SAFETY DATA SHEET
(in accordance with Regulation (EU) 2015/830)

BLACK ALUMINUM

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

1.1 Product identifier.

Product Name:	BLACK ALUMINUM
Chemical Name:	ALUMINUM
Index No:	013-002-00-1
CAS No:	7429-90-5
EC No:	231-072-3
Registration No.:	01-2119529243-45-XXXX

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

Metallurgical industries
Fireworks application
Reducing agent and source of heat and as an ingredient in alloying additives
Concrete block Manufacturing industries

Uses advised against:
Uses other than those recommended.

1.3 Details of the supplier of the safety data sheet.

Company: **ALDEBARÁN SISTEMAS SL**
Address: C/Jerónimo Zurita, 10, entlo izda, 50001
City: Zaragoza
Province: Zaragoza
Telephone: 0034976796134
E-mail: aldebaran@aldebaransistemas.com

1.4 Emergency telephone number: 0034915620420 (Available 24 hours)

SECTION 2: HAZARDS IDENTIFICATION.

2.1 Classification of the substance.
In accordance with Regulation (EU) No 1272/2008:
Flam. Sol. 1 : Flammable solid.
Water-react. 2 : In contact with water releases flammable gases.

2.2 Label elements.
Labelling in accordance with Regulation (EU) No 1272/2008:
Pictograms:

Signal Word:
Danger
H statements:

H228	Flammable solid.
H261	In contact with water releases flammable gases.

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P statements:

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

2.3 Other hazards.
In normal use conditions and in its original form, the product itself does not involve any other risk for health and the environment.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

3.1 Substances.
Mono-constituent.

Chemical Name: Index No: CAS No: EC No:	ALUMINUM 013-002-00-1 7429-90-5 231-072-3	78 – 99%
Chemical Name: CAS No:	ALUMINUM OXIDE 1344-28-1	0,5 – 25%
Chemical Name: CAS No:	STEARIC ACID ESTABLISHED 57-11-4	0,5 – 2%

3.2 Mixtures.
Not Applicable.

SECTION 4: FIRST AID MEASURES.

4.1 Description of first aid measures.
In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

Inhalation.
If inhaled, remove to fresh air. If not breathin give artificial respiration. If breathing is difficult, give oxygen. Call a doctor

Eye contact.
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a doctor.

Skin contact.
In case of contact, flush skin with water. Wash clothing before reuse. Call a doctor if irritation accurs.

Ingestion.
If swallowed, call a doctor inmediately.

4.2 Most important symptoms and effects, both acute and delayed.
No known acute or delayed effects from exposure to the product.

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4.3 Indication of any immediate medical attention and special treatment needed.
Treat according to the symptoms. Eye rising device shall be made available at any point of handling of the product.

SECTION 5: FIREFIGHTING MEASURES.

Not a fire hazard unless in particle form (small chips, fine turnings, dusts)

5.1 Extinguishing media.
Recommended extinguishing methods.
Not a fire hazard unless in particle form (small chips, fine turnings, dusts). In case of aluminium fires, use a class D dry-power extinguiser (Light-X). Dry sand.

Unsuitable extinguishing media
Do not use water or halogenated extinguishing media.

5.2 Special hazards arising from the substance.
Fire or high temperatures create: metal oxides
Unusual fire & explosion hazards: Not a fire hazard unless in particle form. Suspensions of aluminium dust in air may pose a severe explosion hazard. A potential for explosion exists for a mixture of fine and coarse particles if at least 15% to 20% of the material is finer than 44 microns (325 mesh). Buffing and polishing generate finer material than grinding, sawing and cutting. Do not use water on molten metal: Explosion hazard could result.

5.3 Advice for firefighters.
Self-cpmtained breathimg apparatus and full protective clothing must be wom in case of fire
Move container from fire area if it can be done without risk

SECTION 6: ACCIDENTAL RELEASE MEASURES.

6.1 Personal precautions, protective equipment and emergency procedures.
Aluminium in the form of particles may be reactive. Its hazardous characteristics, including fire and explosion, should be considered prior to handling.
Avoid inhalation of dust and contact with skin and eyes. Wear protective clothing

6.2 Environmental precautions.
Avoid release to the environment.

6.3 Methods and material for containment and cleaning up.
Pick up mechanically. Avoid raising dust. Send in suitable containers for recovery or disposal.

6.4 Reference to other sections.
For exposure control and individual protection measures, see section 8.
For later elimination of waste, follow the recommendations under section 13.

SECTION 7: HANDLING AND STORAGE.

7.1 Precautions for safe handling.
Welding, burning, sawing, brazing, grinding or machining operations may generate fumes and dust of metal oxides.
Provide adequate ventilation.
Use appropiate tools.
Avoid contact with sharp edges and hot surfaces.
Avoid generation and spreading of dust. çBecuase of the risk of explosion, aluminium ingots, sows and T-bars should be thoroughly dried prior to remelting.

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Use standard techniques to check metal temperature before handling.
Hot aluminium does not present any warming color change.
Exercise great caution, since the metal may be not

7.2 Conditions for safe storage, including any incompatibilities.
Suitables storega areas should be clearly marked.
Store metal in cool, dry and well-ventilated area
Ingots intented for remelting must be stored in dry area, carefully inspected and preheated before charging into molten metal.
Store away from incompatible materials.

7.3 Specific end use(s).
Section 1.2

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

8.1 Control parameters.

Work exposure limit for:

Name	CAS No.	Country	Limit value	ppm	mg/m³
aluminium powder (stabilised)	7429-90-5	United Kingdom [1]	**Eight hours**		10 (inhalable dust) 10 (inhalable dust) 4 (respirable dust)
			Short term		

[1] According Limit Value (IOELV) list in 2nd Indicative Occupational Exposure adobted by Health and Safety Executive.
The product does NOT contain substances with Biological Limit Values.
Concentration levels DNEL/DMEL:

8.2 Exposure controls.

Measures of a technical nature:
Provide adequate ventilation. Use only in area provided with appropriate exhaust ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure equipment is adequately earthed. Take precautionary measures against static discharges.

General protective and hygiene measures: Do not eat, drink or smoke during work time. After worktime and during work intervals, the affected skin areas must be thoroughly cleaned. Store work clothing separately. Do not inhale dust.

Skin protection: Wear suitable protective clothing. Chemical resistant safety shoes. Wear suitable coveralls to prevent exposure to the skin.

Hand protection: Protective globes.

Eye protection: Safety glasses with side shields.

Respiaratory protection: In case of insufficient ventilation, wear suitable equipment. Half face mask (DIN EN 140). Full face mask (EN 136). Filter type: A/P (EN141)

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

9.1 Information on basic physical and chemical properties.
Appearance: Powder
Colour: Grey
Odour:Odourless
Odour threshold:N.A./N.A.
pH:N.A./N.A.
Melting point:660 ºC
Boiling Point: 2467 ºC
Flash point: 12 ºC
Evaporation rate: N.A./N.A.
Inflammability (solid, gas): Flammable solid.
Lower Explosive Limit: 40 g/cm3
Upper Explosive Limit: N.A./N.A.
Vapour pressure: N.A./N.A.
Vapour density:N.A./N.A.
Relative density:2,7 g/cm^3
Solubility: Insoluble in water and organic solvents
Liposolubility: N.A./N.A.
Hydrosolubility: N.A./N.A.
Partition coefficient (n-octanol/water): N.A./N.A.
Auto-ignition temperature: N.A./N.A.
Decomposition temperature: N.A./N.A.
Viscosity: N.A./N.A.
Explosive properties: Fine aluminum in powder may be explosive if disperse into a dust cloud in air in the oresence of source of ignition
Oxidizing properties: N.A./N.A.
N.A./N.A.= Not Available/Not Applicable due to the nature of the product

9.2 Other information.
Pour point: N.A./N.A.
Blink: N.A./N.A.
Kinematic viscosity: N.A./N.A.
N.A./N.A.= Not Available/Not Applicable due to the nature of the product

SECTION 10: STABILITY AND REACTIVITY.

10.1 Reactivity.
Stable under normal conditions

10.2 Chemical stability.
Stable under normal conditions

10.3 Possibility of hazardous reactions.
It may generate flammable gases on contact with water, mineral acids, organic acids, caustic subtances, isocyanates, mercaptans, and other organic sulphides.
It may generate toxic gases con contact with azo, diazo and hydrazines compounds.
It may catch fire on contact with mineral acids, mercaptans and other organic sulphides and powerful oxidising agents.
In case of contact with acid or alkaline (as well as water), aluminium powder will react and emission of hydrogen will occur.

10.4 Conditions to avoid.
Moisture

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10.5 Incompatible materials.
Avoid Strong oxidizers & acids, halogenated hydrocarbons. Corrodes in contact with acids & others metals. Ignition may occur if powders are mixed with halogens, chlorine, carbon disulphide, or methyl chloride, ammonium nitrate, ammonium persulfate, chromic anhydride.

10.6 Hazardous decomposition products.
Hydrogen

SECTION 11: TOXICOLOGICAL INFORMATION.

11.1 Information on toxicological effects.

a) acute toxicity;

Substance	Organism	Test type	Route	Reported dose
Aluminium	Rat	Acute Oral toxicity	Oral	LD50 > 15900 mg/kg bw
	Rat	Acute inhalation toxicity	Inhalation	LC50 > 0,888 mg/l air (analytical) NOAEC = 10 mg/m^3 air

b) skin corrosion/irritation;
Not irritating

c) serious eye damage/irritation;
Not irritating

d) respiratory or skin sensitisation;
Not sensitising

e) germ cell mutagenicity;
Not classified as mutagenic

f) carcinogenicity;
Not classified as carcinogenic

g) reproductive toxicity;
Not found to be reprotoxic

h) STOT-single exposure;
Not conclusive data for classification.

i) STOT-repeated exposure;
Not conclusive data for classification.

j) Other toxic effects on humans
Inhalation: No data available
Eyes: No data available
Ingestion: No data vaialable
Chronic toxicity: No data available

k) NIOSH, Immediately Dangerous to life or health concentration (IDLH)
Recommended Exposure Limit: 10-Hr Time-Weighted Avg: 10 mg/cu m (total)
Recommended Exposure Limit: 10-Hr Time-Weighted Avg: 5 mg/cu m (tresp)
Recommended Exposure Limit: 10-Hr Time-Weighted Avg: 2 mg/cu m
Recommended Exposure Limit: 10-Hr Time-Weighted Avg: 10 mg/cu m/Alkuminium (pyro powders and welding fumes, as Al)

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SECTION 12: ECOLOGICAL INFORMATION.

12.1 Toxicity.

Toxicity type	Test organisms (species)	Exposure Duration	End point
Short-term toxicity to fish	Pimephales promelas	96 hr	LC 50: 1,16 to 44,8 mg/l
Short-term toxicity to aquatic invertebrates	Ceriodaphnia dubia	48 hr	LC 50: 0,72 to greater than 99,6 mg/l
Toxicity to aquatic algae and cyanobacteria	Pseudokirchnerella subcapitata	72 hr	NOEC ≥ 0,044 mg/l

12.2 Persistence and degradability.
No information is available about persistence and degradability of the product.

12.3 Bioaccumulative potencial.
No information is available regarding the bioaccumulation.

12.4 Mobility in soil.
No information is available about the mobility in soil.
The product must not be allowed to go into sewers or waterways.
Prevent penetration into the ground.

12.5 Results of PBT and vPvB assessment.
No information is available about the results of PBT and vPvB assessment of the product.

12.6 Other adverse effects.
No information is available about other adverse effects for the environment.

SECTION 13 DISPOSAL CONSIDERATIONS.

13.1 Waste treatment methods.
Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.
According to provisions on EU and national and local level.

SECTION 14: TRANSPORT INFORMATION.

Transport following ADR rules for road transport, RID rules for railway, ADN for inner waterways, IMDG for sea, and ICAO/IATA for air transport.
Land: Transport by road: ADR, Transport by rail: RID.
Transport documentation: Consignment note and written instructions
Sea: Transport by ship: IMDG.
Transport documentation: Bill of lading
Air: Transport by plane: ICAO/IATA.
Transport document: Airway bill.

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14.1 UN number.
UN No: UN1309

14.2 UN proper shipping name.
Description:
ADR: UN 1309, ALUMINIUM POWDER, COATED, 4.1, PG II, (E)
IMDG: UN 1309, ALUMINIUM POWDER, COATED, 4.1, PG II
ICAO: UN 1309, ALUMINIUM POWDER, COATED, 4.1, PG II

14.3 Transport hazard class(es).
Class(es): 4.1

14.4 Packing group.
Packing group: II

14.5 Environmental hazards.
Marine pollutant: No

14.6 Special precautions for user.
Labels: 4.1

Hazard number: 40
ADR LQ: 1 kg
IMDG LQ: 1 kg
ICAO LQ: 5 kg

Provisions concerning carriage in bulk ADR: Not authorized carriage in bulk in accordance with ADR.
Transport by ship, FEm – Emergency sheets (F – Fire, S - Spills): F-G,S-G
Proceed in accordance with point 6.
IMDG Code segregation group: 15 Powdered metals

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code.
The product is not transported in bulk.

SECTION 15: REGULATORY INFORMATION.

15.1 Safety, health and environmental regulations/legislation specific for the substance.
The product is not affected by the Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.

The product is not affected by Directive 2012/18/EU (SEVESO III).
The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.
The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

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This safety datasheet complies with the requeriments of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment.
A chemical safety assesment has been carried out for the substance or the mixture by the supplier (LR) – Yes.

SECTION 16: OTHER INFORMATION.

Classification codes:

Flam. Sol. 1 : Flammable solid, Category 1
Water-react. 2 : Substances and mixtures, which in contact with water, emit flammable gases, Category 2

Sections changed compared with the previous version:

1,2,3,4,5,6,7,8,10,11,12,13,15

It is advisable to carry out basic training with regard to health and safety at work in order to handle this product correctly.

Abbreviations and acronyms used:
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
CEN: European Committee for Standardization.
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.
DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.
PPE: Personal protection equipment.
IATA: International Air Transport Association.
ICAO: International Civil Aviation Organization.
IMDG: International Maritime Code for Dangerous Goods.
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.

Key literature references and sources for data:
http://eur-lex.europa.eu/homepage.html
http://echa.europa.eu/
Regulation (EU) 2015/830.
Regulation (EC) No 1907/2006.
Regulation (EU) No 1272/2008.

The information given in this Safety Data Sheet has been drafted in accordance with COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

The information in this Safety Data Sheet on the Preparation is based on current knowledge and on current EC and national laws, as far as the working conditions of the users is beyond our knowledge and control. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.

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