


Material Name : LPW-SCALMALLOY-AJZL		 CARPENTER ADDITIVE®
Issue: 2	Safety Data Sheet	
Date Revised: 7 May 2021		

***** Section 1 - Identification of the Substance/Mixtures and of the Company/Undertaking *****

1.1 Product identifier

Product Form: Mixture

Chemical Name: Aluminum Base Powder

Synonyms: Metal Alloy Powder

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

Uses: Metal Powder for Additive Layer Manufacturer or HIP detailing. Professional use only.

Not to be used for: Any other purpose

1.3 Details of the supplier of the safety data sheet

Carpenter Additive
Dennis Road,
Widnes,
Cheshire WA8 0GU,
United Kingdom
Tel: +44(0)1928 240 530
E-mail address: sds@carpenteradditive.com

1.4 Emergency telephone number

Acute: 112(Emergency EU/UK) / 911 (Emergency US)

Non-acute: +1 703-527-3887 (from anywhere in the world) / 1-800-424-9300 (within US and Canada)

CHEMTREC contact numbers are available 24 hours a day, 7 days a week. Interpretation services are also available.

***** Section 2 - Hazards Identification *****

2.1 Classification of the substance or mixture

Substances and mixtures, which in contact with water, emit flammable gases, Category 3


2.2 Label Elements



Signal Word: Warning

Hazard statements:

H261: In contact with water releases flammable gases.

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Precautionary statements:

Precautionary statements:

P260 - Do not breathe dust.

P262 - Do not get in eyes, on skin, or on clothing.

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

2.3 Other hazards

Dust clouds may be explosive.

Contact with water may lead to the formation of flammable gases (hydrogen) or Toxic gases (Phosphine).

By-products from use such as condensate may release flammable or toxic gases when in contact with water.

Dust can irritate the eyes. High dust levels may irritate the respiratory system.

***** Section 3 - Composition / Information on Ingredients *****

3.1 Substances

Not Applicable

3.2 Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Aluminium	(CAS-No.) 7429-90-5 (EC-No.) 231-072-3 (EC Index-No.) 013-002-00-1	88-90	Flam. Sol. 1, H228 Water-react. 2, H261
Magnesium	(CAS-No.) 7439-95-4 (EC-No.) 231-104-6 (EC Index-No.) 012-001-00-3	<10	Pyr. Sol. 1, H250
Zinc	(CAS-No.) 7440-66-6 (EC-No.) 231-175-3 (EC Index-No.) 030-001-00-1	<2.5	Pyr. Sol. 1, H250 Water-react 1, H260 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

***** Section 4 - First Aid Measures *****

4.1. Description of first aid measures

Inhalation: Remove patient to fresh air, allow to rest and keep warm.


If not breathing, give artificial respiration and seek medical attention.

Skin contact: Remove contaminated clothing, shoes and jewellery and wash before reuse. Wash skin with soap and water for several minutes. Get medical attention if symptoms persist.

Eye contact: Rinse with a gentle stream water for at least 15 minutes. Hold eye lids open. Remove any contact lenses. Get medical attention if symptoms persist.

Ingestion: DO NOT induce vomiting! Rinse mouth out and then drink plenty of water. Get medical attention if discomfort occurs.

Personal precautions: Ensure that those giving first aid treatment do not get contaminated by product spills, etc. Wear suitable protective clothing, gloves and eye protection. See also Section 8 for details.

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

Not expected to present a significant hazard under anticipated conditions of normal use.

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

No further data available for this product.

* * * Section 5 - Fire Fighting Measures * * *

5.1. Extinguishing media

Suitable: Gently smother burning material with dry sand or other inert substance. Special powder (Class D – Dry Powder) extinguishers with spin applicators for smother effect application may be used carefully.

Not to be used: Water, Carbon dioxide, Foam, ABC Powder

5.2. Special hazards arising from the substance or mixture

High concentrations of dust or fine particulate in enclosed spaces may represent a fire/explosion risk. Potential dust explosion hazard from airborne release. Contact with water may release flammable gases (hydrogen).

5.3. Advice for fire fighters

High concentrations of dust or fine particulate in enclosed spaces may represent a fire/explosion risk. Potential dust explosion hazard from airborne release.

* * * Section 6 - Accidental Release Measures * * *

6.1.1. For non-emergency personnel

Evacuate unnecessary personnel.

6.1.2. For emergency responders

Equip cleanup crew with proper protection
Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up


On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

* * * Section 7 - Handling and Storage * * *

7.1. Precautions for safe handling

Use personal protective equipment, see Section 8. Avoid generation of dust clouds. Ensure good dust ventilation during handling. If necessary, use local exhaust ventilation. Use non-sparking tools when opening or closing containers. Avoid sources of sparks or other sources of ignition i.e. no grinding - naked flames - smoking etc.

Protect against static electricity. Earth all equipment. Use electrically conductive materials when possible. Use suitable explosion proof equipment and spark-proof tools. Wash hands and face thoroughly before eating, drinking or smoking.

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7.2. Conditions for safe storage, including any incompatibilities

Store indoors. Keep in original containers. Keep dry. Good housekeeping and engineering practices should be employed to prevent the generation and accumulation of dusts. The area should be suitably marked to indicate the presence of an ignitable dust. No smoking - warning should be present. Avoid sparks or other source of ignition. Do not store with reactive materials i.e. acids, oxidising agents or other chemicals with which aluminium can react.

7.3. Specific end use(s)

Refer to section 1.

***** Section 8 - Exposure Controls / Personal Protection *****

8.1 Control Parameters

Aluminum (7429-90-5)		
United Kingdom	WEL TWA (mg/m ³)	10 mg/m ³ (inhalable dust) 4 mg/m ³ (respirable dust)
United Kingdom	WEL STEL (mg/m ³)	12 mg/m ³ (calculated value)

8.2. Exposure Controls Personal protective equipment:

Avoid all unnecessary exposure.

Materials for protective clothing:

Wear suitable protective clothing

Hand protection:

In case of repeated or prolonged contact (industrial environment), wear gloves; Chemical resistant gloves (according to European standard EN 374 or equivalent).

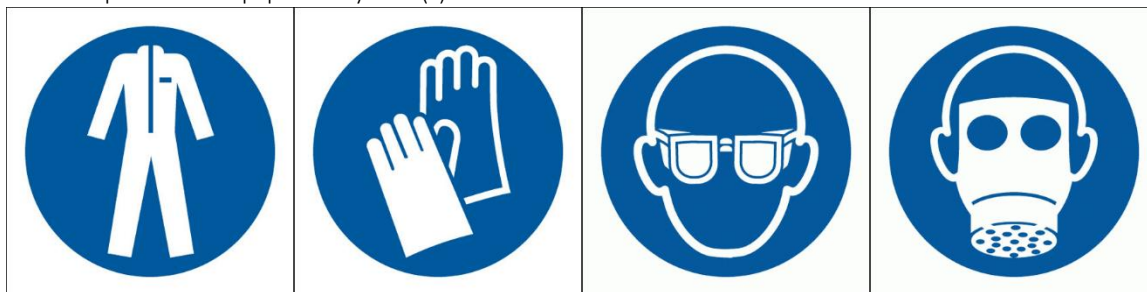
Eye protection:

Wear approved safety goggles. Chemical goggles should be consistent with EN166 or equivalent

Respiratory protection:


Dust production: dust mask with filter type P3. EN 149. Appropriate dust or mist respirator should be used if airborne particles are generated when handling this material

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

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***** Section 9 - Physical & Chemical Properties *****

9.1 Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Dust. 0-63 microns. Atomised powder with irregular or spherical particles.
Colour	: Colourless.
Odour	: None known.
Odour threshold	: None.
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 660°C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: > 1000 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: Non-flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 2.5 g/cm ³
Solubility	: Insoluble in water.
Log Pow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: Fine aluminium powder may be explosive if dispersed into a dust cloud in air in the presence of a source of ignition.
Oxidising properties	: No data available
Lower explosive limit (LEL)	: 70 g/m ³
Limiting Oxygen Concentration (LOC)	: 10%
Minimum Ignition Energy (MIE)	: 500-1000mg (without inductance)
Pmax	: 6.4 bar
St Class	: 1
Kst	: 4.6 bar.m.s ⁻¹

*** Data is indicative and will vary depending on chemistry and particle size distribution**


9.2 Other Information

These are typical values and do not constitute a specification.

***** Section 10 - Stability & Reactivity *****

10.1. Reactivity

Stable product under recommended storage and handling conditions. Will react exothermically if mixed with a strong oxidising substance and ignited.

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10.2. Chemical stability

Stable product under recommended storage and handling conditions.

10.3. Possibility of hazardous reactions

Stable product under recommended storage and handling conditions. Will react exothermically if mixed with a strong oxidising substance and ignited.

Contact with water may lead to the formation of flammable gases (hydrogen) or toxic gases (phosphine)

By-products from use such as material condensate may produce flammable (hydrogen) & toxic (phosphine) when in contact with water.

10.4. Conditions to avoid

High temperatures, humid conditions, contact with water, contact with oxidising substances, and sources of ignition.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

Fume. Carbon monoxide. Carbon dioxide.

*** Section 11 - Toxicological Information ***

11.1. Information on toxicological effects

Acute toxicity (oral): Not classified

Acute toxicity (dermal): Not classified

Acute toxicity (inhalation): Not classified

Skin corrosion/irritation: Not classified

Additional information: Based on available data, the classification criteria are not met

Serious eye damage/irritation: Not classified

Additional information: Based on available data, the classification criteria are not met

Respiratory or skin sensitisation: Not classified

Additional information: Based on available data, the classification criteria are not met

Germ cell mutagenicity: Not classified

Additional information: Based on available data, the classification criteria are not met

Carcinogenicity: Not classified

Additional information: Based on available data, the classification criteria are not met

Reproductive toxicity: Not classified

Additional information: Based on available data, the classification criteria are not met


STOT-single exposure: Not classified

Additional information: Based on available data, the classification criteria are not met

STOT-repeated exposure: Not classified

Additional information: Based on available data, the classification criteria are not met

Aspiration hazard: Not classified

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Additional information: Based on available data, the classification criteria are not met

Potential Adverse human health effects and symptoms: Based on available data, the classification criteria are not met.

*** Section 12 - Ecological Information ***

12.1. Toxicity

Acute aquatic toxicity: Not classified
 Chronic aquatic toxicity: Not classified

12.2. Persistence and degradability

Aluminium Silicon Alloy Powder
 Persistence and degradability Not established.

12.3. Bioaccumulative potential

Aluminium Silicon Alloy Powder
 Bioaccumulative potential Not established.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available


12.6. Other adverse effects

Additional information: Avoid release to the environment.

*** Section 13 - Disposal Considerations ***
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13.1 Waste treatment methods

Disposal of product: Waste product is considered Hazardous Waste and should be disposed of via a licensed operator.
Disposal of packaging: Contaminated packing should be disposed of as Hazardous waste according to local authority guidelines.

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***** Section 14 - Transport Information *****

14.1. UN number (ADR, AND, IMDG, IATA)

ADN: UN 3208
 ADR: UN 3208
 RID: UN 3208
 IMDG: UN 3208
 IATA: UN 3208

14.2. UN proper shipping name

ADN: METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
 (Aluminium, Magnesium)
 ADR: METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
 (Aluminium, Magnesium)
 RID: METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
 (Aluminium, Magnesium)
 IMDG: METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.
 (Aluminium, Magnesium)
 IATA: Metallic substance, water-reactive, n.o.s.
 (Aluminium, Magnesium)

14.3. Transport hazard class(es)


ADN: 4.3
 ADR: 4.3
 RID: 4.3
 IMDG: 4.3
 IATA: 4.3

14.4. Packing group

ADR
 Packing group: III
 Classification Code: W2
 Hazard Identification Number: 423
 Labels: 4.3
 Tunnel restriction code: (E)

IATA (Cargo)
 Packing instruction (cargo aircraft): 481
 Packing instruction (LQ): Y477
 Packing group: III
 Labels: Dangerous When Wet

IATA (Passenger)
 Packing instruction (passenger aircraft): 485
 Packing instruction (LQ): Y477

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Packing group: III
Labels: Dangerous When Wet

14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

None

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

Not applicable


*** Section 15 - Regulatory Information ***

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

Chemical Agents Directive 98/24/EC

15.2. Chemical Safety Assessment

A Chemical Safety Assessment has not been carried out on this mixture.

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***** Section 16 - Other Information *****

Sources of data used in this MSDS:

In-house data files, CLP Annex VI Tables 3.1 & 3.2, TOXNET, IARC, International Labour Organization, NIOSH Pocket Guide to Chemical Hazards, European Chemicals Agency, Institute for Health and Consumer Protection.

Key/Legend:

EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; LC50 = Lethal Concentration 50%; LD50 = Lethal Dose 50%; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NIOSH = The National Institute for Occupational Safety and Health; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

The information provided on this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. Although reasonable care has been taken in the preparation of this document to assess and summarise the hazard properties of the product, the user must satisfy himself that the information contained herein is pertinent to permit safe handling under his use conditions, since the supplier cannot foresee all conditions of use.

Full text of H- and EUH-statements:

Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Sol. 1	Flammable solids, Category 1
Pyr. Sol. 1	Pyrophoric Solids, Category 1
Repr. 1A	Reproductive toxicity, Category 1A
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
Water-react. 1	Substances and Mixtures which, in contact with water, emit flammable gases, Category 1
Water-react. 2	Substances and Mixtures which, in contact with water, emit flammable gases, Category 2
H228	Flammable solid.
H250	Catches fire spontaneously if exposed to air.
H260	In contact with water releases flammable gases which may ignite spontaneously.
H261	In contact with water releases flammable gases.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H360FD	May damage fertility. May damage the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.