

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

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

1.1 Product identifier

Trade name : TRIGONOX 44B VRN

UFI : 3533-10U0-W00J-QM6W

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

Use of the Substance/Mixture : Curing agent

1.3 Details of the supplier of the safety data sheet

Company : Nouryon Functional Chemicals B.V.
Haaksbergweg 88
NL 1101 BZ Amsterdam
Netherlands

Telephone : +31889840367

E-mail address of person responsible for the SDS : polymer.emeia@nouryon.com

1.4 Emergency telephone number

Emergency telephone number : 24 hours:+31 57 06 79211, US-CHEMTREC:1-800-424-9300, CA-CANUTEC:1-613-996-6666, JP: +81 (836) 74 8810, CN: 化学事故应急咨询电话 : +86 532 8388 9090-: Nouryon Emergency Response Centre: +31 570 679211
Poison Information Centre: 09-471977

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Organic peroxides, Type E	H242: Heating may cause a fire.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 2	H361d: Suspected of damaging the unborn child.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Specific target organ toxicity - single exposure, Category 3, Respiratory system

H335: May cause respiratory irritation.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements :

- H242 Heating may cause a fire.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H361d Suspected of damaging the unborn child.

Precautionary statements : **Prevention:**

- P201 Obtain special instructions before use.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P234 Keep only in original packaging.
- P261 Avoid breathing mist or vapours.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

- P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Hazardous components which must be listed on the label:

Diacetone alcohol
Acetylacetone peroxide

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version
2.0

Revision Date:
26.12.2022

FI / EN

Date of last issue: 12.11.2018
Date of first issue: 12.11.2018

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Diacetone alcohol	123-42-2 204-626-7 603-016-00-1 01-2119473975-21	Eye Irrit. 2; H319 Repr. 2; H361d STOT SE 3; H335 (Respiratory system) specific concentration limit Eye Irrit. 2; H319 ≥ 10 %	≥ 45 - ≤ 55
Acetylacetone peroxide	37187-22-7 253-384-9 01-2119965139-28	Org. Perox. D; H242 Eye Irrit. 2; H319 Skin Sens. 1B; H317	≥ 25 - ≤ 35
Diethylene glycol	111-46-6 203-872-2 603-140-00-6 01-2119457857-21	Acute Tox. 4; H302 Acute toxicity estimate Acute oral toxicity: 300,03 mg/kg	≥ 5 - ≤ 9
Acetylacetone	123-54-6 204-634-0 606-029-00-0 01-2119458968-15	Flam. Liq. 3; H226 Acute Tox. 4; H302 Acute Tox. 3; H331 Acute Tox. 3; H311 Acute toxicity estimate Acute oral toxicity: 570 mg/kg Acute inhalation toxicity (vapour): 5,1 mg/l Acute dermal toxicity:	≥ 0,1 - ≤ 6

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version
2.0

Revision Date:
26.12.2022

FI / EN

Date of last issue: 12.11.2018
Date of first issue: 12.11.2018

Hydrogen peroxide solution	7722-84-1 231-765-0 008-003-00-9 01-2119485845-22	<p>790 mg/kg</p> <p>Ox. Liq. 1; H271 Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system) Aquatic Chronic 3; H412</p> <hr/> <p>specific concentration limit</p> <p>Ox. Liq. 1; H271 ≥ 70 % Ox. Liq. 2; H272 50 - < 70 % Skin Corr. 1A; H314 ≥ 70 % Skin Corr. 1B; H314 50 - < 70 % Skin Irrit. 2; H315 35 - < 50 % Eye Dam. 1; H318 8 - < 50 % Eye Irrit. 2; H319 5 - < 8 % STOT SE 3; H335 ≥ 35 % Aquatic Chronic 3; H412 ≥ 63 %</p> <hr/> <p>Acute toxicity estimate</p> <p>Acute oral toxicity: 431 mg/kg Acute inhalation toxicity (dust/mist): 1,5 mg/l</p>	≥ 1 - ≤ 2
----------------------------	--	--	-----------

For explanation of abbreviations see section 16.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

SECTION 4: First aid measures

4.1 Description of first aid measures

- | | | |
|-------------------------|---|---|
| General advice | : | Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance. |
| If inhaled | : | If breathed in, move person into fresh air.
Consult a physician after significant exposure. |
| In case of skin contact | : | Take off contaminated clothing and shoes immediately.
Rinse immediately with plenty of water.
If skin irritation persists, call a physician. |
| In case of eye contact | : | Rinse with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
Obtain medical attention. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.
Obtain medical attention. |

4.2 Most important symptoms and effects, both acute and delayed

- | | | |
|----------|---|--|
| Symptoms | : | The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known. |
| Risks | : | May cause an allergic skin reaction.
Causes serious eye irritation.
May cause respiratory irritation.
Suspected of damaging the unborn child. |

4.3 Indication of any immediate medical attention and special treatment needed

- | | | |
|-----------|---|------------------------|
| Treatment | : | Treat symptomatically. |
|-----------|---|------------------------|
-

SECTION 5: Firefighting measures

5.1 Extinguishing media

- | | | |
|------------------------------|---|--|
| Suitable extinguishing media | : | Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. |
|------------------------------|---|--|

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting : CAUTION: reignition may occur.
Supports combustion.
Water spray may be ineffective unless used by experienced firefighters.
Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous decomposition products formed under fire conditions.
- Hazardous combustion products : Fire will produce smoke containing hazardous combustion products (see section 10).
Carbon oxides
Oxygen

5.3 Advice for firefighters

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.
- Further information : Use water spray to cool unopened containers.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : Use personal protective equipment.
Wear respiratory protection.
Ensure adequate ventilation.
Remove all sources of ignition.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Evacuate personnel to safe areas.
Only qualified personnel equipped with suitable protective equipment may intervene.
Prevent unauthorised persons entering the zone.

6.2 Environmental precautions

- Environmental precautions : Prevent product from entering drains.
Discharge into the environment must be avoided.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material and dispose of as hazardous waste.
Use only inert inorganic material such as vermiculite or perlite as absorbent.
Keep mixture of absorbent material and spilled product wetted with water.
Confinement must be avoided.
Never return spills in original containers for re-use.

6.4 Reference to other sections

For disposal considerations see section 13.

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : For personal protection see section 8.
Avoid formation of aerosol.
Do not breathe vapours or spray mist.
Avoid contact with skin, eyes and clothing.
Smoking, eating and drinking should be prohibited in the application area.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Use explosion protected equipment. Keep away from sources of ignition - No smoking. No sparking tools should be used.
Keep away from reducing agents (e.g. amines), acids, alkalies and heavy metal compounds (e.g. accelerators, driers, metal soaps). Do not cut or weld on or near this container even when empty. Keep away from combustible material.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.
Wash contaminated clothing before re-use.

Temperature class : It is recommended to use electrical equipment of temperature group T3. However, autoignition can never be excluded.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Prevent unauthorized access. No smoking. Keep in a well-ventilated place. Electrical installations / working materials must comply with the technological safety standards. Keep

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version 2.0 Revision Date: 26.12.2022 FI / EN Date of last issue: 12.11.2018
Date of first issue: 12.11.2018

only in original container. Store away from other materials.

Further information on storage stability : Maximum storage temperature is for quality only.

Minimum storage temperature: : Avoid temperatures below: -10 °C

Maximum storage temperature: : 25 °C

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Diacetone alcohol	123-42-2	HTP-arvot 8h	50 ppm 240 mg/m ³	FI OEL
		HTP-arvot 15 min	75 ppm 360 mg/m ³	FI OEL
Hydrogen peroxide solution	7722-84-1	HTP-arvot 15 min	3 ppm 4,2 mg/m ³	FI OEL
		HTP-arvot 8h	1 ppm 1,4 mg/m ³	FI OEL
		HTP-arvot 8h	1 ppm 1,4 mg/m ³	FI OEL
		HTP-arvot 15 min	3 ppm 4,2 mg/m ³	FI OEL

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Carbon dioxide	124-38-9	TWA	5.000 ppm 9.000 mg/m ³	2006/15/EC
	Further information: Indicative			
		HTP-arvot 8h	5.000 ppm 9.100 mg/m ³	FI OEL

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Diacetone alcohol	Workers	Dermal	Long-term systemic	9,4 mg/kg

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version
2.0

Revision Date:
26.12.2022

FI / EN

Date of last issue: 12.11.2018

Date of first issue: 12.11.2018

	Workers	Inhalation	effects	bw/day
	Workers	Inhalation	Long-term systemic effects	66,4 mg/m ³
	Workers	Inhalation	Acute local effects	240 mg/m ³
	Workers	Inhalation	Long-term local effects	66,4 mg/m ³
	Consumers	Inhalation	Acute local effects	120 mg/m ³
	Consumers	Dermal	Long-term systemic effects	3,4 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	3,4 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	11,8 mg/m ³
	Consumers	Inhalation	Long-term local effects	11,8 mg/m ³
Acetylacetone peroxide	Workers	Inhalation	Long-term systemic effects	4,41 mg/m ³
	Workers	Dermal	Long-term systemic effects	5 mg/kg bw/day
	Workers	Dermal	Acute systemic effects	
Remarks:Qualitative assessment, High, Hazardous				
Diethylene glycol	Workers	Inhalation	Long-term systemic effects	44 mg/m ³
	Workers	Inhalation	Long-term local effects	60 mg/m ³
	Workers	Dermal	Long-term systemic effects	43 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	12 mg/m ³
	Consumers	Inhalation	Long-term local effects	12 mg/m ³
	Consumers	Dermal	Long-term systemic effects	21 mg/kg bw/day
Hydrogen peroxide solution	Workers	Inhalation	Acute local effects	3 mg/m ³
	Workers	Inhalation	Long-term local effects	1,4 mg/m ³
	Consumers	Inhalation	Long-term local effects	0,21 mg/m ³
	Consumers	Inhalation	Acute local effects	1,93 mg/m ³
Acetylacetone	Workers	Inhalation	Long-term systemic effects	84 mg/m ³
	Workers	Dermal	Long-term systemic effects	12 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version
2.0

Revision Date:
26.12.2022

FI / EN

Date of last issue: 12.11.2018

Date of first issue: 12.11.2018

Substance name	Environmental Compartment	Value
Diacetone alcohol	Fresh water	2 mg/l
	Intermittent water	1 mg/l
	Marine water	0,2 mg/l
	Fresh water sediment	9,06 mg/kg dry weight
	Marine sediment	0,91 mg/kg dry weight
	Sewage treatment plant	82 mg/l
	Soil	0,63 mg/kg dry weight
Acetylacetone peroxide	Fresh water	0,17 mg/l
	Intermittent water	0,0054 mg/l
	Marine water	0,017 mg/l
	Fresh water sediment	1,53 mg/kg dry weight
	Marine sediment	0,153 mg/kg dry weight
	Sewage treatment plant	6,2 mg/l
Diethylene glycol	Fresh water	10 mg/l
	Marine water	1 mg/l
	Intermittent water	10 mg/l
	Sewage treatment plant	199,5 mg/l
	Fresh water sediment	20,9 mg/kg dry weight (d.w.)
	Marine sediment	2,09 mg/kg dry weight (d.w.)
Hydrogen peroxide solution	Soil	1,53 mg/kg dry weight (d.w.)
	Fresh water	0,0126 mg/l
	Marine water	0,0126 mg/l
	Soil	0,0023 mg/kg
	Sewage treatment plant	4,66 mg/l
	Fresh water sediment	0,047 mg/kg
Acetylacetone	Marine sediment	0,047 mg/kg
	Intermittent water	0,0138 mg/l
	Marine water	0,02 mg/l
	Intermittent water	0,26 mg/l
Acetylacetone	Sewage treatment plant	1,32 mg/l
	Fresh water sediment	1,909 mg/kg dry weight
	Marine sediment	0,191 mg/kg dry weight
	Soil	0,193 mg/kg dry weight

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version 2.0	Revision Date: 26.12.2022	FI / EN	Date of last issue: 12.11.2018 Date of first issue: 12.11.2018
----------------	------------------------------	---------	---

	Fresh water	0,2 mg/l
--	-------------	----------

8.2 Exposure controls

Engineering measures

Explosion proof ventilation recommended.
Effective exhaust ventilation system
Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection : Tightly fitting safety goggles

Hand protection
Material : Neoprene
Material : Nitrile rubber

Skin and body protection : Protective suit

Respiratory protection : In the case of vapour or aerosol formation use a respirator with an approved filter.
Filter A

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : red

Odour : Faint.

Odour Threshold : No data available

Melting point : <= -10 °C

Boiling point/boiling range : Decomposes below the boiling point.

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Flash point : Above the SADT value

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

No flash point was obtained, but the product may release flammable vapour.

- | | | |
|--|---|---|
| Auto-ignition temperature | : | Test method not applicable |
| Decomposition temperature | : | 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 below the SADT. |
| Self-Accelerating decomposition temperature (SADT) | : | 60 °C |
| pH | : | substance/mixture not stable |
| Viscosity | | |
| Viscosity, dynamic | : | 21 mPa.s (20 °C) |
| Viscosity, kinematic | : | 19,91 mm ² /s (20 °C) |
| Solubility(ies) | | |
| Water solubility | : | (20 °C)
miscible |
| Solubility in other solvents | : | Description: Soluble in most organic solvents. |
| Partition coefficient: n-octanol/water | : | No data available |
| Vapour pressure | : | 1 hPa (20 °C) |
| Relative density | : | 1,055 (20 °C) |
| Bulk density | : | Not applicable |
| Relative vapour density | : | No data available |

9.2 Other information

- | | | |
|----------------------|---|------------------------------|
| Explosives | : | Not explosive |
| Oxidizing properties | : | Not classified as oxidising. |

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Flammability (liquids)	:	Decomposition products may be flammable.
Evaporation rate	:	No data available
Active Oxygen Content	:	4,0 %
Organic peroxides	:	25 - 35 %

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : A high degree of confinement must be avoided.
Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Contact with the following incompatible materials will result in hazardous decomposition:
Acids and bases
Iron
Copper
Reducing agents
Heavy metals
Rust
Do not mix with peroxide accelerators, unless under controlled processing.
Use only stainless steel 316, PP, polyethylene or glass-lined equipment.
For queries regarding the suitability of other materials please contact the supplier.

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.
Hazardous decomposition products : Carbon oxides
Acetylacetone
Hydrocarbons
Carbon dioxide

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Thermal decomposition : 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 below the SADT.

Self-Accelerating decomposition temperature (SADT) : 60 °C

SECTION 11: Toxicological information

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

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
 Method: OECD Test Guideline 401
 GLP: yes
 Assessment: The component/mixture is minimally toxic after single ingestion.
 Remarks: The value is calculated

Acute inhalation toxicity : LC50 (Rat, male): > 13,1 mg/l
 Exposure time: 1 h
 Test atmosphere: aerosol
 Assessment: The substance or mixture has no acute inhalation toxicity
 Remarks: The value is calculated

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
 Method: OECD Test Guideline 402
 GLP: yes
 Assessment: The substance or mixture has no acute dermal toxicity
 Remarks: The value is calculated

Components:

Diacetone alcohol:

Acute oral toxicity : LD50 (Rat, male and female): 3.002 mg/kg

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Method: OECD Test Guideline 401
Symptoms: Central nervous system depression

Acute inhalation toxicity : LC0 (Rat, male and female): > 7,6 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD0 (Rat, male and female): > 1.875 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Acetylacetone peroxide:

Acute oral toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 401
GLP: yes

Acute inhalation toxicity : LC50 (Rat, male): > 13,1 mg/l
Exposure time: 1 h
Test atmosphere: aerosol
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity

Diethylene glycol:

Acute oral toxicity : LD50 Oral (Rat, male and female): > 300 - 2.000 mg/kg

Acute toxicity estimate: 300,03 mg/kg
Method: Calculation method

Acute inhalation toxicity : Remarks: Not classified due to data which are conclusive although insufficient for classification.

Acute dermal toxicity : Remarks: Based on available data, the classification criteria are not met.

Acetylacetone:

Acute oral toxicity : LD50 (Rat, female): 570 mg/kg

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

		Acute toxicity estimate: 570 mg/kg Method: Calculation method
Acute inhalation toxicity	:	LC50 (Rat, male and female): 5,1 mg/l Exposure time: 4 h Test atmosphere: vapour
		Acute toxicity estimate: 5,1 mg/l Test atmosphere: vapour Method: Calculation method
Acute dermal toxicity	:	LD50 (Rabbit, female): 790 mg/kg
		Acute toxicity estimate: 790 mg/kg Method: Calculation method
Hydrogen peroxide solution:		
Acute oral toxicity	:	LD50 (Rat): 431 mg/kg Method: OECD Test Guideline 401 Remarks: Information taken from reference works and the literature.
		Acute toxicity estimate: 431 mg/kg Method: Calculation method
Acute inhalation toxicity	:	LC50: 1,5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Expert judgement
		Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.
		Acute toxicity estimate: 1,5 mg/l Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	LD50 Dermal (Rabbit, male): > 5.000 mg/kg Remarks: Information taken from reference works and the literature.

Skin corrosion/irritation

Not classified based on available information.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Components:

Diacetone alcohol:

Species : Rabbit
 Method : OECD Test Guideline 404
 Result : No skin irritation

Acetylacetone peroxide:

Species : Rabbit
 Method : OECD Test Guideline 404
 Result : No skin irritation
 GLP : yes

Diethylene glycol:

Species : Rabbit
 Exposure time : 23 h
 Method : Draize Test
 Result : No skin irritation
 Remarks : Information taken from reference works and the literature.

Acetylacetone:

Species : Rabbit
 Result : No skin irritation

Hydrogen peroxide solution:

Result : Causes severe burns.

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

Diacetone alcohol:

Species : Rabbit
 Method : OECD Test Guideline 405
 Result : Irritation to eyes, reversing within 21 days

Acetylacetone peroxide:

Species : Rabbit
 Method : OECD Test Guideline 405
 Result : Irritating to eyes.
 GLP : yes

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Diethylene glycol:

Species	:	Rabbit
Exposure time	:	24 h
Result	:	No eye irritation
Remarks	:	Information taken from reference works and the literature.

Acetylacetone:

Species	:	Rabbit
Result	:	No eye irritation

Hydrogen peroxide solution:

Assessment	:	Causes severe burns.
------------	---	----------------------

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Components:

Diacetone alcohol:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.
Method	:	OECD Test Guideline 406

Acetylacetone peroxide:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Assessment	:	The product is a skin sensitiser, sub-category 1B.
Method	:	OECD Test Guideline 406
GLP	:	yes

Assessment	:	Eye irritation
------------	---	----------------

May be harmful if swallowed.

Diethylene glycol:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Method	:	Regulation (EC) No. 440/2008, Annex, B.6

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Result : Does not cause skin sensitisation.
 GLP : yes

Acetylacetone:

Test Type : Local lymph node assay (LLNA)
 Species : Mouse
 Assessment : Does not cause skin sensitisation.
 Method : OECD Test Guideline 429
 GLP : yes

Germ cell mutagenicity

Not classified based on available information.

Components:

Diacetone alcohol:

Genotoxicity in vitro : Test Type: Ames test
 Test system: Escherichia coli
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative

Test Type: In vitro gene mutation study in mammalian cells
 Test system: mouse lymphoma cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 476
 Result: negative

Test Type: Chromosome aberration test in vitro
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative

Acetylacetone peroxide:

Genotoxicity in vitro : Test Type: Ames test
 Test system: Salmonella typhimurium
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: positive
 GLP: yes

Test Type: In vitro gene mutation study in mammalian cells
 Test system: mouse lymphoma cells
 Metabolic activation: with and without metabolic activation

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version 2.0	Revision Date: 26.12.2022	FI / EN	Date of last issue: 12.11.2018 Date of first issue: 12.11.2018
----------------	------------------------------	---------	---

Method: OECD Test Guideline 476
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Application Route: Intraperitoneal
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Diethylene glycol:
Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male)
Cell type: Bone marrow
Application Route: Intraperitoneal
Method: OECD Test Guideline 474
Result: negative
GLP: yes

Acetylacetone:
Genotoxicity in vitro : Test Type: Ames test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 479
Result: positive
GLP: yes

Test Type: Microbial mutagenesis assay (Ames test)
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version 2.0	Revision Date: 26.12.2022	FI / EN	Date of last issue: 12.11.2018 Date of first issue: 12.11.2018
----------------	------------------------------	---------	---

GLP: yes

Test Type: In vitro gene mutation study in mammalian cells
 Test system: Chinese hamster ovary cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 476
 Result: negative
 GLP: yes

Genotoxicity in vivo

: Test Type: Micronucleus test
 Method: OECD Test Guideline 474
 Result: positive

Test Type: Chromosome aberration test in vivo
 Method: OECD Test Guideline 483
 Result: negative

Test Type: gene mutation test
 Method: OECD Test Guideline 478
 Result: Ambiguous results

Test Type: Chromosome aberration test in vivo
 Method: OECD Test Guideline 475
 Result: negative

Germ cell mutagenicity-
 Assessment

: Not mutagenic.

Hydrogen peroxide solution:

Genotoxicity in vivo

: Species: Mouse (male and female)
 Application Route: Intraperitoneal
 Method: Mutagenicity (micronucleus test)
 Result: negative
 GLP: yes
 Remarks: Information taken from reference works and the literature.

Carcinogenicity

Not classified based on available information.

Components:

Diacetone alcohol:

Result : Not carcinogenic on laboratory animals.
 Remarks : Read-across from supporting substance (structural analogue or surrogate).

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Diethylene glycol:

Species : Rat, male and female
 Application Route : Oral
 NOAEL : > 1.160 mg/kg bw/day
 Remarks : Information taken from reference works and the literature.

Reproductive toxicity

Suspected of damaging the unborn child.

Components:

Diacetone alcohol:

Effects on fertility : Test Type: Fertility/early embryonic development
 Species: Rat, male and female
 Strain: wistar
 Application Route: Oral
 Dose: 0 100, 300, 1000 milligram per kilogram
 General Toxicity - Parent: NOAEL: 300 mg/kg bw/day
 General Toxicity F1: NOAEL F1: 300 mg/kg bw/day
 Method: OECD Test Guideline 422

Effects on foetal development : Species: Rabbit, female
 Application Route: Oral
 Dose: 100, 300, 800 milligram per kilogram
 General Toxicity Maternal: NOAEL: 300 mg/kg bw/day
 Embryo-foetal toxicity: NOAEL: 100 mg/kg bw/day
 Method: OECD Test Guideline 414
 GLP: yes

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

Acetylacetone peroxide:

Effects on foetal development : Test Type: Pre-natal
 Species: Rat, females
 Strain: wistar
 Application Route: Oral
 General Toxicity Maternal: NOAEL: 500 mg/kg bw/day
 Developmental Toxicity: NOAEL: 150 mg/kg bw/day
 Method: OECD Test Guideline 414
 GLP: yes

Diethylene glycol:

Effects on fertility : Test Type: Two-generation study
 Species: Mouse, male and female
 Application Route: Oral

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

General Toxicity - Parent: NOAEL: 3.060 mg/kg bw/day

Effects on foetal development : Test Type: Pre-natal
 Species: Rabbit
 Application Route: Oral
 General Toxicity Maternal: NOAEL: 1.000 mg/kg bw/day
 Method: OECD Test Guideline 414
 GLP: yes

Acetylacetone:

Effects on fertility : Species: Rat
 Application Route: Inhalation
 Dose: 0, 50, 200, 400 ppm
 General Toxicity - Parent: NOAEC: 200 ppm
 Method: OECD Test Guideline 414
 GLP: yes

STOT - single exposure

May cause respiratory irritation.

Components:

Diacetone alcohol:

Exposure routes : Inhalation
 Target Organs : Respiratory system
 Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

STOT - repeated exposure

Not classified based on available information.

Components:

Diacetone alcohol:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

Diacetone alcohol:

Species : Rat
 NOAEL : 100 mg/kg
 Application Route : Oral

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Exposure time : 44 d

Species : Rat
 NOAEL : 1,041 mg/l
 Application Route : Inhalation
 Test atmosphere : vapour
 Exposure time : 14 d
 Target Organs : Kidney

Acetylacetone peroxide:

Species : Rat, male and female
 NOAEL : 1000 mg/kg bw/day
 Application Route : Oral
 Exposure time : 28 d
 Method : OECD Test Guideline 407
 GLP : yes
 Target Organs : Kidney

Species : Rat, male and female
 NOAEL : 250 mg/kg bw/day
 Application Route : Oral
 Exposure time : 90 d
 Method : OECD Test Guideline 408
 GLP : yes

Diethylene glycol:

Species : Rat, male and female
 NOAEL : 936 mg/kg bw/day
 Application Route : Oral
 Method : OECD Test Guideline 407
 GLP : yes

Species : Dog, male
 NOAEL : 2220 mg/kg bw/day
 Application Route : Dermal
 Method : OECD Test Guideline 410
 GLP : yes

Acetylacetone:

Species : Rat, male and female
 NOAEL : 0,42 mg/l
 Application Route : Inhalation
 Test atmosphere : vapour
 Exposure time : 90 d
 Method : OECD Test Guideline 413
 GLP : yes

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Target Organs : Blood, Central nervous system

Aspiration toxicity

Not classified based on available information.

Components:

Diacetone alcohol:

No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : No further data available.

Components:

Acetylacetone:

Remarks : Solvents may degrease the skin.

Hydrogen peroxide solution:

Remarks : No further data available.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Diacetone alcohol:

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): > 100 mg/l
Exposure time: 96 h
Test Type: semi-static test

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1.000 mg/l
Exposure time: 48 h
Test Type: Immobilization
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.000 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

NOEC (Pseudokirchneriella subcapitata (green algae)): 1.000 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): > 1.000 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 100 mg/l
End point: reproduction rate
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211
GLP: yes

Acetylacetone peroxide:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): > 67,6 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 7,1 mg/l
Exposure time: 48 h
Test Type: static test

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 5,4 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC50: 13 mg/l
End point: Immobilization
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: OECD Test Guideline 211
GLP: yes

Diethylene glycol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 75.200 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes

Toxicity to fish (Chronic toxicity) : NOEC: 15.380 mg/l
Exposure time: 7 d
Species: Pimephales promelas (fathead minnow)
Remarks: Information taken from reference works and the literature.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 8.590 mg/l
Species: Ceriodaphnia dubia (water flea)
Remarks: Information taken from reference works and the literature.

Acetylacetone:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 104 mg/l
End point: mortality
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 25,9 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

- GLP: yes
- Toxicity to algae/aquatic plants : EC50 (*Pseudokirchneriella subcapitata* (microalgae)): 83,2 mg/l
 End point: Growth rate
 Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201
 GLP: yes
- Toxicity to microorganisms : EC10 (activated sludge): 13,2 mg/l
 Exposure time: 3 h
 Test Type: static test
 Method: OECD Test Guideline 209
 GLP: yes
- EC50 (activated sludge): 107,6 mg/l
 Exposure time: 3 h
 Test Type: static test
 Method: OECD Test Guideline 209
 GLP: yes
- Toxicity to fish (Chronic toxicity) : NOEC: 10 mg/l
 Exposure time: 34 d
 Species: *Pimephales promelas* (fathead minnow)
 Test Type: flow-through test
 Method: OECD Test Guideline 210
 GLP: yes
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 18 mg/l
 End point: reproduction rate
 Exposure time: 21 d
 Species: *Daphnia magna* (Water flea)
 Test Type: semi-static test
 Method: OECD Test Guideline 211
 GLP: yes
- Hydrogen peroxide solution:**
- Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): 16,4 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Remarks: Information taken from reference works and the literature.
- Toxicity to daphnia and other aquatic invertebrates : LC50 (*Daphnia pulex* (Water flea)): 2,4 mg/l
 Exposure time: 48 h
 Test Type: semi-static test

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Remarks: Information taken from reference works and the literature.

Toxicity to algae/aquatic plants : ErC50 (Skeletonema costatum (marine diatom)): 1,38 mg/l
 Exposure time: 72 h
 Test Type: static test
 Remarks: Information taken from reference works and the literature.

Ecotoxicology Assessment

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

12.2 Persistence and degradability

Components:

Diacetone alcohol:

Biodegradability : Test Type: Ready biodegradability
 Result: Readily biodegradable.
 Biodegradation: 98,5 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301A

Acetylacetone peroxide:

Biodegradability : Test Type: Ready biodegradability
 Inoculum: Activated sludge, domestic, non-adapted
 Result: Readily biodegradable.
 Biodegradation: 61 %
 Related to: Chemical oxygen demand
 Exposure time: 28 d
 Method: OECD Test Guideline 301D
 GLP: yes

Diethylene glycol:

Biodegradability : Test Type: CO2 Evolution Test
 Inoculum: activated sludge, non-adapted
 Result: Readily biodegradable.
 Biodegradation: 70 - 80 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301B

Biochemical Oxygen Demand (BOD) : Remarks: No data available

Acetylacetone:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Biodegradability : Test Type: Ready biodegradability
 Inoculum: activated sludge
 Result: Readily biodegradable.
 Biodegradation: > 80 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301C

Hydrogen peroxide solution:

Biochemical Oxygen Demand (BOD) : Remarks: No data available

12.3 Bioaccumulative potential

Components:

Diacetone alcohol:

Bioaccumulation : Remarks: No bioaccumulation is expected.

Partition coefficient: n-octanol/water : log Pow: -0,09
 Remarks: estimated

Acetylacetone peroxide:

Partition coefficient: n-octanol/water : log Pow: 1,1 (25 °C)
 Method: OECD Test Guideline 117

Diethylene glycol:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: -1,98 (20 °C)

Acetylacetone:

Partition coefficient: n-octanol/water : log Pow: 0,68
 Method: Tested according to Annex V of Directive 67/548/EEC.

Hydrogen peroxide solution:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

12.4 Mobility in soil

Components:

Diethylene glycol:

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version 2.0	Revision Date: 26.12.2022	FI / EN	Date of last issue: 12.11.2018 Date of first issue: 12.11.2018
----------------	------------------------------	---------	---

Mobility : Remarks: Adsorption to the solid soil particles is not expected.

Hydrogen peroxide solution:

Mobility : Remarks: Can be leached out from soil.

Distribution among environmental compartments : Remarks: Transport to air is not expected.

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Components:

Diethylene glycol:

Assessment : This substance is not considered to be a PBT (Persistent, Bioaccumulation, Toxic). This substance is not considered to be vPvB (very Persistent nor very Bioaccumulating)

Hydrogen peroxide solution:

Assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).. This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

Components:

Acetylacetone:

Additional ecological information : None known.

Hydrogen peroxide solution:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.
Harmful to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of contents/container in accordance with local regulation.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not burn, or use a cutting torch on, the empty drum.
Due to the high risk of contamination recycling/recovery is not recommended.
Follow all warnings even after the container is emptied.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : UN 3105
RID : UN 3105
IMDG : UN 3105
IATA : UN 3105

14.2 UN proper shipping name

ADR : ORGANIC PEROXIDE TYPE D, LIQUID (Acetylacetone peroxide)
RID : ORGANIC PEROXIDE TYPE D, LIQUID

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

IMDG : (Acetylacetone peroxide)
 : ORGANIC PEROXIDE TYPE D, LIQUID
 (Acetylacetone peroxide)

IATA : Organic peroxide type D, liquid
 (Acetylacetone peroxide)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADR	: 5.2	
RID	: 5.2	
IMDG	: 5.2	
IATA	: 5.2	HEAT

14.4 Packing group

ADR
 Packing group : Not assigned by regulation
 Classification Code : P1
 Labels : 5.2
 Tunnel restriction code : (D)

RID
 Packing group : Not assigned by regulation
 Classification Code : P1
 Hazard Identification Number : 539
 Labels : 5.2

IMDG
 Packing group : Not assigned by regulation
 Labels : 5.2
 EmS Code : F-J, S-R

IATA (Cargo)
 Packing instruction (cargo aircraft) : 570
 Packing group : Not assigned by regulation
 Labels : Organic Peroxides, Keep Away From Heat

IATA (Passenger)
 Packing instruction (passenger aircraft) : 570
 Packing group : Not assigned by regulation
 Labels : Organic Peroxides, Keep Away From Heat

14.5 Environmental hazards

ADR
 Environmentally hazardous : no

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

RID

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable

P5c

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P6b

SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

The components of this product are reported in the following inventories:

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory
AIC	:	On the inventory, or in compliance with the inventory
DSL	:	This product contains one or several components that are not on the Canadian DSL nor NDSL. Kayaset red
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	On the inventory, or in compliance with the inventory
TECI	:	Not in compliance with the inventory

15.2 Chemical safety assessment

Acetylacetone peroxide	:	A Chemical Safety Assessment has been carried out for this substance.
Diethylene glycol	:	A Chemical Safety Assessment has been carried out for this substance.
Acetylacetone	:	A Chemical Safety Assessment has been carried out for this substance.
Hydrogen peroxide solution	:	A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of H-Statements

H226	:	Flammable liquid and vapour.
H242	:	Heating may cause a fire.
H271	:	May cause fire or explosion; strong oxidizer.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

H302	:	Harmful if swallowed.
H311	:	Toxic in contact with skin.
H314	:	Causes severe skin burns and eye damage.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.
H331	:	Toxic if inhaled.
H332	:	Harmful if inhaled.
H335	:	May cause respiratory irritation.
H361d	:	Suspected of damaging the unborn child.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Eye Irrit.	:	Eye irritation
Flam. Liq.	:	Flammable liquids
Org. Perox.	:	Organic peroxides
Ox. Liq.	:	Oxidizing liquids
Repr.	:	Reproductive toxicity
Skin Corr.	:	Skin corrosion
Skin Sens.	:	Skin sensitisation
STOT SE	:	Specific target organ toxicity - single exposure
2006/15/EC	:	Europe. Indicative occupational exposure limit values
FI OEL	:	Finland. HTP Values - Concentrations Known to be Harmful
2006/15/EC / TWA	:	Limit Value - eight hours
FI OEL / HTP-arvot 8h	:	Long term exposure limit
FI OEL / HTP-arvot 15 min	:	Short term exposure limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX 44B VRN

Version	Revision Date:	FI / EN	Date of last issue: 12.11.2018
2.0	26.12.2022		Date of first issue: 12.11.2018

population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECl - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : This data sheet contains changes from the previous version in section(s):
 Hazards identification
 Composition/information on ingredients
 Toxicological information

Classification of the mixture:

Org. Perox. E	H242
Eye Irrit. 2	H319
Skin Sens. 1	H317
Repr. 2	H361d
STOT SE 3	H335

Classification procedure:

Based on product data or assessment
Calculation method
Calculation method
Calculation method
Calculation method

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

FI / EN