

**Akzo Nobel Polymer Chemicals LLC**  
**MATERIAL SAFETY DATA SHEET**



# Trigonox 42-40B-pd

## 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

<b>Product name</b> Trigonox 42-40B-pd	<b>Chemical description</b> tert-Butyl peroxy-3,5,5-trimethylhexanoate on inert filler
<b>Synonym</b> Hexaneperoxoic acid, 3,5,5-trimethyl-1, 1-dimethylethyl ester	<b>Chemical formula</b> MIXTURE
<b>CAS number</b> MIXTURE	<b>Chemical family</b> Organic Peroxides/peroxyesters
<b>Supplier</b> Akzo Nobel Polymer Chemicals LLC 300 South Riverside Plaza Chicago, IL 60606 USA	
<b>Medical/Handling Emergency</b> + 1-914-693-6946 Dobbs Ferry, NY USA	<b>Transportation Emergency</b> CHEMTREC - USA: 1-800-424-9300 CANUTEC - CANADA: 1-613-996-6666
<b>Product use</b> Polymerization initiator	<b>Product/technical information</b> 1-800-828-7929
<b>Date of first issue</b> 07-02-1998	<b>Date of last issue / Revision #</b> 03-25-1999 / 1.00

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	Percentage(s)	CAS number
tert-Butyl peroxy-3,5,5-trimethylhexanoate	39.00 - 41.00	13122-18-4
Calcium carbonate	40.00 - 50.00	471-34-1
Silicon dioxide, amorphous	10.00 - 20.00	7631-86-9

## 3. HAZARDS IDENTIFICATION

<p><b>Emergency overview</b>                  White powder with a slight odor.  <b>DANGER!</b>  <b>ORGANIC PEROXIDE.</b>                  HEAT OR CONTAMINATION MAY CAUSE HAZARDOUS DECOMPOSITION.                  COMBUSTIBLE VAPOR.                  CAUSES SKIN AND RESPIRATORY TRACT IRRITATION.                  MAY CAUSE EYE IRRITATION.                  Peroxides and peroxide decomposition products are flammable and can ignite with explosive force if confined.</p>
<p><b>Health effects</b>                  Skin and eye contact and inhalation of dust are the principal routes of exposure to this product.                  Inhalation may cause severe respiratory tract irritation.                  Skin contact may cause severe irritation.                  Eye contact may cause mild irritation and may cause tearing.                  Ingestion may result in nausea and/or vomiting. May cause irritation to the gastrointestinal system.</p>

<b>Carcinogenicity</b>	
<b>Description</b>	<b>Applicable</b>

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IARC	no
NTP	no
OSHA	no
ACGIH	no

### 4. FIRST AID MEASURES

<p><b>Inhalation</b>          If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.</p>
<p><b>Skin</b>          Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical attention if indicated. Wash clothing before reuse. Thoroughly clean contaminated shoes.</p>
<p><b>Eye</b>          Immediately flush eyes with large quantities of running water for a minimum of 15 minutes. If the victim is wearing contact lenses, remove them. Take care not to contaminate the victim's healthy skin and eyes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids. DO NOT let victim rub eye(s). Do not attempt to neutralize with chemical agents. Get medical attention immediately. Oils or ointments should not be used at this time. Continue flushing for an additional 15 minutes if a physician is not immediately available.</p>
<p><b>Ingestion</b>          Do NOT induce vomiting. Call a physician or a poison control center immediately. Give victim plenty of water to drink. Never give anything by mouth to an unconscious or convulsing person. Get medical attention immediately.</p>
<p><b>Note to physician</b>          Persons with pre-existing skin and/or respiratory disease may be at increased risk if exposed to this material.           No specific antidote is known. Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical conditions.</p>

### 5. FIRE-FIGHTING MEASURES

<p><b>Flash point</b>          not determined</p>	<p><b>Autoignition temperature</b>          not determined</p>
	<p><b>Explosion limits</b>          lower: N/D          upper: N/D</p>
<p><b>Extinguishing media</b>          Use water fog or spray, dry chemical, foam or carbon dioxide extinguishing agents.</p>	
<p><b>Fire fighting procedures</b>          As in any fire, prevent human exposure to fire, smoke, fumes or products of combustion. Evacuate non-essential personnel from the fire area. Firefighters should wear full-face, self-contained breathing apparatus and impervious protective clothing. If possible, move containers from the fire area. If not leaking, keep fire exposed containers cool with a water fog or spray to prevent rupture due to excessive heat. High pressure water may spread product from broken containers increasing contamination or fire hazard. Contaminated buildings, areas and equipment must not be used until they are properly decontaminated. Dike fire water for later disposal. Do not allow contaminated water to enter waterways.</p>	
<p><b>Fire and explosion hazards</b>          Peroxides and peroxide decomposition products are flammable and can ignite with explosive force if confined. This product can produce vapors which may travel to a source of ignition and flash back.</p>	

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### Hazardous products of combustion

Thermal decomposition produces oxides of carbon and/or hazardous fumes, vapors and/or gasses.

### NFPA ratings

Hazard	Rating
Health	1
Flammability	2
Reactivity	2
Other	

## 6. ACCIDENTAL RELEASE MEASURES

### Methods for cleaning up

Stop source of spill. Using non-sparking tools, sweep up spilled solid material, being careful not to create dust. Return sweepings to stock or, if contaminated, place into a chemical waste container for disposal.

## 7. HANDLING AND STORAGE

### Handling

Wear protective equipment when handling this product to avoid eye, skin and respiratory contact. Wash thoroughly after handling.

Emptied container may retain product residues. Follow all warnings and precautions even after container is emptied.

### Storage

To insure product quality, storage temperatures should not exceed **MAXIMUM STORAGE TEMPERATURE** shown below. To prevent possible self-accelerating decomposition, temperatures in the storage facility must not exceed 131 F (55 C).

Keep containers tightly closed. Store away from amines, acids alkalis and heavy metal compounds (e.g. driers, metal soaps and accelerators).

### Maximum storage temperature

77.00 °F 25.00 °C

### General comments

Containers should not be opened until ready for use. Use clean non-sparking equipment and tools when handling. Bond and ground all equipment.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Respiratory protection

Use a NIOSH-approved organic vapor respirator with dust, mist and fume filters to reduce potential for inhalation exposure if use conditions generate vapor, mist or aerosol and adequate ventilation (e.g., outdoor or well-ventilated area) is not available. Where exposure potential necessitates a higher level of protection, use a NIOSH-approved, positive-pressure/pressure-demand, air-supplied respirator.

When using respirator cartridges or canisters, they must be changed frequently (following each use or at the end of the workshift) to assure breakthrough exposure does not occur.

### Skin protection

Skin contact with this product should be prevented through the use of suitable protective clothing, gloves, and footwear selected with regard for use condition exposure potential.

### Eye protection

Because eye contact with this product may cause irritation, chemical goggles and/or a face shield should be worn when handling this product.

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### Ventilation protection

Sufficient good general ventilation should be provided to keep concentration below the exposure limit. All work with laboratory samples should be conducted in a hood.

### Other information

Eye wash fountains, or other means of washing the eyes with a gentle flow of cool to tepid tap water, should be readily available in all areas where this material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freezeups in cold weather.

Safety showers, with quick opening valves which stay open, and eye wash fountains, or other means of washing the eyes with a gentle flow of cool to tepid tap water, should be readily available in all areas where this material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freezeups in cold weather.

### Applicable exposure limits

Available exposure limits applicable to this product are shown below. The IDLH (Immediately Dangerous to Life and Health) concentration for amorphous silica is 3000 mg/m<sup>3</sup>.

Agency	Value/Unit of measurement
<b>Calcium carbonate</b>	
OSHA PEL/TWA	15.000 mg/m <sup>3</sup>
ACGIH TLV/TWA	10.000 mg/m <sup>3</sup>
NIOSH REL/TWA	10.000 mg/m <sup>3</sup>
<b>Silicon dioxide, amorphous</b>	
OSHA PEL/TWA	2.667 mg/m <sup>3</sup>
ACGIH TLV/TWA	10.000 mg/m <sup>3</sup>
NIOSH REL/TWA	6.000 mg/m <sup>3</sup>

PEL = Permissible Exposure Limit  
 TLV = Threshold Limit Value  
 TWA = Time Weighted Average  
 STEL = Short Term Exposure Limit  
 CEIL = Ceiling Exposure Limit  
 REL = Recommended Exposure Limit  
 WEEL = Workplace Environmental Exposure Limit

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance and Odor</b> White powder with a slight odor.	<b>pH value</b> not determined
<b>Odor threshold (ppm)</b> not determined	<b>Relative vapor density (air=1)</b> N/D
<b>Volatile %</b> N/D	<b>Vapor pressure (mm Hg)</b> not determined
<b>Boiling point/range</b> not determined	<b>Evaporation rate</b> not determined
<b>Melting point/range</b> not determined	
<b>Cloud point</b> N/D	<b>Pour point</b> not determined
<b>Flash point</b> not determined	<b>Solubility in water</b> not determined

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	<b>Solubility in other solvents</b> not determined
<b>Autoignition temperature</b> not determined	
<b>Specific Gravity/Density</b> not determined	<b>Partition coefficient n-octanol/water</b> not determined
<b>Bulk density</b> not determined	
<b>Other information</b> SADT = 140 F (60 C) (See Sect. 10).	<b>Explosion limits</b> lower: N/D upper: N/D

### 10. STABILITY AND REACTIVITY

<b>Stability</b> This product is stable at temperatures up to 131 F (55 C).
<b>Incompatibilities</b> Avoid contact with strong acids, strong alkalis, strong oxidizers, accelerators and reducing agents.
<b>Polymerization</b> Hazardous polymerization will not occur.
<b>Decomposition</b> Burning may produce carbon dioxide and/or carbon monoxide. Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.
<b>Conditions to avoid</b> Hazardous and uncontrollable decomposition may occur if this product is exposed to temperatures above 131 F (55 C). This temperature is based on the Self-Accelerating Decomposition Temperature (SADT). The SADT is an experimentally derived temperature at which a typical package of the product will undergo self-accelerating decomposition. For this product, the SADT is 140 F (60 C).

### 11. TOXICOLOGICAL INFORMATION

<b>Oral LD50</b>	The oral LD50 (rats) for the peroxide is greater than 5000 mg/kg (practically non-toxic).
<b>Dermal LD50</b>	The dermal LD50 of the product is not available. The peroxide was severely irritating to rabbits.
<b>Inhalation LC50</b>	The inhalation LC50 for the product has not been determined. The LC50 in rats for the peroxide is greater than 0.8 mg/L (4 hour exposure). There was no mortality at this concentration. This product may cause severe respiratory tract irritation.
<b>Skin</b>	Chronic dermal exposure effects of this product are unknown. However, prolonged and/or repeated exposure may cause irritation and redness.
<b>Eye</b>	Data is not available for this product. The peroxide was mildly irritating to rabbits.
<b>Chronic toxicity/carcinogenicity</b>	If swallowed, this product may cause severe irritation or burns of the mouth, throat, esophagus, and stomach.  Chronic inhalation exposure effects of this product are not known. However, it may cause severe irritation of the respiratory tract.



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	<p>This product is not classified as a carcinogen by IARC, NTP, OSHA or ACGIH.                  The peroxide was not mutagenic in the Ames test.</p> <p>The reproductive toxicity of this product is not known.</p> <p>The neurotoxic effects of this product are not known.</p> <p>Overexposure to this product may affect the skin, eyes and respiratory system.</p>
<p><b>Other toxicological information</b></p>	<p>No other toxic effects for this product are known.</p>

**12. ECOLOGICAL INFORMATION**

<p><b>Ecotoxicological information</b></p>	<p>The ecological toxicity of this product is not known.                  For the peroxide, the 96 hr. LC50 in rainbow trout is 7 mg/L (moderately toxic).</p>
<p><b>Bioaccumulation</b></p>	<p>Chemical fate information on this product is not known.                  The peroxide is not readily biodegradable in the Modified Sturm test and is inherently biodegradable in the SCAS test.</p>
<p><b>Other information</b></p>	<p>Other ecological information on this product is not known.</p>

**13. DISPOSAL CONSIDERATIONS**

<p><b>Waste disposal in accordance with regulations</b>                  The characteristic of Reactivity (D003) as per RCRA, would be exhibited by unused product if it becomes a waste material. It is the responsibility of the waste generator to evaluate whether his wastes are hazardous by characteristic or listing. All waste should be disposed of in accord with federal, state and local regulations.                  Note: State and/or local regulations may be more stringent than federal regulations.</p>	
<p><b>Container disposal</b>                  Containers should be cleaned of residual product before disposal. Empty containers should be disposed of in accordance with all applicable laws and regulations.</p>	

**14. TRANSPORT INFORMATION**

<p><b>Shipping description</b></p>	<p>ORGANIC PEROXIDE TYPE D, SOLID                  (TERT-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE, &lt;=42% IN INERT SOLIDS)                  5.2, UN3106, PG II                  NORTH AMERICAN ERG NO: 145</p>
<p><b>Required labels</b></p>	<p>ORGANIC PEROXIDE.</p>
<p><b>Environmentally hazardous substance</b></p>	<p>This product does not contain an environmentally hazardous substance per 49 CFR 172.101, Appendix A.</p>

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### 15. REGULATORY INFORMATION

Products and/or components listed below are subject to the following:

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

New Jersey R-T-K Hazard. Sub.	yes
Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes

#### Calcium carbonate

Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes

#### Silicon dioxide, amorphous

Massachusetts Substance List	yes
New Jersey R-T-K Hazard. Sub.	yes
Penn. Hazardous Substance list	yes
Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes

#### Hazard classes

Description	Applicable
HMIS Hazard Rating Source	HMIS
HMIS Health	1
HMIS Flammability	2
HMIS Reactivity	2
WHMIS Hazard Class	C, D-2B, F

#### Other regulatory information

No other regulatory information is available on this product.

### 16. OTHER INFORMATION

#### Other Information

TRIGONOX is a registered trademark of Akzo Nobel Chemicals Inc.

#### Created by

PRODUCT SAFETY 914-674-5000

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. All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable as of the date of publication. However, no warranty is made as to the accuracy of and/or sufficiency of such information and/or suggestions as to the merchantability or fitness of the product for any particular purpose, or that any suggested use will not infringe any patent. Nothing in here shall be construed as granting or extending any license under any patent. Buyer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. The information contained herein supersedes all previously issued bulletins on the