

# SAFETY DATA SHEET

## TRIGONOX 42S

Version 1

Revision Date 08/06/2015

Print Date 08/27/2015

US / Z8

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TRIGONOX 42S

Product Use Description : Polymerization initiator

Company : Akzo Nobel Functional Chemicals LLC  
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Chicago IL 60607-3823  
USA

Telephone : +18008287929

Fax : +13125447188

E-mail address : RegulatoryAffairs@akzonobel.com

Emergency telephone : AkzoNobel: +31 57 06 79211 CHEMTREC - USA: 1-800-424-9300  
CANUTEC - CANADA: 1-613-996-6666

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

Appearance	liquid
Color	colorless
Odor	characteristic

#### GHS Classification

Organic peroxides, Type D  
Skin sensitization, Category 1  
Acute aquatic toxicity, Category 1  
Chronic aquatic toxicity, Category 1

#### GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H242 Heating may cause a fire.  
H317 May cause an allergic skin reaction.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**  
P210 Keep away from heat/sparks/open flames/hot surfaces. -  
No smoking.

P220 Keep away from dirt, rust, chemicals in particular.  
 P234 Keep only in original container.  
 P261 Avoid breathing mist, vapours or spray.  
 P272 Contaminated work clothing must not be allowed out of the workplace.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/ eye protection/ face protection.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P363 Wash contaminated clothing before reuse.  
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
 P391 Collect spillage.

**Storage:**

P403 + P235 Store in a well-ventilated place. Keep cool.  
 P410 Protect from sunlight.  
 P420 Store away from other materials.

**Disposal:**

P501 Dispose of contents/container in accordance with local regulation.

**Potential Health Effects**

Inhalation	: Not expected to be irritating.
Skin	: May cause an allergic skin reaction.
Eyes	: Not expected to be irritating.
Ingestion	: Not expected to be irritating.
Aggravated Medical Condition	: None known.
Symptoms of Overexposure	: The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.

**Carcinogenicity:**

<b>IARC</b>	: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
<b>OSHA</b>	: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
<b>NTP</b>	: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
<b>ACGIH</b>	: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Hazardous ingredients

Chemical Name	CAS-No.	Classification	Concentration [%]
tert-Butyl peroxy-3,5,5-trimethylhexanoate	13122-18-4	Org. Perox. D; H242 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute): 1	90 - 100

tert-Butyl peroxy-3,5,5-trimethylhexanoate, neat

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 4. FIRST AID MEASURES

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

#### Notes to physician

- Symptoms : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.
- Treatment : Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire : CAUTION: reignition may occur.

fighting / Specific hazards arising from the chemical	: Supports combustion. Do not use a solid water stream as it may scatter and spread fire. Water spray may be ineffective unless used by experienced firefighters. Heating may cause decomposition with release of toxic fumes. Do not allow run-off from fire fighting to enter drains or water courses.
Combustion products	: Fire will produce smoke containing hazardous combustion products (see section 10).
Special protective equipment for fire-fighters	: 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.

See also Section 9. Physical and chemical properties: Safety data

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## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions	: Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up / Methods for containment	: Keep wetted with water. Soak up with inert absorbent material and dispose of as hazardous waste. Confinement must be avoided. Never return spills in original containers for re-use.
Additional advice	: For personal protection see section 8.

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## 7. HANDLING AND STORAGE

### Handling

Advice on safe handling	: For personal protection see section 8. Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. 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	: Use explosion protected equipment.

fire and explosion	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.
Temperature class	: It is recommended to use electrical equipment of temperature group T3. However, autoignition can never be excluded.
<b>Storage</b>	
Requirements for storage areas and containers	: No smoking. Electrical installations / working materials must comply with the technological safety standards. Keep only in original container. Store away from other materials.
Minimum storage temperature:	: Avoid temperatures below: -20 °C (-4 °F)
Maximum storage temperature:	: 25 °C (77 °F)
Other data	: No decomposition if stored and applied as directed. : If product freezes or separates, contact Akzo Nobel

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

Contains no substances with occupational exposure limit values.

### Occupational exposure limits of decomposition products

Decomposition products	CAS-No.	Value	Control parameters	Update	Basis	Form of exposure
tert-Butanol	75-65-0, 75-65-0	TWA	100 ppm	2007-01-01	ACGIH	
	Further information	:	Central Nervous System impairment A4: Not classifiable as a human carcinogen			
		TWA	100 ppm 300 mg/m <sup>3</sup>	2013-10-08	NIOSH REL	
		ST	150 ppm 450 mg/m <sup>3</sup>	2013-10-08	NIOSH REL	
		TWA	100 ppm 300 mg/m <sup>3</sup>	1997-08-04	OSHA Z-1	
	Further information	:	(b): The value in mg/m <sup>3</sup> is approximate.			
		TWA	100 ppm 300 mg/m <sup>3</sup>	1989-01-19	OSHA P0	
		STEL	150 ppm 450 mg/m <sup>3</sup>	1989-01-19	OSHA P0	
Acetone	67-64-1, 67-64-1	TWA	500 ppm	2013-03-01	ACGIH	
	Further information	:	Central Nervous System impairment Hematologic effects Upper Respiratory Tract irritation Eye irritation			

			( ): Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section) A4: Not classifiable as a human carcinogen
		STEL	750 ppm 2013-03-01 ACGIH
	Further information	:	Central Nervous System impairment Hematologic effects Upper Respiratory Tract irritation Eye irritation ( ): Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) BEI: Substances for which there is a Biological Exposure Index or Indices (see BEI® section) A4: Not classifiable as a human carcinogen
		TWA	250 ppm 590 mg/m3 2013-10-08 NIOSH REL
		TWA	1 000 ppm 2,400 mg/m3 1997-08-04 OSHA Z-1
	Further information	:	(b): The value in mg/m3 is approximate.
		TWA	750 ppm 1,800 mg/m3 1989-01-19 OSHA P0
		STEL	1,000 ppm 2,400 mg/m3 1989-01-19 OSHA P0
	Further information	:	h: The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors.
Methane	74-82-8, 74-82-8	TWA	0.1 mg/m3 1989-01-19 OSHA P0
	Further information	:	Formaldehyde
	Further information	:	See Appendix F: Minimal Oxygen Content Asphyxia
		TWA	0.1 mg/m3 2013-10-08 NIOSH REL
	Further information	:	'Ca' in the presence of formaldehyde, acetaldehyde, or malonaldehyde. See Appendices A & C (Aldehydes). Formaldehyde

### Engineering measures

Explosion proof ventilation recommended.  
Effective exhaust ventilation system

### Personal protective equipment

Eye/face protection : Tightly fitting safety goggles

Hand protection : Glove material: butyl-rubber  
: Glove material: Neoprene

Skin and body protection : Protective suit

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

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.

**Environmental exposure controls**

General advice : Prevent product from entering drains.  
If the product contaminates rivers and lakes or drains inform  
respective authorities.

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**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form : liquid  
Color : colorless  
Odor : characteristic  
Odor Threshold : No data available

**Safety data**

pH : Weakly acidic  
Melting point : <= -20 °C  
Boiling point/boiling range : Decomposes below the boiling point.  
Flash point : Above the SADT value  
Evaporation rate : No data available  
Flammability (solid, gas) :  
Lower explosion limit : No data available  
Upper explosion limit : No data available  
Vapor pressure : 0.5 hPa at 59 °C  
Relative vapor density : No data available  
Relative density : 0.900 at 20 °C  
Bulk density : Not applicable  
Water solubility : at 20 °C  
immiscible  
Solubility in other solvents : No data available  
Partition coefficient: n-  
octanol/water : log Pow: 5.16  
at 20 °C  
Autoignition 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)	: 55 °C
Viscosity, dynamic	: 5 mPa.s at 20 °C
Viscosity, kinematic	: 5.56 mm <sup>2</sup> /s at 20 °C
Explosive properties	: Not explosive
Oxidizing properties	: Not classified as oxidizing.
Active Oxygen Content	: 6.74 %
Organic peroxides	: > 97 %

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

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## 10. STABILITY AND REACTIVITY

Conditions to avoid	: Confinement must be avoided. Heat, flames and sparks.  For safety, store below: 25 °C (77 °F)
Materials to avoid	: Contact with incompatible materials will result in hazardous decomposition. For queries regarding the suitability of other materials please contact the supplier. Do not mix with peroxide accelerators, unless under controlled processing. Use only stainless steel 316, PP, polyethylene or glass-lined equipment. Acids and bases Iron Copper Reducing agents Heavy metals Rust
Hazardous decomposition products	: tert-Butanol Acetone Methane Carbon oxides 2-tert-Butoxy-2,4,4-trimethylpentane



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.
Reactivity	: Stable under normal conditions.
Chemical stability	: Stable under recommended storage conditions.
Hazardous reactions	: No dangerous reaction known under conditions of normal use.
Self-Accelerating decomposition temperature (SADT)	: 55 °C (131 °F)

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## 11. TOXICOLOGICAL INFORMATION

### PRODUCT INFORMATION:

#### Toxicology Assessment

Further information : No further data available.

#### Carcinogenicity:

**IARC** : No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** : No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP** : No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**ACGIH** : No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

### TOXICOLOGY DATA FOR THE INGREDIENTS:

#### Test result

##### Component: tert-Butyl peroxy-3,5,5-trimethylhexanoate

Acute oral toxicity	: LD50: 12,905 mg/kg Species: Rat
Acute inhalation toxicity	: LC50 (Rat): > 800 mg/m3 Exposure time: 4 h Saturated vapor concentration
Skin irritation	: Result: No skin irritation

Eye irritation	: Result: No eye irritation
Repeated dose toxicity	: Species: Rat Application Route: Oral Exposure time: 28 d () NOEL: 50 mg/kg
Germ cell mutagenicity Genotoxicity in vitro	: Result: No evidence of genotoxic effects in vitro.
Genotoxicity in vivo	: in vivo assay Method: OECD Test Guideline 474 Result: negative
Carcinogenicity	: No data available
Reproductive toxicity/Fertility	: Species: Rat, females Strain: wistar Application Route: Oral Dose: 0, 50, 160, 500 milligram per kilogram General Toxicity Parent: NOAEL (No observed adverse effect level): 50 mg/kg body weight/day General Toxicity F1: No observed adverse effect level F1: 50 mg/kg body weight/day Fertility: No observed adverse effect level Parent: 50 mg/kg body weight/day Method: OECD Test Guideline 421  Species: Rat, males Strain: wistar Application Route: Oral Dose: 0, 50, 160, 500 milligram per kilogram General Toxicity Parent: NOAEL (No observed adverse effect level): 50 mg/kg body weight/day General Toxicity F1: No observed adverse effect level F1: 50 mg/kg body weight/day Fertility: No observed adverse effect level Parent: 400 mg/kg body weight/day Method: OECD Test Guideline 421
Target Organ Systemic Toxicant - Single exposure	: Routes of exposure: Inhalation Target Organs: Respiratory system The substance or mixture is not classified as specific target organ toxicant, single exposure.
Target Organ Systemic Toxicant - Repeated exposure	: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Aspiration toxicity	: No aspiration toxicity classification

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## 12. ECOLOGICAL INFORMATION

### PRODUCT INFORMATION:

**Ecotoxicology Assessment**

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

**Further information on ecology****Hazardous to the ozone layer**

Regulation : 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

**INGREDIENTS:****Ecotoxicology Assessment****Component: tert-Butyl peroxy-3,5,5-trimethylhexanoate**

Acute aquatic toxicity : Very toxic to aquatic life.  
Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

**Test result****Component: tert-Butyl peroxy-3,5,5-trimethylhexanoate****Ecotoxicity effects**

Toxicity to fish : LC50: 7.0 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50: > 100 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)  
Test Type: static test  
Method: OECD Test Guideline 202

Toxicity to algae : ErC50: 0.5098 mg/l  
Exposure time: 72 h  
Species: Pseudokirchneriella subcapitata (green algae)  
Test Type: Growth inhibition  
Method: OECD Test Guideline 201

NOEC: 0.125 mg/l  
Exposure time: 72 h  
Species: Pseudokirchneriella subcapitata (green algae)  
Test Type: Growth inhibition  
Method: OECD Test Guideline 201

M-Factor : 1

Toxicity to bacteria : NOEC: 26.3 mg/l  
Exposure time: 3 h

Species: activated sludge  
 Test Type: Respiration inhibition  
 Method: Domestic OECD Guideline 209

#### Elimination information (persistence and degradability)

Bioaccumulation : Bioaccumulation is not expected.  
 Biodegradability : Result: Inherently biodegradable.  
 Method: Closed Bottle test

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### 13. DISPOSAL CONSIDERATIONS

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.  
 Hazardous waste  
 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.

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### 14. TRANSPORT INFORMATION

#### International Regulation

##### IATA-DGR

UN/ID No. : UN 3105  
 Proper shipping name : Organic peroxide type D, liquid  
 (tert-Butyl peroxy-3,5,5-trimethylhexanoate)  
 Class : 5.2  
 Subsidiary risk : HEAT  
 Packing group : Not Assigned  
 Labels : 5.2 (HEAT)  
 Packing instruction (cargo aircraft) : 570  
 Packing instruction (passenger aircraft) : 570  
 Environmentally hazardous : yes

##### IMDG-Code

UN number : UN 3105  
 Proper shipping name : ORGANIC PEROXIDE TYPE D, LIQUID  
 (tert-Butyl peroxy-3,5,5-trimethylhexanoate)  
 Class : 5.2  
 Packing group : Not Assigned  
 Labels : 5.2  
 EmS Code : F-J, S-R  
 Marine pollutant : yes



This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals subject to disclosure and listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

#### Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

#### US State Regulations

##### New Jersey Right To Know

tert-Butyl peroxy-3,5,5-trimethylhexanoate

13122-18-4 90 - 100 %

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##### California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

## 16. OTHER INFORMATION

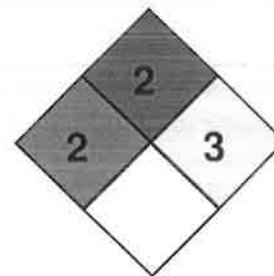
#### Full text of H-Statements

H242 : Heating may cause a fire.  
 H317 : May cause an allergic skin reaction.  
 H400 : Very toxic to aquatic life.  
 H410 : Very toxic to aquatic life with long lasting effects.

#### Further information

**HMIS Classification** : Health Hazard: 2  
 Flammability: 2  
 Physical hazards: 3

**NFPA Classification** : Health Hazard: 2  
 Fire Hazard: 2  
 Reactivity Hazard: 3



#### Notification status explanation

REACH : 1907/2006 (EU)  
 CH INV : Switzerland. New notified substances and declared preparations  
 TSCA : United States TSCA Inventory  
 DSL : Canadian Domestic Substances List (DSL)

AICS	Australia Inventory of Chemical Substances (AICS)
NZIoC	New Zealand. Inventory of Chemical Substances
ENCS	Japan. ENCS - Existing and New Chemical Substances Inventory
ISHL	Japan. ISHL - Inventory of Chemical Substances
KECI	Korea. Korean Existing Chemicals Inventory (KECI)
PICCS	Philippines Inventory of Chemicals and Chemical Substances (PICCS)
IECSC	China. Inventory of Existing Chemical Substances in China (IECSC)

**Further information**

Revision Date 08/06/2015

The information in this material safety data sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. The user must determine the appropriate measures that need to be implemented for the use and handling of this product in the context of the user's operations and use of this product. The information contained herein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old, call to make certain that this sheet is current. No warranty is made as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. User must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. Nothing contained herein shall be construed as granting or extending any license under any patent.

The information provided in this Material 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.

