SAFETY DATA SHEET

ALUMINUM POWDER

Issue date: 05/15/2020

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

1.1. Product identifier

Trade name/designation	:	Aluminum Powder
Chemical name	:	Aluminum
EC Index	:	013-002-00-1
EC No	:	231-072-3
CAS No.	:	7429-90-5
REACH registration No.	:	01-2119529243-45-0146
Product code	:	880 - 8880 - 8980 - 024 - 030 - 032 - 76000 - 80000 - 80000/A - 90000/A - 30/Z - 40/Z - 80/Z - A8 - A88 - A888 - Silver Imitation, also valid for leafing (L) and non-leafing (NL)

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

Main use category : Industrial uses .,Professional use .

1.3. Details of the supplier of the safety data sheet

Company : CHRIS' ROCKET SUPPLIES, LLC
387 Sullivan Circle
Pine Mountain, GA 31822
850-554-6531
sales@csrocketry.com

1.4. Emergency telephone number

Emergency telephone :INFOTRAC, US: 1-352-323-3500
CHEMTREC, International: 1-800-535-5053 (This telephone number is available 24 hours a day, 7 days a week

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EU) 1272/2008

CLP-Classification : The product is classified as hazardous in accordance with Regulation (EC) No. 1272/2008.
This substance does not emit flammable gases in contact with water according to test N. 5 in Part III, sub-section 33.4.1.4 of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria

Flam. Sol. 1 H228

Full text of H-phrases: see section 16

2.1.2. Classification according to EU Directives 67/548/EEC or 1999/45/EC

Classification : This substance is classified as hazardous according to 67/548/EEC.

F; R11

Full text of R-phrases: see section 16

2.2. Label elements

2.2.1. Labelling according to Regulation (EU) 1272/2008

Hazard pictograms :

GHS02

Signal word : Danger

Hazard statements : H228 - Flammable solid.

Precautionary statements : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ ventilating/ lighting/ / equipment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P370+P378 - In case of fire: Use ... to extinguish

2.2.2. Labelling according to Directives (67/548 - 1999/45)

Not relevant

2.3. Other hazards

Other hazards : PBT/vPvB data
Not applicable
Risk of dust explosion.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance name	Product identifier	%	Classification according to Directive 67/548/EEC
Aluminium powder (stabilised)	(CAS No.) 7429-90-5 (EC No) 231-072-3 (EC Index) 013-001-00-6 (REACH-no) 01-2119529243-45-0146, 01-2119529243-45-XXXX	100	F; R11

Substance name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Aluminium powder (stabilised)	(CAS No.) 7429-90-5 (EC No) 231-072-3 (EC Index) 013-001-00-6 (REACH-no) 01-2119529243-45-0146, 01-2119529243-45-XXXX	100	Flam. Sol. 1, H228

Full text of R- and H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	:	Provide fresh air. When in doubt or if symptoms are observed, get medical advice.
Skin contact	:	Wash with plenty of water/.
Eye contact	:	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a physician.
In case of ingestion	:	Rinse mouth thoroughly with water. Rinse mouth immediately and drink plenty of water. Get medical advice/attention.
Additional advice	:	Treat symptomatically. See also section 8 First aider: Pay attention to self-protection! When in doubt or if symptoms are observed, get medical advice.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation	:	Repeated or prolonged exposure: (dust) : May cause respiratory impairment and lung damage.
Skin contact	:	No adverse effects are expected.
Eye contact	:	Dust contact with the eyes can lead to mechanical irritation.
Ingestion	:	May be irritating.
Other adverse effects	:	none.

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Special powder against metal fire . Dry sand . Co-ordinate fire-fighting measures to the fire surroundings.
Extinguishing media which must not be used for safety reasons:	:	Water Foam Carbon dioxide ABC-powder

5.2. Special hazards arising from the substance or mixture

Fire hazard	:	Flammable solid
Specific hazards	:	Dust may form explosive mixture in air.

5.3. Advice for firefighters

Advice for firefighters	:	Special protective equipment for firefighters. In case of fire: Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	Evacuate area. Prevent unauthorised persons entering the zone. Provide adequate ventilation. Use personal protective equipment as required. Personal protection equipment: see section 8 Avoid generation of dust.

Keep away from sources of ignition. - No smoking.
Use only non-sparking tools.
Use explosion-proof machinery, apparatus, ventilation facilities, tools etc.

For emergency responders : Ensure procedures and training for emergency decontamination and disposal are in place.
Personal protection equipment: see section 8.

6.2. Environmental precautions

Environmental precautions : Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so.
Dam up.
Take up mechanically.
Do not rinse down with water. /
Water (with cleaning agent)
Dispose according to legislation.

6.4. Reference to other sections

Personal protection equipment: see section 8
Disposal: see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling : Provide adequate ventilation.
Use personal protective equipment as required.
Avoid contact with skin, eyes and clothes.
Personal protection equipment: see section 8
Dust may form explosive mixture in air.
Avoid generation of dust.
Remove dust regularly from electrical supply and distribution points.
Keep away from sources of ignition. - No smoking.
Ensure that the equipment is adequately grounded.
Use only non-sparking tools.
Take any precaution to avoid mixing with incompatible materials.
Contact with water liberates highly flammable gases. (H2)
See also section 10
Do not allow to enter into surface water or drains.

Advices on general occupational hygiene : Keep good industrial hygiene.
When using do not eat, drink or smoke.
Wash hands before breaks and immediately after using the product.
Take off contaminated clothing.

7.2. Conditions for safe storage, including any incompatibilities

Storage : Keep containers tightly closed in a dry, cool and well-ventilated place.
Do not store near or with any of the incompatible materials listed in section 10.
Protect against water. /
Humidity

Packaging materials : Keep/Store only in original container.

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values :

Aluminium powder (stabilised) (7429-90-5)		
Austria	MAK (mg/m³)	10 mg/m³ (inhalable fraction)
Austria	MAK Short time value (mg/m³)	20 mg/m³ (inhalable fraction)
Belgium	Limit value (mg/m³)	1 mg/m³
Bulgaria	OEL TWA (mg/m³)	10,0 mg/m³ (metal dust) 1,5 mg/m³ (respirable fraction)
Croatia	GVI (granična vrijednost izloženosti) (mg/m³)	10 mg/m³ (total dust) 4 mg/m³ (respirable dust)
France	VME (mg/m³)	10 mg/m³ (metal) 5 mg/m³ (dust)
Greece	OEL TWA (mg/m³)	10 mg/m³ (inhalable fraction) 5 mg/m³ (respirable fraction)
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ (respirable fraction)
Latvia	OEL TWA (mg/m³)	2 mg/m³
Spain	VLA-ED (mg/m³)	10 mg/m³ (dust)
Switzerland	VME (mg/m³)	3 mg/m³ (respirable)
United Kingdom	WEL TWA (mg/m³)	10 mg/m³ (inhalable dust) 4 mg/m³ (respirable dust)
United Kingdom	WEL STEL (mg/m³)	30 mg/m³ (calculated-inhalable dust) 12 mg/m³ (calculated-respirable dust)
Czech Republic	Expoziční limity (PEL) (mg/m³)	10,0 mg/m³ (dust)
Denmark	Grænseværdie (langvarig) (mg/m³)	5 mg/m³ (dust, fume and powder, total) 2 mg/m³ (dust and powder, respirable)
Hungary	AK-érték	6 mg/m³ (respirable dust)
Ireland	OEL (8 hours ref) (mg/m³)	1 mg/m³ (respirable dust)
Ireland	OEL (15 min ref) (mg/m3)	3 mg/m³ (calculated-respirable dust)
Lithuania	IPRV (mg/m³)	5 mg/m³ (inhalable fraction) 2 mg/m³ (respirable fraction) 1 mg/m³
Norway	Gjennomsnittsverdier (AN) (mg/m³)	5 mg/m³ (pyrotechnical-powder)
Norway	Gjennomsnittsverdier (Korttidsverdi) (mg/m3)	10 mg/m³ (pyrotechnical-powder)
Poland	NDS (mg/m³)	2,5 mg/m³ (inhalable fraction) 1,2 mg/m³ (respirable fraction)
Romania	OEL TWA (mg/m³)	3 mg/m³ (dust) 1 mg/m³ (fume)
Romania	OEL STEL (mg/m³)	10 mg/m³ (powder) 3 mg/m³ (fume)
Slovakia	NPHV (priemerná) (mg/m³)	1,5 mg/m³ (metal) 6 mg/m³ (total aerosol)
Sweden	nivågränsvärde (NVG) (mg/m³)	5 mg/m³ (total dust) 2 mg/m³ (respirable dust)

Recommended monitoring procedures : Concentration measurement in air
Personal air monitoring

DNEL : 3 mg/m³
PNEC : 46 - 17800 µg/l

8.2. Exposure controls

Personal protection equipment : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific

		workplace. : dust
Respiratory protection	:	Use appropriate respiratory protection. Effective dust mask. (EN 149) Respirator with a particle filter (EN 143) Filter type: P1
Hand protection	:	Wear gloves in accordance with EN 388 as a protection against mechanical risks.,Leather gloves,Gloves with long cuffs,The selection of specific gloves for a specific application and time of use in a working area, should also take into account other factors on the working space, such as (but not limited to): other chemicals that are possibly used, physical requirements (protection against cutting/drilling, skill, thermal protection), and the instructions/specification of the supplier of gloves.
Eye protection	:	Dust protection eye glasses (EN 166)
Body protection	:	Antistatic boots Flame-retardant protective clothing (EN ISO 11612 / EN 1149)
Thermal hazard protection	:	Use dedicated equipment.
Engineering control measures	:	Use only in area provided with appropriate exhaust ventilation. Apply measures to prevent dust explosions. Organisational measures to prevent/limit releases, dispersion and exposure See also section 7
Environmental exposure controls	:	Do not allow to enter into surface water or drains. Comply with applicable Community environmental protection legislation.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	:	Powder
Colour	:	silver
Odour	:	odourless
Odour threshold:	:	No data available
Odour threshold:	:	No data available
pH	:	Not applicable
Melting point/freezing point	:	660 °C
Initial boiling point and boiling range	:	> 999 °C
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Flammable.
Upper/lower flammability or explosive limits	:	No data available
Vapour pressure	:	No data available
Vapour density	:	No data available
Density	:	2,7 g/cm³ @ 20°C
Relative density	:	No data available
Water solubility	:	Insoluble
Solubility in different media	:	No data available
Partition coefficient n-octanol/water	:	No data available
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	No data available
Viscosity	:	No data available

Explosive properties	:	Not applicable The study does not need to be conducted because there are no chemical groups associated with explosive properties present in the molecule.
Oxidising properties	:	Not applicable The classification procedure needs not to be applied because there are no chemical groups present in the molecule which are associated with oxidising properties.

9.2. Other information

Other information	:	Dust may form explosive mixture in air. Lower explosion limit (g/m³) : 30 Ignition temperature : > 400°C Minimum ignition temperature of a 5 mm dust layer (glowing temperature) : > 230°C (Apparent) Density : 0,10 - 0,35 g/cm³ @ 20°C

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	:	None under normal processing. UN Test N.5: Test method for substances which in contact with water emit flammable gases The substance or mixture does not emit flammable gases in contact with water. Reference to other sections: 10.5

10.2. Chemical stability

Stability	:	The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	:	Risk of dust explosion. The substance or mixture does not emit flammable gases in contact with water. (UN Test N.5: Test method for substances which in contact with water emit flammable gases) Reference to other sections: 10.4/10.5

10.4. Conditions to avoid

Conditions to avoid	:	Remove all sources of ignition. See also section 7

10.5. Incompatible materials

Incompatible materials	:	Reacts with the following substances:, Acids and bases,, Halogens,, Halogenated compounds,, Oxidising substances

10.6. Hazardous decomposition products

Hazardous decomposition products	:	none

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified (Based on available data, the classification criteria are not met.)

Aluminium Powder (7429-90-5)	
LD50/oral/rat	> 2000 mg/kg
LC50/inhalation/4h/rat	> 888 mg/l

Skin corrosion/irritation	:	Not classified (Based on available data, the classification criteria are not met.) pH: Not applicable
Serious eye damage/eye irritation	:	Not classified (Based on available data, the classification criteria are not met.) pH: Not applicable
Respiratory or skin sensitisation	:	Not classified (Based on available data, the classification criteria are not met.)
Germ cell mutagenicity	:	Not classified (Based on available data, the classification criteria are not met.)
Carcinogenicity	:	Not classified (Based on available data, the classification criteria are not met.)
Reproductive toxicity	:	Not classified (Based on available data, the classification criteria are not met.)
STOT-single exposure	:	Not classified (Based on available data, the classification criteria are not met.)
STOT-repeated exposure	:	Not classified (Based on available data, the classification criteria are not met.)
Aspiration hazard	:	Not classified (Based on available data, the classification criteria are not met.)

Other information

Symptoms related to the physical, chemical and toxicological characteristics,Reference to other sections: 4.2

SECTION 12: Ecological information

12.1. Toxicity

Toxicity	:	Ecological injuries are not known or expected under normal use.

12.2. Persistence and degradability

Persistence and degradability	:	Not applicable

12.3. Bioaccumulative potential

Bioaccumulation	:	No data available
Partition coefficient n-octanol/water	:	No data available

12.4. Mobility in soil

Mobility	:	No data available

12.5. Results of PBT and vPvB assessment

PBT/vPvB data	:	PBT/vPvB data : Not applicable

12.6. Other adverse effects

Other information	:	

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product waste:	:	Do not dispose of together with household waste. If recycling is not practicable, dispose of in compliance with local regulations.
Contaminated packaging	:	Delivery to an approved waste disposal company.
Further ecological information	:	Do not allow to enter into surface water or drains.

List of proposed waste codes/waste designations in accordance with EWC	:	Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities. The following Waste Codes are only suggestions: 12 01 04

SECTION 14: Transport information

14.1. UN number

UN number	:	1309

14.2. UN proper shipping name

Proper Shipping Name	:	ALUMINIUM POWDER, COATED
Proper shipping name IATA/IMDG	:	ALUMINIUM POWDER, COATED

14.3. Transport hazard class(es)

14.3.1. Overland transport

ADR/RID	:	tunnel restriction code : E
Class(es)	:	4.1 - Flammable solids, self-reactive substances and solid desensitized explosives
Hazard identification number (Kemler No.)	:	40
Classification code	:	F3
ADR/RID-Labels	:	4.1 - Flammable solid

14.3.2. Inland waterway transport (ADN)

ADN	:	Not classified for this transport way.
Class (UN)	:	4.1

14.3.3. Transport by sea

Class or Division	:	4.1 - Flammable solids, self-reactive substances and solid desensitized explosives

14.3.4. Air transport

Class or Division	:	4.1 - Flammable solids, self-reactive substances and solid desensitized explosives

14.4. Packing group

Packing group	:	II

14.5. Environmental hazards

Other information	:	Not applicable.

14.6 Special precautions for user

Special precautions for user	:	Not applicable.

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

Code: IBC	:	Not applicable.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006	:	

40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	:	Aluminium Powder - Aluminium powder (stabilised)
This product contains an ingredient according to the candidate list of Annex XIV of the REACH Regulation 1907/2006/EC.	:	none
Authorisations	:	Not applicable

15.1.2. National regulations

DE :	WGK	:	nwg
DE :	German storage class (LGK)	:	LGK 4.1B - Flammable solids
DE :	TA-Luft	:	Total dust
DE :	Technische Regeln für Gefahrstoffe (TRGS)	:	applicable
FR :	Installations classées	:	1450
NL :	ABM	:	11 - Weinig schadelijk voor in het water levende organismen (B)
NL :	NeR (Nederlandse emissie Richtlijn)	:	Inorganic substances in powdered form

15.2. Chemical safety assessment

Chemical Safety Assessment	:	For this substance a chemical safety assessment has been carried out.

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Flam. Sol. 1	:	Flammable solids, Hazard Category 1
H228	:	Flammable solid.
R11	:	Highly flammable.
F	:	Highly flammable

Key literature references and sources for data	:	European Metal Particulate Association (EMPA)
Safety datasheet sections which have been updated	:	8
Abbreviations and acronyms	:	ADN = Accord Européen relatif au Transport International des Marchandises Dangereuses par voie de Navigation du Rhin ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route CLP = Classification, Labelling and Packaging Regulation according to 1272/2008/EC IATA = International Air Transport Association IMDG = International Maritime Dangerous Goods Code LEL = Lower Explosive Limit/Lower Explosion Limit UEL = Upper Explosion Limit/Upper Explosive Limit REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals TWA = time weighted average STEL = Short term exposure limit PBT = persistent, bioaccumulating and toxic (PBT). vPvB = very persistent and very bioaccumulating EWC = European Waste Catalogue NA = Not applicable LC50 = Median lethal concentration LD50 = Median lethal dose

DNEL = Derived No Effect Level
PNEC = Predicted No Effect Concentration

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