# **Lovibond® Water Testing**

# Tintometer® Group



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

Printing date 05/25/2020 Reviewed on 05/25/2020

#### 1 Identification

- · Product identifier
- · Trade name: Vario Ferro F10, 25 ml
- · Catalogue number: 00530569, 530560, 530563, 00530579, 530570, 530562, 4530560, 4530570
- · 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



**GHS05 Corrosion** 

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

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

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

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





GHS05 GHS07

- · Signal word Danger
- · Hazard-determining components of labeling:

sodium dithionite disodium disulphite 1,10-phenanthroline methenamine

· Hazard statements

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

P280 Wear protective gloves/protective clothing/eye protection. P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.

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P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

P310 Immediately call a doctor.

· Other hazards No further relevant information available.

### 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: 7775-14-6 EINECS: 231-890-0 Index number: 016-028-00-1	sodium dithionite  Self-heat. 1, H251;  Acute Tox. 4, H302	20–30%
CAS: 7681-57-4 EINECS: 231-673-0 Index number: 016-063-00-2 RTECS: UX8225000	disodium disulphite  Eye Dam. 1, H318;  Acute Tox. 4, H302	20–30%
CAS: 66-71-7 EINECS: 200-629-2 Index number: 613-092-00-8 RTECS: SF 8300000	1,10-phenanthroline  Acute Tox. 3, H301; Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.25-<2.5%
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	0.1-<1%

· 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.

Call a doctor immediately.

· After swallowing:

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

Seek medical treatment.

- · Information for doctor: Sulfites are strong sensitizers
- · Most important symptoms and effects, both acute and delayed

Irritation and corrosion

allergic reactions

after inhalation:

mucosal irritations, cough, breathing difficulty

after swallowing:

resorption

mucous membrane irritation

sickness

vomiting

diarrhoea

pain

disorder of electrolyte balance

· Indication of any immediate medical attention and special treatment needed: No further relevant information available.

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# 5 Fire-fighting measures

#### · Extinguishing media

#### · Suitable extinguishing agents:

Fire-extinguishing powder

Carbon dioxide or dry chemical

Dry sand

#### · For safety reasons unsuitable extinguishing agents:

Water

Foam

--> exothermic reaction.

#### · Special hazards arising from the substance or mixture

mixture with combustible ingredients

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

In case of fire, the following can be released:

Sulfur oxides (SOx)

Sodium oxide

Carbon monoxide (CO) and carbon dioxide (CO2)

- · Advice for firefighters
- · Protective equipment:

Wear self-contained respiratory protective device.

Wear fully protective suit.

#### · 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

## $\cdot \ \, \text{Advice for non-emergency personnel:}$

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Use respiratory protective device against the effects of fume/dust/aerosol.

Avoid formation of dust.

#### · Advice for emergency responders:

Mount respiratory protective device.

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

#### · Precautions for safe handling

#### · Advice on safe handling:

Prevent formation of dust.

Provide suction extractors if dust is formed.

#### · Hygiene measures:

Avoid contact with the skin.

Avoid contact with the eyes.

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.

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· Information about storage in one common storage facility:

Do not store together with acids.

Store away from oxidizing agents.

· 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.

Store in dry conditions.

Protect from humidity and water.

- · 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:

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

At this time, the other constituents have no known exposure innits.				
CAS: 7681-57-4 disodium disulphite				
REL (USA) Long-term value: 5 mg/m³				
TLV (USA)	Long-term value: 5 mg/m <sup>3</sup>			
EL (Canada)	Long-term value: 5 mg/m <sup>3</sup>			
EV (Canada) Long-term value: 5 mg/m³				
CAS: 100-97-0 methenamine				
TLV (USA) Long-term value: NIC-1* mg/m³				
*inhalable fraction,NIC-A4, NIC-DSEN				
EV (Canada) Short-term value: 2 mg/m³, 0.35 ppm				

- · 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:

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

- Breathing equipment: Use respiratory protective device against the effects of fume/dust/aerosol.
- · Recommended filter device for short term use: Combination filter ABEK-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  $\leq 1$  (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: Tightly sealed goggles
- · 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

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	·			
Color:	Whitish			
· Odor:	Pungent			
· Odor threshold:	Not determined.			
· pH-value (12 g/l) at 20°C (68°F):	5.6			
· Melting point/freezing point:	Not determined.			
Initial boiling point and boiling range:				
0. 0				
· Flash point:	Not applicable.			
· Flammability (solid, gas):	Not determined.			
· Decomposition temperature:	> 80°C (> 176°F) (CAS 7775-14-6)			
· Auto-ignition temperature:	Product is not self-igniting.	_		
· Danger of explosion:	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 applicable.			
· Density:	Not determined.			
· Relative density:	Not determined.			
· Vapor density:	Not applicable.			
Evaporation rate:	Not applicable.			
· Solubility(ies)				
Water:	Soluble.			
· Partition coefficient (n-octanol/water):	· Partition coefficient (n-octanol/water): Not applicable.			
· Viscosity:	Not applicable.			
· Solvent content:				
Organic solvents:	0.0 %			
Solids content:	100.0 %			
· 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).

sensitive to moisture

· Possibility of hazardous reactions

Contact with acids releases toxic gases.

Reacts with acids releasing sulfur dioxide.

Reacts with oxidizing agents.

Reacts with humid air.

· Conditions to avoid

Exposure to moisture.

Strong heating (decomposition)

· Incompatible materials:

sodium nitrite

sodium chlorite

· Hazardous decomposition products:

Sulfur dioxide

see section 5

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### 11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity: Classification according to calculation procedure.

•	AC	uτ	e toxi	city	estima	ie (A	IX) -	Calculation method:

Oral GHS ATE<sub>(MIX)</sub> 1144 mg/kg (.)

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

Oral LD50 500 mg/kg (ATE) LD50. 2500 mg/kg (rat) (IUCLID)

CAS: 7681-57-4 disodium disulphite

Oral LD50 | 1540 mg/kg (rat) (OECD 401) (MERCK)

Dermal LD50. | >2000 mg/kg (rat) (RTECS)

CAS: 66-71-7 1,10-phenanthroline

 Oral
 LD50
 132 mg/kg (rat)

 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:

Causes serious eye damage.

Risk of corneal clouding

#### · Information on components:

CAS: 7775-14-6 sodium dithionite

Irritation of skin OECD 404 (rabbit: no irritation)

CAS: 7681-57-4 disodium disulphite

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

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: 7681-57-4 disodium disulphite

Sensitization OECD 406 (guinea pig: negative)

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.

· 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:

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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.
- · Information on components:
- CAS 7681-57-4: Did not show carcinogenic effects in animal experiments (IUCLID).
- CAS 7681-57-4: No impairment of reproductive performance in animal experiments (IUCLID).

CAS 7681-57-4: Did not show teratogenic effects in animal experients.

OECD 414: Teratogenicity testing OECD 473: Mutagenicity testing

OECD 471, 474, 476, 487: Germ cell mutagenicity testing

CAS: 7681-	CAS: 7681-57-4 disodium disulphite		
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)		
CAS: 100-9	CAS: 100-97-0 methenamine		
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)		
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test)		
	(IUCLID)		

# 12 Ecological information

#### · Toxicity

· Aquatic toxicity:			
CAS: 7775-1	CAS: 7775-14-6 sodium dithionite		
EC50	98 mg/l/48h (Daphnia magna) MERCK		
IC50	206 mg/l/72h (Desmodesmus subspicatus) MERCK		
LC50	46–68 mg/l/96h (gold orfe) (DIN 38412) (Merck)		
CAS: 7681-5	7-4 disodium disulphite		
EC50	EC50 89 mg/l/48h (Daphnia magna) (OECD 202) (MERCK)		
IC50	48 mg/l/72h (Desmodesmus subspicatus) (OECD 201) (MERCK)		
LC50	LC50 150–220 mg/l/96h (rainbow trout) (DIN 38412 Teil 15) (Merck)		
CAS: 100-97-	CAS: 100-97-0 methenamine		
EC50	36 mg/l/48h (Daphnia magna) (IUCLID)		
EC10	EC10 5 mg/l (fish)		
LC50 (static) 41 mg/l/96h (bluegill) (US-EPA)			

#### · Bacterial toxicity:

sulfates toxic > 2.5 g/l

0.00 7777 4.4.0 15 15415 15			
CAS: ///5-1	CAS: 7775-14-6 sodium dithionite		
EC50	107 mg/l (Pseudomonas putida) IUCLID		
CAS: 7681-5	CAS: 7681-57-4 disodium disulphite		
EC50	56 mg/l (Pseudomonas putida) (17h) (IUCLID)		
CAS: 100-97-0 methenamine			
EC50 (static)	>5000 mg/l (Bacterial toxicity) (DIN 38412) (Merck, Vibrio fischeri)		

#### Other information:

Toxic for fish:

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sulfates > 7 g/l

· Persistence and degradability

CAS: 100-97-0 methenamine

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

· Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

log Pow 1-3 = Not worth-mentioning accumulating in organisms.

CAS: 7775-14-6 sodium dithionite

log Pow <-4.7 (.) (calculated)

CAS: 66-71-7 1,10-phenanthroline

log Pow 1.78 (.)

(Merck)

CAS: 100-97-0 methenamine

log Pow -2.84 (.) (experimental)

(IUCLID)

- · Mobility in soil No further relevant information available.
- · Other adverse effects

Reacts with water to form toxic decomposition products.

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.

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· UN-Number	
· DOT, IMDG, IATA	none
· UN proper shipping name	
· DOT, IMDG, IATA	none
· Transport hazard class(es)	
· DOT, IMDG, IATA	
· Class	none
· Packing group	
· DOT, IMDG, IATA	none
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/7	8
and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

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### 15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- · Sara
- $\cdot$  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 components have the value ACTIVE.

· Hazardous Air Pollutants

None of the ingredients is 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: 7775-14-6 sodium dithionite

CAS: 7681-57-4 disodium disulphite

CAS: 100-97-0 methenamine

· New Jersey Special Hazardous Substance List:

CAS: 7775-14-6 sodium dithionite
CAS: 7681-57-4 disodium disulphite

R2 CO

Pennsylvania Right-to-Know List:

CAS: 7775-14-6 sodium dithionite

CAS: 7681-57-4 disodium disulphite

· 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 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.

H251 Self-heating: may catch fire.

H301 Toxic if swallowed.

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

· Date of preparation / last revision 05/25/2020 / 46

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#### · 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

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

Self-heat. 1: Self-heating substances and mixtures - Category 1

Acute Tox. 3: Acute toxicity – Category 3 Acute Tox. 4: Acute toxicity – Category 4

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

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

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard - Category 3

#### · Sources

Data arise from safety data sheets, reference works and literature. IUCLID (International Uniform Chemical Information Database) RTECS (Registry of Toxic Effects of Chemical Substances)

· \* Data compared to the previous version altered.