

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

Printing date 04/12/2019

Reviewed on 04/12/2019

1 Identification

- **Product identifier**
- **Trade name:** Vario Total N Persulfate RGT
- **Catalogue number:** 00530379, 530370, 4530370
- **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**



GHS03 Flame over circle

Ox. Sol. 3 H272 May intensify fire; oxidizer.



GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

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

STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS03



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

disodium peroxodisulphate

potassium persulphate

- **Hazard statements**

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H315 Causes skin irritation.

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H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

Precautionary statements

P261 Avoid breathing dust.

P280 Wear protective gloves/protective clothing/eye protection.

P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.

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.

P342+P311 If experiencing respiratory symptoms: Call a poison center/doctor.

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

* 3 Composition/information on ingredients

• **Chemical characterization: Mixtures**• **Description:** Mixture of inorganic compounds.• **Composition and Information on Ingredients:**

Percent ranges are used due to the confidential product information.

CAS: 7775-27-1 EINECS: 231-892-1 RTECS: SE0525000	disodium peroxodisulphate ⚠ Ox. Sol. 3, H272; ⚠ Resp. Sens. 1, H334; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	80–90%
CAS: 7727-21-1 EINECS: 231-781-8 Index number: 016-061-00-1 RTECS: SE0400000	potassium persulphate ⚠ Ox. Sol. 3, H272; ⚠ Resp. Sens. 1, H334; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	5–<10%

• **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 or oxygen; call for doctor.• **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. Then consult a doctor.• **After swallowing:**

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

Seek medical treatment.

• **Most important symptoms and effects, both acute and delayed**

allergic reactions

irritations

after inhalation:

mucosal irritations, cough, breathing difficulty

after swallowing:

sickness

vomiting

gastric or intestinal disorders

mucous membrane irritation

headache

• **Danger:**

Danger of pulmonary edema.

risk of airways sensitization

risk of skin sensitization

• **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:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
 - The product is not combustible.
 - Has a fire-promoting effect due to release of oxygen.
 - 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:
 - Sulfur oxides (SOx)
 - Sodium oxide
 - Potassium 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.
 - Avoid substance contact.
 - Ensure adequate ventilation
 - Avoid formation of dust.
- **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:**
 - Ensure good ventilation/exhaustion at the workplace.
 - Prevent formation of dust.
 - Thorough dedusting.
- **Hygiene measures:**
 - Do not inhale dust / smoke / mist.
 - 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.
 - Protect from heat.
- **Information about storage in one common storage facility:**
 - Store away from flammable substances.
 - Store away from reducing agents.

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- **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:

CAS: 7775-27-1 disodium peroxodisulphate

TLV (USA)	Long-term value: 0.1 mg/m ³ as persulfate
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EL (Canada)	Long-term value: 0.1 mg/m ³ as persulfate
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EV (Canada)	Long-term value: 0.1 mg/m ³
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CAS: 7727-21-1 potassium persulphate

TLV (USA)	Long-term value: 0.1 mg/m ³ as persulfate
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EL (Canada)	Long-term value: 0.1 mg/m ³ as persulfate
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EV (Canada)	Long-term value: 0.1 mg/m ³
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- **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
 - **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:	Odorless
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· Odor threshold:	Not applicable.
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· pH-value (25 g/l) at 20°C (68°F):	4.5
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· Melting point/freezing point:	Not determined.
· Initial boiling point and boiling range:	Not applicable.
· Flash point:	Not applicable.
· Flammability (solid, gas):	Contact with combustible material may cause fire.
· Decomposition temperature:	> 100°C (>212°F) (CAS 7727-21-1)
· 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:	May intensify fire; oxidizer.
· Vapor Pressure:	Not applicable.
· Density at 20°C (68°F):	2.41 g/cm ³ (20.11 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 %
Solids content:	100.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** Risk of dust explosion.
- **Chemical stability** Stable at ambient temperature (room temperature).
- **Possibility of hazardous reactions**
 - Reacts with alcohols.
 - Reacts with reducing agents.
 - Reacts with heavy metals.
 - Reacts with strong acids and alkali.
- **Conditions to avoid**
 - Exposure to moisture.
 - Strong heating (decomposition)
- **Incompatible materials:** combustible materials
- **Hazardous decomposition products:**
 - oxygen
 - 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)	907 mg/kg (.)
· LD/LC50 values that are relevant for classification:		
CAS: 7775-27-1 disodium peroxodisulphate		
Oral	LD50	920 mg/kg (rat) (IUCLID)

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Dermal	LD50	>10000 mg/kg (rabbit)
Inhalative	LC50.	>5.1 mg/l/4h (rat) (ECHA: no deaths at this concentration LC ₀ = >5.1)
	LD50 IPR	226 mg/kg (mouse)
CAS: 7727-21-1 potassium persulfate		
Oral	LD50	802 mg/kg (rat) (RTECS)
Dermal	LD50	>10000 mg/kg (rabbit)

· **Primary irritant effect:**

· **on the skin:** Causes skin irritation.

· **on the eye:** Causes serious eye irritation.

· **Information on components:**

CAS 7775-27-1: chronic: dermatitis

CAS: 7775-27-1 disodium peroxodisulphate

Irritation of skin	OECD 404	(rabbit: slight irritation) (ECHA: read-across CAS 7727-54-0 Diammonium persulfate)
Irritation of eyes	OECD 405	(rabbit: slight irritation) (ECHA: read-across CAS 7727-54-0 Diammonium persulfate)
CAS: 7727-21-1 potassium persulfate		
Irritation of skin	OECD 404	(rabbit: slight irritation) (ECHA: read-across CAS 7727-54-0 Diammonium persulfate)
Irritation of eyes	OECD 405	(rabbit: slight irritation) (ECHA: read-across CAS 7727-54-0 Diammonium persulfate)

· **Sensitization:**

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

· **Information on components:**

CAS: 7775-27-1 disodium peroxodisulphate

Sensitization	OECD 406	(guinea pig: positive)
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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):** 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** May cause respiratory irritation.

· **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: 7775-27-1 disodium peroxodisulphate

OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (IUCLID)
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· **Additional toxicological information:** Other dangerous properties can not be excluded.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

CAS: 7775-27-1 disodium peroxodisulphate

EC50 133 mg/l/48h (Daphnia magna)

NOEC 91.7 mg/l/96h (rainbow trout)
(ECHA)

NOEC 67.6 mg/l/48 h (Daphnia magna)
(ECHA)

LC50 771 mg/l/96h (bluegill)
163 mg/l/96h (rainbow trout)
(ECHA)

CAS: 7727-21-1 potassium persulphate

EC50 120 mg/l/48h (Daphnia magna)

LC50 100 mg/l/96h (guppy)
(Hommel)

· **Bacterial toxicity:**

CAS: 7727-21-1 potassium persulphate

EC50 36 mg/l (Pseudomonas putida)
(Hommel)

· **Other information:**

Toxic for fish:

sulfates > 7 g/l

· **Persistence and degradability .**

· **Other information:**

Mixture of inorganic compounds.

Methods for the determination of biodegradability are not applicable to inorganic substances.

· **Bioaccumulative potential** No further relevant information available.

· **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.

14 Transport information

· **UN-Number**

· **DOT, IMDG, IATA**

UN3215

· **UN proper shipping name**

· **DOT**

· **IMDG, IATA**

Persulfates, inorganic, n.o.s.

PERSULPHATES, INORGANIC, N.O.S.

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- Transport hazard class(es) - DOT	
	
- Class - Label	5.1 Oxidizing substances 5.1
IMDG, IATA	
	
- Class - Label	5.1 Oxidizing substances 5.1
- Packing group - DOT, IMDG, IATA	III
Environmental hazards:	Not applicable.
- Special precautions for user - Danger code (Kemler): - EMS Number: - Stowage Category - Segregation Code	Warning: Oxidizing substances 50 F-A,S-Q A SG40 Stow "separated from" SGG2-ammonium compounds other than mixtures of ammonium persulphates and/or potassium persulphates and/or sodium persulphates. SG49 Stow "separated from" SGG6-cyanides
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: 25 kg On cargo aircraft only: 100 kg
- IMDG - Limited quantities (LQ) - Excepted quantities (EQ)	5 kg 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.		
CAS: 7775-27-1	disodium peroxodisulphate	ACTIVE
CAS: 7727-21-1	potassium persulphate	ACTIVE
Hazardous Air Pollutants		
None of the ingredients is listed.		

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· 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:

All ingredients are listed.

· New Jersey Special Hazardous Substance List:

None of the ingredients is listed.

· Pennsylvania Right-to-Know List:

CAS: 7727-21-1 | potassium persulphate

· 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

H272 May intensify fire; oxidizer.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

· **Date of preparation / last revision** 04/12/2019 / 15

· 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: 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

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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
Ox. Sol. 3: Oxidizing solids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
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>
GESTIS- Stoffdatenbank (Substance Database, Germany)
IUCLID (International Uniform Chemical Information Database)

· * Data compared to the previous version altered.

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