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

Printing date 08/13/2020 Reviewed on 08/13/2020

1 Identification

· **Product identifier**

· **Trade name: Vario Molybdenum HR1 F10 / F25**

· **Catalogue number:** 00530759, 00530789, 530750, 4530750, 530752, 530780, 4530780

· **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

Skin Irrit. 2 H315 Causes skin irritation.

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

GHS05

· **Signal word** Danger
· **Hazard-determining components of labeling:**
succinic acid
· **Hazard statements**
H315 Causes skin irritation.
H318 Causes serious eye damage.
· **Precautionary statements**

P280	Wear protective gloves / eye protection.
P302+P352	If on skin: Wash with plenty of water.
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.

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3 Composition/information on ingredients

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

CAS: 110-15-6 EINECS: 203-740-4 RTECS: WM 4900000	succinic acid Eye Dam. 1, H318	50–60%
CAS: 36679-96-6 EC number: 682-316-4	Glycine, N,N'-1,2-cyclohexanediylbis(N-(carboxymethyl))-, trisodium salt Skin Irrit. 2, H315; Eye Irrit. 2A, H319	10–20%

· **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.
If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed**
Irritation and corrosion
after inhalation:
mucosal irritations, cough, breathing difficulty
after swallowing:
mucous membrane irritation
sickness
vomiting
diarrhoea
· **Danger:** Risk of serious damage to eyes.
· **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**
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:
Nitrogen oxides (NOx)
Carbon monoxide (CO) and carbon dioxide (CO_2)
· **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.

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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
· **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.
· **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.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
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 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:**
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:** 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)

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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:	White
· **Odor:**	Acidic
· **Odor threshold:**	Not determined.
· **pH-value (11.6 g/l) at 20°C (68°F):**	4.4
· **Melting point/freezing point:**	Not determined.
· **Initial boiling point and boiling range:**	Not determined.
· **Flash point:**	206°C (402.8°F) (CAS: 110-15-6 succinic acid)
· **Flammability (solid, gas):**	Not applicable.
· **Decomposition temperature:**	235°C (455°F) (CAS 110-15-6)
· **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:	200 g/m³ (CAS: 110-15-6 succinic acid)
Upper:	1000 g/m³ (CAS: 110-15-6 succinic acid)
· **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** Dust can combine with air to form an explosive mixture.
· **Chemical stability** Stable at ambient temperature (room temperature).
· **Possibility of hazardous reactions** Reacts with acids, alkalis and oxidizing agents.
· **Conditions to avoid** Strong heating (decomposition)
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** see section 5

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11 Toxicological information

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

· **Acute toxicity estimate ($ATE_{(MIX)}$) - Calculation method:**		
Oral	GHS $ATE_{(MIX)}$	4449 mg/kg (.)

· **LD/LC50 values that are relevant for classification:**		
CAS: 110-15-6 succinic acid		
Oral	LD50	2260 mg/kg (rat) (RTECS)

· **Primary irritant effect:**
· **on the skin:** Causes skin irritation.
· **on the eye:**
Causes serious eye damage.
Risk of corneal clouding.

· **Information on components:**		
CAS: 110-15-6 succinic acid		
Irritation of skin	OECD 404	(rabbit: no irritation) (Registrant, ECHA)
Irritation of eyes	OECD 405	(rabbit: severe irritations) (Registrant, ECHA)

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

· **Information on components:**		
CAS: 110-15-6 succinic acid		
Sensitization	OECD 406	(guinea pig: negative) (Registrant, ECHA)
	OECD 429	(negative) (LLNA-Test) (Registrant, ECHA)

· **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:
· **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: 110-15-6 succinic acid	
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (Registrant, ECHA, Salmonella typhimurium)

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12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
CAS: 110-15-6 succinic acid	
EC50	>100 mg/l/48h (Daphnia magna) (OECD 202) (Registrant, ECHA)
EC50	>100 mg/l/72 h (Pseudokirchneriella subcapitata) (OECD 201) (Registrant, ECHA)
LC50	>100 mg/l/96h (zebrafish) (OECD 203)

· **Bacterial toxicity:**	
CAS: 110-15-6 succinic acid	
EC50	>300 mg/l /3h (activated sludge) (OECD 209) (Registrant, ECHA)

· **Persistence and degradability**	
CAS: 110-15-6 succinic acid	
OECD 301 C	78 % / 14 d (readily biodegradable) (Modified MITI Test)
OECD 301 E	96.55 % / 28 d, aerob (readily biodegradable) (Modified OECD Screening Test)

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

CAS: 110-15-6 succinic acid	
log Pow	-0.59 (.) (experimental) (Merck)
BCF	3 (.)

· **Mobility in soil** No further relevant information available.
· **Other adverse effects**
Harmful effect due to pH shift.
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**	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.

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· **Special precautions for user**	Not applicable.
· **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

· **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 No. 36679-96-6 listed as CAS No. 482-54-2
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:**
None of the ingredients is listed.

· **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:** Not required.

· **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**
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
· **Date of preparation / last revision** 08/13/2020 / -

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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
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

· **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)