

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 12.04.2019

Version number 16

Revision: 12.04.2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier**Product name:** Vario Total N Persulfate RGT**Catalog number:** 00530379, 530370, 4530370**1.2 Relevant identified uses of the substance or mixture and uses advised against****Application of the substance / the preparation:** Reagent for water analysis**1.3 Details of the supplier of the safety data sheet****Supplier:**

Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 231 94510-0
e-mail: sales@tintometer.de

Tintometer GmbH
Division AQUALYTIC®
Schleefstr. 12
44287 Dortmund
Made in Germany
www.aqualytic.de

phone: +49 231 94510-755
e-mail: sales@aqualytic.de

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom

phone : +44 1980 664800
e-mail: SDS@tintometer.com

Informing department:

e-mail: sds@tintometer.de
Product Safety Department

1.4 Emergency telephone number:

+44 1235 239670
Languages: English

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture**Classification according to Regulation (EC) No 1272/2008**

GHS03 flame over circle

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



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.

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Skin Irrit. 2 H315 Causes skin irritation.
 Eye Irrit. 2 H319 Causes serious eye irritation.
 Skin Sens. 1 H317 May cause an allergic skin reaction.
 STOT SE 3 H335 May cause respiratory irritation.

2.2 Label elements

· **Labelling according to Regulation (EC) No 1272/2008** The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS03 GHS07 GHS08

· **Signal word** Danger

Hazard-determining components of labelling:

disodium peroxodisulphate
 potassium persulphate

Hazard statements

H272 May intensify fire; oxidiser.
 H302 Harmful if swallowed.
 H315 Causes skin irritation.
 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.

· **2.3 Other hazards** No further relevant information available.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

· **Description:** Mixture of inorganic compounds.

Dangerous components:

CAS: 7775-27-1 EINECS: 231-892-1	disodium peroxodisulphate ⚠ Ox. Sol. 3, H272; ⚠ Resp. Sens. 1, H334; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	80–90%
CAS: 7727-21-1 EINECS: 231-781-8 Index No: 016-061-00-1	potassium persulphate ⚠ Ox. Sol. 3, H272; ⚠ Resp. Sens. 1, H334; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, 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.

SECTION 4: First aid measures

4.1 Description of first aid measures

· **General information** Instantly remove any clothing soiled by the product.

· **After inhalation** Supply fresh air or oxygen; call for doctor.

After skin contact

Instantly rinse with 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 doctor.

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- **After swallowing**
Rinse out mouth and then drink 1-2 glasses of water.
Seek medical treatment.
 - **4.2 Most important symptoms and effects, both acute and delayed:**
allergic reactions
irritations
after inhalation:
mucosal irritations, Cough, Shortness of breath
after swallowing:
sickness
vomiting
gastric or intestinal trouble
mucous membrane irritation
headache
 - **Danger**
Danger of pulmonary oedema.
risk of airways sensitization
risk of skin sensitization
 - **4.3 Indication of any immediate medical attention and special treatment needed:** No further relevant information available.
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* SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
 - **5.2 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.
Can be released in case of fire:
Sulphur oxides (SOx)
Sodium oxide
Dipotassium oxide
 - **5.3 Advice for firefighters**
 - **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
 - **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.
-

SECTION 6: Accidental release measures

- **6.1 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 causing dust.
 - **Advice for emergency responders:** Protective equipment: see section 8
 - **6.2 Environmental precautions:** Do not allow product to reach sewage system or water bodies.
 - **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Collect mechanically.
Dispose of contaminated material as waste according to item 13.
 - **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.
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* SECTION 7: Handling and storage

- **7.1 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 during breaks and at the end of the work.
Do not eat, drink or smoke when using this product.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and containers:**
Store in cool location.
Protect from heat.
- **Information about storage in one common storage facility:**
Store away from flammable substances.
Store away from reducing agents.
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed containers.
Protect from heat and direct sunlight.
Protect from the effects of light.
Store under dry conditions.
Protect from humidity and keep away from water.
- **Recommended storage temperature:** 20°C +/- 5°C
- **7.3 Specific end use(s)** No further relevant information available.

* SECTION 8: Exposure controls/personal protection

- **8.1 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.
- **Recommended monitoring procedures:**
Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **8.2 Exposure controls**
- **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 breathing protection 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 trough 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.

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 · **Limitation and supervision of exposure into the environment:** Do not allow product to reach sewage system or water bodies.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties	
· Appearance:	
Form / Physical state:	Powder
Colour:	White
· Odour:	Odourless
· Odour threshold:	Not applicable
· pH-value (25 g/l) at 20°C:	4.5
· 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 (CAS 7727-21-1)
· Auto-ignition temperature:	Product is not self-igniting.
· Explosive properties:	Product is not explosive. Risk of dust explosion if enriched with fine dust in presence of air
· Flammability or explosive limits:	
Lower:	Not determined.
Upper:	Not determined.
· Oxidising properties:	May intensify fire; oxidiser.
· Vapour pressure:	Not applicable.
· Density at 20°C:	2.41 g/cm ³
· Relative density:	Not determined.
· Vapour 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 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** Risk of dust explosion
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
 - Reacts with alcohols
 - Reacts with reducing agents
 - Reacts with heavy metals
 - Reacts with strong acids and alkali
- **10.4 Conditions to avoid**
 - Exposure to moisture.
 - Strong heating (decomposition)
- **10.5 Incompatible materials:** combustible substances
- **10.6 Hazardous decomposition products:**
 - oxygen

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see section 5

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SECTION 11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity

 Classification according to calculation procedure:
 Harmful if swallowed.

Acute toxicity estimate (ATE_(mix)) - Calculation method:

Oral	CLP ATE _(mix)	907 mg/kg (.)
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LD/LC50 values that are relevant for classification:
CAS: 7775-27-1 disodium peroxodisulphate

Oral	LD50	920 mg/kg (rat) (IUCLID)
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 persulphate

Oral	LD50	802 mg/kg (rat) (RTECS)
Dermal	LD50	>10000 mg/kg (rabbit)

Primary irritant effect:
Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/irritation 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 persulphate

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)

Respiratory or skin sensitisation

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

Sensitisation	OECD 406	(guinea pig: positive)
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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

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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.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

CAS: 7775-27-1 disodium peroxodisulphate

EC50	133 mg/l/48h (Daphnia magna)
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NOEC	91.7 mg/l/96h (rainbow trout) (ECHA)
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NOEC	67.6 mg/l/48 h (Daphnia magna) (ECHA)
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LC50	771 mg/l/96h (bluegill) 163 mg/l/96h (rainbow trout) (ECHA)
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CAS: 7727-21-1 potassium persulphate

EC50	120 mg/l/48h (Daphnia magna)
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LC50	100 mg/l/96h (guppy) (Hommel)
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· **Bacterial toxicity:**

CAS: 7727-21-1 potassium persulphate

EC50	36 mg/l (Pseudomonas putida) (Hommel)
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· **Other information:**

Toxic for fish:
sulphates > 7 g/l

· **12.2 Persistence and degradability .**

· **Other information:**

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

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

· **12.4 Mobility in soil** No further relevant information available.

· **12.5 Results of PBT and vPvB assessment**

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

· **12.6 Other adverse effects**

Reacts with water to form toxic decomposition products.
Avoid transfer into the environment.

· **Water hazard:**

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to disposers of hazardous waste.

· **European waste catalogue**

16 05 07*	discarded inorganic chemicals consisting of or containing hazardous substances
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· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

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SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN-Number · ADR, IMDG, IATA 	<p style="margin: 0;">UN3215</p>
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	<p style="margin: 0;">3215 PERSULPHATES, INORGANIC, N.O.S. PERSULPHATES, INORGANIC, N.O.S.</p>
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR 	<div style="text-align: center;">  </div> <p style="margin: 0;">5.1 (O2) Oxidising substances.</p>
<ul style="list-style-type: none"> · Class · Label 	<p style="margin: 0;">5.1</p>
<ul style="list-style-type: none"> · IMDG, IATA 	<div style="text-align: center;">  </div> <p style="margin: 0;">5.1 Oxidising substances.</p>
<ul style="list-style-type: none"> · Class · Label 	<p style="margin: 0;">5.1</p>
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	<p style="margin: 0;">III</p>
<ul style="list-style-type: none"> · 14.5 Environmental hazards: 	<p style="margin: 0;">Not applicable.</p>
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kehler Number: · EMS Number: · Stowage Category · Segregation Code 	<p style="margin: 0;">Warning: Oxidising 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</p>
<ul style="list-style-type: none"> · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code 	<p style="margin: 0;">Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) 	<p style="margin: 0;">5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g</p>
<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	<p style="margin: 0;">3 E</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p style="margin: 0;">5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g</p>

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SECTION 15: Regulatory information

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

· Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

None of the ingredients is listed.

· Directive 2012/18/EU (SEVESO III):

· **Named dangerous substances - ANNEX I** None of the ingredients is listed.

· **Seveso category** P8 OXIDISING LIQUIDS AND SOLIDS

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

· Regulation (EU) No 649/2012

None of the ingredients is listed.

· National regulations

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they 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; oxidiser.

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.

· **Training hints** Provide adequate information, instruction and training for operators.

· 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

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Ox. Sol. 3: Oxidizing solids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

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.**