiene la sustancia.
- **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

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· Abreviaturas y acrónimos:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Water-react. 2: Sustancias y mezclas que, en contacto con el agua, desprenden gases inflamables – Categoría 2

ES