

Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

Ultraweld Starting Powder

Version number: 6.0

Revision: 2020-05-18

SECTION 1: Identification

1.1 Product identifier

Trade name

Alternative name(s)

STARTER MATERIALS

Ignition Materials, Type IM

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

Relevant identified uses

Industrial use

Welding and soldering product

Uses advised against

Do not use for squirting or spraying.

1.3 Details of the supplier of the safety data sheet

Harger

301 Ziegler Drive

Grayslake, IL 60030

T 847-548-8700

1.4 Emergency telephone number

No Additional Information Available

Emergency information service

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Section	Hazard class	Category	Hazard class and category	Hazard statement
A.3	serious eye damage/eye irritation	1	Eye Dam. 1	H318
B.7	flammable solid	1	Flam. Sol. 1	H228
B.12	substance and mixture which, in contact with water, emits flammable gas	2	Water-react. 2	H261

Code	Supplemental hazard information
HNOC001	may be harmful if swallowed (GHS category 5: acutely toxic - oral)
HNOC002	may be harmful in contact with skin (GHS category 5: acutely toxic - dermal)
HNOC008	very toxic to aquatic life with long lasting effects (GHS category 1: aquatic toxicity - acute and/or chronic)

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

In contact with water releases flammable gases which may ignite spontaneously.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- signal word

Danger

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- pictograms

GHS02, GHS05



- hazard statements

H228 Flammable solid.
H261 In contact with water releases flammable gas.
H318 Causes serious eye damage.

- precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P223 Do not allow contact with water.
P231+P232 Handle under inert gas. Protect from moisture.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/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.
P310 Immediately call a poison center/doctor.
P330 Rinse mouth.
P335+P334 Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.
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.

- hazardous ingredients for labelling

dicopper oxide

2.3 Other hazards

Of no significance.

Hazards not otherwise classified

May be harmful if swallowed (GHS category 5: acutely toxic - oral).
May be harmful in contact with skin (GHS category 5: acutely toxic - dermal).
Very toxic to aquatic life with long lasting effects (GHS category 1: aquatic toxicity - acute and/or chronic).

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
DiCopper oxide	CAS No 1317-39-1	< 40	Acute Tox. 4 / H302 Acute Tox. 4 / H332 Eye Dam. 1 / H318 HNOC002 HNOC008		
Iron(III)oxide	CAS No 1309-37-1	< 40	HNOC011		
aluminium powder (stabilized)	CAS No 7429-90-5	< 50	Acute Tox. 3 / H331 Flam. Sol. 1 / H228 Water-react. 2 / H261		T(a)

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Notes

T(a): This substance is marketed in a form which has the physical properties as indicated

Remarks

For full text of H-phrases: see SECTION 16. All the percentages given are percentages by weight unless stated otherwise.

SECTION 4: First-aid measures

4.1 Description of first- aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

Provide fresh air. If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions.

Following skin contact

Brush off loose particles from skin. Wash with plenty of soap and water.

Following eye contact

Irrigate copiously with clean, fresh water for at least 15 minutes, holding the eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Welding fumes: headaches and dizziness may occur. Cough, pain, choking, and breathing difficulties. Nausea. Varying degrees of pulmonary injury.

4.3 Indication of any immediate medical attention and special treatment needed

For specialist advice physicians should contact the poison centre.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

D-Powder; D-Powder; Sand

Unsuitable extinguishing media

Water. Foam.

5.2 Special hazards arising from the substance or mixture

Deposited combustible dust has considerable explosion potential. Product may release hydrogen gas. Increased storage temperatures will accelerate this process. Water-reactive (in contact with water releases flammable gases).

Hazardous combustion products

During fire hazardous fumes/smoke could be produced.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

Special protective equipment for firefighters

Self-contained breathing apparatus (EN 133). Standard protective clothing for firefighters.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety. Ventilate affected area.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases. Wear personal protective equipment/face protection.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Do not allow firefighting water to enter drains or water courses.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically. Avoid dust formation.

Advice on how to clean up a spill

Take up mechanically.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Use only in well-ventilated areas. Ground/bond container and receiving equipment.

- specific notes/details

Dust deposits may accumulate on all deposition surfaces in a technical room. The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- explosive atmospheres

Removal of dust deposits.

- flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge.

- incompatible substances or mixtures

Observe compatible storage of chemicals. Do not allow contact with water. Keep away from alkalis, oxidising substances, acids.

Control of the effects

Protect against external exposure, such as

High temperatures. UV-radiation/sunlight. Static discharges. Moisture.

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Consideration of other advice

Store in a well-ventilated place. Keep container tightly closed. Do not use product if exposed to moisture (discard product).

- packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

7.3 Specific end use(s)

There is no additional information.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)									
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Notation	Source
US	diiron trioxide (iron(III) oxide)	1309-37-1	TLV®		5			r	ACGIH® 2019
US	iron(III) oxide	1309-37-1	PEL		10			fume	29 CFR 1910.1000
US	rouge	1309-37-1	PEL		15			i, dust	29 CFR 1910.1000
US	rouge	1309-37-1	PEL		5			r, dust	29 CFR 1910.1000
US	aluminium	7429-90-5	PEL		15			Al, i, dust	29 CFR 1910.1000
US	aluminium	7429-90-5	PEL		5			Al, r, dust	29 CFR 1910.1000
US	aluminium	7429-90-5	TLV®		1			r	ACGIH® 2019

Notation

Al calculated as Al (aluminum)

dust as dust

fume as fume

i inhalable fraction

r respirable fraction

STEL short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs/DMELs/PNECs and other threshold levels

Relevant DNELs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
dicopper oxide	1317-39-1	DNEL	1 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
dicopper oxide	1317-39-1	DNEL	1 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
dicopper oxide	1317-39-1	DNEL	137 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
dicopper oxide	1317-39-1	DNEL	0.041 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects

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Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
dicopper oxide	1317-39-1	DNEL	0.082 mg/kg bw/day	human, oral	consumer (private households)	acute - systemic effects
Diiron trioxide	1309-37-1	DNEL	10 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Diiron trioxide	1309-37-1	DNEL	10 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
aluminium powder (stabilised)	7429-90-5	DNEL	3.72 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
aluminium powder (stabilised)	7429-90-5	DNEL	3.72 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
aluminium powder (stabilised)	7429-90-5	DNEL	3.95 mg/kg bw/day	human, oral	consumer (private households)	chronic - systemic effects

Relevant PNECs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
dicopper oxide	1317-39-1	PNEC	7.8 µg/l	aquatic organisms	freshwater	short-term (single instance)
dicopper oxide	1317-39-1	PNEC	5.2 µg/l	aquatic organisms	marine water	short-term (single instance)
dicopper oxide	1317-39-1	PNEC	230 µg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
dicopper oxide	1317-39-1	PNEC	87 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
dicopper oxide	1317-39-1	PNEC	676 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
dicopper oxide	1317-39-1	PNEC	65 mg/kg	terrestrial organisms	soil	short-term (single instance)
aluminium powder (stabilised)	7429-90-5	PNEC	20 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

Handling in enclosed plants. General ventilation. Use local exhaust ventilation: exhaust ventilation welding fumes.

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection

Skin protection

Suitable protective equipment.

- hand protection



In the case of wanting to use the gloves again, clean them before taking off and air them well.

Use heat resistant gloves when handling molten product. 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. As the product is a preparation of sever-

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al substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- other protection measures

Gauntlets.

Respiratory protection

In case of inadequate ventilation wear respiratory protection: dustiness, welding fumes.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	solid (metal powder)
Color	dark brown
Odor	odorless

Other safety parameters

pH (value)	not applicable
Melting point/freezing point	655 °C
Initial boiling point and boiling range	not determined
Flash point	not applicable
Evaporation rate	not determined
Flammability (solid, gas)	flammable solid in accordance with GHS criteria, mixture which, in contact with water, emits flammable gases (in accordance with GHS criteria)
Explosion limits of dust clouds	not determined
Vapor pressure	not determined
Density	1,300 – 1,400 kg/m ³
Vapor density	this information is not available
Solubility(ies)	not determined

Partition coefficient

- n-octanol/water (log KOW)	this information is not available
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Auto-ignition temperature	not determined
Viscosity	not relevant (solid matter)
Explosive properties	none
Oxidizing properties	none

9.2 Other information

There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

The mixture contains reactive substance(s). Risk of ignition. Water reactivity.

If heated:

Risk of ignition.

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

Material reacts vigorously with water emitting flammable gases.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints to prevent fire or explosion

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

10.5 Incompatible materials

Water. Oxidizers. Acids. Alkalis.

Release of flammable materials with:

Water

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Acute toxicity

Shall not be classified as acutely toxic.

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- acute toxicity of components of the mixture

Acute toxicity estimate (ATE) of components of the mixture

Name of substance	CAS No	Exposure route	ATE
dicopper oxide	1317-39-1	oral	1,340 mg/kg
dicopper oxide	1317-39-1	inhalation: dust/mist	1.5 mg/l/4h
aluminium powder (stabilised)	7429-90-5	inhalation: dust/mist	0.888 mg/l/4h

Acute toxicity of components of the mixture

Name of substance	CAS No	Exposure route	Endpoint	Value	Species
dicopper oxide	1317-39-1	oral	LD50	1,340 mg/kg	rat
dicopper oxide	1317-39-1	dermal	LD50	>2,000 mg/kg	rat
Diiron trioxide	1309-37-1	oral	LD50	>5,000 mg/kg	rat
aluminium powder (stabilised)	7429-90-5	oral	LD50	>15,900 mg/kg	rat
aluminium powder (stabilised)	7429-90-5	inhalation: dust/mist	LC50	>0.888 mg/l/4h	rat

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

Name of substance	CAS No	Classification	Number
Iron(III)oxide	1309-37-1	3	

Legend

3 Not classifiable as to carcinogenicity in humans

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

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SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
dicopper oxide	1317-39-1	LC50	193 µg/l	fish	96 h
Diiron trioxide	1309-37-1	EC50	>100 mg/l	aquatic invertebrates	48 h

Aquatic toxicity (chronic) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Diiron trioxide	1309-37-1	EC50	>10,000 mg/l	microorganisms	3 h

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Other adverse effects

Data are not available.

Endocrine disrupting potential

None of the ingredients are listed.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment.

Waste treatment of containers/packages

Only packagings which are approved (e.g. acc. to DOT) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself. Inorganic wastes containing dangerous substances.

Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

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SECTION 14: Transport information

14.1 UN number	3132
14.2 UN proper shipping name	Water-reactive solid, flammable, n.o.s.
Technical name (Hazardous ingredients)	aluminium powder (stabilised)
14.3 Transport hazard class(es)	
Class	4.3 (substances which, in contact with water, emit flammable gases)
Subsidiary risk(s)	4.1 (flammable solid)
14.4 Packing group	II (substance presenting medium danger)
14.5 Environmental hazards	hazardous to the aquatic environment
Environmentally hazardous substance (aquatic environment)	dicopper oxide
14.6 Special precautions for user	
There is no additional information.	
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	
No data available.	

Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT)

Index number	3132
Proper shipping name	Water-reactive solid, flammable, n.o.s.
- particulars in the shipper's declaration	UN3132, Water-reactive solid, flammable, n.o.s., (contains: aluminium powder (stabilised)), 4.3 (4.1), II, environmentally hazardous
Class	4.3
Subsidiary risk(s)	4.1
Packing group	II
Danger label(s)	4.3+4.1, fish and tree
	
Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	IB4, T3, TP33, W31, W40
ERG No	138

International Maritime Dangerous Goods Code (IMDG)

UN number	3132
Proper shipping name	WATER-REACTIVE SOLID, FLAMMABLE, N.O.S.
Class	4.3
Subsidiary risk(s)	4.1
Marine pollutant	yes (hazardous to the aquatic environment)
Packing group	II
Danger label(s)	4.3+4.1, fish and tree



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Special provisions (SP)	76, 274
Excepted quantities (EQ)	E2
Limited quantities (LQ)	0
EmS	F-G, S-N
Stowage category	-
International Civil Aviation Organization (ICAO-IATA/DGR)	
UN number	3132
Proper shipping name	Water-reactive solid, flammable, n.o.s.
Class	4.3
Subsidiary risk(s)	4.1
Environmental hazards	yes (hazardous to the aquatic environment)
Packing group	II
Danger label(s)	4.3+4.1
	
Special provisions (SP)	A3
Excepted quantities (EQ)	E2
Limited quantities (LQ)	5 kg

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

National regulations (United States)

Toxic Substance Control Act (TSCA) all ingredients are listed

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

none of the ingredients are listed

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings

Name of substance	CAS No	Remarks	Effective date
aluminium powder (stabilised)	7429-90-5	fume or dust	1987-01-01

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

none of the ingredients are listed

Clean Air Act

none of the ingredients are listed

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Right to Know Hazardous Substance List

- Hazardous Substance List (NJ-RTK)

Name of substance	CAS No	Remarks	Classifications
Iron(III)oxide	1309-37-1		
aluminium powder (stabilised)	7429-90-5		F3 R1
dicopper oxide			

Legend

F3 Flammable - Third Degree
R1 Reactive - First Degree

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

none of the ingredients are listed

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	/	none
Health	3	major injury likely unless prompt action is taken and medical treatment is given
Flammability	3	material that can be ignited under almost all ambient temperature conditions
Physical hazard	2	materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	3	material that can be ignited under almost all ambient temperature conditions
Health	3	material that, under emergency conditions, can cause serious or permanent injury
Instability	2	material that readily undergoes violent chemical change at elevated temperatures and pressures
Special hazard	W	material that can form potentially explosive mixtures with water

15.2 Chemical Safety Assessment

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

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SECTION 16: Other information, including date of preparation or last revision

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)
1.2	Relevant identified uses: Professional use Industrial use Welding and soldering product	Relevant identified uses: Industrial use Welding and soldering product
1.2		Uses advised against: Do not use for squirting or spraying.
9.1	Color: light brown	Color: dark brown
11.1	Acute toxicity: Harmful if swallowed.	Acute toxicity: Shall not be classified as acutely toxic.
14.2	Technical name (Hazardous ingredients): aluminium powder (pyrophoric)	Technical name (Hazardous ingredients): aluminium powder (stabilised)
14.7	Particulars in the shipper's declaration: UN3132, Water-reactive solid, flammable, n.o.s., (contains: aluminium powder (pyrophoric)), 4.3 (4.1), II, environmentally hazardous	Particulars in the shipper's declaration: UN3132, Water-reactive solid, flammable, n.o.s., (contains: aluminium powder (stabilised)), 4.3 (4.1), II, environmentally hazardous

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
ACGIH® 2019	From ACGIH®, 2019 TLVs® and BEIs® Book. Copyright 2019. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement
Acute Tox.	Acute toxicity
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
DOT	Department of Transportation (USA)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EmS	Emergency Schedule
ERG No	Emergency Response Guidebook - Number
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Sol.	Flammable solid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)

Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

Ultraweld Starting Powder

Version number: 6.0

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Abbr.	Descriptions of used abbreviations
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
STEL	Short-term exposure limit
TLV®	Threshold Limit Values
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative
Water-react.	Material which, in contact with water, emits flammable gases

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H228	Flammable solid.
H261	In contact with water releases flammable gas.
H302	Harmful if swallowed.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H332	Harmful if inhaled.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.