

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

Printing date 14.11.2023

Version number 18 (replaces version 17)

Revision: 14.11.2023

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, 00570379

· **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 (0)231 94510-0
e-mail: sales@lovibond.com

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

phone : +44 1980 664800
e-mail: SDS@lovibond.uk

· **Informing department:**

e-mail: sds@lovibond.com
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.
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.

(Contd. on page 2)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.11.2023

Version number 18 (replaces version 17)

Revision: 14.11.2023

Product name: Vario Total N Persulfate RGT

(Contd. of page 1)

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the GB 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.

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.

P302+P352 IF ON SKIN: Wash with plenty of water.

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.

Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

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.

(Contd. on page 3)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.11.2023

Version number 18 (replaces version 17)

Revision: 14.11.2023

Product name: Vario Total N Persulfate RGT

(Contd. of page 2)

- **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.
-

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
 - **Suitable extinguishing agents** Water, Carbon dioxide (CO₂), Foam, Fire-extinguishing powder
 - **For safety reasons unsuitable extinguishing agents**
For this substance / mixture no limitations of extinguishing agents are given.
 - **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 (SO_x)
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.

(Contd. on page 4)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.11.2023

Version number 18 (replaces version 17)

Revision: 14.11.2023

Product name: Vario Total N Persulfate RGT

(Contd. of page 3)

See Section 13 for information on disposal.

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**
- **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.
see chapter 10
- **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.
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.
- **Individual protection measures, such as personal protective equipment**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
- **Eye/face protection** Safety glasses
- **Hand protection**
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.
- **Other skin protection (body protection):** Protective work clothing.

(Contd. on page 5)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.11.2023

Version number 18 (replaces version 17)

Revision: 14.11.2023

Product name: Vario Total N Persulfate RGT

(Contd. of page 4)

- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter P2
- **Environmental exposure controls** 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

- | | |
|---|---|
| · Physical state | Solid. |
| · Form: | Powder |
| · Colour: | White |
| · Odour: | Odourless |
| · Odour threshold: | Not applicable. |
| · Melting point/Freezing point: | Not determined. |
| · Boiling point or initial boiling point and boiling range | Not determined. |
| · Flammability | Contact with combustible material may cause fire. |
| · Explosive properties: | Product is not explosive.
Risk of dust explosion if enriched with fine dust in presence of air |
| · Lower and upper explosion limit | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| · Flash point: | Not applicable. |
| · Auto-ignition temperature: | Not applicable (solid). |
| · Decomposition temperature: | > 100°C (CAS 7727-21-1) |
| · pH (25 g/l) at 20°C | 4.5 |
| · Kinematic viscosity | Not applicable (solid). |
| · Solubility | |
| · Water: | Soluble |
| · Partition coefficient n-octanol/water (log value) | Not applicable (mixture). |
| · Vapour pressure: | Not applicable. |
| · Density and/or relative density | |
| · Density at 20°C: | 2.41 g/cm ³ |
| · Relative density: | Not determined. |
| · Relative gas density | Not applicable (solid). |
| · Particle characteristics | Not determined. |

· 9.2 Other information

· Information with regard to physical hazard classes

- | | |
|---------------------------------------|-------------------------------|
| · Corrosive to metals | Void |
| · Other safety characteristics | |
| · Oxidising properties: | May intensify fire; oxidiser. |
| · Additional information | |
| · Solids content: | 100.0 % |
| · Solvent content: | |
| · Organic solvents: | 0 % |

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

(Contd. on page 6)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.11.2023

Version number 18 (replaces version 17)

Revision: 14.11.2023

Product name: Vario Total N Persulfate RGT

see section 5

(Contd. of page 5)

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008
Acute toxicity

 Classification according to calculation procedure:
 Harmful if swallowed.

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

Oral	CLP ATE _(MX)	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)
	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)

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)

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)

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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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.

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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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 likely routes of exposure

In persons occupationally exposed to persulphates, skin diseases have been observed very frequently, which were attributed to irritative effects on the one hand, but predominantly to allergic reactions. In addition to the above-mentioned early-type reactions, allergic dermatitis and chronic recurrent eczema have been described as late-type reactions. (GESTIS)

(Contd. on page 7)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.11.2023

Version number 18 (replaces version 17)

Revision: 14.11.2023

Product name: Vario Total N Persulfate RGT

(Contd. of page 6)

· Additional toxicological information:	
CAS: 7775-27-1 disodium peroxodisulphate	
·	(source: GESTIS) acute: irritant effect on mucous membranes, sensitising effect, danger of acute intolerance reactions chronic: allergic skin and respiratory diseases[GESTIS]
CAS: 7727-21-1 potassium persulphate	
·	(source: GESTIS) acute: sensitising effect, danger of acute hypersensitivity reactions. chronic: allergic skin and respiratory diseases[GESTIS]

· 11.2 Information on other hazards
· Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.

· Other information

Other dangerous properties can not be excluded.

According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

SECTION 12: Ecological information

· 12.1 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/48h (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:

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 Endocrine disrupting properties The product does not contain substances with endocrine disrupting properties.

· 12.7 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.

 GB
 (Contd. on page 8)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.11.2023

Version number 18 (replaces version 17)

Revision: 14.11.2023

Product name: Vario Total N Persulfate RGT

(Contd. of page 7)

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

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

SECTION 14: Transport information

· 14.1 UN number or ID number · ADR, IMDG, IATA	UN3215
· 14.2 UN proper shipping name · ADR · IMDG, IATA	3215 PERSULPHATES, INORGANIC, N.O.S. PERSULPHATES, INORGANIC, N.O.S.
· 14.3 Transport hazard class(es) · ADR	
	
· Class · Label	5.1 (O2) Oxidising substances. 5.1
· IMDG, IATA	
	
· Class · Label	5.1 Oxidising substances. 5.1
· 14.4 Packing group · ADR, IMDG, IATA	III
· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user · Kemler Number: · EMS Number: · Stowage Category · Segregation Code	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
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR · 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
· Transport category	3

(Contd. on page 9)

GB

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.11.2023

Version number 18 (replaces version 17)

Revision: 14.11.2023

Product name: Vario Total N Persulfate RGT

(Contd. of page 8)

· Tunnel restriction code	E
· IMDG	
· Limited quantities (LQ)	5 kg
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g

SECTION 15: Regulatory information

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

· Poisons Act UK

· Regulated explosives precursors

None of the ingredients is listed.

· Regulated poisons

None of the ingredients is listed.

· Reportable explosives precursors

None of the ingredients is listed.

· Reportable poisons

None of the ingredients is listed.

· Regulation (EU) 2019/1148 on the marketing and use of explosives precursors not regulated

· Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)

None of the ingredients is listed.

· Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:

None of the ingredients is listed.

· Regulation (EC) No 273/2004 on drug precursors

None of the ingredients is listed.

· Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients is listed.

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

None of the ingredients is listed.

· REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)

None of the ingredients is listed.

· LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)

None of the ingredients is listed.

· Substances of very high concern (SVHC) according to REACH, Article 57

This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).

· Substances of very high concern (SVHC) according to UK REACH

This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).

· 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

· Information about limitation of use: Employment restrictions concerning young persons must be observed (94/33/EC).

· 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.

(Contd. on page 10)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.11.2023

Version number 18 (replaces version 17)

Revision: 14.11.2023

Product name: Vario Total N Persulfate RGT

(Contd. of page 9)

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

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

· **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.

· **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 relatif au transport international 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
 SVHC: Substances of Very High Concern
 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.**