

# SAFETY DATA SHEET

(in accordance with Regulation (EU) 2015/830)

## POLVO DE IGNICIÓN Incluido en los Cartuchos para Soldadura Aluminotérmica KLK-weld



a RAILTECH company

Version: 2  
Revision date: 21/05/2018

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### SECTION 1: IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY/UNDERTAKING.

#### 1.1 Product identifier.

Product Name: STARTING POWDER Included in Aluminothermic Welding Cartridges KLK-weld

#### 1.2 Relevant identified uses of the mixture and uses advised against.

Thermite reaction initiator welding procedures.

#### Uses advised against:

Uses other than those recommended.

#### 1.3 Details of the supplier of the safety data sheet.

Company: **KLK Electro Materiales, S.L.U.**  
Address: Camino de la Peñona 38B - Apdo 333  
City: 33211 Gijón  
Province: Asturias  
Telephone: +34 985 321850  
Fax: +34 985 309307  
E-mail: comercial@klk.es  
Web: www.klk.es

**1.4 Emergency telephone number:** +34 985 321850 (Only available during office hours; Monday-Friday; 08:00-14:00)

### SECTION 2: HAZARDS IDENTIFICATION.

#### 2.1 Classification of the mixture.

In accordance with Regulation (EU) No 1272/2008:

Acute Tox. 4 : Harmful if inhaled.  
Acute Tox. 4 : Harmful if swallowed.  
Aquatic Acute 1 : Very toxic to aquatic life.  
Aquatic Chronic 1 : Very toxic to aquatic life with long lasting effects.  
Eye Dam. 1 : Causes serious eye damage.  
Flam. Sol. 1 : Flammable solid.

#### 2.2 Label elements.

##### Labelling in accordance with Regulation (EU) No 1272/2008:

##### Pictograms:



Signal Word:

**Danger**

H statements:

H228 Flammable solid.  
H302+H332 Harmful if swallowed or if inhaled.  
H318 Causes serious eye damage.  
H410 Very toxic to aquatic life with long lasting effects.

P statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash with water thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.

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P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P330 Rinse mouth.  
P391 Collect spillage.  
P501 Dispose of contents/container in an authorized manager, in accordance with current regulations.  
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/... if you feel unwell.  
P370+P378 In case of fire: Use Extinguisher or CO2 for extinction.

Contains:  
dicopper oxide, copper (I) oxide

### 2.3 Other hazards.

The product may have the following additional risks:  
Dust explosion hazards.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

### 3.1 Substances.

Not Applicable.

### 3.2 Mixtures.

Substances posing a danger to health or the environment in accordance with the Regulation (EC) No. 1272/2008, assigned a Community exposure limit in the workplace, and classified as PBT/vPvB or included in the Candidate List:

Identifiers	Name	Concentrate	(*)Classification - Regulation (EC) No 1272/2008	
			Classification	specific concentration limit
Index No: 029-002-00-X CAS No: 1317-39-1 EC No: 215-270-7 Registration No: 01-2119513794-36-XXXX	dicopper oxide, copper (I) oxide	25 - 50 %	Acute Tox. 4, H332 - Acute Tox. 4, H302 - Aquatic Acute 1, H400 (M=100) - Aquatic Chronic 1, H410 - Eye Dam. 1, H318	-
Index No: 029-016-00-6 CAS No: 1317-38-0 EC No: 215-269-1 Registration No: 01-2119502447-44-XXXX	[1] copper(II) oxide	25 - 50 %	Aquatic Acute 1, H400 (M=100) - Aquatic Chronic 1, H410	-
Index No: 013-002-00-1 CAS No: 7429-90-5 EC No: 231-072-3 Registration No: 01-2119529243-45-XXXX	[1] aluminium powder (stabilised)	10 - 25 %	Flam. Sol. 1, H228 - Water-react. 2, H261	-
Index No: 015-002-00-7 CAS No: 7723-14-0 EC No: 231-768-7 Registration No: 01-2119448009-39-XXXX	[1] red phosphorus	1 - 6 %	Aquatic Chronic 3, H412 - Flam. Sol. 1, H228	-

(\*) The complete text of the H phrases is given in section 16 of this Safety Data Sheet.

[1] Substance with a Community workplace exposure limit (see section 8.1).

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### 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.

Take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration. Do not administer anything orally. If unconscious, place them in a suitable position and seek medical assistance. The use of personal protective equipment is recommended for people providing first aid (see section 8).

##### Eye contact.

Wash eyes with plenty of clean and cool water for at least 10 minutes while pulling eyelids up, and seek medical assistance. Don't let the person to rub the affected eye.

##### Skin contact.

Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. **NEVER** use solvents or thinners.

##### Ingestion.

If accidentally ingested, seek immediate medical attention. Keep calm. **NEVER** induce vomiting.

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

Corrosive Product, contact with eyes or skin can cause burns; ingestion or inhalation can cause internal damage, if this occurs immediate medical assistance is required.

Harmful Product, prolonged exposure due to inhalation may cause anaesthetic effects and the need for immediate medical assistance.

Contact with eyes may cause irreversible damage.

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

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious. Do not induce vomiting. If the person vomits, clear the respiratory tract.

### SECTION 5: FIREFIGHTING MEASURES.

Flammable product, the necessary prevention measures should be taken in order to avoid risks, In case of fire, the following measures are recommended:

#### 5.1 Extinguishing media.

##### Suitable extinguishing media:

Extinguisher powder or CO<sub>2</sub>. In case of more serious fires, also alcohol-resistant foam and water spray.

##### Unsuitable extinguishing media:

Do not use a direct stream of water to extinguish. In the presence of electrical voltage, you cannot use water or foam as extinguishing media.

#### 5.2 Special hazards arising from the mixture.

##### Special risks.

Fire can cause thick, black smoke. As a result of thermal decomposition, dangerous products can form: carbon monoxide, carbon dioxide. Exposure to combustion or decomposition products can be harmful to your health.

During a fire and depending on its magnitude the following may occur:

- Flammable vapors or gases.

#### 5.3 Advice for firefighters.

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways. Product residues and extinguishing media may contaminate the aquatic environment. Follow the instructions given in the emergency or fire evacuation plan or plans if available.

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### **Fire protection equipment.**

According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and boots. During extinction and depending on the magnitude and proximity to the fire, additional protective equipment such as chemical protection gloves, heat-reflecting suits or gas-tight suits may be required.

## **SECTION 6: ACCIDENTAL RELEASE MEASURES.**

### **6.1 Personal precautions, protective equipment and emergency procedures.**

Eliminate possible ignition points and ventilate the area. No smoking. For exposure control and individual protection measures, see section 8.

### **6.2 Environmental precautions.**

Product dangerous for the environment, in case of large spills or if the product contaminates lakes, rivers, or sewers, inform the responsible authorities according to local legislation. Prevent the contamination of drains, surface or subterranean waters, and the ground.

### **6.3 Methods and material for containment and cleaning up.**

The contaminated area should be immediately cleaned with an appropriate de-contaminator. Pour the decontaminator on the remains in an opened container and let it act various days until no further reaction is produced.

### **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.**

The product must only be used in areas where all unprotected flames and other ignition points have been eliminated. Electrical equipment has to be protected according to applicable standards.

The product can be electrostatically charged: always use earth grounds when transferring the product. Operators must use antistatic footwear and clothing, and floors must be conductors.

Keep the container tightly closed and isolated from heat sources, sparks, and fire. For personal protection, see section 8.

In the application area, smoking, eating, and drinking must be prohibited.

Follow legislation on occupational health and safety.

Never use pressure to empty the containers. They are not pressure-resistant containers. Keep the product in containers made of a material identical to the original.

### **7.2 Conditions for safe storage, including any incompatibilities.**

Store according to local legislation. Observe indications on the label. Store the containers between 5 and 35° C, in a dry and well-ventilated place, far from sources of heat and direct solar light. Keep far away from ignition points. Keep away from oxidising agents and from highly acidic or alkaline materials. Do not smoke. Prevent the entry of non-authorized persons. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.

Classification and threshold amount of storage in accordance with Annex I to Directive 2012/18/EU (SEVESO III):

Code	Description	Qualifying quantity (tonnes) for the application of	
		Lower-tier requirements	Upper-tier requirements
E1	ENVIRONMENTAL HAZARDS - Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1	100	200

### **7.3 Specific end use(s).**

Thermite reaction initiator welding procedures.

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### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

#### 8.1 Control parameters.

Work exposure limit for:

Name	CAS No.	Country	Limit value	ppm	mg/m <sup>3</sup>
aluminium powder (stabilised)	7429-90-5	United Kingdom [1]	<b>Eight hours</b>		10 (inhalable dust) 10 (inhalable dust) 4 (respirable dust)
			<b>Short term</b>		
red phosphorus	7723-14-0	United Kingdom [1]	<b>Eight hours</b>		0,1
			<b>Short term</b>		0,3

[1] According Limit Value (IOELV) list in 2nd Indicative Occupational Exposure adopted by Health and Safety Executive.

The product does NOT contain substances with Biological Limit Values.

Concentration levels DNEL/DMEL:

Name	DNEL/DMEL	Type	Value
aluminium powder (stabilised) CAS No: 7429-90-5 EC No: 231-072-3	DNEL (Workers)	Inhalation, Long-term, Local effects	3,72 (mg/m <sup>3</sup> )
	DNEL (General population)	Oral, Long-term, Systemic effects	3,95 (mg/kg bw/day)
red phosphorus CAS No: 7723-14-0 EC No: 231-768-7	DNEL (Workers)	Inhalation, Long-term, Systemic effects	0,1 (mg/m <sup>3</sup> )

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.

DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

Concentration levels PNEC:

Name	Details	Value
aluminium powder (stabilised) CAS No: 7429-90-5 EC No: 231-072-3	PNEC STP	20 (mg/L)

PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

#### 8.2 Exposure controls.

##### Measures of a technical nature:

Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system.

<b>Concentration:</b>	<b>100 %</b>
<b>Uses:</b>	<b>Thermite reaction initiator welding procedures.</b>
<b>Breathing protection:</b>	
PPE:	Particle filter mask
Characteristics:	«CE» marking, category III. Made of filtering material, it covers nose, mouth and chin.
CEN standards:	EN 149
Maintenance:	Check for any tears, defects, etc. before use. Since it is disposable individual protection equipment, it should be replaced after use.



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Observations:	Does not protect worker unless properly adjusted. Follow the manufacturer's instructions regarding suitable use of the equipment.		
Filter Type needed:	P2		
<b>Hand protection:</b>			
PPE:	Protective gloves against chemicals.		
Characteristics:	«CE» marking, category III.		
CEN standards:	EN 374-1, En 374-2, EN 374-3, EN 420		
Maintenance:	Keep in a dry place, away from any sources of heat, and avoid exposure to sunlight as much as possible. Do not make any changes to the gloves that may alter their resistance, or apply paints, solvents or adhesives.		
Observations:	Gloves should be of the appropriate size and fit the user's hand well, not being too loose or too tight. Always use with clean, dry hands.		
Material:	PVC (polyvinyl chloride)	Breakthrough time (min.): > 480	Material thickness (mm): 0,35
<b>Eye protection:</b>			
PPE:	Protective goggles against particle impacts.		
Characteristics:	«CE» marking, category II. Eye protector against dust and smoke.		
CEN standards:	EN 165, EN 166, EN 167, EN 168		
Maintenance:	Visibility through lenses should be ideal. Therefore, these parts should be cleaned daily. Protectors should be disinfected periodically following the manufacturer's instructions.		
Observations:	Some signs of wear and tear include: yellow colouring of the lenses, superficial scratching of the lenses, scraping etc.		
<b>Skin protection:</b>			
PPE:	Anti-static protective clothing.		
Characteristics:	«CE» marking, category II. Protective clothing should not be too tight or loose in order not to obstruct the user's movements.		
CEN standards:	EN 340, EN 1149-1, EN 1149-2, EN 1149-3, EN 1149-5		
Maintenance:	In order to guarantee uniform protection, follow the washing and maintenance instructions provided by the manufacturer.		
Observations:	The protective clothing should offer a level of comfort in line with the level of protection provided in terms of the hazard against which it protects, bearing in mind environmental conditions, the user's level of activity and the expected time of use.		
PPE:	Anti-static safety footwear.		
Characteristics:	«CE» marking, category II.		
CEN standards:	EN ISO 13287, EN ISO 20344, EN ISO 20346		
Maintenance:	The footwear should be checked regularly.		
Observations:	The level of comfort during use and acceptability are factors that are assessed very differently depending on the user. Therefore, it is advisable to try on different footwear models and, if possible, different widths.		

### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

#### 9.1 Information on basic physical and chemical properties.

Appearance: Solid in granular form.

Colour: Metálico

Odour: N.A./N.A.

Odour threshold: N.A.

pH: N.A.

Melting point: N.A./N.A.

Boiling Point: N.A./N.A.

Flash point: N.A./N.A.

Evaporation rate: N.A.

Inflammability (solid, gas): flammable solid

Lower Explosive Limit: N.A./N.A.

Upper Explosive Limit: N.A./N.A.

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Vapour pressure: N.A.  
Vapour density: N.A.  
Relative density: 4,2  
Solubility: insoluble  
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.°C  
Viscosity: N.A.  
Explosive properties: N.A./N.A.  
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.= Not Available/Not Applicable due to the nature of the product

## SECTION 10: STABILITY AND REACTIVITY.

### 10.1 Reactivity.

Solid reactant, avoid contact with water, heat and sources of ignition.

### 10.2 Chemical stability.

Stable under the recommended handling and storage conditions (see section 7).

### 10.3 Possibility of hazardous reactions.

It may be a highly exothermic reaction and reach temperatures > 1000 ° C.

### 10.4 Conditions to avoid.

Avoid any improper handling.  
- heat  
- sparks

### 10.5 Incompatible materials.

Avoid the following materials:  
- Explosives materials.  
- Toxic materials.  
- Oxidizing materials.

### 10.6 Hazardous decomposition products.

No decomposition in normal storage conditions.

## SECTION 11: TOXICOLOGICAL INFORMATION.

### 11.1 Information on toxicological effects.

Repeated or prolonged contact with the product can cause the elimination of oil from the skin, giving rise to non-allergic contact dermatitis and absorption of the product through the skin.  
Splatters in the eyes can cause irritation and irreversible damage.

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### Toxicological information about the substances present in the composition.

Name	Acute toxicity			
	Type	Test	Kind	Value
dicopper oxide, copper (I) oxide CAS No: 1317-39-1    EC No: 215-270-7	Oral	LD50	Rat	1340 mg/kg bw [1] [1] study report, 1984.
	Dermal	LD50	Rat	>2000 mg/kg bw [1] [1] study report, 1988.
	Inhalation			
aluminium powder (stabilised) CAS No: 7429-90-5    EC No: 231-072-3	Oral	LD50	Rat	>10000 mg/kg
	Dermal			
	Inhalation	LC50 LC50	Rat Rat	>0.888 mg/L air (analytical) (4 h) >2.3 mg/L air (4 h)

a) acute toxicity;

Product classified:

Acute toxicity (Inhalation), Category 4: Harmful if inhaled.

Acute toxicity (Oral), Category 4: Harmful if swallowed.

Acute Toxicity Estimate (ATE):

Mixtures:

ATE (Inhalation) = 4 mg/l/4 h (Dust or mist)

ATE (Oral) = 1.429 mg/kg

b) skin corrosion/irritation;

Not conclusive data for classification.

c) serious eye damage/irritation;

Product classified:

Serious eye damage, Category 1: Causes serious eye damage.

d) respiratory or skin sensitisation;

Not conclusive data for classification.

e) germ cell mutagenicity;

Not conclusive data for classification.

f) carcinogenicity;

Not conclusive data for classification.

g) reproductive toxicity;

Not conclusive data for classification.

h) STOT-single exposure;

Not conclusive data for classification.

i) STOT-repeated exposure;

Not conclusive data for classification.

j) aspiration hazard;

Not conclusive data for classification.

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### SECTION 12: ECOLOGICAL INFORMATION.

#### 12.1 Toxicity.

Name	Ecotoxicity			
	Type	Test	Kind	Value
dicopper oxide, copper (I) oxide  CAS No: 1317-39-1    EC No: 215-270-7	Fish	LC50	Oncorhynchus mykiss	28.9 µg/L (96 h)
	Aquatic invertebrates	LC50	Ceriodaphnia dubia	14 µg/L (48 h) [1]
	Aquatic plants			[1] standard procedures for ceriodaphnia (method 1002.0 USEPA, 1985b)
aluminium powder (stabilised)  CAS No: 7429-90-5    EC No: 231-072-3	Fish	NOEC	Lepomis cyanellus	>50 mg/L (96 h)
		LC50	Pimephales promelas	35 mg/L (96 h) [1]
	Aquatic invertebrates	EC50	Ceriodaphnia dubia	1.9 mg/L (48 h) [1]
		NOEC	Daphnia magna	0.076 mg/L (21 d)
Aquatic plants	NOEC	Lemna minor	>45.7 mg/L (96 h)	

#### 12.2 Persistence and degradability.

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

#### 12.3 Bioaccumulative potential.

No information is available regarding the bioaccumulation of the substances present.

#### 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.

Do not dump into sewers or waterways. Waste and empty containers must be handled and eliminated according to current, local/national legislation.  
Follow the provisions of Directive 2008/98/EC regarding waste management.

Waste classification according to the European Waste Catalogue:

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10 WASTES FROM THERMAL PROCESSES  
10 08 wastes from other non-ferrous thermal metallurgy  
10 08 04 particulates and dust

Method of treatment according to Directive 2008/98/EC:  
Recovery  
R4 Recycling/reclamation of metals and metal compounds

### 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.

#### 14.1 UN number.

UN No: UN3089

#### 14.2 UN proper shipping name.

Description:

ADR: UN 3089, METAL POWDER, FLAMMABLE, N.O.S., 4.1, PG II, (E)

IMDG: UN 3089, METAL POWDER, FLAMMABLE, N.O.S. (COPPER(II) OXIDE), 4.1, PG II.

ICAO/IATA: UN 3089, METAL POWDER, FLAMMABLE, N.O.S., 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.

It is not a marine pollutant because the packaging does not exceed 5 kg capacity.

#### 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.

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### SECTION 15: REGULATORY INFORMATION.

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

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.

#### Volatile organic compound (VOC)

VOC content (p/p): 0 %

VOC content: 0 g/l

Product classification according to Annex I of Directive 2012/18/EU (SEVESO III): E1

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.

#### 15.2 Chemical safety assessment.

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

### SECTION 16: OTHER INFORMATION.

Complete text of the H phrases that appear in section 3:

H228	Flammable solid.
H261	In contact with water releases flammable gases.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Classification codes:

Acute Tox. 4 : Acute toxicity (Inhalation), Category 4

Acute Tox. 4 : Acute toxicity (Oral), Category 4

Aquatic Acute 1 : Acute toxicity to the aquatic environment, Category 1

Aquatic Chronic 1 : Chronic effect to the aquatic environment, Category 1

Aquatic Chronic 3 : Chronic effect to the aquatic environment, Category 3

Eye Dam. 1 : Serious eye damage, Category 1

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:

2,3,4,8,9,11,14,15,16.

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

Information on the TSCA Inventory (Toxic Substances Control Act) USA:

-Continued on next page.-

# SAFETY DATA SHEET

(in accordance with Regulation (EU) 2015/830)

## POLVO DE IGNICIÓN Incluido en los Cartuchos para Soldadura Aluminotérmica KLK-weld



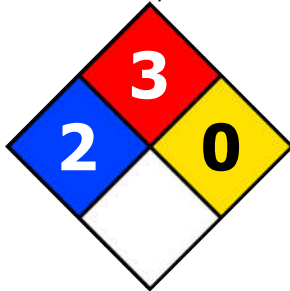
a RAILTECH company

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CAS No	Name	State
1317-39-1	dicopper oxide, copper (I) oxide	Registered
1317-38-0	copper(II) oxide	Registered
7429-90-5	aluminium powder (stabilised)	Registered
7723-14-0	red phosphorus	Registered

Risk classification system NFPA 704:



Health hazard: 2 (Hazardous)

Flammability: 3 (Below 100°F)

Reactivity: 0 (Stable)

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.

EC50: Half maximal effective concentration.

PPE: Personal protection equipment.

IATA: International Air Transport Association.

ICAO: International Civil Aviation Organization.

IMDG: International Maritime Code for Dangerous Goods.

LC50: Lethal concentration, 50%.

LD50: Lethal dose, 50%.

PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

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.

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In the official UN transport designation (point 14.2) the components are not indicated, as this mixture does not have the special provision 274

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.

-End of safety data sheet.-