BAVARIA SCHWEISSTECHNIK®

WP 380

SAFETY DATA SHEET
according to Regulation (EC) No. 1907 / 2006 (REACH)

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Bavaria Welding Flux WP 380

Other means of identification:
Standard designation: ISO 14174– S F CS 2 DC

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

Use of the substance / mixture:
Agglomerated Flux for Submerged Arc Welding with solid or flux-cored steel electrodes.
Relevant identified uses:
Product Categories [PC]
PC 38: Welding and soldering

1.3 Details of the supplier of the safety data sheet:

Supplier (manufacturer/importer/only representative/downstream user/distributor):

Bavaria Schweisstechnik GmbH
Wiesenweg 23
85716 Unterschleissheim
Germany

Telephone: +49(0)89/3171035
Telefax: +49(0)89/3171796
E-Mail: bavaria@subarcflux.com
E-Mail (competent person): msds@tuev-sued.de
TUV SUD Industrie Service GmbH - Environmental Service - Westendstrasse 199 - 80686 Munich - Germany

1.4 Emergency telephone number

+49 (0)89 / 5791 3031 (only available during office hours)

SECTION 2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272 / 2008 [CLP]:
This article is classified as not hazardous according to regulation (EC) No. 1272 / 2008 [CLP].

2.2 Label elements

Labeling according to Regulation (EC) No. 1272 / 2008 [CLP]:
According to EC directives or the corresponding national regulations the article does not have to be labeled.

2.3 Other hazards

Adverse physicochemical effects:
No known significant effects or critical hazards.
Adverse human health effects and symptoms:
No known significant effects or critical hazards.
Additional information:
Inhaling of gases or fumes is to be avoided.
When welding Chromium- and/or Nickel/Cobalt-alloyed alloys and electrodes the fumes and vapour/gases that may be produced have to be thoroughly ventilated in the welding area and require local exhaust at the arc according to the corresponding safety standards
Adverse environmental effects:
No known significant effects or critical hazards.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substance

Not applicable

3.2 Mixtures

Description:
The chemical composition of the flux is only a mixture of inorganic phases without organic substances.
Additional information:
According to ISO 14174 – standard „Classification of fluxes for submerged-arc welding “: fluxes for submerged-arc welding are granular fusible products of mineral origin, manufactured by various methods.
Agglomerated fluxes consist of finely milled and characteristically heat-treated natural minerals and metal alloys bonded with silicate waterglass to a uniform granular product in special manufacturing processes. These grains are baked at temperatures up to 900 °C. After cooling the flux is sieved to a granulometry over 0.1 mm but below 2.5 mm, packed and labelled.
According to ISO 14174 fluxes are classified by the characteristic chemical constituents. The welding flux **WP 380** is classified as a Calcium-Silicate **(CS)** flux type with the following limits of the characteristic chemical constituents:
CaO + MgO + SiO_2 min. 55 %; CaO + MgO min. 15 %.

Hazardous ingredients / Hazardous impurities / Stabilizers:
*) Silicate Binders
Full text of R-, H- and EUH-phrases: see section 16.

Hazardous ingredients / Hazardous impurities / Stabilizers:

product identifiers	Substance name Classification according to Regulation (EC) No. 1272 / 2008 [CLP]	Concentration in %
CAS No.: 14808-60-7 **EC No**.: 238-878-4 **REACH-No.:** 01-2120770509-45	**SiO2*** The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].	30,5 – 33,5
CAS No.: 1305-78-8 **EC No**.: 215-138-9 **REACH-No.:** 01-2119475325-36	**Calcium oxide** Eye Dam. 1, STOT SE 3, Skin Irrit. 2  **Danger** H315-H318-H335	29,5 – 32
CAS No.: 7789-75-5 **EC No**.: 232-188-7 **REACH-No.:** 01-2119491248-30	**Calcium fluoride** Substance with a Community workplace exposure limit.	18 - 20
CAS No.: 1314-23-4 **EC No**.: 215-227-2 **REACH-No.:** 01-2119486976-14	**Zirconium dioxide** The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].	6 - 8
CAS No.: 1309-48-4 **EC No**.: 215-171-9 **REACH-No.:** exempt	**Magnesium oxide** The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].	3,8 – 5,2
CAS No.: 1344-28-1 **EC No**.: 215-691-6 **REACH-No.:** 01-2119529248-35	**Aluminium oxide** The substance is classified as not hazardous according to regulation (EC) No 1272/2008 [CLP].	1,5 – 3,5

*) **SiO2 is in the crystalline structure of the raw materials used to make the product**

SECTION 4 FIRST AID MEASURES

4.1 Description of first aid measures

General information:
In case of accident or indisposition, seek medical advice immediately. (Show directions for use or safety data sheet if possible). Employ first-aid techniques recommended by the National Ambulance Authorities.

In case of inhalation:
Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. If experiencing respiratory symptoms: Call a doctor.

In case of skin contact:
After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, consult a physician.

After eye contact:
After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion: Let water be drunk in little sips (dilution effect).

4.2 Most important symptoms and effects, both acute and delayed

– No data available –

4.3 Indication of any immediate medical attention and special treatment needed

– No data available –

SECTION 5 FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: Extinguishing powder, sand, water spray.

Unsuitable extinguishing media: Full water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products: none

5.3 Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

5.4 Additional information

The product itself does not burn. Coordinate fire-fighting measures to the fire surroundings.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Personal precautions: Use personal protection equipment.

6.1.2 For emergency responders

– No data available –

6.2 Environmental precautions

No special environmental measures necessary.

6.3 Methods and material for containment and cleaning up

For cleaning up:

Collect mechanically, placing in appropriate containers for disposal, or: Use approved industrial vacuum cleaner for removal.

6.4 Reference to other sections

Safe handling:	see section 7
Personal protection equipment:	see section 8
Disposal:	see section 13

6.5 Additional information

– No data available

SECTION 7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective measures

Advice for safe handling:

Avoid: Generation/-formation of dust. Use only in well-ventilated areas.
The fluxes are normally delivered on wooden pallets in 25 kg plastic PE-bags or specially coated Big-Bags (500-1250 kg) of PPL fabric and transportation must be done in a suitable manner. Plastic bags are shrink-wrapped in plastic foil or kept in dry cardboard or wooden boxes. Unprotected containers and flux packages must not be exposed to direct wetness, like snow or rain. Damaged containers must be repacked within one hour or otherwise be disposed of.

Fire prevent measures:

No special fire protection measures are necessary.

Advices on general occupational hygiene

Minimum standard for preventive measures while handling with working materials are specified in the TRGS 500. Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff.

7.2 Conditions for safe storage, including any incompatibilities

Packaging materials:

Plastic packaging: PPL (Polypropylene), PE (Polyethylene).

Requirements for storage rooms and containers:

Keep container tightly closed. Keep container dry.

Further information on storage conditions:

A maximum of 2 pallets may be stapled onto each other.

7.3 Specific end use(s)

Recommendation:

Submerged-arc welding flux acc. to ISO 14174 for SAW applications such as boiler construction, pipe welding and steel construction.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational exposure limit values

Limit value type	Substance name	1) long-term occupational exposure limit value 2) short-term occupational exposure limit value 3) instantaneous value 4) monitoring and observation processes 5) remark
IOELV (EU)	**Aluminium oxide** CAS-Nr.: 1344-28-1	Not Listed
OSHA (US)	**Aluminium oxide** CAS-Nr.: 1344-28-1	1) 15 mg/m³ 5 mg/m³ 5) (inhalable fraction) (respirable fraction)
IOELV (EU)	**Calcium oxide** CAS No.: 1305-78-8	Not Listed
OSHA (US)	**Calcium oxide** CAS No.: 1305-78-8	1) 5 mg/m³
IOELV (EU) OSHA (US)	**Calcium fluoride** CAS No.: 7789-75-5	Not Listed
IOELV (EU)	**SiO_2 *** CAS No.: 14808-60-7	Not Listed
OSHA (US)	**SiO_2 *** CAS No.: 14808-60-7	1) mg/m³ 30/(%silica+2) total dust 10/(%silica+2) respirable dust
IOELV (EU)	**Titanium dioxide** CAS No.: 13463-67-7	Not Listed
OSHA (US)	**Titanium dioxide** CAS No.: 13463-67-7	1) 15 mg/m³ total dust
IOELV (EU) OSHA (US)	**Manganese dioxide** CAS No.: 1313-13-9	Not Listed
IOELV (EU)	**Magnesium oxide** CAS No.: 1309-48-4	Not Listed
OSHA (US)	**Magnesium oxide** CAS No.: 1309-48-4	1) 15 mg/m³ total dust

***)** **Crystalline silica is complex-bound to other substances**

8.1.2 Biological limit values

– No data available –

8.2 Exposure controls

8.2.1 Appropriate engineering controls

See section 7. No additional measures necessary.

As shipped welding flux described in this data sheet is non-reactive, non-inflammable, non-explosive and essentially non-hazardous until welded. However, during welding the relevant safety regulations have to be observed.

8.2.2 Personal protection equipment

Eye / face protection: Eye glasses with side protection.

Skin protection:

Hand protection: suitable gloves type: chromate-free leather or other heat-resistant materials.

Body protection: use industrial heat-resisting safety clothes, safety shoes.

Respiratory protection:

Respiratory protection necessary at: exceeding exposure limit values. If technical exhaust or ventilation measures are not possible or insufficient respiratory protection must be worn.

Suitable respiratory protection apparatus: filtering device (DIN EN 147).

8.2.3 Environmental exposure controls

The local and national waste and waste water disposal rules are to be observed. (Section 13: Disposal considerations / Section 15: regulatory information)

8.3 Additional information

The finely milled constituents are bonded to a uniform granular product, the formation of aerosols and fine dust particles is limited if the flux is properly handled.

The occupational exposure limit acc. to TRGS 900 for the general threshold limit value for dust of 10 mg/m³ -respirable- and 3 mg/m³ -alveolar- fraction is not reached during proper use of the flux.

Welding fumes from the use of this flux may contain fluorides and complex oxides of Aluminium, Magnesium, Silicon, Iron and Titanium whose exposure limits are lower than the 5 mg/m³ TLV for general welding fume.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties Appearance

Physical state: granulate
Colour: dark grey
Odour: odourless

Safety relevant basic data

		at °C	Method	Remark
pH value	not applicable			
Melting point/melting range	> 1300 °C			
Freezing point	not applicable			
Boiling temperature/boiling range	not applicable			
Decomposition temperature (°C)	not determined			
Flash point	not applicable			
Vapourization rate/evaporation rate	not applicable			
Ignition temperature (°C)	not determined			
Explosion limits (LEL, UEL)	not applicable			
Vapour pressure	not applicable			
Relative vapour density at 20 °C (air = 1)	not determined			
Density	not determined			
Bulk density	approx. 1000 kg / m^3			
Water solubility (g / L)	insoluble			
Partition coefficient n-octanol/water (log Kow)	not applicable			
Dynamic viscosity	not determined			
Kinematic viscosity	not applicable	40 °C		

9.2 Other information

– No data available –

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity
No hazardous reactions known.

10.2 Chemical stability
The product is stable.

10.3 Possibility of hazardous reactions
No hazardous reactions known.

10.4 Conditions to avoid
No known significant effects or critical hazards.

10.5 Incompatible materials
No hazardous reactions known.

10.6 Hazardous decomposition products
No decomposition according to intended use.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 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 possibly carcinogenic to humans (Group 2B).

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:	based on available data, the classification criteria are not met
Serious eye damage/irritation:	based on available data, the classification criteria are not met
Respiratory/skin sensitization:	based on available data, the classification criteria are not met
Germ cell mutagenicity:	based on available data, the classification criteria are not met
Genotoxicity:	based on available data, the classification criteria are not met
Carcinogenicity:	based on available data, the classification criteria are not met
Repeated dose toxicity:	based on available data, the classification criteria are not met
Reproductive toxicity:	based on available data, the classification criteria are not met
STOT-single exposure:	based on available data, the classification criteria are not met
STOT-repeated exposure:	based on available data, the classification criteria are not met
Aspiration hazard:	based on available data, the classification criteria are not met
LD50 Oral:	based on available data, the classification criteria are not met
LD50 Dermal:	based on available data, the classification criteria are not met
LC50 Inhalation:	based on available data, the classification criteria are not met
Routes of exposure:	based on available data, the classification criteria are not met
Symptoms related to the physical, chemical and toxicological characteristics:	based on available data, the classification criteria are not met
Mixture versus substance Information:	based on available data, the classification criteria are not met

Delayed and immediate effects as well as chronic effects from short and long-term exposure:	based on available data, the classification criteria are not met
Interactive effects:	based on available data, the classification criteria are not met
Toxicity in case of skin contact:	based on available data, the classification criteria are not met
Absence of specific data:	based on available data, the classification criteria are not met
Toxicity in case of eye contact	based on available data, the classification criteria are not met
Mixtures:	based on available data, the classification criteria are not met
Toxicity in case of ingestion:	based on available data, the classification criteria are not met

SECTION 12 ECOLOGICAL INFORMATION

12.1 Toxicity Aquatic toxicity:
Based on available data, the classification criteria are not met.

12.2 Persistence und degradability
Abiotic degradation:
Due to its low solubility in water the product is almost completely mechanically separated in biological sewage plants.
Biodegradation:
The methods for determining the biological degradability are not applicable to inorganic substances.
Additional information:
Readily eliminated from water.

12.3 Bioaccumulative potential
not applicable

12.4 Mobility in soil
not applicable.

12.5 Results of PBT and vPvB assessment
The substances in the mixture do not meet the PBT / vPvB criteria according to REACH, annex XIII.

12.6 Other adverse effects
No known significant effects or critical hazards.

SECTION 13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
List of proposed waste codes / waste designations in accordance with AVV
13.1.1 Product / Packaging disposal
Waste codes / waste designations according to EWC / AVV
Waste code product:

12 01 13	**Welding waste**

Waste code packaging:

20 03 99	**Municipal wastes not otherwise specified**

Waste treatment options
Appropriate disposal / product:
Dispose of waste according to applicable legislation.

Appropriate disposal / packaging:
Contaminated packaging must be completely emptied and can be re-used after proper cleaning.

13.2 Additional information
Flux and slag residuals are mineral constituents and therefore may also be used as filler in site-preparation or underground construction work.

SECTION 14 TRANSPORT INFORMATION

The product is not a dangerous good within the meaning of the IATA transport regulations for air freight.
No dangerous good (not restricted) in sense of these transport regulations.

SECTION 15 REGULATORY INFORMATION

15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture
– No data available –

15.2 Chemical Safety Assessment
Chemical safety assessments for this mixture were not carried out.

15.3 Additional information
VOC (volatile organic compounds) content is 0%.

SECTION 16 OTHER INFORMATION

16.1 Indication of changes
Adaptation to regulation CLP

16.2 Abbreviations and acronyms
For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

16.3 Key literature references and sources for data
REACH Dissemination

16.4 Classification for mixtures and used evaluation method according to regulation (EC) No. 1272 / 2008 [CLP]
Classification according to Regulation (EC) No. 1272 / 2008 [CLP]:
This mixture is classified as not hazardous according to regulation (EC) No. 1272 / 2008 [CLP].

16.5 Relevant R-, H- and EUH- phrases (number und full text)

Hazard statements (H-phrases)	
H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage.
H319	Causes serious eye irritation
H332	Harmful if inhaled.
H335	May cause respiratory irritation
H372	Causes damage to organs through prolonged or repeated exposure (state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)

16.6 Training advice

– No data available –

16.7 Additional information

The above information describes exclusively the safety requirements of the product and is based on our present day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

This Safety Data Sheet was prepared in cooperation with TUV SUD Industrie Service GmbH (see below), based on data from the supplier, who is named in section 1 and who is responsible for this document.

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