

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/06/2019

Reviewed on 11/05/2019

1 Identification

- **Product identifier**
- **Trade name: BÖHLER FOX EV 50**
- **CAS Number:** -
- **EINECS Number:** -
- **Application of the substance / the mixture** Shielded Metal Arc Welding Electrode
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
voestalpine Böhler Welding Austria GmbH
Böhler-Welding-St. 1
8605 Kapfenberg

Tel.: +43/50304/31-0
Fax: +43/50304/71-95193
www.voestalpine.com/welding

voestalpine Böhler Welding USA
1601 Gillingham Suite 110
Sugar Land, TX 77478
Telephone: 281-499-1212
Fax: 832-944-6942
www.voestalpine.com/welding
-
- **Information department:**

Research and Development
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-

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-
- **Emergency telephone number:**

NCEC

+1 202 464 2554 (USA, Canada)

+44 1865 407333 (English)

+44 1235 239670 (English, French, Spain)
-

2 Hazard(s) identification

- **Classification of the substance or mixture**
Classified according to the criteria of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Controlled Products Regulations.

The Product does not meet the criteria for classification in any hazard class according to GHS.

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- **Label elements -**
- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **NFPA ratings (scale 0 - 4)**



Health = 1
Fire = 0
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = *0
Fire = 0
Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 14808-60-7 EINECS: 238-878-4	silicon dioxide	Carc. 1A, H350 Acute Tox. 4, H332	0.1-2.5%
CAS: 7439-96-5 EINECS: 231-105-1	manganese		0.1-2.5%
CAS: 13463-67-7 EINECS: 236-675-5	titanium dioxide	Carc. 2, H351	0.1-2.5%

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Seek medical treatment.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Suitable to surrounding conditions

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- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters** -
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation

Use respiratory protective device against the effects of fumes/dust/aerosol.

- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:** Pick up mechanically.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

- **Protective Action Criteria for Chemicals**

- **PAC-1:**

7439-89-6	iron	3.2 mg/m ³
14542-23-5	calcium fluoride	15 mg/m ³
14808-60-7	silicon dioxide	0.075 mg/m ³
7439-96-5	manganese	3 mg/m ³
13463-67-7	titanium dioxide	30 mg/m ³
7440-21-3	silicon	45 mg/m ³
1344-28-1	aluminium oxide	15 mg/m ³
554-13-2	lithium carbonate	3.1 mg/m ³
7440-02-0	nickel	4.5 mg/m ³
7440-44-0	carbon	6 mg/m ³
1330-43-4	disodium tetraborate, anhydrous	6 mg/m ³
7440-50-8	copper	3 mg/m ³
7440-47-3	chromium	1.5 mg/m ³
7439-98-7	molybdenum	30 mg/m ³
7440-62-2	vanadium	3 mg/m ³
7440-03-1	niobium	30 mg/m ³
7723-14-0	phosphorus	0.27 mg/m ³
7440-31-5	tin	6 mg/m ³
7440-38-2	arsenic	1.5 mg/m ³
7727-37-9	nitrogen	7.96E+05 ppm
7440-36-0	antimony	1.5 mg/m ³

- **PAC-2:**

7439-89-6	iron	35 mg/m ³
14542-23-5	calcium fluoride	170 mg/m ³
14808-60-7	silicon dioxide	33 mg/m ³
7439-96-5	manganese	5 mg/m ³
13463-67-7	titanium dioxide	330 mg/m ³
7440-21-3	silicon	100 mg/m ³
1344-28-1	aluminium oxide	170 mg/m ³
554-13-2	lithium carbonate	34 mg/m ³
7440-02-0	nickel	50 mg/m ³

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7440-44-0	carbon	330 mg/m ³
1330-43-4	disodium tetraborate, anhydrous	88 mg/m ³
7440-50-8	copper	33 mg/m ³
7440-47-3	chromium	17 mg/m ³
7439-98-7	molybdenum	330 mg/m ³
7440-62-2	vanadium	5.8 mg/m ³
7440-03-1	niobium	330 mg/m ³
7723-14-0	phosphorus	3 mg/m ³
7440-31-5	tin	67 mg/m ³
7440-38-2	arsenic	17 mg/m ³
7727-37-9	nitrogen	8.32E+05 ppm
7440-36-0	antimony	13 mg/m ³
· PAC-3:		
7439-89-6	iron	150 mg/m ³
14542-23-5	calcium fluoride	1,000 mg/m ³
14808-60-7	silicon dioxide	200 mg/m ³
7439-96-5	manganese	1,800 mg/m ³
13463-67-7	titanium dioxide	2,000 mg/m ³
7440-21-3	silicon	630 mg/m ³
1344-28-1	aluminium oxide	990 mg/m ³
554-13-2	lithium carbonate	210 mg/m ³
7440-02-0	nickel	99 mg/m ³
7440-44-0	carbon	2,000 mg/m ³
1330-43-4	disodium tetraborate, anhydrous	530 mg/m ³
7440-50-8	copper	200 mg/m ³
7440-47-3	chromium	99 mg/m ³
7439-98-7	molybdenum	2,000 mg/m ³
7440-62-2	vanadium	35 mg/m ³
7440-03-1	niobium	2,000 mg/m ³
7723-14-0	phosphorus	18 mg/m ³
7440-31-5	tin	400 mg/m ³
7440-38-2	arsenic	100 mg/m ³
7727-37-9	nitrogen	8.69E+05 ppm
7440-36-0	antimony	80 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Ensure that suitable extractors are available on processing machines
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

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· **Specific end use(s)** No further relevant information available.**8 Exposure controls/personal protection**· **Control parameters**· **Components with limit values that require monitoring at the workplace:****14808-60-7 silicon dioxide**PEL Long-term value: 0.05* mg/m³
resp. dust; 30mg/m³/%SiO₂+2REL Long-term value: 0.05 mg/m³
respirable dust; See Pocket Guide App. ATLV Long-term value: 0.025 mg/m³
*as respirable fraction**7439-96-5 manganese**PEL Ceiling limit value: 5 mg/m³
as MnREL Short-term value: 3 mg/m³
Long-term value: 1 mg/m³
fume, as MnTLV Long-term value: 0.02* 0.1** mg/m³
as Mn; *respirable **inhalable fraction**13463-67-7 titanium dioxide**PEL Long-term value: 15* mg/m³
*total dust

REL See Pocket Guide App. A

TLV Long-term value: 10 mg/m³· **Ingredients with biological limit values:****14542-23-5 calcium fluoride**BEI 2 mg/L
5 mg/m³: urine
Time: prior to shift
Parameter: Fluoride (background, nonspecific)3 mg/L
5 mg/m³: urine
Time: end of shift
Parameter: Fluoride (background, nonspecific)· **Additional information:** The lists that were valid during the creation were used as basis.· **Exposure controls**· **Personal protective equipment:**· **General protective and hygienic measures:** Wash hands before breaks and at the end of work.· **Breathing equipment:** Filter P2· **Protection of hands:**

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Safety glasses· **Body protection:**

Protective work clothing

Wear hand, head, and body protection which help to prevent injury from radiation, sparks, and electrical shock. See ANSI Z49.1. At a minimum this includes welder's gloves and a protective face shield, and may include arm

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protectors, aprons, hats, shoulder protection, and well as dark substantial clothing. Train the welder not to touch live electrical parts and to insulate himself from work and ground.

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form: Solid
Color: According to product specification

· **Odor:** Odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· Explosion limits:

Lower: Not determined.

Upper: Not determined.

· **Density:** Not determined.

· **Relative density** Not determined.

· **Vapor density** Not applicable.

· **Evaporation rate** Not applicable.

· **Water:** Insoluble.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Dynamic:** Not applicable.

· **Kinematic:** Not applicable.

· **VOC content:** 0.00 %

· **Solids content:** 100.0 %

· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

· Chemical stability

· Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.

· **Possibility of hazardous reactions** Attacks materials containing glass and silicate.

· **Conditions to avoid** No further relevant information available.

· **Incompatible materials:** No further relevant information available.

· Hazardous decomposition products:

Reasonably expected fume constituents of this product would include:

Copper Oxide

copper oxide.

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Chromoxide.

Nickel oxide.

Reasonably expected gaseous constituents would include Carbon monoxide and Carbon dioxide. Ozone and nitrogen oxides may be formed by the radiation from the arc. One recommended way to determine the composition and quantity of fumes and gases to which workers are exposed is to take an air sample from inside the welder's helmet if worn or in the worker's breathing zone. See ANSI/AWS F1.1 and ANSI/AWS F1.2-1992. In order to determine and evaluation of the existing problem areas, the standards EN ISO15011 –parts 1,4 can also be applied.

11 Toxicological information· **Information on toxicological effects**· **Acute toxicity:**· **Primary irritant effect:**· **on the skin:** No irritant effect.· **on the eye:** No irritating effect.· **Sensitization:** No sensitizing effects known.· **Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

14542-23-5	calcium fluoride	3
14808-60-7	silicon dioxide	1
13463-67-7	titanium dioxide	2B

· **NTP (National Toxicology Program)**

14808-60-7	silicon dioxide	K
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· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information· **Toxicity**· **Aquatic toxicity:** No further relevant information available.· **Persistence and degradability** No further relevant information available.· **Behavior in environmental systems:**· **Bioaccumulative potential** No further relevant information available.· **Mobility in soil** No further relevant information available.· **Additional ecological information:**· **General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **Other adverse effects** No further relevant information available.

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13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Must be specially treated adhering to official regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- | | |
|---|--|
| · DOT, ADR, ADN, IMDG, IATA | Void |
| · UN proper shipping name | |
| · DOT, ADR, ADN, IMDG, IATA | Void |
| · Transport hazard class(es) | |
| · DOT, ADR, ADN, IMDG, IATA | |
| · Class | Void |
| · Packing group | |
| · DOT, ADR, IMDG, IATA | Void |
| · Environmental hazards: | |
| · Marine pollutant: | No |
| · Special precautions for user | Not applicable. |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
| · Transport/Additional information: | Not dangerous according to the above specifications. |
| · UN "Model Regulation": | -
Void |

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

· **Sara**

- **Section 355 (extremely hazardous substances):**

None of the ingredient is listed

- **Section 313 (Specific toxic chemical listings):**

7439-96-5 manganese

1344-28-1 aluminium oxide

554-13-2 lithium carbonate

- **TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

- **Hazardous Air Pollutants**

7439-96-5 manganese

7723-14-0 phosphorus

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· **Proposition 65**· **Chemicals known to cause cancer:**

14808-60-7 silicon dioxide

13463-67-7 titanium dioxide

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

554-13-2 lithium carbonate

· **Carcinogen categories**· **EPA (Environmental Protection Agency)**

7439-96-5 manganese

D

· **TLV (Threshold Limit Value established by ACGIH)**

14542-23-5 calcium fluoride

A4

14808-60-7 silicon dioxide

A2

13463-67-7 titanium dioxide

A4

1344-28-1 aluminium oxide

A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

14808-60-7 silicon dioxide

13463-67-7 titanium dioxide

· **GHS label elements** Void· **Hazard pictograms** Void· **Signal word** Void· **Hazard statements** Void· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**16 Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Additional information:**

Recommendations for exposure scenarios, measures for risk management and identification of working conditions under which metals, metal alloys and products made of metal can be safely worked can be found attached. Detailed information can be found on our webpage www.voestalpine.com (Environment, REACH at voestalpine).

· **Department issuing SDS:**

Research and Development
Procurement/Logistics

· **Contact:**

Deniece Fiedler
Chris Smith

· **Date of preparation / last revision** 11/06/2019 / 3· **Abbreviations and acronyms:**

NCEC - National Chemical Emergency Centre (=Carechem24)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

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ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
TRGS: Technische Regeln für Gefahrstoffe (Technical Rules for Dangerous Substances, BAuA, Germany)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEL: Biological Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Carc. 1A: Carcinogenicity – Category 1A
Carc. 2: Carcinogenicity – Category 2

• * **Data compared to the previous version altered.**

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