

## Safety data sheet

according to Regulation (EC) No 1907/2006, Article 31

Printing date 25.07.2024

Version number 42 (replaces version 41)

Revision: 25.07.2024

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

- **1.1 Product identifier**
- **Trade name:** GRF S-39 BO 320ML\*12 ENDE
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Soldering flux
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Bison International  
Dr.A.F.Philipsstraat 9  
NL-4462 EW Goes  
PO Box 160  
NL-4460 AD Goes  
tel. +31 88 3235700  
fax. +31 88 3235800  
e mail: sds@boltonadhesives.com
- **Further information obtainable from:** PSRA
- **1.4 Emergency telephone number:**  
National Poisons Information Centre: +353 (1) 809 2166 (8.00 a.m. to 10.00 p.m. 7 days a week)  
Healthcare Professionals: +353 (1) 809 2566 (24 hour service)

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

Skin Corr. 1B      H314 Causes severe skin burns and eye damage.

Eye Dam. 1      H318 Causes serious eye damage.



GHS09 environment

Aquatic Acute 1      H400 Very toxic to aquatic life.

Aquatic Chronic 1      H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4      H302 Harmful if swallowed.

STOT SE 3      H335 May cause respiratory irritation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The product is classified and labelled according to the CLP regulation.

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**Hazard pictograms**

GHS05 GHS07 GHS09

**Signal word** Danger**Hazard-determining components of labelling:**zinc chloride  
ammonium chloride**Hazard statements**H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.  
H410 Very toxic to aquatic life with long lasting effects.**Precautionary statements**P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P260 Do not breathe vapours.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P501 Dispose of contents/container in accordance with national regulations.**Labelling of packages where the contents do not exceed 125 ml****Hazard pictograms**

GHS05 GHS07 GHS09

**Signal word** Danger**Hazard-determining components of labelling:**zinc chloride  
ammonium chloride**Hazard statements**H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H335 May cause respiratory irritation.**Precautionary statements**P101 If medical advice is needed, have product container or label at hand.  
P102 Keep out of reach of children.  
P260 Do not breathe vapours.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P501 Dispose of contents/container in accordance with national regulations.

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

**SECTION 3: Composition/information on ingredients**

- **3.2 Mixtures**
- **Description:** Soldering flux

· **Dangerous components:**

CAS: 7646-85-7 EINECS: 231-592-0 Index number: 030-003-00-2 Reg.nr.: 01-2119472431-44	zinc chloride ⚠ Skin Corr. 1B, H314; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302; STOT SE 3, H335 Specific concentration limit: STOT SE 3; H335: C ≥ 5 %	25-50%
CAS: 12125-02-9 EINECS: 235-186-4 Index number: 017-014-00-8 Reg.nr.: 01-2119487950-27	ammonium chloride ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319	10-25%
CAS: 56-81-5 EINECS: 200-289-5 Reg.nr.: 01-2119471987-18	glycerol substance with a Community workplace exposure limit	1-2.5%
CAS: 67-63-0 EINECS: 200-661-7 Index number: 603-117-00-0 Reg.nr.: 01-2119457558-25-XXXX	propan-2-ol ⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	<1%
CAS: 111-46-6 EINECS: 203-872-2 Index number: 603-140-00-6 Reg.nr.: 01-2119457857-21	2,2'-oxybisethanol ⚠ Acute Tox. 4, H302	<1%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

**SECTION 4: First aid measures**

- **4.1 Description of first aid measures**
- **General information:**  
Immediately remove any clothing soiled by the product.  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**  
Call a doctor immediately.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**  
Rinse out mouth and then drink plenty of water.

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Call for a doctor immediately.

Drink plenty of water and provide fresh air. Call for a doctor immediately.

· **4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

· **5.2 Special hazards arising from the substance or mixture**

During heating or in case of fire poisonous gases are produced.

· **5.3 Advice for firefighters**

· **Protective equipment:** Mouth respiratory protective device.

### SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Mount respiratory protective device.

Wear protective equipment. Keep unprotected persons away.

· **6.2 Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**

Send for recovery or disposal in suitable receptacles.

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralising agent.

Dispose contaminated material as waste according to section 13.

Ensure adequate ventilation.

· **6.4 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.

### SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

· **Information about fire - and explosion protection:** Keep respiratory protective device available.

· **7.2 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:** Keep container tightly sealed.

· **Storage class:** 8 A

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· **7.3 Specific end use(s)** No further relevant information available.

### SECTION 8: Exposure controls/personal protection

#### · 8.1 Control parameters

· **Ingredients with limit values that require monitoring at the workplace:**

##### **12125-02-9 ammonium chloride**

OEL (Ireland)	Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>
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##### **56-81-5 glycerol**

OEL (Ireland)	Long-term value: 10 mg/m <sup>3</sup>
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##### **67-63-0 propan-2-ol**

OEL (Ireland)	Short-term value: 400 ppm Long-term value: 200 ppm Skin
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##### **111-46-6 2,2'-oxybisethanol**

OEL (Ireland)	Long-term value: 100 mg/m <sup>3</sup> , 23 ppm
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· **Additional information:** The lists valid during the making were used as basis.

#### · 8.2 Exposure controls

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

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.

· **Respiratory protection:**

Suitable respiratory protective device recommended.

Use suitable respiratory protective device in case of insufficient ventilation.

· **Recommended filter device for short term use:** Filter A

· **Hand protection**



Protective gloves

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

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

· **Material of gloves**

Recommended thickness of the material: > 0,12 mm

Nitrile rubber, NBR

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- **Penetration time of glove material**

For the mixture of chemicals mentioned below the penetration time has to be at least 10 minutes (Permeation according to EN 374 Part 3: Level 1).

- **Eye/face protection**



Tightly sealed goggles

Goggles recommended during refilling

### SECTION 9: Physical and chemical properties

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

- **General Information**

- **Physical state**

Fluid

- **Colour:**

According to product specification

- **Odour:**

Characteristic

- **Odour threshold:**

Not determined.

- **Melting point/freezing point:**

Undetermined.

- **Boiling point or initial boiling point and boiling range**

100 °C

- **Flammability**

Not applicable.

- **Lower and upper explosion limit**

- **Lower:**

3.2 Vol %

- **Upper:**

53 Vol %

- **Flash point:**

111 °C

- **Auto-ignition temperature:**

410 °C

- **Decomposition temperature:**

Not determined.

- **pH at 20 °C**

3

- **Viscosity:**

- **Kinematic viscosity**

Not determined.

- **Dynamic:**

Not determined.

- **Solubility**

- **water:**

Not miscible or difficult to mix.

- **Partition coefficient n-octanol/water (log value)**

Not determined.

- **Vapour pressure at 20 °C:**

23 hPa

- **Density and/or relative density**

- **Density at 20 °C:**

 ~1.432 g/cm<sup>3</sup>

- **Relative density**

Not determined.

- **Vapour density**

Not determined.

- **9.2 Other information**

All relevant physical data were determined for the mixture. All non-determined data are not measurable or not relevant for the characterization of the mixture.

- **Appearance:**

- **Form:**

Fluid

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· **Important information on protection of health and environment, and on safety.**

- |                         |   |
|-------------------------|---|
| · Ignition temperature: | Product is not selfigniting.                  |
| · Explosive properties: | Product does not present an explosion hazard. |
| · Solvent content:      |   |
| · Organic solvents:     | 3.3 %   |
| · Water:                | 35.4 %  |
| · Solids content:       | 52.3 %  |
| · Change in condition   |   |
| · Evaporation rate      | Not determined.                               |

· **Information with regard to physical hazard classes**

- |   |      |
|---|------|
| · Explosives  | Void |
| · Flammable gases   | Void |
| · Aerosols  | Void |
| · Oxidising gases   | Void |
| · Gases under pressure  | Void |
| · Flammable liquids   | Void |
| · Flammable solids  | Void |
| · Self-reactive substances and mixtures                                     | Void |
| · Pyrophoric liquids  | Void |
| · Pyrophoric solids   | Void |
| · Self-heating substances and mixtures                                      | Void |
| · Substances and mixtures, which emit flammable gases in contact with water | Void |
| · Oxidising liquids   | Void |
| · Oxidising solids  | Void |
| · Organic peroxides   | Void |
| · Corrosive to metals   | Void |
| · Desensitised explosives   | Void |

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Corrosive action on metals.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Danger of forming toxic pyrolysis products.

### SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Harmful if swallowed.

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· **LD/LC50 values relevant for classification:**

**7646-85-7 zinc chloride**

Oral	LD50	350 mg/kg (rat)
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**12125-02-9 ammonium chloride**

Oral	LD50	1650 mg/kg (rat)
------	------	------------------

**56-81-5 glycerol**

Oral	LD50	12600 mg/kg (rat)
------	------	-------------------

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

Oral	LD50	5045 mg/kg (rat)
Dermal	LD50	12800 mg/kg (rabbit)
Inhalative	LC50/4 h	30 mg/l (rat)

**111-46-6 2,2'-oxybisethanol**

Oral	LD50	12565 mg/kg (rat)
Dermal	LD50	11890 mg/kg (rabbit)

· **Skin corrosion/irritation**

Causes severe skin burns and eye damage.

· **Serious eye damage/irritation**

Causes serious eye damage.

· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

· **Germ cell mutagenicity**

Not applicable.

Based on available data, the classification criteria are not met.

· **Carcinogenicity** 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** May cause respiratory irritation.

· **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.

· **Additional toxicological information:**

· **Acute effects (acute toxicity, irritation and corrosivity)** Not applicable.

· **Sensitisation** Not applicable.

· **Repeated dose toxicity** Not applicable.

· **11.2 Information on other hazards**

· **Endocrine disrupting properties**

None of the ingredients is listed.

**SECTION 12: Ecological information**

· **12.1 Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil** No further relevant information available.

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

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· **12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

· **12.7 Other adverse effects**

· **Remark:** Very toxic for fish

· **Additional ecological information:**

· **General notes:**

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

### SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

· **European waste catalogue**

06 03 13*	solid salts and solutions containing heavy metals
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· **Uncleaned packaging:**

· **Recommendation:**

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

### SECTION 14: Transport information

· **14.1 UN number or ID number**

· **ADR/ADN, IMDG, IATA** UN2586

· **14.2 UN proper shipping name**

· <b>ADR/ADN</b>	2586 ALKYL SULPHONIC ACIDS, LIQUID
· <b>IMDG</b>	ALKYL SULPHONIC ACIDS, LIQUID, MARINE POLLUTANT
· <b>IATA</b>	ALKYL SULPHONIC ACIDS, LIQUID

· **14.3 Transport hazard class(es)**

· **ADR/ADN**



· **Class**

8 (C3) Corrosive substances.

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· Label	8
· IMDG	
	
· Class	8 Corrosive substances.
· Label	8
· IATA	
	
· Class	8 Corrosive substances.
· Label	8
· 14.4 Packing group	
· ADR/ADN, IMDG, IATA	III
· 14.5 Environmental hazards:	Product contains environmentally hazardous substances: zinc chloride
· Marine pollutant:	Yes
· Special marking (ADR/ADN):	Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Corrosive substances.
· Hazard identification number (Kemler code):	80
· EMS Number:	F-A,S-B
· Segregation groups	(SGG1) Acids
· Stowage Category	B
· Segregation Code	SG36 Stow "separated from" SGG18-alkalis. SG49 Stow "separated from" SGG6-cyanides
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· ADR/ADN	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1

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·	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 2586 ALKYL SULPHONIC ACIDS, LIQUID, 8, III, ENVIRONMENTALLY HAZARDOUS

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category E1** Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 65

- **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

- **REGULATION (EU) 2019/1148**

- **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

- **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

- **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

- **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### SECTION 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.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H400 Very toxic to aquatic life.

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H410 Very toxic to aquatic life with long lasting effects.

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

The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

Acute toxicity - oral

Skin corrosion/irritation

Serious eye damage/irritation

Specific target organ toxicity (single exposure)

Hazardous to the aquatic environment - short-term (acute) aquatic hazard

Hazardous to the aquatic environment - long-term (chronic) aquatic hazard

The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

**Department issuing SDS:** PSRA**Contact:** PSRA**Date of previous version:** 02.06.2021**Version number of previous version:** 41**Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

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