

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

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

### 1.1 Product identifier

Trade name : TRIGONOX 101-45D-PD

This substance/ mixture contains nanoforms

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

Use of the Substance/Mixture : Cross-linking 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 Centre09-471977

---

## 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.

Skin irritation, Category 2 H315: Causes skin irritation.

### 2.2 Label elements



#### Labelling (REGULATION (EC) No 1272/2008)

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

- Hazard pictograms :  
- Signal word : Warning
- Hazard statements : H242 Heating may cause a fire.  
H315 Causes skin irritation.
- Precautionary statements : **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P234 Keep only in original packaging.  
P264 Wash skin thoroughly after handling.  
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.  
**Storage:**  
P420 Store separately.

### 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.

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.

Dust can form an explosive mixture in air.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components

Chemical name	CAS-No. EC-No.	Classification	Concentration (% w/w)

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version 3.2      Revision Date: 09.05.2023      FI / EN      Date of last issue: 08.12.2022  
Date of first issue: 26.01.2015

	Index-No. Registration number		
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane	78-63-7 201-128-1 01-2119875400-42	Org. Perox. C; H242 Skin Irrit. 2; H315	44 - 46
Substances with a workplace exposure limit :			
Silicon dioxide	7631-86-9 231-545-4 01-2119379499-16		25 - 35
Calcium carbonate	471-34-1 207-439-9 01-2119486795-18		20 - 30

For explanation of abbreviations see section 16.

Remarks : Substances with a workplace exposure limit

#### The following substances have multiple CAS-number

Silicon dioxide : 122945-52-2  
112926-00-8

This substance/ mixture contains nanoforms

#### Components:

##### **Silicon dioxide:**

Particle characteristics

Particle size : 4 - 95 nm

Assessment : Assessment: This substance/ mixture contains nanoforms based on: Measurement data

Shape : Shape: spheres

## 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 : Remove to fresh air.  
Keep patient warm and at rest.  
Rinse nose and mouth with water.

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

- |                         |   |  |
|-------------------------|---|--|
| In case of skin contact | : | Take off contaminated clothing and shoes immediately.<br>Wash the skin immediately with soap and water.<br>If skin irritation persists, call a physician.                |
| In case of eye contact  | : | Rinse with plenty of water.<br>Remove contact lenses.<br>Protect unharmed eye.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist. |
| If swallowed            | : | Clean mouth with water and drink afterwards plenty of water.<br>Never give anything by mouth to an unconscious person.<br>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    | : | Causes skin irritation.  |

#### 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. |
| Unsuitable extinguishing media | : | High volume water jet  |

### 5.2 Special hazards arising from the substance or mixture

- |                                      |   |  |
|--------------------------------------|---|--|
| Specific hazards during firefighting | : | CAUTION: reignition may occur.<br>Supports combustion.<br>Do not use a solid water stream as it may scatter and spread fire.<br>Water spray may be ineffective unless used by experienced firefighters.<br>Do not allow run-off from fire fighting to enter drains or water courses.<br>Risks of ignition followed by flame propagation or secondary explosions shall be prevented by avoiding accumulation of |
|--------------------------------------|---|--|

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

dust, e.g. on floors and ledges.  
Hazardous decomposition products formed under fire conditions.

Hazardous combustion products : Fire will produce smoke containing hazardous combustion products (see section 10).

#### 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.  
Avoid dust formation.  
Avoid breathing dust.  
Ensure adequate ventilation.  
Remove all sources of ignition.  
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.

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Keep wetted with water.  
Confinement must be avoided.  
Pick up and arrange disposal without creating dust.  
Collect in plastic container for disposal as hazardous waste.  
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.

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

- Advice on safe handling : For personal protection see section 8.  
 Avoid formation of respirable particles.  
 Avoid contact with skin, eyes and clothing.  
 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  
 Smoking, eating and drinking should be prohibited in the application area.  
 Open drum carefully as content may be under pressure.
- Advice on protection against fire and explosion : Use explosion protected equipment. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. No sparking tools should be used. Keep away from reducing agents (e.g. amines), acids, alkalis 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.
- 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 : No smoking. Keep in a dry place. Electrical installations / working materials must comply with the technological safety standards. Store at room temperature in the original container. Keep only in original container. Store away from other materials.
- Further information on storage stability : If product freezes or separates, contact the manufacturer.  
  
 Maximum storage temperature is for quality only.
- Minimum storage temperature: : Avoid temperatures below:  
 0 °C
- Maximum storage temperature: : 30 °C

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

#### 7.3 Specific end use(s)

Specific use(s) : Consult the technical guidelines for the use of this substance/mixture.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Dust	5 mg/m <sup>3</sup> Value type (Form of exposure): HTP-arvot 8h (Dust) Basis: FI OEL
	10 mg/m <sup>3</sup> Value type (Form of exposure): HTP-arvot 15 min (Dust) Basis: FI OEL

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Silicon dioxide	7631-86-9	HTP-arvot 8h	5 mg/m <sup>3</sup> (Silica)	FI OEL
Calcium carbonate	471-34-1	HTP-arvot 8h (Dust)	10 mg/m <sup>3</sup>	FI OEL

#### Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
tert-Butanol	75-65-0	HTP-arvot 15 min	75 ppm 230 mg/m <sup>3</sup>	FI OEL
	Further information: The health risk of absorbed amounts of compounds which can pass through the skin to the body cannot be evaluated from their atmospheric concentration. Therefore these compounds have the notification 'skin' in the list. Many compounds can be irritating or corrosive when in contact with the skin, especially strong acids and bases.			
		HTP-arvot 8h	50 ppm 150 mg/m <sup>3</sup>	FI OEL
	Further information: The health risk of absorbed amounts of compounds which can pass through the skin to the body cannot be evaluated from their atmospheric concentration. Therefore these compounds have the notification 'skin' in the list. Many compounds can be irritating or corrosive when in contact with the skin, especially strong acids and bases.			
tert-Amyl alcohol	75-85-4	HTP-arvot 15 min	10 ppm 37 mg/m <sup>3</sup>	FI OEL
		HTP-arvot 8h	5 ppm	FI OEL

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version  
3.2

Revision Date:  
09.05.2023

FI / EN

Date of last issue: 08.12.2022

Date of first issue: 26.01.2015

Acetone	67-64-1	TWA	18 mg/m <sup>3</sup> 500 ppm 1.210 mg/m <sup>3</sup>	2000/39/EC
Further information: Indicative				
		HTP-arvot 8h	500 ppm 1.200 mg/m <sup>3</sup>	FI OEL
		HTP-arvot 15 min	630 ppm 1.500 mg/m <sup>3</sup>	FI OEL
Methane	74-82-8	HTP-arvot 8h	1.000 ppm	FI OEL
Further information: Oxygen Depleting Substances				
Ethane	74-84-0	HTP-arvot 8h	1.000 ppm	FI OEL
Further information: Oxygen Depleting Substances				

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

Substance name	End Use	Exposure routes	Potential health effects	Value
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane	Workers	Dermal	Long-term systemic effects	15 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	11 mg/m <sup>3</sup>

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

Substance name	Environmental Compartment	Value
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane	Fresh water	0,00065 mg/l
	Marine water	0,000065 mg/l
	Fresh water sediment	72,2 mg/kg dry weight
	Marine sediment	7,22 mg/kg dry weight
	Sewage treatment plant	100 mg/l
	Soil	14,4 mg/kg dry weight
Calcium carbonate	Sewage treatment plant	100 mg/l

## 8.2 Exposure controls

### Engineering measures

Explosion proof ventilation recommended.

Provide appropriate exhaust ventilation at places where dust is formed.

### Personal protective equipment

Eye/face protection : Tightly fitting safety goggles

Hand protection



## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

Material	:	Neoprene
Material	:	Nitrile rubber
Skin and body protection	:	Protective suit
Respiratory protection	:	Half mask with a particle filter P2 (EN 143)

---

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state	:	powder
Colour	:	white
Odour	:	Faint.
Odour Threshold	:	No data available
Melting point	:	Decomposes before melting.
Boiling point/boiling range	:	Decomposes below the boiling point.
Flammability	:	Decomposition products may be flammable.
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	Not applicable
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	:	80 °C

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

decomposition temperature  
(SADT)

pH : substance/mixture is non-soluble (in water)

Viscosity

Viscosity, dynamic : Not applicable

Viscosity, kinematic : Not applicable

Solubility(ies)

Water solubility : (20 °C)  
insoluble

Solubility in other solvents : Description: Soluble in most organic solvents.

Partition coefficient: n-  
octanol/water : No data available

Vapour pressure : 20 hPa (25 °C)  
Active component

Relative density : 1,36 (20 °C)

Bulk density : 665 kg/m<sup>3</sup> (20 °C)  
Tap density

Relative vapour density : Not applicable

Particle characteristics

Assessment : Assessment: This substance/ mixture contains nanoforms

Particle size : Further particle properties for nanomaterials see section 3

#### 9.2 Other information

Explosives : Not explosive

Oxidizing properties : Not classified as oxidising.

Evaporation rate : Not applicable

Active Oxygen Content : 4,95 %

Organic peroxides : 45 %

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

#### 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 : Dust may form explosive mixture in air.

##### 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 : tert-Butanol  
tert-Amyl alcohol  
Acetone  
Methane  
Ethane  
Carbon oxides

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

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

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) : 80 °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.

#### Components:

##### **2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:**

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

LD50 (Rat, male and female): > 32.000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity : LD50 (Rat, male): 2.800 - 5.400 mg/kg  
Method: OECD Test Guideline 402

##### **Silicon dioxide:**

Acute oral toxicity : LD50 (Rat): > 10.000 mg/kg

##### **Calcium carbonate:**

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg  
Assessment: The substance or mixture has no acute oral toxicity  
Remarks: No mortality observed at this dose.

Acute inhalation toxicity : LC50 (Rat): > 3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
GLP: yes  
Remarks: Saturated vapour concentration

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

Assessment: The substance or mixture has no acute dermal toxicity

#### Skin corrosion/irritation

Causes skin irritation.

#### Components:

##### 2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Species	: Rabbit
Exposure time	: 4 h
Method	: OECD Test Guideline 404
Result	: Severe skin irritation
GLP	: yes

##### Calcium carbonate:

Species	: Rabbit
Exposure time	: 4 h
Method	: OECD Test Guideline 404
Result	: No skin irritation

#### Serious eye damage/eye irritation

Not classified based on available information.

#### Components:

##### 2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Species	: Rabbit
Method	: OECD Test Guideline 405
Result	: No eye irritation
GLP	: yes

##### Calcium carbonate:

Species	: Rabbit
Method	: OECD Test Guideline 405
Result	: No eye irritation
GLP	: yes

#### Respiratory or skin sensitisation

##### Skin sensitisation

Not classified based on available information.

##### Respiratory sensitisation

Not classified based on available information.

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

#### Components:

##### **2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:**

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

##### **Calcium carbonate:**

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:

##### **2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
 Test system: mouse lymphoma cells  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 476  
 Result: negative  
 GLP: yes

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

##### **Calcium carbonate:**

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro  
 Test system: Human lymphocytes  
 Method: OECD Test Guideline 473  
 Result: negative  
 GLP: yes

Test Type: Ames test  
 Method: OECD Test Guideline 471

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

Result: negative  
GLP: yes

Test Type: In vitro gene mutation study in mammalian cells  
Test system: mouse lymphoma cells  
Method: OECD Test Guideline 476  
Result: negative  
GLP: yes

Genotoxicity in vivo : Result: Not mutagenic.

#### **Carcinogenicity**

Not classified based on available information.

#### **Reproductive toxicity**

Not classified based on available information.

#### **Components:**

##### **2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:**

Effects on foetal development : Species: Rat  
Strain: Sprague-Dawley  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 300 mg/kg bw/day  
Developmental Toxicity: NOAEL F1: 300 mg/kg bw/day  
Method: OECD Test Guideline 414  
GLP: yes

##### **Calcium carbonate:**

Effects on fertility : Test Type: Fertility/early embryonic development  
Species: Rat  
Application Route: Oral  
General Toxicity - Parent: NOAEL: 1.000 mg/kg bw/day  
Symptoms: Not observed  
Method: OECD Test Guideline 422  
Result: Animal testing did not show any effects on fertility.  
GLP: yes

#### **STOT - single exposure**

Not classified based on available information.

#### **Components:**

##### **Calcium carbonate:**

Exposure routes : Inhalation  
Target Organs : Respiratory system  
Assessment : The substance or mixture is not classified as specific target

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

organ toxicant, single exposure.

#### STOT - repeated exposure

Not classified based on available information.

#### Components:

##### Calcium carbonate:

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

#### Repeated dose toxicity

#### Components:

##### 2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:

Species	:	Rat, male and female
NOAEL	:	150 mg/kg bw/day
Application Route	:	Oral
Exposure time	:	90 d
Method	:	OECD Test Guideline 408
GLP	:	yes

Species	:	Rat, male and female
NOAEL	:	200 mg/kg bw/day
Application Route	:	Oral
Exposure time	:	28 d
Method	:	OECD Test Guideline 407
GLP	:	yes

##### Calcium carbonate:

Species	:	Rat
NOAEL	:	1.000 mg/kg
Application Route	:	Oral
Exposure time	:	48 d
Method	:	OECD Test Guideline 422
GLP	:	yes

#### Aspiration toxicity

Not classified based on available information.

#### Components:

##### Calcium carbonate:

No aspiration toxicity classification



## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

#### 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.

---

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

##### **2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:**

Toxicity to fish	:	LC50 (Oryzias latipes (Japanese medaka)): 4,5 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes Remarks: No toxicity at the limit of solubility
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 236 µg/l Exposure time: 72 h Test Type: Growth inhibition Analytical monitoring: yes Method: OECD Test Guideline 201 GLP: yes Remarks: No toxicity at the limit of solubility
Toxicity to microorganisms	:	NOEC (activated sludge): > 1.000 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209 GLP: yes Remarks: No toxicity at the limit of solubility

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: > 6.5 µg/l  
 End point: reproduction rate  
 Exposure time: 21 d  
 Species: Daphnia magna (Water flea)  
 Test Type: semi-static test  
 Analytical monitoring: yes  
 Method: OECD Test Guideline 211  
 GLP: yes  
 Remarks: No toxicity at the limit of solubility

#### Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

#### Calcium carbonate:

Toxicity to fish : (Danio rerio (zebra fish)): Test Type: semi-static test  
 Method: OECD Test Guideline 203  
 Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates : (Daphnia magna (Water flea)): Exposure time: 48 h  
 Method: OECD Test Guideline 202  
 Remarks: No toxicity at the limit of solubility

Toxicity to algae/aquatic plants : NOEC (Desmodesmus subspicatus (green algae)): 14 mg/l  
 Exposure time: 72 h  
 Test Type: Growth inhibition  
 Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEC (activated sludge): 1.000 mg/l  
 Exposure time: 3 h  
 Test Type: Respiration inhibition  
 Method: Domestic OECD Guideline 209  
 Remarks: Read-across from supporting substance (structural analogue or surrogate).

#### Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

### 12.2 Persistence and degradability

#### Product:

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

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

#### Components:

##### **2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:**

Biodegradability : Test Type: Ready biodegradability  
 Inoculum: activated sludge, non-adapted  
 Concentration: 1 mg/l  
 Result: Not readily biodegradable.  
 Biodegradation: 0 %  
 Exposure time: 28 d  
 Method: OECD Test Guideline 301D

##### **Calcium carbonate:**

Biodegradability : Remarks: inorganic

#### 12.3 Bioaccumulative potential

##### Components:

##### **2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:**

Bioaccumulation : Bioconcentration factor (BCF): 521 - 839  
 GLP: yes

Partition coefficient: n-octanol/water : log Pow: 7,34 (20 °C)

##### **Calcium carbonate:**

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : Remarks: Not applicable

#### 12.4 Mobility in soil

##### Product:

Mobility : Remarks: No data available

#### 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.

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

#### Components:

##### **2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane:**

Assessment : Not classified as PBT or 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 : None known.

---

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Do not dispose of waste into sewer.  
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 3108  
**RID** : UN 3108  
**IMDG** : UN 3108

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

**IATA** : UN 3108

#### 14.2 UN proper shipping name

**ADR** : ORGANIC PEROXIDE TYPE E, SOLID  
(2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane)

**RID** : ORGANIC PEROXIDE TYPE E, SOLID  
(2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane)

**IMDG** : ORGANIC PEROXIDE TYPE E, SOLID  
(2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane)

**IATA** : Organic peroxide type E, solid  
(2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane)

#### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
<b>ADR</b>	: 5.2	
<b>RID</b>	: 5.2	
<b>IMDG</b>	: 5.2	
<b>IATA</b>	: 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 : 570

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

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

#### 14.5 Environmental hazards

**ADR**  
 Environmentally hazardous : no

**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) : Not applicable

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

Seveso III: Directive 2012/18/EU of the P6b SELF-REACTIVE SUBSTANCES

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

AND MIXTURES and ORGANIC PEROXIDES

**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
AIIC	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
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	:	On the inventory, or in compliance with the inventory

#### 15.2 Chemical safety assessment

2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane	:	A Chemical Safety Assessment has been carried out for this substance.
---	---	---

---

#### SECTION 16: Other information

##### Full text of H-Statements

H242	:	Heating may cause a fire.
H315	:	Causes skin irritation.

##### Full text of other abbreviations

Org. Perox.	:	Organic peroxides
Skin Irrit.	:	Skin irritation
2000/39/EC	:	Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values
FI OEL	:	Finland. HTP Values - Concentrations Known to be Harmful

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

### TRIGONOX 101-45D-PD

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

2000/39/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 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):  
Exposure scenario

#### Classification of the mixture:

Org. Perox. E	H242
Skin Irrit. 2	H315

#### Classification procedure:

Based on product data or assessment
Calculation method



## **SAFETY DATA SHEET**

according to Regulation (EC) No. 1907/2006

### **TRIGONOX 101-45D-PD**

Version	Revision Date:	FI / EN	Date of last issue: 08.12.2022
3.2	09.05.2023		Date of first issue: 26.01.2015

---

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