

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

Printing date 28.09.2018

Version number 25

Revision: 28.09.2018

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

- **1.1 Product identifier**
- **Product name:** Vario Aluminum ECR F20 ml
- **Catalog number:** 251400
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**  
Xylem Analytics Germany GmbH  
WTW  
Dr.-Karl-Slevogt-Straße 1  
82362 Weilheim  
Germany  
Tel. +49 881 183-0
- **Informing department:** E-Mail: Info.WTW@Xyleminc.com
- **1.4 Emergency telephone number:** Chemtrec (USA & Canada) 800-424-9300 (INTERNATIONAL) 001 703-527-3887

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
The product is not classified as hazardous according to the CLP regulation.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Additional information:**  
EUH210 Safety data sheet available on request.
- **2.3 Other hazards** The following applies to Mercaptane in genreal: offensive odour
- **Results of PBT and vPvB assessment**  
This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

### SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of organic and inorganic compounds

· **Dangerous components:**

|                   |  |        |
|-------------------|--|--------|
| CAS: 70-49-5      | mercaptosuccinic acid  | 5-<10% |
| EINECS: 200-736-4 | ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335 |        |

- **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** Instantly remove any clothing soiled by the product.
- **After inhalation** Supply fresh air.
- **After skin contact** Instantly wash with water and soap and rinse thoroughly.

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- **After eye contact**  
Rinse opened eye for several minutes under running water (at least 15 min). If symptoms persist, consult doctor.
- **After swallowing**  
Rinse out mouth and then drink 1-2 glasses of water.  
In case of persistent symptoms consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed:**
  - after inhalation:
    - irritations
    - coughing
    - breathing difficulty
  - after swallowing:
    - sickness
    - vomiting
    - diarrhoea
  - after swallowing of large amounts:
    - drop in blood pressure
    - CNS disorders
    - respiratory paralysis
    - narcotic conditions
    - cramps
- **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 fighting measures that suit the environment.
- **5.2 Special hazards arising from the substance or mixture**  
The product is not combustible.  
Formation of toxic gases is possible during heating or in case of fire.  
Nitrogen oxides (NO<sub>x</sub>)  
Sulphur oxides (SO<sub>x</sub>)
- **5.3 Advice for firefighters**
- **Protective equipment:**  
Wear self-contained breathing apparatus.  
Wear full protective suit.
- **Additional information**  
Collect contaminated fire fighting water separately. It must not enter drains.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.  
Ambient fire may liberate hazardous vapours.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**  
Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation
- **Advice for emergency responders:** Protective equipment: see section 8
- **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
- **6.3 Methods and material for containment and cleaning up:**  
Ensure adequate ventilation.  
Collect mechanically.  
Dispose of contaminated material as waste according to item 13.
- **6.4 Reference to other sections**  
See Section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:**  
Prevent formation of dust.  
Thorough dedusting.

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**Hygiene measures:**

The usual precautionary measures should be adhered to general rules for handling chemicals.  
Wash hands during breaks and at the end of the work.  
Do not eat, drink or smoke when using this product.

**7.2 Conditions for safe storage, including any incompatibilities**
**Storage**
**Requirements to be met by storerooms and containers:** Store in cool location.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:**

Store in cool, dry conditions in well sealed containers.

Protect from heat and direct sunlight.

Protect from the effects of light.

Store under dry conditions.

Protect from humidity and keep away from water.

This product is hygroscopic.

**Recommended storage temperature:** 20°C +/- 5°C

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

## SECTION 8: Exposure controls/personal protection

**8.1 Control parameters**
**Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** The lists that were valid during the compilation were used as basis.

**8.2 Exposure controls**
**Engineering measures:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.  
See item 7.

**Personal protective equipment**
**Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

**Recommended filter device for short term use:** Filter P1

**Protection of hands:**

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

**Material of gloves**

nitrile rubber, NBR

Recommended thickness of the material:  $\geq 0.11$  mm
**Penetration time of glove material**

Value for the permeation: Level = 1 (&lt; 10 min)

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:**

Safety glasses

use against the effects of fumes / dust

**Body protection:** Protective work clothing.

**Limitation and supervision of exposure into the environment:**

Do not allow product to reach sewage system or water bodies.

## SECTION 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**
**Appearance:**
**Form / Physical state:** Powder

**Colour:** Orange

**Odour:** Sulphurous

**Odour threshold:** Not determined.

**pH-value (22 g/l) at 20°C:** 2.8

**Melting point/Freezing point:** Not determined

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|   |  |
|---|--|
| · <b>Initial boiling point and boiling range:</b> | Not determined                             |
| · <b>Flash point:</b>                             | Not applicable                             |
| · <b>Flammability (solid, gas):</b>               | The product is not combustible.            |
| · <b>Ignition temperature:</b>                    | Not applicable                             |
| · <b>Decomposition temperature:</b>               | Not determined.                            |
| · <b>Auto-ignition temperature:</b>               | Product is not self-igniting.              |
| · <b>Explosive properties:</b>                    | Product is not explosive.                  |
| · <b>Flammability or explosive limits:</b>        |  |
| <b>Lower:</b>                                     | Not applicable                             |
| <b>Upper:</b>                                     | Not applicable                             |
| · <b>Oxidising properties:</b>                    | none                                       |
| · <b>Vapour pressure:</b>                         | Not applicable.                            |
| · <b>Density at 20°C:</b>                         | 1.7 g/cm <sup>3</sup>                      |
| · <b>Relative density:</b>                        | Not determined.                            |
| · <b>Vapour density:</b>                          | Not applicable.                            |
| · <b>Evaporation rate:</b>                        | Not applicable.                            |
| · <b>Solubility(ies):</b>                         |  |
| <b>Water:</b>                                     | Soluble                                    |
| · <b>Partition coefficient: n-octanol/water:</b>  | Not applicable.                            |
| · <b>Viscosity:</b>                               | Not applicable.                            |
| · <b>Solvent content:</b>                         |  |
| <b>Organic solvents:</b>                          | 0.0 %                                      |
| <b>Solids content:</b>                            | 100.0 %                                    |
| · <b>9.2 Other information</b>                    | No further relevant information available. |

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability**  
Stable at ambient temperature (room temperature).  
sensitive to moisture  
sensitivity to light  
sensitive to air
- **10.3 Possibility of hazardous reactions**  
Reacts with alkalis releasing ammonia  
Reacts with strong oxidizing agents
- **10.4 Conditions to avoid** Strong heating (decomposition)
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** see section 5

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **LD/LC50 values that are relevant for classification:**  
The following statements refer to the individual components.

#### CAS: 70-49-5 mercaptosuccinic acid

|      |          |                   |
|------|----------|-------------------|
| Oral | LD50     | 800 mg/kg (rat)   |
|      | LD50 IVN | >1 mg/kg (rabbit) |
|      | LD50 IPR | 200 mg/kg (mouse) |

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.

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- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)** The following statements refer to the mixture:
- **Germ cell mutagenicity** 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 (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -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:**  
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

### SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Bacterial toxicity:** sulphates toxic > 2.5 g/l
- **Other information:**  
Toxic for fish:  
sulphates > 7 g/l  
NH<sub>4</sub><sup>+</sup> > 0.3 mg/l
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential**  
Pow = n-octanol/wasser partition coefficient  
log Pow < 1 = Does not accumulate in organisms.

|   |
|---|
| <b>CAS: 70-49-5 mercaptosuccinic acid</b> |
|---|

|                                  |
|----------------------------------|
| log Pow   -0.88 (.) (calculated) |
|----------------------------------|

- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**  
This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.
- **12.6 Other adverse effects**  
Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies.  
Avoid transfer into the environment.
- **Water hazard:**  
Do not allow product to reach ground water, water bodies or sewage system, even in small quantities.  
Danger to drinking water if even extremely small quantities leak into soil.

### SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.  
Disposal must be made according to official regulations.

|                                 |
|---------------------------------|
| <b>European waste catalogue</b> |
|---------------------------------|

|   |
|---|
| 16 05 09   discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08 |
|---|

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

### SECTION 14: Transport information

- |   |      |
|---|------|
| <ul style="list-style-type: none"> <li>· <b>14.1 UN-Number</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul> | Void |
|---|------|

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|  |  |
|--|--|
| · <b>14.2 UN proper shipping name</b><br>· <b>ADR, IMDG, IATA</b>                      | Void   |
| · <b>14.3 Transport hazard class(es)</b><br>· <b>ADR, IMDG, IATA</b><br>· <b>Class</b> | Void   |
| · <b>14.4 Packing group</b><br>· <b>ADR, IMDG, IATA</b>                                | Void   |
| · <b>14.5 Environmental hazards:</b>   | Not applicable.                                      |
| · <b>14.6 Special precautions for user</b>   | Not applicable.                                      |
| · <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>       | Not applicable.                                      |
| · <b>Transport/Additional information:</b>   | Not dangerous according to the above specifications. |

### SECTION 15: Regulatory information

#### · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

##### · Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

None of the ingredients is listed.

##### · Directive 2012/18/EU (SEVESO III):

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 65

· **Information about limitation of use:** Not required.

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

### SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### · Relevant phrases

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

· **Training hints** Provide adequate information, instruction and training for operators.

#### · Abbreviations and acronyms:

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

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

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

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

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

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

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- **Sources** Data arise from safety data sheets, reference works and literature.
- \* **Data compared to the previous version altered.**

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

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Version number 36

Revision: 28.09.2018

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

· **1.1 Product identifier**

· **Product name:** Vario Hexamine F20 ml

· **Catalog number:** 251400

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

· **Application of the substance / the preparation:** Reagent for water analysis

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

· **Supplier:**

Xylem Analytics Germany GmbH  
WTW  
Dr.-Karl-Slevogt-Straße 1  
82362 Weilheim  
Germany  
Tel. +49 881 183-0

· **Informing department:** E-Mail: Info.WTW@Xyleminc.com

· **1.4 Emergency telephone number:** Chemtrec (USA & Canada) 800-424-9300 (INTERNATIONAL) 001 703-527-3887

### SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

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



GHS02 flame

Flam. Sol. 2 H228 Flammable solid.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

· **2.2 Label elements**

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

· **Hazard pictograms**



GHS02

GHS07

· **Signal word** Warning

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

methenamine

· **Hazard statements**

H228 Flammable solid.

H317 May cause an allergic skin reaction.

· **Precautionary statements**

P210 Keep away from heat. - No smoking.

P280 Wear protective gloves.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

· **2.3 Other hazards** No further relevant information available.

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**Product name: Vario Hexamine F20 ml**

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**Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

### SECTION 3: Composition/information on ingredients

**3.2 Mixtures**

**Description:** Mixture of organic and inorganic compounds

**Dangerous components:**

|                                |             |  |         |
|--------------------------------|-------------|--|---------|
| CAS: 100-97-0                  | methenamine | ⚠ Flam. Sol. 2, H228; ⚠ Skin Sens. 1, H317 | 90-100% |
| EINECS: 202-905-8              |             |  |         |
| Index No: 612-101-00-2         |             |  |         |
| Reg.nr.: 01-2119474895-20-XXXX |             |  |         |

**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** Instantly remove any clothing soiled by the product.

**After inhalation** Supply fresh air; consult doctor in case of symptoms.

**After skin contact**

Instantly rinse with water.

If skin irritation or rash occurs: Get medical advice/attention.

**After eye contact**

Rinse opened eye for several minutes under running water (at least 15 min). If symptoms persist, consult doctor.

**After swallowing**

Rinse out mouth and then drink 1-2 glasses of water.

Seek medical treatment in case of complaints.

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

allergic reactions

after inhalation:

irritations

coughing

breathing difficulty

asthma attacks

after swallowing:

mucous membrane irritation

sickness

vomiting

pain

cramps

**Danger** risk of skin sensitization

**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** Water, Carbon dioxide (CO<sub>2</sub>), Foam, Fire-extinguishing powder

**For safety reasons unsuitable extinguishing agents**

For this substance / mixture no limitations of extinguishing agents are given.

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

combustible

Risk of dust explosion

Formation of toxic gases is possible during heating or in case of fire.

Can be released in case of fire:

Hydrogen cyanide (HCN)

nitrous gases

Nitrogen oxides (NO<sub>x</sub>)

Ammonia (NH<sub>3</sub>)

hydrogen cyanide (prussic acid HCN)

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- **5.3 Advice for firefighters**

- **Protective equipment:**

Wear self-contained breathing apparatus.  
Wear full protective suit.

- **Additional information**

Collect contaminated fire fighting water separately. It must not enter drains.  
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.  
Ambient fire may liberate hazardous vapours.

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### SECTION 6: Accidental release measures

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

- **Advice for non-emergency personnel:**

Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation  
Avoid causing dust.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

- **Advice for emergency responders:** Protective equipment: see section 8

- **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.

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

Ensure adequate ventilation.  
Collect mechanically.  
Dispose of contaminated material as waste according to item 13.

- **6.4 Reference to other sections**

See Section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

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### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**

- **Advice on safe handling:**

Use only in well ventilated areas.  
Prevent formation of dust.  
Protect from heat.  
Thorough dedusting.  
Keep ignition sources away - Do not smoke.  
Take action to prevent static discharges.

- **Hygiene measures:**

Avoid contact with the skin.  
Take off immediately all contaminated clothing.  
Wash hands during breaks and at the end of the work.  
Do not eat, drink or smoke when using this product.

- **7.2 Conditions for safe storage, including any incompatibilities**

- **Storage**

- **Requirements to be met by storerooms and containers:** Store in cool location.

- **Information about storage in one common storage facility:**

Store away from oxidising agents.  
Do not store together with acids.

- **Further information about storage conditions:**

Store in cool, dry conditions in well sealed containers.  
Protect from heat and direct sunlight.  
Protect from the effects of light.  
Protect from humidity and keep away from water.  
This product is hygroscopic.

- **Recommended storage temperature:** 20°C +/- 5°C

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

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Product name: Vario Hexamine F20 ml

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### SECTION 8: Exposure controls/personal protection

#### · 8.1 Control parameters

##### · Components with limit values that require monitoring at the workplace:

###### CAS: 100-97-0 methenamine

|              |   |
|--------------|---|
| OEL (Sweden) | Short-term value: 5 mg/m <sup>3</sup><br>Long-term value: 3 mg/m <sup>3</sup><br>S, V |
|--------------|---|

##### · Regulatory information OEL (Sweden): AFS2015:7

##### · DNELs

Derived No Effect Level (DNEL)

###### CAS: 100-97-0 methenamine

|            |      |   |
|------------|------|---|
| Dermal     | DNEL | 8.8 mg/kg (Worker / long-term /systemic effects)            |
| Inhalative | DNEL | 31 mg/m <sup>3</sup> (Worker / long-term /systemic effects) |

##### · Recommended monitoring procedures:

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

##### · PNECs

Predicted No Effect Concentration (PNEC)

###### CAS: 100-97-0 methenamine

|      |   |
|------|---|
| PNEC | 100 mg/l (Sewage treatment plant)<br>0.5 mg/l (Marine water)<br>2.4 mg/l (Fresh water sediment)<br>3 mg/l (Fresh water) |
|------|---|

##### · Additional information: The lists that were valid during the compilation were used as basis.

#### · 8.2 Exposure controls

##### · Engineering measures:

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

##### · Personal protective equipment

##### · Breathing equipment: Use breathing protection against the effects of fumes/dust/aerosol.

##### · Recommended filter device for short term use: Filter P2

##### · Protection of hands:

Protective gloves.

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

##### · Material of gloves

nitrile rubber, NBR

Recommended thickness of the material:  $\geq 0.11$  mm

##### · Penetration time of glove material

Value for the permeation: Level = 1 (&lt; 10 min)

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

##### · Eye protection:

Safety glasses

use against the effects of fumes / dust

##### · Body protection: Protective work clothing.

##### · Limitation and supervision of exposure into the environment:

Do not allow product to reach sewage system or water bodies.

Risk of explosion.

### SECTION 9: Physical and chemical properties

#### · 9.1 Information on basic physical and chemical properties

##### · Appearance:

Form / Physical state: Powder

Colour: White

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# Safety data sheet

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

Printing date 28.09.2018

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**Product name: Vario Hexamine F20 ml**

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|   |   |
|---|---|
| · <b>Odour:</b>                                   | Amine-like  |
| · <b>Odour threshold:</b>                         | Not determined.   |
| · <b>pH-value (20 g/l) at 20°C:</b>               | 8.5   |
| · <b>Melting point/Freezing point:</b>            | 263°C (CAS 100-97-0)  |
| · <b>Initial boiling point and boiling range:</b> | Not applicable  |
| · <b>Flash point:</b>                             | 250°C (CAS 100-97-0)  |
| · <b>Flammability (solid, gas):</b>               | Flammable solid.  |
| · <b>Ignition temperature:</b>                    | 390°C (CAS 100-97-0)  |
| · <b>Decomposition temperature:</b>               | Not determined.   |
| · <b>Auto-ignition temperature:</b>               | Product is not self-igniting.   |
| · <b>Explosive properties:</b>                    | Product is not explosive.<br>Risk of dust explosion if enriched with fine dust in presence of air |
| · <b>Flammability or explosive limits:</b>        |   |
| <b>Lower:</b>                                     | Not determined.   |
| <b>Upper:</b>                                     | Not determined.   |
| · <b>Oxidising properties:</b>                    | none  |
| · <b>Vapour pressure:</b>                         | Not determined.   |
| · <b>Density at 20°C:</b>                         | 1.34 g/cm <sup>3</sup>  |
| · <b>Relative density:</b>                        | Not determined.   |
| · <b>Vapour density at 20°C:</b>                  | 0.0005 g/cm <sup>3</sup> (CAS 100-97-0)   |
| · <b>Evaporation rate:</b>                        | Not applicable.   |
| · <b>Solubility(ies):</b>                         |   |
| <b>Water at 20°C:</b>                             | 895 g/l (CAS 100-97-0)  |
| · <b>Partition coefficient: n-octanol/water:</b>  | Not applicable.   |
| · <b>Viscosity:</b>                               | Not applicable.   |
| · <b>Solvent content:</b>                         |   |
| <b>Organic solvents:</b>                          | 0 %   |
| <b>Solids content:</b>                            | 100 %   |
| · <b>9.2 Other information</b>                    | No further relevant information available.  |

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** Dust can combine with air to form an explosive mixture.
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**  
In contact with nitrites, nitrates or nitrous acid possible release of nitrosamines (carcinogenic)!  
with nitric acid, acetic anhydride, iodide  
---> Explosive  
Reacts with peroxides  
Reacts with acids  
Reacts with oxidizing agents
- **10.4 Conditions to avoid** strong heating
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**  
nitrous gases  
formaldehyde  
Ammonia (NH<sub>3</sub>)  
In case of fire: see section 5.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

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# Safety data sheet

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

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**Product name: Vario Hexamine F20 ml**

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|   |       |                              |
|---|-------|------------------------------|
| · <b>LD/LC50 values that are relevant for classification:</b> |       |                              |
| <b>CAS: 100-97-0 methenamine</b>                              |       |                              |
| Oral  | LD50  | 9200 mg/kg (rat)<br>(IUCLID) |
| Dermal  | LD50. | >2000 mg/kg (rat) (OECD 402) |

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.

|                                     |          |                         |
|-------------------------------------|----------|-------------------------|
| · <b>Information on components:</b> |          |                         |
| <b>CAS: 100-97-0 methenamine</b>    |          |                         |
| Irritation of skin                  | OECD 404 | (rabbit: no irritation) |
| Irritation of eyes                  | OECD 405 | (rabbit: no irritation) |

- **Respiratory or skin sensitisation**  
May cause an allergic skin reaction.

|                                     |                    |                        |
|-------------------------------------|--------------------|------------------------|
| · <b>Information on components:</b> |                    |                        |
| <b>CAS: 100-97-0 methenamine</b>    |                    |                        |
| Sensitisation                       | OECD 406           | (guinea pig: positive) |
|                                     | Patch test (human) | (positive)<br>(IUCLID) |

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** The following statements refer to the mixture:
- **Germ cell mutagenicity** 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 (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

- **Information on components:**  
OECD 414: Teratogenicity testing  
OECD 473: Mutagenicity testing  
OECD 471, 474, 476, 487: Germ cell mutagenicity testing

|                                  |            |   |
|----------------------------------|------------|---|
| <b>CAS: 100-97-0 methenamine</b> |            |   |
| OECD 471                         | (negative) | (Bacterial Reverse Mutation Test - Ames test)         |
| OECD 474                         | (negative) | (Mammalian Erythrocyte Micronucleus Test)<br>(IUCLID) |

- **Additional toxicological information:**  
Under given conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines, which have shown themselves to be carcinogenic in animal experiments.
- **Experience with humans:** CAS 100-97-0: Can cause kidney damages.

## SECTION 12: Ecological information

### · 12.1 Toxicity

|                                  |             |                             |
|----------------------------------|-------------|-----------------------------|
| · <b>Aquatic toxicity:</b>       |             |                             |
| <b>CAS: 100-97-0 methenamine</b> |             |                             |
| EC50                             | 36 mg/l/48h | (Daphnia magna)<br>(IUCLID) |
| EC10                             | 5 mg/l      | (fish)                      |
| LC50 (static)                    | 41 mg/l/96h | (bluegill)<br>(US-EPA)      |

- **Bacterial toxicity:**  
sulphates toxic > 2.5 g/l

|                                  |            |  |
|----------------------------------|------------|--|
| <b>CAS: 100-97-0 methenamine</b> |            |  |
| EC50 (static)                    | >5000 mg/l | (Bacterial toxicity) (DIN 38412)<br>(Merck, Vibrio fischeri) |

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**Product name: Vario Hexamine F20 ml**

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**Other information:**

Toxic for fish:

Magnesium compounds: 100 - 400 mg/l

**12.2 Persistence and degradability**

CAS 100-97-0: not easily biodegradable

**CAS: 100-97-0 methenamine**

OECD 302 C 39–47 % / 28 d (not readily biodegradable) (Modified MITI Test (II))

**12.3 Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient

log Pow &lt; 1 = Does not accumulate in organisms.

**CAS: 100-97-0 methenamine**log Pow -2.84 (.) (experimental)  
(IUCLID)**12.4 Mobility in soil** No further relevant information available.**12.5 Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

**12.6 Other adverse effects** Avoid transfer into the environment.**Water hazard:**

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

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

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

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

Hand over to disposers of hazardous waste.

**European waste catalogue**

16 05 06\* laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals

**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**Recommended cleaning agent:** Water, if necessary with cleaning agent.**SECTION 14: Transport information****14.1 UN-Number****ADR, IMDG, IATA**

UN1328

**14.2 UN proper shipping name****ADR****IMDG, IATA**

1328 HEXAMETHYLENETETRAMINE

HEXAMETHYLENETETRAMINE

**14.3 Transport hazard class(es)****ADR****Class****Label**

4.1 (F1) Flammable solids, self-reactive substances and solid desensitised explosives.

4.1

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|   |  |
|---|--|
| · <b>IMDG, IATA</b>   |  |
|  |  |
| · <b>Class</b>  | 4.1 Flammable solids, self-reactive substances and solid desensitised explosives.                              |
| · <b>Label</b>  | 4.1  |
| · <b>14.4 Packing group</b><br>· <b>ADR, IMDG, IATA</b>                           | III  |
| · <b>14.5 Environmental hazards:</b>  | Not applicable.  |
| · <b>14.6 Special precautions for user</b>  | Warning: Flammable solids, self-reactive substances and solid desensitised explosives.                         |
| · <b>Kemler Number:</b>   | 40   |
| · <b>EMS Number:</b>  | F-A,S-G  |
| · <b>Stowage Category</b>   | A  |
| · <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>  | Not applicable.  |
| · <b>Transport/Additional information:</b>  |  |
| · <b>ADR</b>  |  |
| · <b>Limited quantities (LQ)</b>  | 5 kg   |
| · <b>Excepted quantities (EQ)</b>   | Code: E1<br>Maximum net quantity per inner packaging: 30 g<br>Maximum net quantity per outer packaging: 1000 g |
| · <b>Transport category</b>   | 3  |
| · <b>Tunnel restriction code</b>  | E  |
| · <b>IMDG</b>   |  |
| · <b>Limited quantities (LQ)</b>  | 5 kg   |
| · <b>Excepted quantities (EQ)</b>   | Code: E1<br>Maximum net quantity per inner packaging: 30 g<br>Maximum net quantity per outer packaging: 1000 g |

### \* SECTION 15: Regulatory information

#### · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

##### · Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

None of the ingredients is listed.

##### · Directive 2012/18/EU (SEVESO III):

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### \* SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### · **Relevant phrases**

H228 Flammable solid.

H317 May cause an allergic skin reaction.

· **Training hints** Provide adequate information, instruction and training for operators.

#### · **Abbreviations and acronyms:**

OECD: Organisation for Economic Co-operation and Development

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

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**Product name: Vario Hexamine F20 ml**

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EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

o.c.: open cup

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

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)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Sol. 2: Flammable solids – Category 2

Skin Sens. 1: Skin sensitisation – Category 1

**· Sources**

Data arise from safety data sheets, reference works and literature.

IUCLID (International Uniform Chemical Information Database)

**· \* Data compared to the previous version altered.**

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

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Revision: 28.09.2018

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

- **1.1 Product identifier**
- **Product name:** Vario ECR-Masking RGT
- **Catalog number:** 251400
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**  
Xylem Analytics Germany GmbH  
WTW  
Dr.-Karl-Slevogt-Straße 1  
82362 Weilheim  
Germany  
Tel. +49 881 183-0
- **Informing department:** E-Mail: Info.WTW@Xyleminc.com
- **1.4 Emergency telephone number:** Chemtrec (USA & Canada) 800-424-9300 (INTERNATIONAL) 001 703-527-3887

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
-  GHS07
- Acute Tox. 4 H302 Harmful if swallowed.
- Acute Tox. 4 H312 Harmful in contact with skin.
- Acute Tox. 4 H332 Harmful if inhaled.
- Eye Irrit. 2 H319 Causes serious eye irritation.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS07

- **Signal word** Warning
- **Hazard-determining components of labelling:**  
ammonium fluoride
- **Hazard statements**  
H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.  
H319 Causes serious eye irritation.
- **Precautionary statements**  
P261 Avoid breathing mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection.  
P302+P352 IF ON SKIN: Wash with plenty of water.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.
- **2.3 Other hazards** CAS 12125-01-8: Danger by skin resorption.

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**Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

### SECTION 3: Composition/information on ingredients

**3.2 Mixtures**
**Description:** aqueous solution

**Dangerous components:**

|  |   |        |
|--|---|--------|
| CAS: 12125-01-8<br>EINECS: 235-185-9<br>Index No: 009-006-00-8 | ammonium fluoride<br>☠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 | 10-20% |
| CAS: 3012-65-5<br>EINECS: 221-146-3                            | diammonium hydrogen 2-hydroxypropane-1,2,3-tricarboxylate<br>⚠ Eye Irrit. 2, H319 | 10-20% |

**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** Instantly remove any clothing soiled by the product.

**After inhalation** Supply fresh air or oxygen; call for doctor.

**After skin contact**

Instantly rinse with water.

Seek immediate medical advice.

**After eye contact** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult doctor.

**After swallowing**

Rinse out mouth and then drink 1-2 glasses of water.

Seek medical treatment.

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

irritations

after swallowing:

sickness

vomiting

diarrhoea

after absorption of large amounts:

drop in blood pressure

narcotic conditions

CNS disorders

respiratory paralysis

cramps

**Danger**

Danger of pulmonary oedema.

Danger of disturbed cardiac rhythm.

**4.3 Indication of any immediate medical attention and special treatment needed:** Antidote: calcium gluconate

### SECTION 5: Firefighting measures

**5.1 Extinguishing media**
**Suitable extinguishing agents** Use fire fighting measures that suit the environment.

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

The product is not combustible.

Formation of toxic gases is possible during heating or in case of fire.

Can be released in case of fire:

Hydrogen fluoride (HF)

Nitrogen oxides (NOx)

NH<sub>3</sub>
**5.3 Advice for firefighters**
**Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective suit.

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**Additional information**

Collect contaminated fire fighting water separately. It must not enter drains.  
 Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.  
 Ambient fire may liberate hazardous vapours.

### SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures**
**Advice for non-emergency personnel:**

Wear protective equipment. Keep unprotected persons away.  
 Avoid substance contact.  
 Ensure adequate ventilation

Use breathing protection against the effects of fumes/dust/aerosol.

**Advice for emergency responders:** Protective equipment: see section 8

**6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.

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

Ensure adequate ventilation.  
 Neutralize with lime sand, lime or sodium bicarbonate.  
 Absorb with liquid-binding material (sand, diatomite, universal binders).  
 Dispose of contaminated material as waste according to item 13.

**6.4 Reference to other sections**

See Section 8 for information on personal protection equipment.  
 See Section 13 for information on disposal.

### SECTION 7: Handling and storage

**7.1 Precautions for safe handling**
**Advice on safe handling:**

Open and handle container with care.  
 Ensure good ventilation/exhaustion at the workplace.  
 Prevent formation of aerosols.

**Hygiene measures:**

Do not get in eyes, on skin, or on clothing.  
 Take off immediately all contaminated clothing.  
 Wash hands during breaks and at the end of the work.  
 Do not eat, drink or smoke when using this product.

**7.2 Conditions for safe storage, including any incompatibilities**
**Storage**
**Requirements to be met by storerooms and containers:**

Store in cool location.  
 Store only in the original container.  
 Unsuitable material for container: glass  
 Unsuitable material for container: metals, metal alloys

**Information about storage in one common storage facility:** Do not store together with acids.

**Further information about storage conditions:**

Keep container tightly sealed.  
 Protect from heat and direct sunlight.  
 Protect from the effects of light.  
 Protect from humidity and keep away from water.

**Recommended storage temperature:** 20°C +/- 5°C

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

### SECTION 8: Exposure controls/personal protection

**8.1 Control parameters**
**Components with limit values that require monitoring at the workplace:**
**CAS: 12125-01-8 ammonium fluoride**

|                     |  |
|---------------------|--|
| WEL (Great Britain) | Long-term value: 2.5 mg/m <sup>3</sup><br>as F |
|---------------------|--|

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|                        |  |
|------------------------|--|
| IOELV (European Union) | Long-term value: 2.5 mg/m <sup>3</sup><br>as F |
| OEL (Sweden)           | Long-term value: 2 mg/m <sup>3</sup><br>som F  |

**Regulatory information**

WEL (Great Britain): EH40/2011  
 IOELV (European Union): (EU) 2017/164  
 OEL (Sweden): AFS2015:7

**Recommended monitoring procedures:**

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

· **Additional information:** The lists that were valid during the compilation were used as basis.

**8.2 Exposure controls****Engineering measures:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

**Personal protective equipment**

· **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.

· **Recommended filter device for short term use:** Combination filter B-P3

**Protection of hands:**

Protective gloves.  
 Preventive skin protection by use of skin-protecting agents is recommended.  
 After use of gloves apply skin-cleaning agents and skin cosmetics.

**Material of gloves**

nitrile rubber, NBR  
 Recommended thickness of the material:  $\geq 0.11$  mm

**Penetration time of glove material**

Value for the permeation: Level = 1 (< 10 min )  
 The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:** Safety glasses

· **Body protection:** Protective work clothing.

**Limitation and supervision of exposure into the environment:**

Do not allow product to reach sewage system or water bodies.

## SECTION 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties****Appearance:**

|                               |            |
|-------------------------------|------------|
| <b>Form / Physical state:</b> | Liquid     |
| <b>Colour:</b>                | Colourless |

|                           |                |
|---------------------------|----------------|
| · <b>Odour:</b>           | Odourless      |
| · <b>Odour threshold:</b> | Not applicable |

|                            |     |
|----------------------------|-----|
| · <b>pH-value at 20°C:</b> | 5.1 |
|----------------------------|-----|

|   |                |
|---|----------------|
| · <b>Melting point/Freezing point:</b>            | Not determined |
| · <b>Initial boiling point and boiling range:</b> | Not applicable |

|                       |                |
|-----------------------|----------------|
| · <b>Flash point:</b> | Not applicable |
|-----------------------|----------------|

|                                     |                 |
|-------------------------------------|-----------------|
| · <b>Flammability (solid, gas):</b> | Not applicable. |
|-------------------------------------|-----------------|

|                                     |                         |
|-------------------------------------|-------------------------|
| · <b>Decomposition temperature:</b> | ~100°C (CAS 12125-01-8) |
|-------------------------------------|-------------------------|

|                                     |                               |
|-------------------------------------|-------------------------------|
| · <b>Auto-ignition temperature:</b> | Product is not self-igniting. |
|-------------------------------------|-------------------------------|

|                                |                           |
|--------------------------------|---------------------------|
| · <b>Explosive properties:</b> | Product is not explosive. |
|--------------------------------|---------------------------|

**Flammability or explosive limits:**

|               |                |
|---------------|----------------|
| <b>Lower:</b> | Not applicable |
| <b>Upper:</b> | Not applicable |

|                                |      |
|--------------------------------|------|
| · <b>Oxidising properties:</b> | none |
|--------------------------------|------|

|                           |                 |
|---------------------------|-----------------|
| · <b>Vapour pressure:</b> | Not determined. |
|---------------------------|-----------------|

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|  |  |
|--|--|
| · <b>Density at 20°C:</b>                        | 1.09 g/cm <sup>3</sup>                     |
| · <b>Relative density:</b>                       | Not determined.                            |
| · <b>Vapour density:</b>                         | Not determined.                            |
| · <b>Evaporation rate:</b>                       | Not determined.                            |
| · <b>Solubility(ies):</b>                        |  |
| <b>Water:</b>                                    | Fully miscible                             |
| · <b>Partition coefficient: n-octanol/water:</b> | Not determined.                            |
| · <b>Viscosity:</b>                              | Not determined.                            |
| · <b>Solvent content:</b>                        |  |
| <b>Water:</b>                                    | > 60 %                                     |
| <b>Solids content:</b>                           | < 40 %                                     |
| · <b>9.2 Other information</b>                   | No further relevant information available. |

### SECTION 10: Stability and reactivity

- **10.1 Reactivity** see section 10.3
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
  - Forms hydrogen in aqueous solution with metals
  - Reacts with halogenated compounds
  - Reacts with strong oxidizing agents
  - Contact with strong acids releases hydrogen fluoride
  - Attacks materials containing glass and silicate
- **10.4 Conditions to avoid** To avoid thermal decomposition do not overheat.
- **10.5 Incompatible materials:**
  - metals
  - glass
- **10.6 Hazardous decomposition products:**
  - Hydrogen fluoride
  - Poisonous gases/vapours
  - Corrosive gases/vapours
  - Ammonia (NH<sub>3</sub>)
  - In case of fire: see section 5.

### SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
  - Classification according to calculation procedure:
  - Harmful if swallowed, in contact with skin or if inhaled.

· **Acute toxicity estimate (ATE<sub>(MIX)</sub>) - Calculation method:**

|            |                          |                       |
|------------|--------------------------|-----------------------|
| Oral       | CLP ATE <sub>(MIX)</sub> | 554 mg/kg (.)         |
| Dermal     | CLP ATE <sub>(MIX)</sub> | 1663 mg/kg (.)        |
| Inhalative | CLP ATE <sub>(MIX)</sub> | 2.8 mg/l/4h (aerosol) |

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

**CAS: 12125-01-8 ammonium fluoride**

|            |          |                   |
|------------|----------|-------------------|
| Oral       | LD50     | 100 mg/kg (ATE)   |
| Dermal     | LD50     | 300 mg/kg (ATE)   |
| Inhalative | LC50     | 0.5 mg/l/4h (ATE) |
|            | LD50 IPR | 32 mg/kg (rat)    |

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** The following statements refer to the mixture:

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- **Germ cell mutagenicity** 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 (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -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:**  
 chronic ingestion: contains fluoride which may affect behaviour / central nervous system, respiration, cardiovascular system, liver, urinary system, brain, metabolism  
 chronic toxic effect: fluorosis  
 Other dangerous properties can not be excluded.

### SECTION 12: Ecological information

#### · 12.1 Toxicity

##### · Aquatic toxicity:

|  |                                |
|--|--------------------------------|
| <b>CAS: 12125-01-8 ammonium fluoride</b> |                                |
| LC50                                     | 364 mg/l/96h (fathhead minnow) |

##### · Other information:

Toxic for fish:

NH<sub>4</sub><sup>+</sup> > 0.3 mg/l

#### · 12.2 Persistence and degradability

No further relevant information available.

#### · 12.3 Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient

log Pow &lt; 1 = Does not accumulate in organisms.

|   |           |
|---|-----------|
| <b>CAS: 12125-01-8 ammonium fluoride</b>  |           |
| log Pow   | -4.37 (.) |
| <b>CAS: 3012-65-5 diammonium hydrogen 2-hydroxypropane-1,2,3-tricarboxylate</b> |           |
| log Pow   | -2.84 (.) |

#### · 12.4 Mobility in soil

No further relevant information available.

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

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

#### · 12.6 Other adverse effects

Avoid transfer into the environment.

#### · Water hazard:

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

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

### SECTION 13: Disposal considerations

#### · 13.1 Waste treatment methods

##### · Recommendation

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

Hand over to disposers of hazardous waste.

##### · European waste catalogue

|           |  |
|-----------|--|
| 16 05 06* | laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals |
|-----------|--|

##### · Uncleaned packagings:

##### · Recommendation:

Disposal must be made according to official regulations.

##### · Recommended cleaning agent:

Water, if necessary with cleaning agent.

### SECTION 14: Transport information

#### · 14.1 UN-Number

#### · ADR, IMDG, IATA

Void

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|  |  |
|--|--|
| · <b>14.2 UN proper shipping name</b><br>· <b>ADR, IMDG, IATA</b>                      | Void   |
| · <b>14.3 Transport hazard class(es)</b><br>· <b>ADR, IMDG, IATA</b><br>· <b>Class</b> | Void   |
| · <b>14.4 Packing group</b><br>· <b>ADR, IMDG, IATA</b>                                | Void   |
| · <b>14.5 Environmental hazards:</b>   | Not applicable.                                      |
| · <b>14.6 Special precautions for user</b>   | Not applicable.                                      |
| · <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b>       | Not applicable.                                      |
| · <b>Transport/Additional information:</b>   | Not dangerous according to the above specifications. |

### SECTION 15: Regulatory information

#### · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

##### · Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

None of the ingredients is listed.

##### · Directive 2012/18/EU (SEVESO III):

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 65

##### · Information about limitation of use:

Observe employment restrictions for pregnant and nursing mothers according to the 'mother protection guideline' (92/85/EEC) .  
Employment restrictions concerning young persons must be observed.

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

### SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

#### · Relevant phrases

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H319 Causes serious eye irritation.

H331 Toxic if inhaled.

· **Training hints** Provide adequate information, instruction and training for operators.

#### · Abbreviations and acronyms:

STOT: specific target organ toxicity

SE: single exposure

RE: repeated exposure

EC50: half maximal effective concentration

IC50: half maximal inhibitory concentration

NOEL or NOEC: No Observed Effect Level or Concentration

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

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

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 4: Acute toxicity – Category 4

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

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- **Sources** Data arise from safety data sheets, reference works and literature.
  - **\* Data compared to the previous version altered.**
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