

## Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

### 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

· **Information department:** 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 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

67-64-1 acetone	⚠ H225; ⚠ H319; H336	25-50%
108-10-1 4-methylpentan-2-one	⚠ H225; ⚠ H332; H319; H335	2.5-10%
107-98-2 1-methoxy-2-propanol	⚠ H226	2.5-10%
67-63-0 propan-2-ol	⚠ H225; ⚠ H319; H336	2.5-10%
10024-97-2 dinitrogen oxide	⚠ H270; ⚠ H280	2.5-10%
64-18-6 formic acid	⚠ H314	≤2.0%
112-34-5 2-(2-butoxyethoxy)ethanol	⚠ H319	≤2.0%

CA

(Contd. on page 2)

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

(Contd. of page 1)

**3 Hazards identification****· Classification of the substance or mixture**

GHS02 Flame

H222 Extremely flammable aerosol.



GHS07

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

H333 May be harmful if inhaled.

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

Irritant

Irritating to eyes.



Extremely flammable

Extremely flammable.

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 international guidelines.

Warning! Pressurized container.

**· Classification system:**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

**· Label elements****· Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

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

Irritant

Extremely flammable

**· Risk phrases:**

Extremely flammable.

Irritating to eyes.

Vapours may cause drowsiness and dizziness.

**· Safety phrases:**

Keep out of the reach of children.

Keep away from sources of ignition - No smoking.

Do not breathe aerosol.

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

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

Use only in well-ventilated areas.

(Contd. on page 3)

CA

## Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

(Contd. of page 2)

- **Special labelling of certain preparations:**

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.

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

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

- **Hazard description:**

- **WHMIS-symbols:**

A - Compressed gas

B5 - Flammable aerosol

D2B - Toxic material causing other toxic effects



- **Classification system:**

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



Health = 1

Fire = 4

Reactivity = 3

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

HEALTH	1
FIRE	4
REACTIVITY	3

Health = 1

Fire = 4

Reactivity = 3

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

## 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 lying 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.

(Contd. on page 4)

CA

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

(Contd. of page 3)

- **Advice for firefighters**
- **Protective equipment:** No special measures required.
- **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 protection against explosions and fires:**  
Do not spray on 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 receptacle tightly sealed.  
Do not gas tight seal receptacle.  
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 systems:** No further data; see item 7.

(Contd. on page 5)

CA

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

(Contd. of page 4)

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

EL Short-term value: 500 ppm

Long-term value: 250 ppm

EV Short-term value: 750 ppm

Long-term value: 500 ppm

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

EL Short-term value: 75 ppm

Long-term value: 50 ppm

EV Short-term value: 75 ppm

Long-term value: 205 mg/m<sup>3</sup>, 50 ppm**107-98-2 1-methoxy-2-propanol**

EL Short-term value: 75 ppm

Long-term value: 50 ppm

EV Short-term value: 550 mg/m<sup>3</sup>, 150 ppmLong-term value: 365 mg/m<sup>3</sup>, 100 ppm**67-63-0 propan-2-ol**

EL Short-term value: 400 ppm

Long-term value: 200 ppm

EV Short-term value: 400 ppm

Long-term value: 200 ppm

**10024-97-2 dinitrogen oxide**

EL 25 ppm

R

EV 45 mg/m<sup>3</sup>, 25 ppm**64-18-6 formic acid**

EL Short-term value: 10 ppm

Long-term value: 5 ppm

EV Short-term value: 10 ppm

Long-term value: 5 ppm

· **Additional information:** The lists that were valid during the creation 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.

· **Breathing equipment:** 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.

(Contd. on page 6)

CA

## Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

(Contd. of page 5)

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

**Color:**

Amber colored

- **Odor:**

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.

- **Auto igniting:**

Product is not selfigniting.

- **Danger of explosion:**

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

- **Explosion limits:**

**Lower:**

2.6 Vol %

**Upper:**

13.0 Vol %

- **Vapor pressure at 20°C:**

233 hPa

- **Density at 20°C:**

1 g/cm<sup>3</sup>

- **Relative density**

Not determined.

- **Vapour density**

Not determined.

- **Evaporation rate**

Not applicable.

- **Solubility in / Miscibility with**

**Water:**

Not miscible or difficult to mix.

(Contd. on page 7)

CA

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

(Contd. of page 6)

- **Segregation coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
  - Dynamic:** Not determined.
  - Kinematic:** Not determined.
- **Solvent content:**
  - Organic solvents:** 63.1 %
  - Solids content:** 0.8 %
- **Other information** 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 internally approved calculation methods for preparations:  
Irritant

**12 Ecological information**

- **Toxicity**
- **Acquatic 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  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

(Contd. on page 8)

CA

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

(Contd. of page 7)

- **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 of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

- **DOT regulations:**



- **Hazard class:** 2.1
- **Identification number:** UN1950
- **Packing group:** -
- **Proper shipping name (technical name):** AÉROSOLS, flammable
- **Label:** 2.1

- **TDG (Transport dangerous goods):**



- **TDG class:** 2 5F Gases
- **Danger code (Kemler):** -
- **UN-Number:** 1950
- **Packaging group:** -
- **Label:** 2.1
- **UN proper shipping name:** 1950 AEROSOLS

- **Maritime transport IMDG:**



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

(Contd. on page 9)

CA




**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

(Contd. of page 8)

- **Propper shipping name:** AEROSOLS
  - **Air transport ICAO-TI and IATA-DGR:**
- 
- **ICAO/IATA Class:** 2.1
  - **UN/ID Number:** 1950
  - **Label:** 2.1
  - **Packaging group:** -
  - **Propper 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**
- **Sara**
- **Section 355 (extremely hazardous substances):**  
None of the ingredients is listed.
- **Section 313 (Specific toxic chemical listings):**  
108-10-1 4-methylpentan-2-one  
67-63-0 propan-2-ol  
64-18-6 formic acid
- **TSCA (Toxic Substances Control Act):**  
All ingredients are listed.
- **Proposition 65**
- **Chemicals known to cause cancer:**  
None of the ingredients is listed.
- **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:**  
None of the ingredients is listed.
- **Carcinogenic categories**
- **EPA (Environmental Protection Agency)**  
67-64-1 acetone |  
108-10-1 4-methylpentan-2-one |
- **IARC (International Agency for Research on Cancer)**  
67-63-0 propan-2-ol 3  
1401-55-4 Tannins 3

(Contd. on page 10)

**Material Safety Data Sheet**  
acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

(Contd. of page 9)

**· NTP (National Toxicology Program)**

None of the ingredients is listed.

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

67-64-1 acetone	A4
67-63-0 propan-2-ol	A4
10024-97-2 dinitrogen oxide	A4

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

None of the ingredients is listed.

**· OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**· Canadian substance listings:****· Canadian Domestic Substances List (DSL)**

All ingredients are listed.

**· Canadian Ingredient Disclosure list (limit 0.1%)**

10024-97-2 dinitrogen oxide

**· Canadian Ingredient Disclosure list (limit 1%)**

67-64-1 acetone  
108-10-1 4-methylpentan-2-one  
107-98-2 1-methoxy-2-propanol  
67-63-0 propan-2-ol  
64-18-6 formic acid  
112-34-5 2-(2-butoxyethoxy)ethanol

**· Product related hazard informations:**

The product has been classified and marked in accordance with directives on hazardous materials.

**· Hazard symbols:**Irritant  
Extremely flammable**· Risk phrases:**

Extremely flammable.  
Irritating to eyes.  
Vapours may cause drowsiness and dizziness.

**· Safety phrases:**

Keep out of the reach of children.  
Keep away from sources of ignition - No smoking.  
Do not breathe aerosol.  
Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.  
If swallowed, seek medical advice immediately and show this container or label.  
Use only in well-ventilated areas.

**· Special labeling of certain preparations:**

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

(Contd. on page 11)

CA

## **Material Safety Data Sheet**

acc. to ISO/DIS 11014

Printing date 11/28/2010

Reviewed on 11/28/2010

(Contd. of page 10)

- **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.

- **Department issuing MSDS:** Abteilung Produktsicherheit

- **Contact:** siehe Seite 1 / see page 1

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

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)

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

CA