

Safety data sheet
according to 1907/2006/EC (REACH)

Printing date 17.11.2019

Rev. n. 6

Revision: 17.11.2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

Trade name: **PERVELOX EVO 50**
E02

1.2 Relevant identified uses of the substance or mixture and uses advised against

Formulation and packing into small containers. Industrial use as polymerisation initiator for production of polymers, and as cross-linking agent for the manufacture of resins. Professional use as hardener for coating resins.

[SU 9, SU 10, SU12, SU 22] [PROC 3, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 14, PROC 19, PROC 21]

Application of the substance / the mixture

Dibenzoyl peroxide, paste

Hardening agent / Curing agent

Polymerisation catalyst

1.3 Details of the supplier of the safety data sheet**Manufacturer/Supplier:**

RAICHEM S.r.l.

Via Don Grazioli, 53 - Località Gavassa

42122 Reggio Emilia (Italy)

Tel. +39 0522 511182 - Fax +39 0522 920616

Further information obtainable from: RAICHEM S.r.l. - E-mail: laboratorio@raichem.it

1.4 Emergency telephone number:

UNITED KINGDOM

National Poisons Information Service (NPIS) - Tel: +44 844 8920111

RAICHEM S.r.l. - Technical support: Tel. +39 0522 511182 (Monday-Friday: 8.00-12.00 AM, 2.00-6.00 PM)

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Org. Perox. E H242 Heating may cause a fire.

Eye Irrit. 2 H319 Causes serious eye irritation.

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

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

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

GHS02

GHS07

GHS09

Signal word Warning**Hazard-determining components of labelling:**

dibenzoyl peroxide

Hazard statements

H242 Heating may cause a fire.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P280 Wear protective gloves/protective clothing/eye protection/face 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.

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

P403+P235 Store in a well-ventilated place. Keep cool.

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P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

* SECTION 3: Composition/information on ingredients

- **3.2 Mixtures**
- **Description:** Mixture of substances listed below with nonhazardous additions.

· Components:		
CAS: 94-36-0 EINECS: 202-327-6 Index number: 617-008-00-0 Reg.nr.: 01-2119511472-50-XXXX	dibenzoyl peroxide ⚠ Org. Perox. B, H241; ⚠ Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=10); ⚠ Eye Irrit. 2, H319; Skin Sens. 1, H317	45-52%
CAS: 131-11-3 EINECS: 205-011-6 Reg.nr.: 01-2119437229-36-XXXX	dimethyl phthalate substance with a Community workplace exposure limit	25-35%
CAS: 107-21-1 EINECS: 203-473-3 Index number: 603-027-00-1 Reg.nr.: 01-2119456816-28-XXXX	ethanediol ⚠ STOT RE 2, H373; ⚠ Acute Tox. 4, H302	0.1-9.9%

- **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**
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
If skin irritation continues, consult a doctor.
Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Do not induce vomiting; call for medical help immediately.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **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:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Carbonic anhydride (CO₂)
Carbon monoxide (CO)
Benzoic acid
Benzene
Biphenyl
Phenyl benzoate
Under certain fire conditions, traces of other toxic gases cannot be excluded.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Do not inhale explosion gases or combustion gases.
Mouth respiratory protective device.
Wear suitable fire protection equipment.
- **Additional information**
Cool endangered receptacles with water spray.

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Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Keep away from ignition sources.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Use respiratory protective device against the effects of fumes/dust/aerosol.

· 6.2 Environmental precautions:

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· 6.3 Methods and material for containment and cleaning up:

Pick up mechanically.

Do not allow to dry out

Ensure adequate ventilation.

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

* SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Use only in well ventilated areas.

Ensure good ventilation/exhaustion at the workplace.

Keep away from heat and direct sunlight.

Protect against electrostatic charges.

· Information about fire - and explosion protection:

Substance/product is oxidising when dry.

Keep ignition sources away - Do not smoke.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles:

Store in a cool location.

Store only in the original receptacle.

· Information about storage in one common storage facility:

Do not store together with reducing agents, heavy-metal compounds, acids and alkalis.

· Further information about storage conditions:

Store receptacle in a well ventilated area.

Prevent from drying out.

Keep container tightly sealed.

The product, stored in the original containers, away from sunlight, maintains its properties for 12 months from the production date.

· Recommended storage temperature: +5 °C / +25 °C

· 7.3 Specific end use(s) No further relevant information available.

* SECTION 8: Exposure controls/personal protection

· Additional information about design of technical facilities: No further data; see item 7.

· 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:

94-36-0 dibenzoyl peroxide

WEL (Great Britain) Long-term value: 5 mg/m³

PEL (USA) Long-term value: 5 mg/m³

REL (USA) Long-term value: 5 mg/m³

TLV (USA) Long-term value: 5 mg/m³

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131-11-3 dimethyl phthalate	
WEL (Great Britain)	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³
PEL (USA)	Long-term value: 5 mg/m ³
REL (USA)	Long-term value: 5 mg/m ³
TLV (USA)	Long-term value: 5 mg/m ³
107-21-1 ethanediol	
IOELV (EU)	Short-term value: 104 mg/m ³ , 40 ppm Long-term value: 52 mg/m ³ , 20 ppm Skin
WEL (Great Britain)	Short-term value: 104** mg/m ³ , 40** ppm Long-term value: 10* 52** mg/m ³ , 20** ppm Sk *particulate **vapour
TLV (USA)	Short-term value: NIC-127* NIC-10** mg/m ³ , NIC-50* ppm Long-term value: NIC-63.5* mg/m ³ , NIC-25* ppm Ceiling limit: (100) mg/m ³ (H); *inh. fraction + vapor, P:**inh. fraction, H

· **Regulatory information**

WEL (Great Britain): EH40/2011

PEL (USA): Permissible Exposure Limits (OSHA)

REL (USA): Recommended Exposure Limits (NIOSH)

TLV (USA): Threshold Limit Values (ACGIH)

IOELV (EU): Dir. 2009/161/EU

· **DNELs**

94-36-0 dibenzoyl peroxide		
Oral	DNEL / Long term exposure - Systemic effects	2 mg/kg bw/d (general population)
Dermal	DNEL / Long term exposure - Systemic effects	13.3 mg/kg bw/d (workers)
Inhalative	DNEL / Long term exposure - Systemic effects	39 mg/m ³ (workers)

· **PNECs**

94-36-0 dibenzoyl peroxide	
PNEC / aqua	0.00002 mg/l (freshwater)
	0.000602 mg/l (intermittent releases)
	0.000002 mg/l (marine water)
PNEC / sediment	0.0127 mg/kg dw (freshwater)
	0.00127 mg/kg dw (marine water)
PNEC / soil	0.0025 mg/kg dw
PNEC / STP	0.35 mg/l (sewage treatment plant)

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Do not eat, drink, smoke or sniff while working.

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

· **Respiratory protection:** Use suitable respiratory protective device in case of insufficient ventilation.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

Neoprene gloves

Nitrile rubber, NBR

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Recommended thickness of the material: ≥ 0.14 mm

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

For the mixture of chemicals mentioned, the penetration time has to be at least 30 minutes (Permeation according to EN 374 Part 3: Level 2).

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Light weight protective clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

- **Form:** Pasty
- **Colour:** Different according to colouring
- **Odour:** Characteristic
- **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

- **Melting point/Melting range:** Undetermined.
- **Boiling point/Boiling range:** Undetermined.

· **Flash point:** Not applicable.
Above the SADT value.

· **Flammability (solid, gaseous):** May cause fire.

· **Ignition temperature:**

- **Decomposition temperature:** Not determined.
SADT = 50 °C

· **Self-igniting:** Not determined.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

- **Lower:** Not determined.
- **Upper:** Not determined.

· **Vapour pressure:** Not determined.

- **Density at 20 °C:** 1.15-1.25 g/cm³
- **Relative density** Not determined.
- **Vapour density** Not determined.
- **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

- **water:** Insoluble.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

- **Dynamic:** Not determined.
- **Kinematic:** Not determined.

· **Solvent content:**

- **VOC (UE)** Not applicable.

· **9.2 Other information** No further relevant information available.

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SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
 - **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
Exothermic thermal decomposition.
Visible decomposition with spontaneous ignition on heating.
SADT = 50 °C
SADT (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport.
A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the SADT.
Contact with incompatible substances can cause decomposition at or below the SADT.
- **10.3 Possibility of hazardous reactions**
Reacts with reducing agents.
Reacts with heavy metals.
Reacts with alkali, amines and strong acids.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
Reducing agents like amines, acids, alkali, compounds based on heavy metals (p.e. accelerators)
- **10.6 Hazardous decomposition products:**
Benzoic acid
Benzene
Biphenyl
Phenyl benzoate

SECTION 11: Toxicological information

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

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

94-36-0 dibenzoyl peroxide

Oral	LD0	2000 mg/kg (rat)
Inhalative	LC0	24.3 mg/l (rat)

- **Primary irritant effect:**
 - **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
 - **Serious eye damage/irritation**
Causes serious eye irritation.
 - **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
 - **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-single exposure** Based on available data, the classification criteria are not met.
 - **STOT-repeated exposure** Based on available data, the classification criteria are not met.
 - **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**

· **Aquatic toxicity:**

94-36-0 dibenzoyl peroxide

LC50 / 96h	0.0602 mg/l (fish - <i>Oncorhynchus mykiss</i>) (OECD TG 203)
EC50 / 48h	0.110 mg/l (crustacea - <i>Daphnia magna</i>) (OECD TG 202)
ErC50 / 72h	0.0711 mg/l (algae - <i>Pseudokirchneriella subcapitata</i>) (OECD TG 201)
M Factor Acute	10

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NOEC / 96h	0.0316 mg/l (fish)
EC10 / 21d	0.001 mg/l (crustacea - <i>Daphnia magna</i>) (OECD TG 211)
NOEC / 72 h	0.02 mg/l (algae - <i>Pseudokirchneriella subcapitata</i>)
M Factor Chronic	10

· **12.2 Persistence and degradability**

94-36-0 dibenzoyl peroxide

Ready Biodegradability in water / 28d | 71 % (OECD TG 301 D)

· **12.3 Bioaccumulative potential**

94-36-0 dibenzoyl peroxide

Log Kow | 3.2 (OECD TG 117)

· **12.4 Mobility in soil**

94-36-0 dibenzoyl peroxide

Log Koc | 3.8 (OECD TG 121)

· **Ecotoxicological effects:**

· **Remark:** Very toxic for fish

· **Additional ecological information:**

· **General notes:**

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

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

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according to official regulations.

· **Uncleaned packaging:**

· **Recommendation:**

Disposal must be made according to official regulations.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA**

UN3108

· **14.2 UN proper shipping name**

· **ADR**

ORGANIC PEROXIDE TYPE E, SOLID, ENVIRONMENTALLY HAZARDOUS

· **IMDG**

ORGANIC PEROXIDE TYPE E, SOLID, MARINE POLLUTANT

· **IATA**

ORGANIC PEROXIDE TYPE E, SOLID

· **14.3 Transport hazard class(es)**

· **ADR, IATA**



· **Class**

5.2 Organic peroxides.

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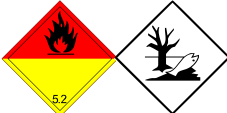
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· Label	5.2
· IMDG	
	
· Class	5.2 Organic peroxides.
· Label	5.2
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant:	Yes Symbol (fish and tree)
· 14.6 Special precautions for user · Danger code (Kemler): · EMS Number: · Stowage Category · Stowage Code · Segregation Code	Warning: Organic peroxides. - F-J,S-R D SW1 Protected from sources of heat. SG35 Stow "separated from" acids. SG36 Stow "separated from" alkalis.
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code	500 g 2 D
· IMDG · Limited quantities (LQ)	500 g
· UN "Model Regulation":	UN 3108 ORGANIC PEROXIDE TYPE E, SOLID, 5.2, ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
Regulation (EC) No 1907/2006 (REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals)
Regulation (EC) No 1272/2008 (CLP - Classification, Labelling and Packaging of substances and mixtures)
Compilation of Safety Data Sheet: Reg.UE n. 830/2015 (amending Reg.EC n.1907/2006, Annex II)
- **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category**
P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES
E1 Hazardous to the Aquatic Environment
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **National regulations:**
· **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

* SECTION 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**
H241 Heating may cause a fire or explosion.
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.

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H319 Causes serious eye irritation.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H400 Very toxic to aquatic life.
 H410 Very toxic to aquatic life with long lasting effects.

(→1.2) Relevant identified uses of the substance or mixture and uses advised against
 No further relevant information available.

· Sector of Use

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
 SU9 Manufacture of fine chemicals
 SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
 SU12 Manufacture of plastics products, including compounding and conversion
 SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

· Process category

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
 PROC5 Mixing or blending in batch processes
 PROC7 Industrial spraying
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
 PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
 PROC10 Roller application or brushing
 PROC11 Non industrial spraying
 PROC13 Treatment of articles by dipping and pouring
 PROC14 Tableting, compression, extrusion, pelletisation, granulation
 PROC19 Manual activities involving hand contact
 PROC21 Low energy manipulation and handling of substances bound in/on materials or articles

· Environmental release category

ERC2 Formulation into mixture
 ERC6d Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
 ERC8b Widespread use of reactive processing aid (no inclusion into or onto article, indoor)
 ERC8e Widespread use of reactive processing aid (no inclusion into or onto article, outdoor)

· Contact: Raichem S.r.l.

· Abbreviations and acronyms:

REACH: Registration, Evaluation and Restriction of Chemicals
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
 CLP: Classification, Labelling and Packaging
 TLV: Threshold Limit Value
 TLV-TWA: Threshold Limit Value - Time Weighted Average
 TLV-STEL: Threshold Limit Value - Short Term Exposure Limit
 IOELV: Indicative Occupational Exposure Limit Value
 BEI: Biological Exposure Indices
 LD50: Lethal dose, 50 percent
 LC50: Lethal Concentration, 50 percent
 Kow: Octanol-Water partition coefficient
 BCF: BioConcentration Factor
 LC50: LC50: Lethal Concentration, 50 percent
 EC50: Effective Concentration, 50 percent
 ErC50: Effective Concentration, 50 percent, growth rate
 WGK: Wassergefährdungsklasse - Water hazard class [Germany]
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 ACGIH: American Conference of Governmental Industrial Hygienists [USA]
 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)
 VOC: Volatile Organic Compounds (USA, EU)
 DNEL: Derived No-Effect Level (REACH)
 PNEC: Predicted No-Effect Concentration (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 Org. Perox. B: Organic peroxides – Type B
 Org. Perox. E: Organic peroxides – Type E/F
 Acute Tox. 4: Acute toxicity – Category 4
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 Skin Sens. 1: Skin sensitisation – Category 1
 STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
 Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
 Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

· * Data compared to the previous version altered.