

SAFETY DATA SHEET

This Safety Data Sheet complies with Annex II of
830/2015 amending EC No.
1907/2006, Commission Regulation (EU) 2019/521
amending CLP directive 1272/2008, also in
accordance with ISO 11014-1 and ANSI Z400.1

Issued: 2020-05-22

OK 46.00

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

1.1. Product identifier

Trade name OK 46.00

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

Use Arc Welding

1.3. Details of the supplier of the safety data sheet

SDS created by TDS Team

Supplier ESAB AB

Street address Box 8004
402 77 Göteborg
Sweden

Telephone +46 31 509000

Email sdsrequest@esab.com

Web site www.esab.com

1.4. Emergency telephone number

Emergency phone number +46 31 509000

Available outside office hours No

Other

Other Classification(s): EN ISO 2560-A: E 38 0 RC 11
SFA/AWS A5.1: E6013

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The product is not classified

2.2. Label elements

The product does not require labelling in accordance with CLP Regulation (EC) No 1272/2008.

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2.3. Other hazards

Other hazards

This product contains titanium dioxide which is possibly carcinogenic. This product contains quartz, but normally not in an inhalable fraction. Quartz can cause silicosis and may cause cancer. Avoid eye contact or inhalation of dust from the product. Skin contact is normally no hazard but should be avoided to prevent possible allergic reactions.

Persons with a pacemaker should not go near welding or cutting operations until they have consulted their doctor and obtained information from the manufacturer of the device.

When this product is used in a welding process, the most important hazards are welding fumes, heat, radiation and electric shock.

Fumes: Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. Chronic overexposure to welding fumes may affect pulmonary function. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait.

Heat: Spatter and melting metal can cause burn injuries and start fires.

Radiation: Arc rays can severely damage eyes or skin.

Electricity: ELECTRIC SHOCK can kill.

Other

Other

Emergency Overview: Metal wire or rods in varying colours. This product is normally not considered hazardous as shipped. Gloves should be worn when handling to prevent cuts and abrasions.

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SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-pharse M factor acute M factor chronic	Note
IRON(REACH Registered)	7439-89-6 231-096-4 - -	60 - 80%	-	- - -	-
TITANIUM OXIDE**	13463-67-7 236-675-5 - -	15 - 20%	-	- - -	-
Aluminum silicate	12141-46-7 235-253-8 - -	2 - 5%	-	- - -	-
SILICATE BINDER (POTASSIUM SILICATE)	1312-76-1 215-199-1 - -	2 - 5%	-	- - -	-
Limestone	1317-65-3 215-279-6 - -	1 - 3%	-	- - -	-
Cellulose	9004-34-6 232-674-9 - -	1 - 3%	-	- - -	-
MANGANESE	7439-96-5 231-105-1 - -	1 - 3%	-	- - -	-
QUARTZ*	14808-60-7 238-878-4 - -	0 - 2%	STOT RE 1	H372 - -	-

Product based on

This product is a preparation of core wire with extruded coating.

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SECTION 4: First aid measures

4.1. Description of first aid measures

Description of first aid measures

Electric shock: Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live parts or wires. If not breathing, begin artificial respiration, preferably mouth-to-mouth. If no detectable pulse, begin Cardio Pulmonary Resuscitation (CPR). call emergency physician to the scene of the accident.

Inhalation

If breathing has stopped, perform artificial respiration and obtain medical assistance immediately! If breathing is difficult, provide fresh air and call physician.

Skin contact

For skin burns from arc radiation, promptly flush with cold water. Get medical attention for burns or irritations that persist. To remove dust or particles wash with mild soap and water

Eye contact

For radiation burns due to arc flash, see physician. To remove dusts or fumes flush with water for at least fifteen minutes. If irritation persists, obtain medical assistance.

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

Not applicable

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

Not applicable

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

No specific recommendations for welding consumables. Welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for the burning materials and fire situation.

5.2. Special hazards arising from the substance or mixture

Not applicable

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Wear self-contained breathing apparatus as fumes or vapors may be harmful.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures

Wear hand, head, eyes, ear and body protection like welders gloves, helmet or face shield with filter lens, safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry.

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6.2. Environmental precautions

Environmental precautions

Refer to section 13.

6.3. Methods and material for containment and cleaning up

Methods and material for containment and cleaning up

Solid objects may be picked up and placed into a container. Liquids or pastes should be scooped up and placed into a container. Wear proper protective equipment while handling these materials. Do not discard as refuse.

6.4. Reference to other sections

Reference to other sections

Refer to section 8/13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

Handle with care to avoid stings and cuts. Wear gloves when handling welding consumables. Avoid exposure to dust. Do not ingest. Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.

7.2. Conditions for safe storage, including any incompatibilities

Conditions for safe storage, including any incompatibilities

Keep separate from chemical substances like acids and strong bases, which could cause chemical reactions.

7.3. Specific end use(s)

Specific end use(s)

Arc Welding

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

Use industrial hygiene monitoring equipment to ensure that exposure does not exceed applicable national exposure limits. The following limits can be used as guidance. Unless noted, all values are for 8 hour time weighted averages (TWA).

National occupational exposure limits

Ingredient	CAS No. EC No.	Exposure limit ppm / mg/m ³	Short-term exposure limit ppm / mg/m ³	Source	Remark	Year
Iron (REACH Registered)	7439-89-6 231-096-4	- -	- -	UK WEL	-	2018
Titanium oxide **	13463-67-7 236-675-5	- 10	- -	UK WEL	total inhalable	2019
Titanium oxide **	13463-67-7 236-675-5	- 4	- -	UK WEL	respirable	2018
Aluminum silicate	12141-46-7 235-253-8	- -	- -	UK WEL	-	2018
Silicate Binder (Potassium silicate)	1312-76-1	-	-	UK WEL	-	2018

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Ingredient	CAS No. EC No.	Exposure limit ppm / mg/m ³	Short-term exposure limit ppm / mg/m ³	Source	Remark	Year
	215-199-1	-	-			
Limestone	1317-65-3 215-279-6	- 10	- -	UK WEL	total inhalable	2018
Limestone	1317-65-3 215-279-6	- 4	- -	UK WEL	Respirable	2018
Cellulose	9004-34-6 232-674-9	- 10	- -	UK WEL	inhalable dust	2018
Cellulose	9004-34-6 232-674-9	- 4	- -	UK WEL	respirable dust	2018
Manganese	7439-96-5 231-105-1	- 0.2	- -	UK WEL	Inhalable fraction	2018
Manganese	7439-96-5 231-105-1	- 0.05	- -	UK WEL	Respirable fraction	2018
Quartz *	14808-60-7 238-878-4	- 0.1	- -	UK WEL	-	2018

8.2. Exposure controls

Safety gloves

Abrasion (Cycles):(Type A-2 (500));(Type B-1 (100)); Cut (Factor):(Type A-1 (1.2));(Type B-1 (1.2)); Tear (Newton):(Type A-2 (25));(Type B-1 (10)); Puncture (Newton):(Type A-2 (60));(Type B-1 (20)); Burning Behaviour:(Type A-3);(Type B-2); Contact Heat:(Type A-1);(Type B-1); Convective Heat:(Type A-2);(Type B--); Small Splashes:(Type A-3);(Type B-2); Dexterity:(Type A-1 (11));(Type B-4 (6.5)) Type B gloves are recommended when high dexterity is required as for TIG welding, while type A gloves are recommended for other welding processes. The contact temp (oC) is 100 and the threshold time (seconds) >15.

Other

Other

Avoid exposure to welding fumes, radiation, spatter, electric shock, heated materials and dust. Train welders to avoid contact with live electrical parts and insulate conductive parts.

Ventilation

Use respirator or air supplied respirator when welding or brazing in a confined space, or where local exhaust or ventilation is not sufficient to keep exposure values within safe limits. Use special care when welding painted or coated steels since hazardous substances from the coating may be emitted. Ensure sufficient ventilation, local exhaust, or both, to keep welding fumes and gases from breathing zone and general area. Keep working place and protective clothing clean and dry.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance, physical state

Solid, non-volatile with varying color.

Appearance, colour

Not applicable

Odour

Not applicable

Odour threshold

Not applicable

pH value

Not applicable

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Melting point / freezing point	>1300°C / >2300°F
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper / lower flammability or explosive limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	Not applicable
Solubility	Not applicable
Partition coefficient: n-octanol / water	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity, kinematic	Not applicable
Viscosity, dynamic	Not applicable
Explosive properties	Not applicable
Oxidising properties	Not applicable

9.2. Other information

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Non Reactive unless gets in contact with chemical substances like acids or strong bases could cause generation of gas
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10.2. Chemical stability

Chemical stability	Stable at normal conditions
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10.3. Possibility of hazardous reactions

Not applicable

10.4. Conditions to avoid

Conditions to avoid	This product is only intended for normal welding purposes.
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10.5. Incompatible materials

Not applicable

10.6. Hazardous decomposition products

Hazardous decomposition products

When this product is used in a welding process, hazardous decomposition products would include those from the volatilization, reaction or oxidation of the materials listed in Section 3 and those from the base metal / Coated wire / Coated rod / Bare wire / Bare rod.
The amount of fumes generated from manual metal arc welding varies with welding parameters and dimensions, but is generally no more than 5 to 15 g/kg consumable.

Other

Other

Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume compounds found in Section 8.
Manganese has a low exposure limit, in some countries, that may be easily exceeded.
Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Air contaminants around the welding area can be affected by the welding process and influence the composition and quantity of fumes and gases produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on toxicological effects

Inhalation of welding fumes and gases can be dangerous to your health. Classification of welding fumes is difficult because of varying base materials, coatings, air contamination and processes.
The International Agency for Research on Cancer has classified welding fumes as carcinogenic to humans (Group 1).

Acute toxicity

Acute toxicity: Overexposure to welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes.

Skin corrosion/irritation

No data available

Serious eye damage/irritation

No data available

Respiratory/skin sensitization

No data available

Germ cell mutagenicity

No data available

Genotoxicity

No data available

Carcinogenicity

*This product contains substance(s) that may cause cancer, which is/are classified as Carcinogenic to humans as per IARC.
**This product contains substance(s) that may cause cancer, which is/are classified as Possibly carcinogenic to humans as per IARC.

Repeated dose toxicity

No data available

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Reproductive toxicity	No data available
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STOT-single exposure	No data available
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STOT-repeated exposure	No data available
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Aspiration hazard	No data available
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LD50 Oral	No data available
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LD50 Dermal	No data available
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LC50 Inhalation	No data available
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Other

Long term effect

Chronic toxicity: Overexposure to welding fumes may affect pulmonary function. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, disturbances and spastic gait.

Inhalation of quartz may cause lung disease and cancer.

Prolonged inhalation of titanium dioxide above safe exposure limits can cause cancer. Inhalable quartz is a respiratory carcinogen however the process of welding converts crystalline quartz to the amorphous form which is not considered to be a carcinogen.

SECTION 12: Ecological information

12.1. Toxicity

Acute toxicity	No data available
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Toxicity	No data available
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Aquatic	No data available
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Soil	No data available
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Acute fish toxicity	No data available
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Acute algae toxicity	No data available
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Acute crustacean toxicity	No data available
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Chronical toxicity	No data available
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12.2. Persistence and degradability

Persistence and degradability	No data available
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Decay/transformation	No data available
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12.3. Bioaccumulative potential

Bioaccumulative potential	No data available
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12.4. Mobility in soil

Mobility	No data available
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12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

Other adverse effects

No data available

Other

Other

Welding consumables and materials could degrade/weather into components originating from the consumables or from the materials used in the welding process. Avoid exposure to conditions that could lead to accumulation in soils or groundwater.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal considerations

Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal and local regulations. Use recycling procedures if available.
USA RCRA: This product is not considered hazardous waste if discarded.
Residues from welding consumables and processes could degrade and accumulate in soils and groundwater.
Welding slag from this product typically contains mainly the following components originating from the coating of the electrode.
Slag analysis / %less than
SiO₂/20
CaO/5
Al₂O₃/5
Fe₂O₃/15
MnO/15
TiO₂/55
K₂O/5

SECTION 14: Transport information

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

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14.5. Environmental hazards

Not applicable

14.6. Special precautions for user

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

Other

Other No international regulations or restrictions are applicable.

SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning 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.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

DIRECTIVE 2008/98/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL. of 19 November 2008. on waste and repealing certain Directives.

European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste.

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Other regulations, limitations and legal regulations

Poland Regulations:

ACT of 25 February 2011 on the chemical substances and their mixtures (OJ # 63, poz. 322).

Regulation of the Minister of Labour and Social Policy of 6 June 2014 on Maximum Permissible Concentration and Intensity of Agents Harmful to Health in the Working Environment (Dz. u. z. 2014, poz 817).
The Act on Waste of 14 December 2012, Journal of Laws of 2013, item 21 with amendments

Act of 13th June 2013 on packaging management and packaging waste (Journal of Laws of 2013, item 888).

Regulation of the Minister of the Environment of 9 December 2014 on waste catalogue (Journal of Laws of 2014, item 1923).

Regulation of the Minister of Economy of 21 December 2005. Concerning essential requirements for personal protective equipment (Journal. Laws No. 259, item. 2173).

Regulation of the Minister of Health of 2 February 2011 on tests and measurements of factors harmful to health in the working environment (the Journal of Laws 2011, no. 33, item 166).

USA Regulations :

USA: This product contains or produces a chemical known to the state of California to cause cancer and birth defects (or other reproductive harm). (California Health & Safety Code § 25249.5 et seq.)

CERCLA/SARA Title III Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs):
Product is a solid solution in the form of a solid article. Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center and to your Local Emergency Planning Committee.

EPCRA/SARA Title III 313 Toxic Chemicals: The following metallic components are listed as SARA 313 "Toxic Chemicals" and potential subject to annual SARA 313 reporting. See Section 3 for weight percent.
Manganese: 1.0% de minimis concentration

International Inventories:

Australia: The substance(s) in this product is/are in compliance with the inventory requirements of Australian Inventory of Chemical Substances (AICS)

United States EPA Toxic Substance Control Act: All constituents of this product are on the TSCA inventory list or are excluded from listing.

Canadian Environmental Protection Act (CEPA): All constituent(s) of this product is/are on the Domestic Substance List (DSL).

15.2. Chemical safety assessment

Chemical safety assessment

Not Available

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Other

Other

Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal and local regulations. Take precautions when welding and protect yourself and others.
WARNING: Welding fumes and gases are hazardous to your health and may damage lungs and other organs. Use adequate ventilation. ELECTRIC SHOCK can kill. ARC RAYS and SPARKS can injure eyes and burn skin.
Wear correct hand, head, eye and body protection

SECTION 16: Other information

Changes to previous revision

This Safety Data Sheet has been revised due to modifications to Sections 1-16. Previous Revision of SDS as per Regulation - January 2018; Latest Revision of SDS as per Regulation - April 2019

References to key literature and data sources

Refer to ESAB "Welding and Cutting - Risks and Measures", F52-529 "Precautions and Safe Practices for Electric Welding and Cutting" and F2035 "Precautions and Safe Practices for Gas Welding, Cutting and Heating" available from ESAB, and to: www.esab.com

Phrase meaning

STOT RE 1 - Specific Target Organ Toxicity — Repeated exposure, hazard category 1
H372 Causes damage to organs through prolonged or repeated exposure.

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Other

Additional information

USA: Contact ESAB at www.esabna.com or 1-800 ESAB-123 if you have any questions about this SDS. American National Standard Z49.1 Safety in Welding and Cutting, ANSI/AWS F1.5 Methods for Sampling and Analyzing Gases from Welding and Allied Processes, ANSI/AWS F1.1 "Method for Sampling Airborne Particles Generated by Welding and Allied Processes", AWSF3.2M/F3.2 "Ventilation Guide for Weld Fume", 550 North Le Jeune Road, Miami Florida 33135. Safety and Health Fact Sheets available from AWS at www.aws.org.

OSHA Publication 2206 (29 C.F.R. 1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954

American Conference of Governmental Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices, 6500 Glenway Ave., Cincinnati, Ohio 45211, USA.

NFPA 51B "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169

UK: WMA Publication 236 and 237, "Hazards from Welding fume", "The arc welder at work, some general aspects of health and safety".

Germany: Germany: Accident prevention regulation BGV D1, "Welding, cutting and related processes".

Canada: CSA Standard CAN/CSA-W117.2-01 "Safety in Welding, Cutting, and Allied Processes".

This product has been classified according to the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

ESAB requests the users of this product to study this Safety Data Sheet (SDS) and become aware of product hazards and safety information. To promote safe use of this product a user should: notify its employees, agents and contractors of the information on this SDS and any product hazards/safety information. furnish this same information to each of its customers for the products

Request such customers to notify employees and customers for the same product hazards and safety information.

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