Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 09/18/2017 Reviewed on 09/18/2017

1 Identification

· **Product identifier**

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

· **Catalogue number:** 00531659, 531650, 4531650

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

· **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany

· **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS02 Flame

Flam. Sol. 2 H228 Flammable solid.

GHS07

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

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
· **Hazard pictograms**

GHS02 GHS07

· **Signal word** Warning
· **Hazard-determining components of labeling:**
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.

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

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 09/18/2017 Reviewed on 09/18/2017

Trade name: Vario Hexamine F20 ml

(Contd. of page 1)

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of organic and inorganic compounds
· **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

CAS: 100-97-0 EINECS: 202-905-8 Index number: 612-101-00-2 RTECS: MN 4725000	methenamine	Flam. Sol. 2, H228; Skin Sens. 1, H317	90–100%

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

*
4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Immediately rinse with plenty of water.
If skin irritation or rash occurs: Get medical advice/attention.
· **After eye contact:**
Rinse opened eye for several minutes (at least 15 min) under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment in case of complaints.
· **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
· **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Water, Carbon dioxide (CO_2), Foam, Fire-extinguishing powder
· **For safety reasons unsuitable extinguishing agents:**
For this substance / mixture no limitations of extinguishing agents are given.
· **Special hazards arising from the substance or mixture**
Can burn in fire.
Risk of dust explosion.
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Hydrogen cyanide (HCN)
nitrous gases
Nitrogen oxides (NOx)
Ammonia (NH_3)
Hydrogen cyanide (prussic acid HCN)
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 09/18/2017 Reviewed on 09/18/2017

Trade name: Vario Hexamine F20 ml

(Contd. of page 2)

· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Avoid formation of dust.
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
· **Advice for emergency responders:** Protective equipment: see section 8
· **Environmental precautions:** Do not allow product to reach sewage system or any water course.
· **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Pick up mechanically.
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
· **Advice on safe handling:**
Use only in well ventilated areas.
Thorough dedusting.
Prevent formation of dust.
Protect from heat.
Keep ignition sources away - Do not smoke.
Take precautionary measures against static discharge.
· **Hygiene measures:**
Avoid contact with the skin.
Take off immediately all contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:**
Store away from oxidizing agents.
Do not store together with acids.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Protect from exposure to the light.
Protect from humidity and water.
This product is hygroscopic.
· **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
CAS: 100-97-0 methenamine	
EV (Canada)	Short-term value: 2 mg/m³, 0.35 ppm

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 09/18/2017 Reviewed on 09/18/2017

Trade name: Vario Hexamine F20 ml

(Contd. of page 3)

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

· **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 respiratory protective device 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: ≥ 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
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 any water course.
Risk of explosion.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
Form / Physical state:	Powder
Color:	White
· **Odor:**	Amine-like
· **Odor threshold:**	Not determined.
· **pH-value (20 g/l) at 20°C (68 °F):**	8.5
· **Melting point/freezing point:**	263°C (505.4 °F) (CAS 100-97-0)
· **Initial boiling point and boiling range:**	Not applicable.
· **Flash point:**	250°C (482 °F) (CAS 100-97-0)
· **Flammability (solid, gas):**	Flammable solid.
· **Ignition temperature:**	390°C (734 °F) (CAS 100-97-0)
· **Decomposition temperature:**	Not determined.
· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product does not present an explosion hazard. Risk of dust explosion if enriched with fine dust in the presence of air.
· **Flammability or explosive limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Oxidizing properties:**	none
· **Vapor Pressure:**	Not determined.
· **Density at 20°C (68 °F):**	1.34g/cm³ (11.18 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density at 20°C (68 °F):**	0,0005g/cm³ (0 lbs/gal) (CAS 100-97-0)
· **Evaporation rate:**	Not applicable.
· **Solubility(ies)**	
Water at 20°C (68 °F):	895g/l (CAS 100-97-0)

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 09/18/2017 Reviewed on 09/18/2017

Trade name: Vario Hexamine F20 ml

(Contd. of page 4)

· **Partition coefficient (n-octanol/water):**	Not applicable.
· **Viscosity:**	Not applicable.
· **Solvent content:**	
Organic solvents:	0%
Solids content:	100%
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** Dust can combine with air to form an explosive mixture.
· **Chemical stability** Stable at ambient temperature (room temperature).
· **Possibility of hazardous reactions**
In contact with nitrites, nitrates or nitrous acid possible release of nitrosamines (carcinogenic)!
with nitric acid, acetic anhydride, acetic acid, iodide
---> Danger of explosion.
Reacts with peroxides.
Reacts with acids.
Reacts with oxidizing agents.
· **Conditions to avoid** strong heating
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:**
nitrous gases
formaldehyde
Ammonia (NH_3)
In case of fire: see section 5.

* 11 Toxicological information

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

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

CAS: 100-97-0 methenamine

Oral	LD50	9200 mg/kg (rat) (IUCLID)
Dermal	LD50.	>2000 mg/kg (rat) (OECD 402)

· **Primary irritant effect:**
· **on the skin:** Based on available data, the classification criteria are not met.
· **on the eye:** Based on available data, the classification criteria are not met.

· **Information on components:**

CAS: 100-97-0 methenamine

Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: no irritation)

· **Sensitization:** May cause an allergic skin reaction.

· **Information on components:**

CAS: 100-97-0 methenamine

Sensitization	OECD 406	(guinea pig: positive)
	Patch test (human)	(positive) (IUCLID)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 09/18/2017 Reviewed on 09/18/2017

Trade name: Vario Hexamine F20 ml

(Contd. of page 5)

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

· **Other information:** see section 8 / 15

· **Synergistic Products:** None

· **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.

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

CAS: 100-97-0 methenamine	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test) (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.

12 Ecological information

· **Toxicity**

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

· **Bacterial toxicity:**
sulfates toxic > 2.5 g/l

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

· **Other information:**
Toxic for fish:
Magnesium compounds: 100 - 400 mg/l
· **Persistence and degradability**
CAS 100-97-0: not easily biodegradable

CAS: 100-97-0 methenamine	
OECD 302 C	39–47 (.) (Modified MITI Test (II))

· **Bioaccumulative potential**
Pow = n-octanol/wasser partition coefficient
log Pow < 1 = Does not accumulate in organisms.

CAS: 100-97-0 methenamine	
log Pow	-2.84 (.) (experimental) (IUCLID)

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

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 09/18/2017 Reviewed on 09/18/2017

Trade name: Vario Hexamine F20 ml

(Contd. of page 6)

· **Other adverse effects** Avoid transfer into the environment.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

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

14 Transport information

· **UN-Number**	
· **DOT, IMDG, IATA**	UN1328
· **UN proper shipping name**	
· **DOT**	Hexamethylenetetramine
· **IMDG, IATA**	HEXAMETHYLENETETRAMINE
· **Transport hazard class(es)**	
· **DOT**	
· **Class**	4.1 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
· **Packing group**	
· **DOT, IMDG, IATA**	III
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Warning: Flammable solids, self-reactive substances and solid desensitised explosives
· **Danger code (Kemler):**	40
· **EMS Number:**	F-A,S-G
· **Stowage Category**	A
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **Limited quantity (LQ):**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 09/18/2017 Reviewed on 09/18/2017

Trade name: Vario Hexamine F20 ml

(Contd. of page 7)

· **IMDG**	
· **Limited quantities (LQ)**	5 kg
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Sara**

· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**
None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**
None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **New Jersey Right-to-Know List:**
CAS: 100-97-0 | methenamine

· **New Jersey Special Hazardous Substance List:**
None of the ingredients is listed.

· **Pennsylvania Right-to-Know List:**
None of the ingredients is listed.

· **Pennsylvania Special Hazardous Substance List:**
None of the ingredients is listed.

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**
None of the ingredients is listed.

· **Information about limitation of use:**
Employment restrictions concerning pregnant and lactating women must be observed.
Employment restrictions concerning young persons must be observed.

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H228 Flammable solid.
H317 May cause an allergic skin reaction.
· **Date of preparation / last revision** 09/18/2017 / 33

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Trade name: Vario Hexamine F20 ml

(Contd. of page 8)

· **Abbreviations and acronyms:**
OECD: Organisation for Economic Co-operation and Development
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure
EC50: half maximal effective concentration
IC50: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
o.c.: open cup
ACGIH® - American Conference of Governmental Industrial Hygienists
•A1 - Confirmed human carcinogen
•A2 - Suspected human carcinogen
•A3 - Confirmed animal carcinogen with unknown relevance to humans
•A4 - Not classifiable as a human carcinogen
•A5 - Not suspected as a human carcinogen
IARC - International Agency for Research on Cancer
•Group 1 - Carcinogenic to humans
•Group 2A - Probably carcinogenic to humans
•Group 2B - Possibly carcinogenic to humans
•Group 3 - Not classifiable as to carcinogenicity to humans
•Group 4 - Probably not carcinogenic to humans
NTP - National Toxicology Program, U.S. Department of Health and Human Services
•Group K - Known to be Human Carcinogens
•Group R - Reasonably Anticipated to be Human Carcinogens
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
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.**