

## Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 29.11.2010

Revision: 29.11.2010

### 1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name:** BRUNOX® Epoxy Spray

· **Relevant identified uses of the substance or mixture and uses advised against**

· **Application of the substance / the preparation**

Coating material

rust neutraliser and epoxy primer

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

BRUNOX Korrosionsschutz GmbH

Postfach 100127

85001 Ingolstadt

Tel. + 49/ (0) 841 961 29 04

Fax + 49/ (0) 841 961 29 13

E-mail: office@brunox.com

· BRUNOX AG

Tunnelstrasse 6

CH - 8732 Neuhaus/SG

Tel. +41/ (0)55 285 80 80

Fax +41/ (0)55 285 80 81

E-mail: office@brunox.com

· **Further information obtainable from:** Abteilung Produktsicherheit: Tel. +41/ (0)79 372 34 44

· **Emergency telephone number:**

Toxikologisches Informationszentrum

CH - 8030 Zürich, Freiestrasse 16

Tel. +41/ 044 251 51 51

Notruf - CH - : 145

Notruf - D - : Giftnotrufzentrale 030 19240

Notruf - AT - : 01 4064343

EUROPÄISCHE NOTRUFNR. : 112

### 2 Hazards identification

· **Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Aerosol 1 H222 Extremely flammable aerosol.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R36: Irritating to eyes.



F+; Extremely flammable

(Contd. on page 2)

## Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 29.11.2010

Revision: 29.11.2010

(Contd. of page 1)

R12: Extremely flammable.

R67: Vapours may cause drowsiness and dizziness.

• **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Warning! Pressurized container.

• **Classification system:**

The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

• **Label elements**

• **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

• **Code letter and hazard designation of product:**



Xi Irritant  
F+ Extremely flammable

• **Risk phrases:**

12 Extremely flammable.

36 Irritating to eyes.

67 Vapours may cause drowsiness and dizziness.

• **Safety phrases:**

2 Keep out of the reach of children.

16 Keep away from sources of ignition - No smoking.

23 Do not breathe aerosol.

29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.

46 If swallowed, seek medical advice immediately and show this container or label.

51 Use only in well-ventilated areas.

• **Special labelling of certain preparations:**

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C.

Do not pierce or burn, even after use.

Do not spray on a naked flame or any incandescent material.

• **Classification in accordance with Directive 75/324/EEC:** Extremely flammable

• **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 substances listed below with nonhazardous additions.

• **Dangerous components:**

(Contd. on page 3)

IE

## Safety data sheet

### according to 1907/2006/EC, Article 31

Printing date 29.11.2010

Revision: 29.11.2010

		(Contd. of page 2)
CAS: 67-64-1	acetone	25-50%
EINECS: 200-662-2	☒ Xi R36; ☒ F R11 R66-67	
	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	
CAS: 108-10-1	4-methylpentan-2-one	2.5-10%
EINECS: 203-550-1	☒ Xn R20; ☒ Xi R36/37; ☒ F R11 R66	
	⚠ Flam. Liq. 2, H225; ⚠ Acute Tox. 4, H332; Eye Irrit. 2, H319; STOT SE 3, H335	
CAS: 107-98-2	1-methoxy-2-propanol	2.5-10%
EINECS: 203-539-1	R10	
	⚠ Flam. Liq. 3, H226	
CAS: 67-63-0	propan-2-ol	2.5-10%
EINECS: 200-661-7	☒ Xi R36; ☒ F R11 R67	
	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	
CAS: 10024-97-2	dinitrogen oxide	2.5-10%
EINECS: 233-032-0	⚠ Press. Gas, H280	
CAS: 64-18-6	formic acid	≤2.0%
EINECS: 200-579-1	☒ C R35 ⚠ Skin Corr. 1A, H314	
CAS: 112-34-5	2-(2-butoxyethoxy)ethanol	≤2.0%
EINECS: 203-961-6	☒ Xi R36 ⚠ Eye Irrit. 2, H319	

· **Additional information:** For the wording of the listed risk phrases refer to section 16.

## 4 First aid measures

- **Description of first aid measures**
- **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. If symptoms persist, consult a doctor.
- **After swallowing:** A person vomiting while laying on their back should be turned onto their side.
- **Information for doctor:**
- **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 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**  
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

(Contd. on page 4)

IE

## **Safety data sheet** according to 1907/2006/EC, Article 31

Printing date 29.11.2010

Revision: 29.11.2010

(Contd. of page 3)

- **Additional information** Cool endangered receptacles with water spray.

### **6 Accidental release measures**

- **Personal precautions, protective equipment and emergency procedures**  
Ensure adequate ventilation  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Do not allow product to reach sewage system or any water course.  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Ensure adequate ventilation.  
Do not flush with water or aqueous cleansing agents
- **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.

### **7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**  
Store in cool, dry place in tightly closed receptacles.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.
- **Information about fire - and explosion protection:**  
Do not spray onto a naked flame or any incandescent material.  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store in a cool location.  
Observe official regulations on storing packagings with pressurized containers.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Do not seal receptacle gas tight.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

### **8 Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.

(Contd. on page 5)

IE

## **Safety data sheet**

**according to 1907/2006/EC, Article 31**

Printing date 29.11.2010

Revision: 29.11.2010

(Contd. of page 4)

**· Control parameters****· Ingredients with limit values that require monitoring at the workplace:****67-64-1 acetone**

OEL (Ireland) 1210 mg/m<sup>3</sup>, 500 ppm  
IOELV  
WEL (Great Britain) Short-term value: 3620 mg/m<sup>3</sup>, 1500 ppm  
Long-term value: 1210 mg/m<sup>3</sup>, 500 ppm

**108-10-1 4-methylpentan-2-one**

OEL (Ireland) Short-term value: 208 mg/m<sup>3</sup>, 50 ppm  
Long-term value: 83 mg/m<sup>3</sup>, 20 ppm  
Sk, IOELV  
WEL (Great Britain) Short-term value: 416 mg/m<sup>3</sup>, 100 ppm  
Long-term value: 208 mg/m<sup>3</sup>, 50 ppm  
Sk

**107-98-2 1-methoxy-2-propanol**

OEL (Ireland) Short-term value: 368 mg/m<sup>3</sup>, 100 ppm  
Long-term value: 184 mg/m<sup>3</sup>, 50 ppm  
IOELV  
WEL (Great Britain) Short-term value: 560 mg/m<sup>3</sup>, 150 ppm  
Long-term value: 375 mg/m<sup>3</sup>, 100 ppm  
Sk

**67-63-0 propan-2-ol**

OEL (Ireland) Short-term value: 400 ppm  
Long-term value: 200 ppm  
Sk  
WEL (Great Britain) Short-term value: 1250 mg/m<sup>3</sup>, 500 ppm  
Long-term value: 999 mg/m<sup>3</sup>, 400 ppm

**10024-97-2 dinitrogen oxide**

OEL (Ireland) 180 mg/m<sup>3</sup>, 100 ppm  
WEL (Great Britain) 183 mg/m<sup>3</sup>, 100 ppm

**64-18-6 formic acid**

OEL (Ireland) 9 mg/m<sup>3</sup>, 5 ppm  
IOELV  
WEL (Great Britain) 9.6 mg/m<sup>3</sup>, 5 ppm

**112-34-5 2-(2-butoxyethoxy)ethanol**

OEL (Ireland) Short-term value: 101.2 mg/m<sup>3</sup>, 15 ppm  
Long-term value: 67.5 mg/m<sup>3</sup>, 10 ppm  
IOELV  
WEL (Great Britain) Short-term value: 101.2 mg/m<sup>3</sup>, 15 ppm  
Long-term value: 67.5 mg/m<sup>3</sup>, 10 ppm

**· Additional information:** The lists valid during the making were used as basis.**· Exposure controls****· Personal protective equipment:****· General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.

(Contd. on page 6)

IE

## Safety data sheet

### according to 1907/2006/EC, Article 31

Printing date 29.11.2010

Revision: 29.11.2010

(Contd. of page 5)

- **Respiratory protection:**

Use suitable respiratory protective device in case of insufficient ventilation.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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

- **Material of gloves**

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

- **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:**



Tightly sealed goggles

## 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

**Form:**

Aerosol

**Colour:**

Amber coloured

- **Odour:**

Characteristic

- **Odour threshold:**

Not determined.

- **pH-value at 20°C:**

4

- **Change in condition**

**Melting point/Melting range:**

Undetermined.

**Boiling point/Boiling range:**

55°C

- **Flash point:**

13°C

- **Ignition temperature:**

270°C

- **Decomposition temperature:**

Not determined.

- **Self-igniting:**

Product is not selfigniting.

- **Danger of explosion:**

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

- **Explosion limits:**

**Lower:**

2.6 Vol %

(Contd. on page 7)

IE

## Safety data sheet

### according to 1907/2006/EC, Article 31

Printing date 29.11.2010

Revision: 29.11.2010

(Contd. of page 6)

<b>Upper:</b>	13.0 Vol %
· <b>Vapour pressure at 20°C:</b>	233 hPa
· <b>Density at 20°C:</b>	1 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not applicable.
· <b>Solubility in / Miscibility with water:</b>	Not miscible or difficult to mix.
· <b>Segregation coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Solvent content:</b>	
<b>Organic solvents:</b>	63.1 %
<b>VOC (EC)</b>	63.06 %
<b>Solids content:</b>	0.8 %
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** Danger of bursting.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:**  
Bei längeren und/oder häufigem Hautkontakt sind Reizerscheinungen möglich.  
Prolonged skin contact will result in defatting of the skin, leading to irritation, and in some cases, dermatitis.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Irritant

IE  
(Contd. on page 8)

## Safety data sheet

### according to 1907/2006/EC, Article 31

Printing date 29.11.2010

Revision: 29.11.2010

(Contd. of page 7)

## 12 Ecological information

- **Toxicity**
- **Acquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour 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 (German Regulation) (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **European waste catalogue**  
20 01 28 paint, inks, adhesives and resins other than those mentioned in 20 01 27  
20 01 40 metals
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 2 5F Gases.
- **Danger code (Kemler):** -
- **UN-Number:** 1950
- **Packaging group:** -
- **Hazard label:** 2.1
- **UN proper shipping name:** 1950 AEROSOLS
- **Tunnel restriction code** D

(Contd. on page 9)

IE



**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 29.11.2010

Revision: 29.11.2010

(Contd. of page 8)

· **Maritime transport IMDG:**



- **IMDG Class:** 2.1
- **UN Number:** 1950
- **Label** 2.1
- **Packaging group:** -
- **EMS Number:** F-D,S-U
- **Marine pollutant:** No
- **Proper shipping name:** AEROSOLS

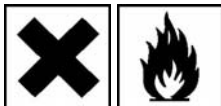
· **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 2.1
- **UN/ID Number:** 1950
- **Label** 2.1
- **Packaging group:** -
- **Proper shipping name:** AEROSOLS, flammable
- **UN "Model Regulation":** UN1950, AEROSOLS, 2.1
- **Special precautions for user** Warning: Gases.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

## 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Labelling according to EU guidelines:**  
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.
- **Code letter and hazard designation of product:**



Xi Irritant  
F+ Extremely flammable

- **Risk phrases:**  
12 Extremely flammable.  
36 Irritating to eyes.  
67 Vapours may cause drowsiness and dizziness.
- **Safety phrases:**  
2 Keep out of the reach of children.  
16 Keep away from sources of ignition - No smoking.  
23 Do not breathe aerosol.  
29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.  
46 If swallowed, seek medical advice immediately and show this container or label.

(Contd. on page 10)

## **Safety data sheet**

### **according to 1907/2006/EC, Article 31**

Printing date 29.11.2010

Revision: 29.11.2010

(Contd. of page 9)

51 Use only in well-ventilated areas.

**• Special labelling of certain preparations:**

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C.

Do not pierce or burn, even after use.

Do not spray on a naked flame or any incandescent material.

**• Classification in accordance with Directive 75/324/EEC:** Extremely flammable**• 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.

**• Relevant phrases**

H225 Highly flammable liquid and vapour.

H226 Flammable liquid and vapour.

H280 Contains gas under pressure; may explode if heated.

H314 Causes severe skin burns and eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

R10 Flammable.

R11 Highly flammable.

R20 Harmful by inhalation.

R35 Causes severe burns.

R36 Irritating to eyes.

R36/37 Irritating to eyes and respiratory system.

R66 Repeated exposure may cause skin dryness or cracking.

R67 Vapours may cause drowsiness and dizziness.

**• Department issuing MSDS:** Abteilung Produktsicherheit**• Contact:** siehe Seite 1 / see page 1**• Abbreviations and acronyms:**

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

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

VOC: Volatile Organic Compounds (USA, EU)