

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

Printing date 08/25/2020

Reviewed on 08/25/2020

* 1 Identification

- **Product identifier**
- **Trade name:** Vario Monochlor F RGT
- **Catalogue number:** 00531819, 531810, 4531810, 00531811
- **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

Skin Corr. 1A H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

- **Label 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:**
lithium hydroxide monohydrate
sodium nitroprusside dihydrate
- **Hazard statements**
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
- **Precautionary statements**
P260 Do not breathe dust.
P280 Wear protective gloves/protective clothing/eye protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
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+P310 IF exposed or concerned: Immediately call a poison center/doctor.

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- **Other hazards** Acid burns have to treated immediately, as it may otherwise cause badly curing wounds.

* 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: 1310-66-3 EINECS: 215-183-4	lithium hydroxide monohydrate ⚠ Skin Corr. 1A, H314; Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302	20–30%
CAS: 90-01-7 EINECS: 201-960-5 RTECS: DO6430000	salicyl alcohol ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	10–<20%
CAS: 13755-38-9 EINECS: 238-373-9 RTECS: LJ 8925000	sodium nitroprusside dihydrate ⚠ Acute Tox. 3, H301	≤2.5%

- **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.
Call a doctor immediately.
- **After skin contact:**
Immediately rinse with plenty of water.
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
- **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.
Do not induce vomiting; immediately call for medical help.
- **Most important symptoms and effects, both acute and delayed**
burns
after inhalation:
mucosal irritations, cough, breathing difficulty
Possible damages: damage of respiratory tract
headache
dizziness
after swallowing:
strong caustic effect
sickness
vomiting
diarrhoea
after absorption of large amounts:
CNS disorders
drop in blood pressure
cramps
ataxia (impaired locomotor coordination)
disorder of electrolyte balance
- **Danger:**
Danger of circulatory collapse.
Danger of pulmonary edema.
- **Indication of any immediate medical attention and special treatment needed:**
If swallowed or in case of vomiting, danger of entering the lungs.
Later observation for pneumonia and pulmonary edema.

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5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:**
 - Water
 - > Aqueous solution reacts strongly alkaline.
 - If possible use dry extinguishing agents.
- **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:
 - nitrous gases
 - Nitrogen oxides (NOx)
 - cyanide compounds, sodium monoxide
 - LiOx
- **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**
- **Advice for non-emergency personnel:**
 - Wear protective equipment. Keep unprotected persons away.
 - Avoid substance contact.
 - Ensure adequate ventilation
 - Use respiratory protective device against the effects of fume/dust/aerosol.
- **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

- **Precautions for safe handling**
- **Advice on safe handling:**
 - Prevent formation of dust.
 - Provide suction extractors if dust is formed.
- **Hygiene measures:**
 - Do not inhale dust / smoke / mist.
 - Do not get in eyes, on skin, or on clothing.
 - 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.
 - Store only in the original receptacle.
- **Information about storage in one common storage facility:**
 - Do not store together with acids.

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- 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.
 - 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:**
 - 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 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 fume/dust/aerosol.
 - **Recommended filter device for short term use:** Filter P3
 - **Protection of hands:**
 - Protective gloves
 - 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:** 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.

* 9 Physical and chemical properties

· Information on basic physical and chemical properties	
· Appearance:	
Form / Physical state:	Powder
Color:	Light beige
· Odor:	Odorless
· Odor threshold:	Not applicable.
· pH-value (26.6 g/l) at 20°C (68°F):	12.2
· Melting point/freezing point:	Not determined.
· Initial boiling point and boiling range:	Not determined.
· Flash point:	Not applicable.
· Flammability (solid, gas):	The product is not combustible.
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Flammability or explosive limits:	
Lower:	Not applicable.
Upper:	Not applicable.

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· 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):	Not applicable.
· Viscosity:	Not applicable.
· Solvent content: Solids content:	100.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** see section "Possibility of hazardous reactions"
- **Chemical stability** Stable at ambient temperature (room temperature).
- **Possibility of hazardous reactions**
 - Aqueous solution reacts alkaline.
 - Aqueous solution reacts with metals.
 - Contact with acids releases toxic gases.
 - Reacts with light alloys in the presence of moisture to form hydrogen.
 - Corrodes aluminium and zinc.
 - Reacts with acids releasing Hydrogen cyanide (prussic acid).
 - Reacts with oxidizing agents.
- **Conditions to avoid**
 - To avoid thermal decomposition do not overheat.
 - Exposure to moisture.
- **Incompatible materials:**
 - organic substances
 - aluminum
 - zinc
- **Hazardous decomposition products:**
 - Hydrogen cyanide (prussic acid HCN)
 - In case of fire: see section 5.

*11 Toxicological information

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

· **Acute toxicity estimate (ATE_(MIX)) - Calculation method:**

Oral	GHS ATE _(MIX)	1366 mg/kg (.)
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· **LD/LC50 values that are relevant for classification:**

CAS: 1310-66-3 lithium hydroxide monohydrate

Oral	LD50	368 mg/kg (rat) (Registrant, ECHA)
	LC50.	>6.15 mg/l/4h (rat) (Registrant, ECHA)

CAS: 13755-38-9 sodium nitroprusside dihydrate

Oral	LD50	99 mg/kg (rat) (RTECS, anhydrous substance)
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- **Primary irritant effect:**
- **on the skin:** Causes severe skin burns.
- **on the eye:** Causes serious eye damage.

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Risk of blindness!

- **Sensitization:** Based on available data, the classification criteria are not met.

- **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 (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.

- **Additional toxicological information:**

The following complies to cyanogen compounds / nitriles in general:

Utmost caution! Release of hydrocyanic acid is possible - blockade of cellular respiration.

The following applies to soluble iron compounds: nausea and vomiting after swallowing. The absorption of large quantities is followed by cardiovascular disorders. Toxic effect on liver and kidneys.

The following applies to lithium compounds in general:

after absorption: CNS disorders, ataxia (impaired locomotor coordination) due to disturbed electrolyte balance

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

CAS: 13755-38-9 sodium nitroprusside dihydrate

EC50 1 mg/l/24h (Daphnia magna)

LC50 0.05 mg/l (fish)

- **Other information:**

The following applies for lithium compounds in general:

fish toxic from 100 mg/l, Daphnia toxic from 16 mg/l, plants toxic from 0,2 mg/l

Toxic for fish:

the following applies to dissolved iron compounds in general:

toxic as from 0.9 mg/l at pH 6.5 - 7.5

lethal as from 1.0 mg/l at pH 5.5 - 6.7

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

- **Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 90-01-7 salicyl alcohollog Pow 0.73 (experimental)
(Merck)

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

- **Other adverse effects**

Harmful effect due to pH shift.

Forms corrosive mixtures with water even if diluted.

Avoid transfer into the environment.

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13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
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	UN2680
· DOT, IMDG, IATA	
· UN proper shipping name	Lithium hydroxide mixture
· DOT	LITHIUM HYDROXIDE mixture
· IMDG, IATA	
· Transport hazard class(es)	
· DOT	
	
· Class	8 Corrosive substances
· Label	8
· IMDG, IATA	
	
· Class	8 Corrosive substances
· Label	8
· Packing group	
· DOT, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Corrosive substances
· Hazard identification number (Kemler code):	80
· EMS Number:	F-A,S-B
· Segregation groups	Alkalis
· Stowage Category	A
· Segregation Code	SG35 Stow "separated from" SGG1-acids
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 15 kg On cargo aircraft only: 50 kg
· IMDG	
· Limited quantities (LQ)	1 kg
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g

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*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):

CAS 1310-66-3 / 13755-38-9 is not on the TSCA Inventory listed, because it is a hydrate.
It is listed on the CAS 1310-65-2 / 14402-89-2 number for the anhydrous form.
All remaining ingredients are listed.

· 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: 1310-66-3 | lithium hydroxide monohydrate

· New Jersey Special Hazardous Substance List:

CAS: 1310-66-3 | lithium hydroxide monohydrate | CO, R1

· 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 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

H301 Toxic if swallowed.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

· Date of preparation / last revision 08/25/2020 / 1

· Abbreviations and acronyms:

STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure

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EC50: half maximal effective concentration
 IC50: half 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
 Acute Tox. 3: Acute toxicity – Category 3
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Corr. 1A: Skin corrosion/irritation – Category 1A
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• Sources

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

ECHA: European Chemicals Agency <http://echa.europa.eu>

RTECS (Registry of Toxic Effects of Chemical Substances)

• * Data compared to the previous version altered.