

Copyright 2016, Bohlender GmbH. All rights reserved. Duplication or download of this document is only allowed for the purpose of getting familiar with the adequate use and the safe handling of the described products from Bohlender. These information of Bohlender GmbH must be duplicated or downloaded completely and must not be changed with regards to contents.

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

1.1 Product identifier

Ethylene / Tetrafluoroethylene Copolymer (ETFE), processed with thermoplastic technologies: injection moulding, extrusion.

1.2 Relevant identified use of substance/preparation and use which is advised against

None

Relevant identified uses

Fluoropolymer for the industrial use, e. g. for laboratory equipment.

1.3 Details of the supplier of safety data sheet

Address: BOHLENDER GmbH, Waltersberg 8, D-97947 Grünsfeld
Tel./ Fax.: +49 9346 9286-0 / +49 9346 9286-51
E-Mail: info@bohlender.de
Internet: www.bohlender.de / www.bola.de / www.sicco.de

1.4 Emergency Telephone Number: +49 30-19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Classification:

According to CLP regulation (EC) No. 1272/2008 this product is not classified as hazardous substance/hazardous mixture.

2.2 Label elements

Regulation (EC) No. 1272/2008

Not applicable

Additional Information:

None.

Supplemental safety advice:

Fire fighting measures:

Product itself does not burn without external flame.

Use self-contained respirator (breathing apparatus with compressed air) and wear full protective suit as protection from hydrofluoric acid.

The vapours caused during processing of ETFE can be hazardous if inhaled.

These vapours can cause irritations in eyes, nose, throat and lung.

Avoid contamination of tobacco products with the polymer resin.

Please read the current safety data sheet before use.

2.3 Other hazards

Product can cause burns in hot condition.

Bohlender GmbH
Waltersberg 8
D-97947 Grünsfeld
Germany
Telefon : +49 (0)9346 - 9286-0
Telefax : +49 (0)9346 - 9286-51
E-Mail : info@bohlender.de
www.bohlender.de

Geschäftsführer:
Volker Bohlender
Sitz der Gesellschaft: Grünsfeld

Amtsgericht Mannheim HRB 560446
Steuernummer 8028818258
U-St-Idnr. DE812198581

Sparkasse Tauberfranken
BLZ 673 525 65 » Konto-Nr: 4013611
IBAN: DE 57673525650004013611 / BIC SOLADES1TBB

Volksbank Main-Tauber eG
BLZ 673 900 00 » Konto-Nr.: 71678806
IBAN: DE1567390000071678806 / BIC GENODE61WTH



Wir produzieren und vertreiben:
Laborbedarf aus Hochleistungskunststoffen
www.bola.de
Trockenschränke und Exsikkatoren
www.sicco.de

SECTION 3: Composition/information on ingredients

| Substance Name | CAS no.. | EC no. | Concentration | Classification |
|-------------------------------------------------|---------------|--------|-----------------|----------------|
| Ethylene / Tetrafluoroethylene Copolymer (ETFE) | Not specified | | 100 % by weight | |

See section 16 for the full text of the H-Statements used in this safety data sheet.

See paragraph 2.2 for additional information on the classification of components.

See sections 8 and 12 of this data sheet for information on exposure limits, the persistent, bioaccumulative and toxic substances (PBT) respectively very persistent and very bioaccumulative (vPvB) substances and characteristics.

SECTION 4: First aid measures**4.1 Description of First aid measures****Inhalation:**

Move affected person to fresh air immediately. Get medical advice in case of discomfort.

Skin contact with hot ETFE:

Wash skin immediately with cold water for at least 15 minutes. DO NOT TRY TO REMOVE THE PRODUCT. Cover the injured area with clean bandages. Get immediately medical advice/attention.

Eye contact with hot ETFE:

Rinse eyes with cold water for at least 15 minutes. DO NOT TRY TO REMOVE THE MATERIAL. Get immediately medical advice/attention.

Ingestion:

Rinse mouth. Get medical advice in case of discomfort.

4.2 Most important symptoms and effects, both acute and delayed

See paragraph 11.1 Information on toxicological effects.

4.3 Indication of any immediate medical attention and special treatment needed

Not applicable.

SECTION 5: Fire fighting measures**5.1 Extinguishing media**

Non-combustible in air. In case of fire: use extinguishing media for combustible materials e. g. water or foam.

5.2 Special hazards arising from the substance or mixture

Thermal decomposition can occur if the product is exposed to very high temperatures. Please observe section 10 „Hazardous decomposition products“.

5.3 Advice for fire-fighters

Please observe the following protective measures in case of heavy fire and a possible complete thermal decomposition of the product: wear full protective suit and helmet, use self-contained respirator (breathing apparatus with compressed air), wear tightly sealing jacket and trousers, use protectors for arms, waist and legs, wear a mask and protect your head.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Evacuate surrounding, ventilate room. Please see the following sections of this safety data sheet for information on physical and health risks, respiratory protection, exhaust ventilation and personal protective clothing.

6.2 Environmental precautions

Avoid release to the environment.

6.3 Methods and material for containment and cleaning up

Collect released material. Use wet thickeners or water to avoid dust formation. Use a UN-certified container. Wipe residues. Seal the container. Dispose the collected material.

6.4 Reference to other sections

See sections 8 and 13 for additional information.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Avoid inhalation of thermal decomposition products.

Avoid skin contact with the heated material.

The product is only determined for a use as described in the product catalogue of Bohlender GmbH.

Keep work wear separated from normal cloths, food and tobaccos.

Do not inhale dust / smoke / gas / fog / vapour / aerosol.

Do not eat, drink or smoke when using ETFE.

Do not smoke during use! Smoking while using the product could contaminate tobaccos. The tobacco smoke could contain hazardous decomposition products as listed in paragraph 10.6.

7.2 Conditions for safe storage including any incompatibilities

Do not store near heat sources (>260 °C).

7.3 Specific end uses

See paragraphs 7.1 Precautions for safe handling and 7.2 Conditions for safe storage including any incompatibilities.

See section 8 Exposure controls/personal protection.

SECTION 8: Exposure controls/personal protection**8.1 Control Parameters****Exposure limits**

There are no exposure limit values available for the substances listed in section 3.

Biological limit values

There are no biological limit values available for the substances listed in section 3.

8.2 Exposure controls

8.2.1 Appropriate engineering controls

If the product is heated (> 260 °C) during processing, sufficient ventilation has to be provided respectively a local exhaust ventilation should be used.

If the product is overheated extremely due to inadequate use or defective equipment, a local exhaust ventilation should be used. This exhaust should be suitable to keep decomposition products below permissible limits (see also section 10 "hazardous decomposition products"). Local exhaust ventilation is required for temperatures > 260 °C.

8.2.2 Personal protective equipment

Eye / Face protection

An occupational exposure assessment should be made to determine eye/face protection.

Skin protection

Avoid skin contact.

Hand protection and other protection measures

It is not necessary to wear chemically resistant protective gloves.

Respiratory protection

If products made of ETFE are used according to regulations, respiratory protection is not required.

An occupational exposure assessment can be necessary if the product is heated to high temperatures during use.

If temperatures > 260 °C are reached, preferably use local exhaust ventilation or at least work with sufficient ventilation. This exhaust should be suitable to keep decomposition products below permissible limits (see also section 10 "hazardous decomposition products"). In addition to the measures described, you can use a full view hood with fresh air supply to keep away possible toxic decomposition products from the breathing area. For applications like hot gas welding it is recommended to wear full protective mask and respirator for fresh air supply.

Thermal hazards

Wear heat-insulating gloves to avoid burns.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|----------------------------------------|---------------------------------------------------------|
| Physical state / form: | Solid |
| Appearance / odour: | transparent, odourless |
| Odour threshold: | No data available |
| pH | Not applicable |
| Boiling point: | Not applicable |
| Melting point: | 260-280 °C (ASTM D 4894) |
| Flammability (solid / gas): | Not classified |
| Explosive properties: | Not classified |
| Oxidizing properties: | Not classified |
| Flash point: | No flash point |
| Auto ignition temperature: | Not applicable |
| Lower explosion limit (LEL): | Not applicable |
| Upper explosion limit (UEL): | Not applicable |
| Relative density: | 1,7-1,9 g/cm ³ (at 23°C; reference water =1) |
| Water solubility: | Insignificant |
| Solubility – without water: | No data available |
| N-octanol-water partition coefficient: | No data available |
| Evaporation rate: | Not applicable |
| Vapour density: | Not applicable |

Decomposition temperature:

>260 °C; see Safe Handling Guide PTFE, Plastics Europe

Viscosity:

Not applicable

Density:

1,7-1,9 g/cm³ (at 23°C)**9.2 Other information**

Bulk weight:

Not applicable

Volatile organic components:

Not applicable

Volatile components (%):

Not applicable

VOC less water and excluded solvents

Not applicable

SECTION 10: Stability and reactivity**10.1. Reactivity**

This product can be reactive with certain substances under certain conditions. Please observe the information in this section.

10.2. Chemical stability

Stable.

10.3 Possibility of hazardous reactions

Not known.

10.4 Conditions to avoid

Not known.

10.5 Incompatible materials

Alkaline metals and alkaline earth metals.

Reactions with metal powders are possible at temperatures above 260°C.

10.6 Hazardous decomposition products**Substance**

Carbonyl fluoride
Carbon monoxide
Carbon dioxide
Hydrogen fluoride
Perfluorobutylene (PFIB)
Toxic vapours, gas or particles

Condition

At increased temperatures- above 260 °C
At increased temperatures- above 260 °C
At increased temperatures- above 260 °C
At increased temperatures- above 260 °C
At increased temperatures- above 260 °C
At increased temperatures- above 260 °C

Toxic decomposition products, such as hydrofluoric acid (MAC-value: 3 ml/m³; 2 mg/m³, MAC and BEL-value list 1997, DFG) and Perfluorobutylene (PFIB) (threshold limit: 0,01 ml/m³; internally specified by 3M), can be produced if the product is exposed to high temperatures due to intentionally wrong handling or faulty equipment.

SECTION 11: Toxicological information

The following information can deviate from the substance's classification as per section 2 and/or from the classification of individual ingredients as per section 3, which had been stipulated by the responsible European authorities. The information in section 11 are in particular based on the UN-GHS calculation rules.

Bohlender GmbH

Waltersberg 8
D-97947 Grünsfeld
Germany
Telefon : +49 (0)9346 - 9286-0
Telefax : +49 (0)9346 - 9286-51
E-Mail : info@bohlender.de
www.bohlender.de

Geschäftsführer:
Volker Bohlender
Sitz der Gesellschaft: Grünsfeld

Amtsgericht Mannheim HRB 560446
Steuernummer 8028818258
U-Id-nr. DE812198581

Sparkasse Tauberfranken
BLZ 673 525 65 » Konto-Nr.: 4013611
IBAN: DE 57673525650004013611 / BIC SOLADES1TBB

Volksbank Main-Tauber eG
BLZ 673 900 00 » Konto-Nr.: 71678806
IBAN: DE1567390000071678806 / BIC GENODE61WTH



Wir produzieren und vertreiben:
Laborbedarf aus Hochleistungskunststoffen
www.bola.de
Trockenschränke und Exsikkatoren
www.sicco.de

11.1 Information on toxicological effects

Signs and symptoms after exposure.

Based on test data and/or information about the ingredients, this product can have following effects on health:

Inhalation:

Vapours from material which has been heated over 260 °C can irritate the breathing system.

Signs/symptoms can include: cough, sneezing, nasal flow, hoarseness, gasping, difficulties in breathing, throat and nose pain and coughing of blood. Further irritation can affect the eyes like eye pain and lacrimation. ETFE can have following additional effects on health (see below):

Heating:

Information on polymer fume fever: a disease with influenza-like symptoms e.g. breathlessness, tremors, fever, cough, cyanosis. It is caused by the inhalation of decomposition products of fluoropolymers. . Smoking of contaminated tobacco can cause exposure to decomposition products. Symptoms normally occur after 2 hours and fade within 36-48 hours. Continuing symptoms in respiratory tract have not been observed.

Skin contact:**Heating:**

Skin burns (thermal, due to contact with hot material). Signs/symptoms can include: pain due to burns, red and swollen skin and vesication.

Mechanical skin irritation: Signs/symptoms can include: itching and redness.

Eye contact:**Heating:**

Thermal burns. Signs/symptoms can include: strong pain, redness, swelling and tissue injury.

Mechanical eye irritation: signs/symptoms can include: irritation, redness, scratching of cornea and lacrimation. Vapours of heated material can cause eye irritation. Symptoms can include: redness, swelling, pain, lacrimation and blurred eye sight.

Ingestion:

Product can be hazardous if ingested. Gastrointestinal irritations: symptoms can include: abdominal pain, upset stomach, sickness, vomiting and diarrhoea.

Additional information

The health hazards of this material are not completely known. Conservative and safe measures for handling should be observed (see sections 7 and 8) and appropriate first aid measures should be taken (see section 4), if an exposure occurs.

Information on the following relevant hazard classifications

If a product listed in section three does not occur in following charts there are either no data available or the available data are not sufficient for a classification.

Acute toxicity

| Substance | Exposure route | Species: | Value |
|-------------------------------------------------|----------------|----------|--------------------------------------------------|
| Ethylene / Tetrafluoroethylene Copolymer (ETFE) | Ingestion | | No data available, calculated ATE >5000 mg/kg |

ATE = estimated acute toxicity

Skin corrosion/irritation

For the product/the products there are either no data available or the available data are not sufficient for a classification.

Eye damage/irritation

For the product/the products there are either no data available or the available data are not sufficient for a classification.

Skin sensitisation

For the product/the products there are either no data available or the available data are not sufficient for a classification.

Sensitisation to the respiratory tract

For the product/the products there are either no data available or the available data are not sufficient for a classification.

Germ cell mutagenicity

For the product/the products there are either no data available or the available data are not sufficient for a classification.

Carcinogenicity

For the product/the products there are either no data available or the available data are not sufficient for a classification.

Reproductive toxicity**Effects on reproduction and/or development**

For the product/the products there are either no data available or the available data are not sufficient for a classification.

Specific target organ toxicity**Specific target organ toxicity / single exposure**

For the product/the products there are either no data available or the available data are not sufficient for a classification.

Specific target organ toxicity / repeated exposure

For the product/the products there are either no data available or the available data are not sufficient for a classification.

Aspiration hazard

For the product/the products there are either no data available or the available data are not sufficient for a classification.

For additional toxicological information please contact address or telephone number mentioned on page 1.

SECTION 12: Ecological information

Following information can differ from the classification of the product in section 2 and/or from the classification of ingredients in section 3 which have been stipulated by the European authority. All information listed in section 12 are based on the UN-GHS calculation rules.

12.1 Toxicity

There are no test data available for the product.

| Substance | CAS-no. | Organism | Test method | Exposure | Final point | Result |
|--------------------------------------------------|---------------|----------|----------------------------------------------------------------------------------|----------|-------------|--------|
| Ethylene / Tetrafluoro-ethylene Copolymer (ETFE) | Not specified | | No data available or the available data are not sufficient for a classification. | | | |

12.2 Persistence and degradability

| Substance | CAS-No. | Test method | Duration | Indicator | Result | Protocol |
|-------------------------------------------------|---------------|----------------------------------------------------------------------------------|----------------|----------------|----------------|----------------|
| Ethylene / Tetrafluoroethylene Copolymer (ETFE) | Not specified | No data available or the available data are not sufficient for a classification. | Not applicable | Not applicable | Not applicable | Not applicable |

12.3 Bioaccumulative potential

| Substance | CAS-No. | Test method | Duration | Indicator | Result | Protocol |
|-------------------------------------------------|---------------|----------------------------------------------------------------------------------|----------------|----------------|----------------|----------------|
| Ethylene / Tetrafluoroethylene Copolymer (ETFE) | Not specified | No data available or the available data are not sufficient for a classification. | Not applicable | Not applicable | Not applicable | Not applicable |

12.4 Mobility in soil

Please contact producer for further details.

12.5 Results of PBT and vPvB assessment

There are no data available at the moment. Please contact producer for further details.

12.6 Other adverse effects

No data available.

SECTION 13: Disposal considerations**13.1 Waste treatment methods**

See paragraph 11.1 Information on toxicological effects.

Disposal (recycling or removal) in accordance with local and national rules. The combustion products contain hydrogen halides (hydrogen chloride/hydrogen fluoride/hydrogen bromide).

According to the European regulation (2000/532/EC), waste numbers have to be assigned from waste producers according to industry and process.

All stated waste codes are recommendations only.

Recommended waste codes /waste names:

070213**Plastic waste**

Bohlender GmbH
Waltersberg 8
D-97947 Grünsfeld
Germany
Telefon : +49 (0)9346 - 9286-0
Telefax : +49 (0)9346 - 9286-51
E-Mail : info@bohlender.de
www.bohlender.de

Geschäftsführer:
Volker Bohlender
Sitz der Gesellschaft: Grünsfeld

Amtsgericht Mannheim HRB 560446
Steuernummer 8028818258
U-St-Idnr. DE812198581

Sparkasse Tauberfranken
BLZ 673 525 65 » Konto-Nr.: 4013611
IBAN: DE 57673525650004013611 / BIC SOLADES1TBB

Volksbank Main-Tauber eG
BLZ 673 900 00 » Konto-Nr.: 71678806
IBAN: DE15673900000071678806 / BIC GENODE61WTH



Wir produzieren und vertreiben:
Laborbedarf aus Hochleistungskunststoffen
www.bola.de
Trockenschränke und Exsikkatoren
www.sicco.de

SECTION 14: Transport information

97-5000-1220-4, 97-5000-1384-8

No hazardous goods.

97-5000-1488-7

ADR / IMDG / IATA: not restricted. No dangerous goods.

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Status of worldwide chemicals register**

The ingredients of this product are in accordance with the registration of chemicals according to TSCA.

Water hazard class

nhw not hazardous to water KBwS-code number 766

Technical instruction air

Not stipulated.

15.2 Material safety evaluation

Not applicable.

SECTION 16: Other information

The information given in this safety data sheet is based on our present available experience and only describes the security appearance of the product. It is up to the user to check if the product is suitable for the respective application. All questions regarding warranty and liability for this product are regulated according to our sales conditions unless legal requirements are differing.

Change index

| Revision | Date: | Reason for change: | Changed paragraphs: |
|----------|------------|-----------------------------|---------------------|
| 00 | 11.07.2016 | Initial creation | |
| 01 | 12.07.2016 | New emergency telephone no. | Section 1, 1.4 |

| | Date / Name | For questions contact: | see 1.3 |
|---------------------|------------------------|------------------------------|------------|
| Created: | 12.07.2016/Dr. Schlipf | Number of pages: | 9 |
| Checked: | 12.07.2016/V.Bohlender | Revision no.: | 01 |
| Released | 12.07.2016/V.Bohlender | Issue date: | 12.07.2016 |
| Distributed: | | Replaces issue dated: | 11.07.2016 |