

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

Printing date 11/06/2017

Reviewed on 11/06/2017

1 Identification

- **Product identifier**
- **Trade name:** Vario Manganese Citrate (Buffer) F10 ml
- **Catalogue number:** 00530659, 530650, 4530650
- **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**



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

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



GHS07

- **Signal word** Warning
- **Hazard statements**
H319 Causes serious eye irritation.
- **Precautionary statements**
P280 Wear protective gloves / eye 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.
P337+P313 If eye irritation persists: Get medical advice/attention.
- **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: 77-92-9 EINECS: 201-069-1 RTECS: GE 7350000	citric acid	 Eye Irrit. 2A, H319	10–20%
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- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air.
- **After skin contact:**
Immediately rinse with plenty of water.
If skin irritation continues, consult a doctor.
- **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.
If symptoms persist consult doctor.
- **Most important symptoms and effects, both acute and delayed**
after swallowing of large amounts:
coughing
pain
mucous membrane irritation
sickness
vomiting
fever
- **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
The product is not combustible.
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)
Phosphorus oxides (PxOx)
Sodium oxide
- **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.
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 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

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7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
- **Advice on safe handling:**
 - Thorough dedusting.
 - Prevent formation of dust.
- **Hygiene measures:**
 - 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:**
 - 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.
 - 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 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:**
 - Tightly sealed goggles
 - use against the effects of fumes / dust
- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment:** No further relevant information available.

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9 Physical and chemical properties

· Information on basic physical and chemical properties	
· Appearance:	
Form / Physical state:	Powder
Color:	White
· Odor:	Odorless
· Odor threshold:	Not applicable.
· pH-value (19 g/l) at 20 °C (68 °F):	6,3
· 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.
· Ignition temperature:	Not applicable.
· 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.
· Oxidizing properties:	none
· Vapor Pressure:	Not applicable.
· Density at 20 °C (68 °F):	1,578 g/cm ³ (13.17 lbs/gal)
· 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:	
Organic solvents:	0,0 %
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 with metals.
 - Reacts with certain metals.
 - Citric acid: incompatible with bases, strong oxidizers, amines. Contact with metal nitrates may be explosive. Attacks aluminum, copper, zinc und their alloys, when wet.
- **Conditions to avoid** Strong heating (decomposition)
- **Incompatible materials:**
 - metals
 - aluminum, copper, zinc, metal ions
 - aluminum
- **Hazardous decomposition products:**
 - sodium monoxide
 - 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.

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

CAS: 7558-79-4 disodium hydrogenorthophosphate

Oral	LD50	17000 mg/kg (rat) (RTECS)
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CAS: 7757-82-6 sodium sulphate

Dermal	LD50	>2000 mg/kg (rat)
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CAS: 77-92-9 citric acid

Oral	LD50	3000 mg/kg (rat) (IUCLID)
Dermal	LD50	>2000 mg/kg (rat) (limit test: there were no deaths)

- **Primary irritant effect:**
- **on the skin:** Based on available data, the classification criteria are not met.
- **on the eye:** Causes serious eye irritation.
- **Information on components:**
Citric acid: A single drop of a 2% or 5% solution in water causes little or no irritation.
A 0.5% solution held in contact with the eye causes irreversible tissue damage to the cornea.
Citric Acid caused mild irritation when 500 mg was tested on rabbit skin in a 24-hour test.
(CHEMINFO, Canadian Centre for Occupational Health and Safety)

CAS: 7757-82-6 sodium sulphate

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

CAS: 77-92-9 citric acid

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

- **Sensitization:** No sensitizing effects known.

· **Information on components:**

CAS: 77-92-9 citric acid

Sensitization	OECD 406	(guinea pig: negative) (EPA OPP 81-6: Guinea pig maximisation test)
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· **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):**

no further data available

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:**

CAS: 77-92-9 citric acid

OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test)
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- **Additional toxicological information:**
- **Experience with humans:** CAS 77-92-9: Can cause kidney damages.

12 Ecological information

· Toxicity

· Aquatic toxicity:

CAS: 7558-79-4 disodium hydrogenorthophosphate

LC50 467 mg/l/48h (mosquitofish)

EC50 1089 mg/l/48h (Daphnia magna)

CAS: 7757-82-6 sodium sulphate

EC50 2564 mg/l/48h (Daphnia magna)
(IUCLID)

LC50 120 mg/l/96h (mosquitofish)
(IUCLID)

13500–14500 mg/l/96h (fathhead minnow)

CAS: 77-92-9 citric acid

EC50 ~120 mg/l (Daphnia magna) (72 h)
(IUCLID)

EC5 485 mg/l (Entosiphon sulcatum) (72h)
(MERCK)

LC50 440–760 mg/l/96h (gold orfe)
(IUCLID)

· Bacterial toxicity:

sulfates toxic > 2.5 g/l

CAS: 7757-82-6 sodium sulphate

EC10 >1000 mg/l (Pseudomonas putida) (16h)
(IUCLID)

CAS: 77-92-9 citric acid

EC5 >10000 mg/l (Pseudomonas putida) (16h (Lit.))

· Other information:

Toxic for fish:

sulfates > 7 g/l

· Persistence and degradability

CAS: 77-92-9 citric acid

OECD 301 B 97 % / 28 d (readily biodegradable) (CO2 Evolution Test)

OECD 302 B 98 % / 2 d (readily eliminated from water) (Zahn-Wellens / EMPA Test)

· Bioaccumulative potential

No further relevant information available.

CAS: 77-92-9 citric acid

log Pow -1.72 (.) (OECD 117, 20°C)

· Mobility in soil No further relevant information available.

· Other adverse effects

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies.

13 Disposal considerations

· Waste treatment methods

- **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· Uncleaned packagings:

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

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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:	
· Marine pollutant:	No
· 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):		
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: 7558-79-4	disodium hydrogenorthophosphate	
· New Jersey Special Hazardous Substance List:		
None of the ingredients is listed.		
· Pennsylvania Right-to-Know List:		
CAS: 7558-79-4	disodium hydrogenorthophosphate	
CAS: 7757-82-6	sodium sulphate	
· Pennsylvania Special Hazardous Substance List:		
CAS: 7558-79-4	disodium hydrogenorthophosphate	E
CAS: 7757-82-6	sodium sulphate	E
· 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.		

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- **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**

H319 Causes serious eye irritation.

- **Date of preparation / last revision** 11/06/2017 / 20

- **Abbreviations and acronyms:**

ICAO: International Civil Aviation Organisation
 EC50: effective concentration, 50 percent (in vivo)
 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: 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
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

- **Sources**

Data arise from safety data sheets, reference works and literature.
 IUCLID (International Uniform Chemical Information Database)
 International Chemical Safety Cards (ICSCs)