

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 21.07.2011

Version number 30

Revision: 21.07.2011

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

- **1.1 Product identifier** Reagent for water analysis
- **Product name:** Vario Hexamine F20 ml
- **Catalog number:** 00531659, 531650, 4531650
- **1.2 Details of the supplier of the safety data sheet**

- **Supplier:**

Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

- **Informing department:**

e-mail: produktsicherheit@tintometer.de
Product Safety Department

- **Contact for technical details:**

Technical Department
e-mail: technik@tintometer.de

- **1.3 Emergency telephone number:**

Poison Center Berlin, Germany
phone: 0049-30 30686 790

* 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.

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



Xi; Sensitising

R43: May cause sensitisation by skin contact.



F+; Highly flammable

R11: Highly flammable.

- **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

(Contd. on page 2)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 21.07.2011

Version number 30

Revision: 21.07.2011

Product name: Vario Hexamine F20 ml

(Contd. of page 1)

· Hazard statements

H228 Flammable solid.

H317 May cause an allergic skin reaction.

· Precautionary statements

P280 Wear protective gloves.

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





P363 Wash contaminated clothing before reuse.

P370+P378 In case of fire: Use for extinction: CO₂, powder or water spray.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

* 3 Composition/information on ingredients

· 3.2 Chemical characterization: Mixtures**· Dangerous components:**

CAS: 100-97-0	methenamine	 Xi R43;  F R11	> 98%
EINECS: 202-905-8		 Flam. Sol. 2, H228;  Skin Sens. 1, H317	
Index number: 612-101-00-2			

· REACH - Pre-registered substances All components are REACH pre-registered.**· Additional information** For the wording of the listed risk phrases refer to section 16.

* 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 medical treatment.

· After eye contact

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

allergic reactions

after inhalation:

breathing difficulty

coughing

asthma attacks

after swallowing:

sickness

vomiting

cramps

mucous membrane irritation

gastric or intestinal trouble

· Danger risk of skin sensitization**· Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Firefighting measures

· 5.1 Extinguishing media**· Suitable extinguishing agents**

Foam

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 21.07.2011

Version number 30

Revision: 21.07.2011

Product name: Vario Hexamine F20 ml

(Contd. of page 2)

Alcohol-resistant foam

Fire-extinguishing powder

Carbon dioxide (CO₂)
· 5.2 Special hazards arising from the substance or mixture

Can form explosive gas-air mixtures.

Can be released in case of fire:

Nitrogen oxides (NO_x)

formaldehyde

Hydrogen cyanide (HCN)

nitrous gases

ammonia (NH₃)
· 5.3 Advice for firefighters
· Protective equipment:

Wear full protective suit.

Wear self-contained breathing apparatus.

· Additional information

Cool endangered containers with water spray jet.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Collect contaminated fire fighting water separately. It must not enter drains.

6 Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Avoid causing dust.

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

· 6.2 Environmental precautions:

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

Damp down gases/fumes/haze with water spray jet.

· 6.3 Methods and material for containment and cleaning up:

Dispose of contaminated material as waste according to item 13.

Ensure adequate ventilation.

Collect mechanically.

· 6.4 Reference to other sections

See Section 8 for information on personal protection equipment.

* 7 Handling and storage

· Handling
· 7.1 Precautions for safe handling

Thorough dedusting.

Work only in fume cupboard.

Use only in well ventilated areas.

· Information about protection against explosions and fires:

Dust can combine with air to form an explosive mixture.

Protect from heat.

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

· 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:

Do not store together with acids.

Store away from oxidizing agents.

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 21.07.2011

Version number 30

Revision: 21.07.2011

Product name: Vario Hexamine F20 ml

(Contd. of page 3)

- **Further information about storage conditions:**
 - Keep container tightly sealed.
 - Store in cool, dry conditions in well sealed containers.
 - Store under dry conditions.
 - Protect from humidity and keep away from water.
 - Protect from the effects of light.
 - This product is hygroscopic.
- **Recommended storage temperature:** 20°C +/- 5°C
- **Storage class** 4.1B
- **7.3 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.

· 8.1 Control parameters

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

100-97-0 methenamine (90-100%)

OEL (Sweden)	Short-term value: 5 mg/m ³ Long-term value: 3 mg/m ³ S
--------------	------------------------------------------------------------------------------------

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

· 8.2 Exposure controls

· Personal protective equipment

· General protective and hygienic measures

- Keep away from foodstuffs, beverages and food.
- Take off immediately all contaminated clothing
- Wash hands during breaks and at the end of the work.
- Do not eat, drink or smoke while working.

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

- **Recommended filter device for short term use:** Combination filter A-P2

- **Protection of hands:** After use of gloves apply skin-cleaning agents and skin cosmetics.

· Material of gloves

- nitrile rubber, NBR
- Recommended thickness of the material: ≥ 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.

* 9 Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance:

Form:	Powder
Colour:	White
Odour:	Amine-like

- **pH-value (20 g/l) at 20°C:** 8.5

- **Melting point/Melting range:** 280, Subl.°C
- **Boiling point/Boiling range:** Not determined

(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 21.07.2011

Version number 30

Revision: 21.07.2011

Product name: Vario Hexamine F20 ml

(Contd. of page 4)

· Flash point:	> 100°C
· Inflammability (solid, gaseous)	Highly flammable.
· Critical values for explosion:	
Lower:	20 g/m ³
Upper:	Not determined
· Density at 20°C	1.331 g/cm ³
· Settled apparent density at 20°C	600 kg/m ³
· Solubility in / Miscibility with Water at 20°C:	100 g/l
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %
· 9.2 Other information	No further relevant information available.

* 10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions**
 - with nitric acid, acetic anhydride
 - Reacts with metals forming hydrogen (--> Explosive!)
 - Strong exothermic reaction with acids
 - Reacts with halogenated compounds
 - The product is not capable of dust explosion in the form supplied; enrichment with fine dust causes risk of dust explosion
 - Corrodes aluminium
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - acids
 - peroxides
 - halogenated hydrocarbons
 - iodide
 - oxidizing agents
- **Hazardous decomposition products:**
 - formaldehyde
 - see chapter 5

* 11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
 - Quantitative data on the toxicity of the preparation are not available.
 - The following statements refer to the individual components.

· LD/LC50 values that are relevant for classification:		
100-97-0 methenamine		
Oral	LD50	9200 mg/kg (rat) (IUCLID)
	LD50	9200 mg/kg (rat) intravenous

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 21.07.2011

Version number 30

Revision: 21.07.2011

Product name: Vario Hexamine F20 ml

(Contd. of page 5)

- **Primary irritant effect:**

- **on the skin:** temporary erythema possible
- **on the eye:** slight irritations possible
- **Sensitization:** Sensitization possible by skin contact.
- **Experience with humans:** Can cause kidney damages.

- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:

Irritant

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

* 12 Ecological information

- **12.1 Toxicity**

- **Acquatic toxicity:**

100-97-0 methenamine

EC50	36 mg/l/48h (Daphnia magna) (IUCLID)
LC50	49.8 mg/l/96h (Pimephales promelas)
Toxicity EC10	5 g/l (fish)
Toxicity ECo	10 g/l/48h (Daphnia magna)

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

- **Other information:**

The product is biodegradable.

CAS-No. 100-97-0: 39-47% / 28 d

- **Behaviour in environmental systems:**

100-97-0 methenamine

log P(o/w)	-2.84 (.)
------------	-----------

- **12.3 Bioaccumulative potential** Does not accumulate in organisms

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

- **Additional ecological information:**

- **BSB5-value:**

100-97-0 methenamine

BSB5	0.015 g/g (.)
------	---------------

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.

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 unneutralized.

- **12.5 Results of PBT and vPvB assessment** no data available

- **vPvB assessments:** no data available

- **12.6 Other adverse effects** No further relevant information available.

* 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.

(Contd. on page 7)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 21.07.2011

Version number 30

Revision: 21.07.2011

Product name: Vario Hexamine F20 ml

(Contd. of page 6)

· **European waste catalogue**

16 05 06	laboratory chemicals, consisting of or containing dangerous 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.

* 14 Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA**

UN1328

· **14.2 UN proper shipping name**

· **ADR**

1328 HEXAMETHYLENETETRAMINE

· **IMDG, IATA**

HEXAMETHYLENETETRAMINE

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class**

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

· **Label**

4.1

· **IMDG, IATA**



· **Class**

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

· **Label**

4.1

· **14.4 Packing group**

· **ADR, IMDG, IATA**

III

· **14.5 Environmental hazards:**

· **Marine pollutant:**

No

· **14.6 Special precautions for user**

Warning: Flammable solids, self-reactive substances and solid desensitised explosives.

· **Kemler Number:**

40

· **EMS Number:**

F-A,S-G

· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)**

5 kg

· **Tunnel restriction code**

E

· **UN "Model Regulation":**

UN1328, HEXAMETHYLENETETRAMINE, 4.1, III

GB

(Contd. on page 8)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 21.07.2011

Version number 30

Revision: 21.07.2011

Product name: Vario Hexamine F20 ml

(Contd. of page 7)

* 15 Regulatory information

- **15.4 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:**
Employment restrictions concerning young persons must be observed.
Observe employment restrictions for pregnant and nursing mothers according to the 'mother protection guideline' (92/85/EEC)
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* 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.
R11 Highly flammable.
R43 May cause sensitisation by skin contact.
- **Abbreviations and acronyms:**
EC50: effective concentration, 50 percent (in vivo)
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
ICAO: International Civil Aviation Organization
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
- **Sources**
IUCLID (International Uniform Chemical Information Database)
International Chemical Safety Cards (ICSCs)
Data arise from reference works and literature.
- *** Data compared to the previous version altered.**

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 04.10.2012

Version number 22

Revision: 04.10.2012

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

- **1.1 Product identifier**
- **Product name:** Vario Aluminum ECR F20 ml
- **Catalog number:** 00531629, 531620, 4531620
- **Application of the substance / the preparation:** Reagent for water analysis
- **1.3 Details of the supplier of the safety data sheet**
- **Supplier:**
Tintometer GmbH
Schleefstr. 8-12
DE-44287 Dortmund
Made in Germany
www.lovibond.com
- **Informing department:**
e-mail: produktsicherheit@tintometer.de
Product Safety Department
- **Contact for technical details:**
Technical Department
e-mail: technik@tintometer.de
- **1.4 Emergency telephone number:**
Poison Center Berlin, Germany
phone: 0049-30 30686 790

phone: +49 (0) 231 945100
E-Mail: sales@tintometer.de

* 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.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **Information concerning particular hazards for human and environment:**
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" (1999/45/EC) in the latest valid version.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements**
Safety data sheet available on request.

3 Composition/information on ingredients

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

· **Dangerous components:**

CAS: 70-49-5 EINECS: 200-736-4	mercaptosuccinic acid Xn R22; Xi R36/37/38 ! Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	5-10%
-----------------------------------	---------------------------------------------------------------------------------------------------------------------------------	-------

(Contd. on page 2)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 04.10.2012

Version number 22

Revision: 04.10.2012

Product name: Vario Aluminum ECR F20 ml

(Contd. of page 1)

- **REACH - Pre-registered substances** All components are REACH pre-registered.
- **Additional information** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- **4.1 Description of first aid measures**
 - **After inhalation** Supply fresh air; consult doctor in case of symptoms.
 - **After skin contact** Instantly wash with water and soap and rinse thoroughly.
 - **After eye contact**
Rinse opened eye for several minutes under running water (at least 15 minutes). 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 swallowing of large amounts:
diarrhoea
drop in blood pressure
CNS disorders
respiratory paralysis
sickness
vomiting
cramps
- **Danger** Danger of disturbed cardiac rhythm.
- **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Hydrogen chloride (HCl)
Dipotassium oxide
nitrogen oxides
- **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.

6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **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:**
Dispose of contaminated material as waste according to item 13.
Collect mechanically.
Ensure adequate ventilation.

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 04.10.2012

Version number 22

Revision: 04.10.2012

Product name: Vario Aluminum ECR F20 ml

(Contd. of page 2)

- **6.4 Reference to other sections** No dangerous materials are released.

* 7 Handling and storage

- **7.1 Precautions for safe handling** Thorough dedusting.
- **Information about protection against explosions and fires:** The product is not flammable
- **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:**
 - Protect from heat and direct sunlight.
 - Store under dry conditions.
 - Protect from humidity and keep away from water.
 - Protect from the effects of light.
- **Recommended storage temperature:** 20°C +/- 5°C
- **Storage class** 10-13
- **7.3 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.
- **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**
- **Personal protective equipment**
- **General protective and hygienic measures**
 - Wash hands during breaks and at the end of the work.
 - Do not eat, drink or smoke while working.
- **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.
- **Material of gloves**
 - nitrile rubber, NBR
 - Recommended thickness of the material: ≥ 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:**
 - use against the effects of fumes / dust
 - Safety glasses
- **Body protection:** Protective work clothing.

* 9 Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **Appearance:**
- **Form:** Powder

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 04.10.2012

Version number 22

Revision: 04.10.2012

Product name: Vario Aluminum ECR F20 ml

(Contd. of page 3)

· Colour:	Orange
· Odour:	Sulphurous
· pH-value (22 g/l) at 20°C:	2.8
· Melting point/Melting range:	Not determined
· Boiling point/Boiling range:	Not determined
· Flash point:	Not applicable
· Danger of explosion:	Product is not explosive.
· Density	Not determined
· Solubility in / Miscibility with Water:	Soluble
· Solvent content:	
Organic solvents:	0.0 %
Solids content:	100.0 %
· 9.2 Other information	No further relevant information available.

* 10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions** Reacts with alkalis releasing ammonia
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** oxidizing agents
- **Hazardous decomposition products:** see chapter 5

* 11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
Quantitative data on the toxicity of the preparation are not available.
The following statements refer to the individual components.

· LD/LC50 values that are relevant for classification:		
70-49-5 mercaptosuccinic acid		
Oral	LD50	800 mg/kg (rat)
	LD50 IPR	200 mg/kg (mouse)
	LD50 IVN	>1 mg/kg (rabbit) (Fremd-MSDS)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** irritating effect possible
- **Sensitization:** No sensitizing effect known.
- **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.
The usual precautionary measures should be adhered to general rules for handling chemicals.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)** no data available

GB

(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 04.10.2012

Version number 22

Revision: 04.10.2012

Product name: Vario Aluminum ECR F20 ml

(Contd. of page 4)

* 12 Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **Other information:** Quantitative data on the ecological effect of this product are not available.
- **12.3 Bioaccumulative potential** No further relevant information available.

· Behaviour in environmental systems:

70-49-5 mercaptosuccinic acid

log P(o/w)	-0.88 (.)
------------	-----------

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

- **Ecotoxicological effects:**

- **Remark:**

Toxic for fish:

NH₄⁺ > 0.3 mg/l

sulphates > 7 g/l

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

- **Additional ecological information:**

- **General notes:**

Water danger class 3 (German Regulation) (Self-assessment acc. VwVwS Annex 4): extremely hazardous for water.

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.

- **12.5 Results of PBT and vPvB assessment** no data available

- **vPvB assessments:** no data available

- **12.6 Other adverse effects** No further relevant information available.

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.

· European waste catalogue

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.

* 14 Transport information

- | | |
|-------------------------------|------|
| · 14.1 UN-Number | |
| · ADR, ADN, IMDG, IATA | Void |

- | | |
|---------------------------------------|------|
| · 14.2 UN proper shipping name | |
| · ADR, ADN, IMDG, IATA | Void |

- | | |
|------------------------------------------|------|
| · 14.3 Transport hazard class(es) | |
| · ADR, ADN, IMDG, IATA | |
| · Class | Void |

- | | |
|-----------------------------|------|
| · 14.4 Packing group | |
| · ADR, IMDG, IATA | Void |

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 04.10.2012

Version number 22

Revision: 04.10.2012

Product name: Vario Aluminum ECR F20 ml

(Contd. of page 5)

· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

* 15 Regulatory information

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

* 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.

R22 Harmful if swallowed.

R36/37/38 Irritating to eyes, respiratory system and skin.

- **Abbreviations and acronyms:**

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

ICAO: International Civil Aviation Organization

ADR: Accord européen sur le transport 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 Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

- **Sources**

IUCLID (International Uniform Chemical Information Database)

Data arise from reference works and literature.

- *** Data compared to the previous version altered.**

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

Printing date 29.07.2011

Version number 27

Revision: 29.07.2011

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

- **1.1 Product identifier** Reagent for water analysis
- **Product name:** Vario ECR-Masking RGT
- **Catalog number:** 531625, 4531625
- **1.2 Details of the supplier of the safety data sheet**

- **Supplier:**

Tintometer GmbH
Schleefstr. 8-12
DE - 44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 231 945100
e-mail: sales@tintometer.de

- **Informing department:**

e-mail: produktsicherheit@tintometer.de
Product Safety Department

- **Contact for technical details:**

Technical Department
e-mail: technik@tintometer.de

- **1.3 Emergency telephone number:**

Poison Center Berlin, Germany
phone: 0049-30 30686 790

* 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.

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



Xn; Harmful

R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.

- **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 Harmful if swallowed.
H312 Harmful in contact with skin.
H332 Harmful if inhaled.
H319 Causes serious eye irritation.

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 29.07.2011

Version number 27

Revision: 29.07.2011

Product name: Vario ECR-Masking RGT





(Contd. of page 1)

Precautionary statements

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P302+P352 IF ON SKIN: Wash with plenty of soap and water.
 P309+P311 IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.
 P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

* 3 Composition/information on ingredients

3.2 Chemical characterization: Mixtures**Description:** aqueous solution**Dangerous components:**

CAS: 3012-65-5 EINECS: 221-146-3	diammonium hydrogen 2-hydroxypropane-1,2,3-tricarboxylate  Xi R36  Eye Irrit. 2, H319	15-25%
CAS: 12125-01-8 EINECS: 235-185-9 Index number: 009-006-00-8	ammonium fluoride  T R23/24/25  Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331	15-25%

REACH - Pre-registered substances All components are REACH pre-registered.**Additional information** For the wording of the listed risk phrases refer to section 16.

* 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 medical treatment.

After eye contact

Rinse opened eye for several minutes (at least 10 min) under running water.

Call a doctor immediately.

After swallowing

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

Call a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed

after absorption:

breathing difficulty

diarrhoea

gastric pain

sickness

vomiting

After swallowing of large amounts:

drop in blood pressure

CNS disorders

cramps

Danger Danger of disturbed cardiac rhythm.**Indication of any immediate medical attention and special treatment needed** Antidote: calcium gluconate

GB

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 29.07.2011

Version number 27

Revision: 29.07.2011

Product name: Vario ECR-Masking RGT

(Contd. of page 2)

* 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**
Formation of toxic gases is possible during heating or in case of fire.
Hydrogen fluoride (HF)
NH₃
nitrogen oxides
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
- **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter drains.
Ambient fire may liberate hazardous vapours.

* 6 Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **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.

* 7 Handling and storage

- **Handling**
- **7.1 Precautions for safe handling**
Prevent formation of aerosols.
Work only in fume cupboard.
- **Information about protection against explosions and fires:** The product is not flammable
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:**
Store only in the original container.
Store in cool location.
Unsuitable material for container: glass
- **Further information about storage conditions:**
Keep container tightly sealed.
Protect from heat and direct sunlight.
Protect from humidity and keep away from water.
Protect from the effects of light.
- **Recommended storage temperature:** 20°C +/- 5°C
- **Storage class** 10-13

(Contd. on page 4)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 29.07.2011

Version number 27

Revision: 29.07.2011

Product name: Vario ECR-Masking RGT

(Contd. of page 3)

 · **7.3 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.

 · **8.1 Control parameters**

 · **Components with limit values that require monitoring at the workplace:**
12125-01-8 ammonium fluoride (10-20%)

WEL (Great Britain)	Long-term value: 2.5 mg/m ³ as F
IOELV (European Union)	Long-term value: 2.5 mg/m ³ as F

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

 · **8.2 Exposure controls**

 · **Personal protective equipment**

 · **General protective and hygienic measures**

Avoid contact with the eyes and skin.

Do not eat, drink or smoke while working.

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

 · **Recommended filter device for short term use:** Combination filter B-P2

 · **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** Recommended thickness of the material: ≥ 0.11 mm

 · **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.

 Value for the permeation: Level ≥ 1 (>10 min)

 · **Eye protection:**

Safety glasses

use against the effects of fumes / dust

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

* 9 Physical and chemical properties

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

 · **Appearance:**
Form: Fluid

Colour: Colourless

 · **Odour:** Odourless

 · **pH-value at 20°C:** 5.1

 · **Melting point/Melting range:** Not determined

 · **Boiling point/Boiling range:** 100°C

 · **Flash point:** Not applicable

 · **Danger of explosion:** Product is not explosive.

 · **Density at 20°C** 1.108 g/cm³

 · **Solubility in / Miscibility with**
Water: Fully miscible

(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 29.07.2011

Version number 27

Revision: 29.07.2011

Product name: Vario ECR-Masking RGT

(Contd. of page 4)

· Solvent content:	
Organic solvents:	0.0 %
Water:	< 70 %
· Solids content:	
< 40 %	
· 9.2 Other information	No further relevant information available.

* 10 Stability and reactivity

- **Reactivity**
- **Thermal decomposition / conditions to be avoided:** To avoid thermal decomposition do not overheat.
- **Possibility of hazardous reactions**
 - Contact with strong acids releases hydrogen fluoride
 - Attacks materials containing glass and silicate
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
 - acids
 - metals
 - halogen compounds
- **Hazardous decomposition products:**
 - Poisonous gases/vapours
 - Corrosive gases/vapours
 - ammonia (NH₃)
 - Nitrogen oxides (NO_x)
 - see chapter 5

* 11 Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
 - Quantitative data on the toxicity of the preparation are not available.
 - The following statements refer to the individual components.

· LD/LC50 values that are relevant for classification:	
12125-01-8 ammonium fluoride	
LD50 IPR	32 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritant effect.
- **Sensitization:** No sensitizing effect known.
- **Subacute to chronic toxicity:**
 - chronic ingestion: contains fluoride which may affect behaviour / central nervous system, respiration, cardiovascular system, liver, urinary system, brain, metabolism
 - chronic toxic effect: fluorosis
- **Additional toxicological information:**
 - The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:
 - Harmful
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** no data available

— GB —

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 29.07.2011

Version number 27

Revision: 29.07.2011

Product name: Vario ECR-Masking RGT

(Contd. of page 5)

* 12 Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

12125-01-8 ammonium fluoride

LC 50 (NaF) 660 mg/l (Leuciscus idus)

LC50 3638 mg/l/96h (Pimephales promelas)

· 12.2 Persistence and degradability No further relevant information available.

· Other information:

Quantitative data on the ecological effect of this product are not available.

The following statements refer to the individual components.

· Behaviour in environmental systems:

· 12.3 Bioaccumulative potential No further relevant information available.

· 12.4 Mobility in soil No further relevant information available.

· Ecotoxicological effects:

· Remark:

Toxic for fish:

NH₄⁺ > 0.3 mg/l

· Additional ecological information:

· General notes:

Water hazard class 1 (German Regulation) (Self-assessment acc. VwVwS Annex 4): slightly hazardous for water.

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 unneutralized.

· 12.5 Results of PBT and vPvB assessment no data available

· 12.6 Other adverse effects No further relevant information available.

* 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 dangerous 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.

14 Transport information

· 14.1 UN-Number

· ADR, ADN, IMDG, IATA

Void

· 14.2 UN proper shipping name

· ADR, ADN

Void

· 14.3 Transport hazard class(es)

· ADR, ADN, IMDG, IATA

· Class

Void

(Contd. on page 7)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 29.07.2011

Version number 27

Revision: 29.07.2011

Product name: Vario ECR-Masking RGT

(Contd. of page 6)

· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	No
· 14.6 Special precautions for user	Not applicable.
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

*15 Regulatory information

- **15.4 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **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.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

*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.

R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R36 Irritating to eyes.

- **Recommended restriction of use:** professional/industrial use only

- **Abbreviations and acronyms:**

EC50: effective concentration, 50 percent (in vivo)

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

ICAO: International Civil Aviation Organization

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

- **Sources**

Data arise from reference works and literature.

GESTIS-Stoffdatenbank

- *** Data compared to the previous version altered.**