



### Material Safety Data Sheet

acc. to ISO/DIS 11014





Printing date 07/30/2012

Reviewed on 07/06/2012

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

- . **Product identifier:** S-39® RVS
- . **Trade name:** S 39 RVS
- . **Relevant identified uses of the substance or mixture and uses advised against:**  
No further relevant information available.
- . **Application of the substance / the preparation:** Soldering flux
- . **Details of the supplier of the safety data sheet:**
- . **Information department:** Bison QESH
- . **Emergency telephone number:** +31 113 235700

#### 2 Hazards identification

- . **Classification of the substance or mixture:**
- . **Classification according to Directive 67/548/EEC or Directive 1999/45/EC:**
  -  **Corrosive**  
Causes burns.
  -  **Harmful**  
Harmful if swallowed.
  -  **Irritant**  
Irritating to respiratory system.
  -  **Dangerous for the environment**  
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- . **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.
- . **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:**  
Corrosive  
Dangerous for the environment
- . **Hazard-determining components of labelling:**  
zinc chloride
- . **Risk phrases:**  
Harmful if swallowed.

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Causes burns.

Irritating to respiratory system.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

. **Safety phrases:**

Do not breathe vapour.

Avoid contact with eyes.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately.

This material and its container must be disposed of as hazardous waste.

Avoid release to the environment. Refer to special instructions/Safety data sheets

. **Classification system:**

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



Health = 3

Fire = 1

Reactivity = 0

. **Other hazards**

. **Results of PBT and vPvB assessment**

. **PBT:** Not applicable.

. **vPvB:** Not applicable.

\* **3 Composition/information on ingredients**

. **Chemical characterization: Mixtures**

. **Description:** Soldering flux

. **Dangerous components:**

7646-85-7 zinc chloride 25-50%

12125-02-9 ammonium chloride 10-25%

107-21-1 ethanediol 2.5-10%

7647-01-0 hydrogen chloride 2.5-10%

56-81-5 glycerol ≤ 2.5%

. **Additional information:**

For the wording of the listed risk phrases refer to section 16.

\* **4 First aid measures**

. **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:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

Call a doctor immediately.

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- . **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:**  
Do not induce vomiting; immediately call for medical help.  
Drink copious amounts of water and provide fresh air. Immediately call a doctor.  
Rinse out mouth and then drink plenty of water.
- . **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:** Use fire fighting measures that suit the environment.
- . **Special hazards arising from the substance or mixture**  
No further relevant information available.
- . **Advice for firefighters**
- . **Protective equipment:** No special measures required.

#### \* 6 Accidental release measures

- . **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- . **Environmental precautions:**  
Inform respective authorities in case of seepage into water course or sewage system.  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- . **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralizing agent.  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- . **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** Ensure good ventilation/exhaustion at the workplace.
- . **Information about protection against explosions and fires:**  
No special measures required.
- . **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.

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- . **Further information about storage conditions:** Keep receptacle tightly sealed.
- . **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.

- . **Control parameters**

- . **Components with limit values that require monitoring at the workplace:**

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

REL () Short-term value: 20 mg/m<sup>3</sup>  
Long-term value: 10 mg/m<sup>3</sup>

TLV () Short-term value: 20 mg/m<sup>3</sup>  
Long-term value: 10 mg/m<sup>3</sup>

##### 107-21-1 ethanediol

TLV () Short-term value: C 100 mg/m<sup>3</sup>  
H

##### 7647-01-0 hydrogen chloride

PEL () Short-term value: C 7 mg/m<sup>3</sup>, C 5 ppm

REL () Short-term value: C 7 mg/m<sup>3</sup>, C 5 ppm

TLV () Short-term value: C 2.98 mg/m<sup>3</sup>, C 2 ppm

##### 56-81-5 glycerol

PEL () 15\* 5\*\* mg/m<sup>3</sup>  
\*total dust \*\*respirable fraction

TLV () 10\* ppm  
\*Mist

- . **Additional information:**

The lists that were valid during the creation were used as basis.

- . **Exposure controls**

- . **Personal protective equipment:**

- . **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

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 and skin.

- . **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Suitable respiratory protective device recommended.

- . **Protection of hands:**



Protective gloves

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PVC or PE 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.

PVC or PE gloves

. **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.

. **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**

PVC or PE gloves

. **For the permanent contact gloves made of the following materials are suitable:**

Nitrile rubber, NBR

PVC or PE gloves

Neoprene gloves

. **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

PVC or PE gloves

. **As protection from splashes gloves made of the following materials are suitable:**

PVC or PE gloves

. **Eye protection:**



Tightly sealed goggles

\* **9 Physical and chemical properties**

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

. **General Information**

. **Appearance:**

Form:

Fluid

Color:

According to product specification

. **Odor:**

Characteristic

. **Odour threshold:**

Not determined.

. **pH-value at 20°C (68 °F):**

< 0

. **Change in condition**

Melting point/Melting range:

Undetermined.

Boiling point/Boiling range:

100°C (212 °F)

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- . **Flash point:** > 100°C (> 212 °F)
- . **Flammability (solid, gaseous):** Not applicable.
- . **Ignition temperature:** 410°C (770 °F)
- . **Decomposition temperature:** Not determined.
- . **Auto igniting:** Product is not selfigniting.
- . **Danger of explosion:** Product does not present an explosion hazard.
  
- . **Explosion limits:**
  - Lower: Not determined.
  - Upper: Not determined.
- . **Vapor pressure at 20°C (68 °F):** 23 hPa (17 mm Hg)
- . **Density at 20°C (68 °F):** 1.445 g/cm<sup>3</sup> (12.059 lbs/gal)
- . **Relative density** Not determined.
- . **Vapour density** Not determined.
- . **Evaporation rate** Not determined.
  
- . **Solubility in / Miscibility with**
  - Water:** Fully miscible.
- . **Partition coefficient (n-octanol/water):** Not determined.
  
- . **Viscosity:**
  - Dynamic at 20°C (68 °F):** 30 mPas
  - Kinematic:** Not determined.
  - Organic solvents:** 2.7 %
  - Water:** 34.4 %
  - Solids content:** 52.0 %
- . **Other information** No further relevant information available.

#### \* 10 Stability and reactivity

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

#### \* 11 Toxicological information

- . **Information on toxicological effects**
- . **Acute toxicity:**
- . **LD/LC50 values that are relevant for classification:**
  - 7646-85-7 zinc chloride
  - Oral LD50 350 mg/kg (rat)

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- . **Primary irritant effect:**
- . **on the skin:** Caustic effect on skin and mucous membranes.
- . **on the eye:** Strong caustic effect.
- . **Sensitization:** No sensitizing effects known.
- . **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
Corrosive  
Irritant  
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- . **Carcinogenic categories**
- . **IARC (International Agency for Research on Cancer)**  
7647-01-0 hydrogen chloride: 3
- . **NTP (National Toxicology Program)**  
None of the ingredients is listed.

### \* 12 Ecological information

- . **Toxicity**
- . **Aquatic 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.
- . **Ecotoxicological effects:**
- . **Remark:** Very toxic for fish
- . **Additional ecological information:**
- . **General notes:**  
Also poisonous for fish and plankton in water bodies.  
Very toxic for aquatic organisms  
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.  
Water danger class 3 (Self-assessment): extremely hazardous for water  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into the ground.
- . **Results of PBT and vPvB assessment**
- . **PBT:** Not applicable.
- . **vPvB:** Not applicable.
- . **Other adverse effects** No further relevant information available.

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#### \* 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. Packagings that cannot be cleansed are to be disposed of in the same manner as the product.
- . **Recommended cleansing agent:** Water, if necessary with cleansing agents.

#### \* 14 Transport information

- . **UN-Number**
- . **DOT, ADR, IMDG, IATA** UN3264
- . **UN proper shipping name**
- . **DOT, IATA** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID, ZINC CHLORIDE)
- . **ADR** 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID, ZINC CHLORIDE), ENVIRONMENTALLY HAZARDOUS
- . **IMDG** CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID, ZINC CHLORIDE), MARINE POLLUTANT

- . **Transport hazard class(es)**

- . **DOT**



- . **Class** 8 Corrosive substances.
- . **Label** 8

- . **ADR**



- . **Class** 8 (C1) Corrosive substances
- . **Label** 8

- . **IMDG**



- . **Class** 8 Corrosive substances.

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. Label	8
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. IATA	
	
. Class	8 Corrosive substances.
. Label	8
. Packing group	
. DOT, ADR, IMDG, IATA	III
. Environmental hazards:	Product contains environmentally hazardous substances: zinc chloride ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID
. Marine pollutant:	Yes Symbol (fish and tree)
. Special marking (ADR):	Symbol (fish and tree)
. Special precautions for user	Warning: Corrosive substances
. Danger code (Kemler):	80
. EMS Number:	F-A,S-B
. Segregation groups	Acids
. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
. Transport/Additional information:	
. DOT	
. Remarks:	Special marking with the symbol (fish and tree).
<hr/>	
. IMDG	
. Remarks:	Under certain conditions substances in Class 3 (flammable liquids) can be classified in packinggroup III. See IMDG, Part 2, Chapter 2.3, Paragraph 2.3.2.2

#### \* 15 Regulatory information

- . Safety, health and environmental regulations/legislation specific for the substance or mixture
- . SARA Section 355 (extremely hazardous substances)  
7647-01-0 hydrogen chloride
- . SARA Section 313 (specific toxic chemical listings)  
7646-85-7 zinc chloride  
107-21-1 ethanediol  
7647-01-0 hydrogen chloride  
78-93-3 methyl ethyl ketone
- . TSCA (Toxic Substances Control Act)  
All ingredients are listed.

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. **Prop 65 - Chemicals known to cause cancer**

None of the ingredients is listed.

. **Carcinogenicity categories**

. **EPA (Environmental Protection Agency)**

7646-85-7 zinc chloride: II

78-93-3 methyl ethyl ketone: 1

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

107-21-1 ethanediol: A4

7647-01-0 hydrogen chloride: A4

64-17-5 ethanol: A3

. **MAK (German Maximum Workplace Concentration)**

64-17-5 ethanol: 5

. **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.

. **Product related hazard informations:**

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

. **Hazard symbols:**

Corrosive

Dangerous for the environment

. **Hazard-determining components of labelling:**

zinc chloride

. **Risk phrases:**

Harmful if swallowed.

Causes burns.

Irritating to respiratory system.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

. **Safety phrases:**

Do not breathe vapour.

Avoid contact with eyes.

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable protective clothing, gloves and eye/face protection.

In case of accident or if you feel unwell, seek medical advice immediately.

This material and its container must be disposed of as hazardous waste.

Avoid release to the environment. Refer to special instructions/Safety data sheets

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- . **National regulations:**
- . **Technical instructions (air):**
- . **Class Share in %**
- . **Water**           25-50
- NK**             10-25
- . **Water hazard class:**  
Water danger class 3 (Self-assessment): extremely hazardous for water.
- . **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:** QESH Department
- . **Contact:** Reach coordinator
- . **\* Data compared to the previous version altered.**

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