AKZO NOBEL

Trigonox 17-40B-pd

1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name Trigonox 17-40B-pd	**Chemical description** n-Butyl 4,4-di-(tert-butylperoxy)valerate on inert filler
Synonym(s) Pentanoic acid, 4,4-bis{(1,1-dimethylethyl)-dioxy}, butyl ester	**Chemical formula** MIXTURE
CAS number MIXTURE	**Chemical family** Organic peroxides/Peroxyketals
Supplier Akzo Nobel Polymer Chemicals LLC 525 West Van Buren Street Chicago, IL 60607-3823 USA	
Medical/Handling Emergency + 1-914-693-6946 Dobbs Ferry, NY USA	**Transportation Emergency** CHEMTREC - USA: 1-800-424-9300 CANUTEC - CANADA: 1-613-996-6666
Product use Cross-linking agent	**Product/technical Information** 1-800-828-7929
Date of first issue 1994-06-27	**Date of last issue / Revision** 2002-04-18 / 7.01

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Percentage(s)	CAS number
	38.00 - 42.00	995-33-5
	18.80 - 26.00	1344-95-2
	30.00 - 35.00	471-34-1
	0.80 - 1.10	14464-46-1
	0.40 - 0.60	14808-60-7

3. HAZARDS IDENTIFICATION

Emergency overview
Off-white powder with a fruity odor.
DANGER!
ORGANIC PEROXIDE.
HEAT OR CONTAMINATION MAY CAUSE HAZARDOUS DECOMPOSITION.
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.
CONTAINS MATERIAL WHICH CAN CAUSE LUNG DAMAGE.

CANCER HAZARD-CONTAINS MATERIAL WHICH CAN CAUSE CANCER. Risk of cancer depends on level and duration of exposure.
Peroxides and peroxide decomposition products are flammable and can ignite with explosive force if confined.

Health effects
Skin and eye contact and inhalation of dust are the principal routes of exposure to this product.
May cause irritation of the nose, throat and lungs.
Skin contact may cause irritation.
Eye contact may cause slight irritation.
Irritation to the mouth, throat, esophagus and stomach may be caused by ingestion of this material.

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Carcinogenicity	
Description	**Applicable**
IARC	no
NTP	no
OSHA	no
ACGIH	no

4. FIRST AID MEASURES

Inhalation
Remove to fresh air. If breathing becomes difficult, oxygen may be given, preferably with a physician's advice. If not breathing, give artificial respiration. Get medical attention.

Skin
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.

Eye
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.

Ingestion
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.

Note to physician
There are no data available that address medical conditions that are generally recognized as being aggravated by exposure to this product.

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.

5. FIRE-FIGHTING MEASURES

Flash point not determined	**Autoignition temperature** not determined
	Explosion limits lower: N/D upper: N/D

Extinguishing media
Use water fog or spray, dry chemical, foam or carbon dioxide extinguishing agents.

Fire fighting procedures
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.

Fire and explosion hazard
Peroxides and peroxide decomposition products are flammable and can ignite with explosive force if confined. This product can produce flammable vapors which may travel to a source of ignition and flash back.

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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**
Flammability	1
Reactivity	1

6. ACCIDENTAL RELEASE MEASURES

Methods for cleaning up
Stop source of spill. Sweep up spilled solid material being careful not to create dust. Place in a chemical waste container for disposal.

7. HANDLING AND STORAGE

Handling
Containers should be located in an area where they can be rotated regularly (first in, first out) and visually inspected for damage or bulging on a regular basis.
Use approved equipment for transport of containers to avoid puncturing or rupturing containers. Do not use air pressure to empty containers.
Protective equipment should be worn when handling this product to avoid eye and skin contact.
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 86 F (30 C). To insure against possible exothermic self accelerating decomposition, storage temperatures must not exceed 131 F (55 C). This emergency temperature is derived from the SADT (see Sect. 9). Keep containers tightly closed. Store away from reducing agents (e.g. amines, acids, alkalis) and heavy metal compounds (e.g. driers metal soaps and accelerators).

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

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 dust, 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
Eye contact with liquid or aerosol must be prevented through the use of chemical safety goggles or a face shield selected with regard for use condition exposure potential.
Eye wash fountains or other means of washing the eyes with a gentle flow of water should be readily available in all areas where this product is handled or stored. Water should be supplied through insulated and/or heat-traced pipes to prevent freeze-up in winter.

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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
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.

Agency	Value/Unit of measurement
OSHA PEL/TWA	15.000 mg/m³
ACGIH TLV/TWA	10.000 mg/m³
NIOSH REL/TWA	15.000 mg/m³
OSHA PEL/TWA	15.000 mg/m³
ACGIH TLV/TWA	10.000 mg/m³
NIOSH REL/TWA	10.000 mg/m³
OSHA PEL/TWA	0.050 mg/m³
ACGIH TLV/TWA	0.050 mg/m³
NIOSH REL/TWA	0.050 mg/m³
OSHA PEL/TWA	0.100 mg/m³
ACGIH TLV/TWA	0.100 mg/m³
NIOSH REL/TWA	0.050 mg/m³

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
IDLH = Immediate Dangerous to Life and Health

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor Off-white powder with a fruity odor.	**pH value** not determined
Odor threshold (ppm) not determined	**Relative vapor density (air=1)** not determined
Volatile % not determined	**Vapor pressure (mm Hg)** not determined
Boiling point/range not determined	**Evaporation rate** not determined
Melting point/range not determined	
Cloud point not determined	**Pour point** not determined
Flash point not determined	**Solubility in water** Insoluble

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	Solubility in other solvents not determined
Autoignition temperature not determined	
Specific Gravity/Density approx. 1.56 @ 20 degrees C	**Partition coefficient n-octanol/water** not determined
Bulk density not determined	
Other information SADT = 140 F (60 C) (See Sect. 10).	**Explosion limits** lower: N/D upper: N/D

10. STABILITY AND REACTIVITY

Stability This product is stable at ambient temperatures but may decompose if exposed to temperatures above 131 F (55 C).
Incompatibilities Avoid contact with strong acids, strong alkalis, strong oxidizers, accelerators and reducing agents.
Polymerization Hazardous polymerization will not occur.
Decomposition 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.
Conditions to avoid The SADT for this product is 140 F (60 C). The SADT (self accelerating decomposition temperature) is an experimentally derived temperature at which a typical package of the product will undergo self accelerating decomposition. Decomposition can be expected to be hazardous and uncontrollable. Under no circumstances should this product be exposed to temperatures near or above the emergency temperature of 131 F (55 C). Such an exposure could initiate hazardous decomposition. Contact with incompatible materials such as acids, alkalis, heavy metals and reducing agents will also result in hazardous decomposition.

11. TOXICOLOGICAL INFORMATION

Oral LD50	Acute oral toxicity data (LD50) is not available for this product The oral LD50 for the peroxide (40% in calcium carbonate) is greater than 5000 mg/kg (practically nontoxic).
Dermal LD50	Acute dermal(LD50)is not available for this product. The peroxide (40% on calcium carbonate) has been shown to be mildly irritating to rabbits following a 24 hour exposure.
Inhalation LC50	Acute toxicity data (LC50) is not available for this product. The product is expected to cause mild respiratory tract irritation. The product contains crystalline silica which is known to cause silicosis.
Skin	Chronic dermal effects for this product are not known. This product is expected to be mildly irritating.
Eye	The peroxide (40% on calcium carbonate) is mildly irritating to rabbits.
Chronic toxicity/carcinogenicity	Chronic ingestion effects of this product are not known. Chronic inhalation exposure effects of this product are

	not known. This product is expected to cause mild respiratory tract irritation. The product contains crystalline silica which is known to cause silicosis. The carcinogenic/mutagenic properties of this product are not known. Crystalline silica (cistobalite and quartz) is classified by IARC to be a known carcinogen to humans and by NTP as a substance which may be anticipated to be a carcinogen. The reproductive toxicity of this product is not known. The neurotoxic effects of this product are not known. Overexposure to this product may affect the skin, eyes, upper respiratory tract and lungs.
Other toxicological information	No other toxic effects for this product are known.

12. ECOLOGICAL INFORMATION

Ecotoxicological information	The ecological toxicity of this product is not known.
Bioaccumulation	Chemical fate information on this product is not known.
Other information	Other ecological toxicity is not available for this product.

13. DISPOSAL CONSIDERATIONS

Waste disposal in accordance with regulations The characteristic of reactivity per RCRA would be exhibited by unused product if it becomes a waste material.
Container disposal Containers should be cleaned of residual product before disposal. Empty containers should be disposed of in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

Shipping description	ORGANIC PEROXIDE TYPE E, SOLID (n-BUTYL-4,4-DI-(TERT-BUTYLPEROXY)VALERATE, 40%) 5.2, UN3108, PG II NORTH AMERICAN ERG NO:145
Required labels	ORGANIC PEROXIDE.
Environmentally hazardous substance	This product does not contain an environmentally hazardous substance per 49 CFR 172.101, Appendix A.

15. REGULATORY INFORMATION

Products and/or components listed below are subject to the following:	
New Jersey R-T-K Hazard. Sub.	yes
Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes
Massachusetts Substance List	yes
Penn. Hazardous Substance list	yes

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Toxic Subst. Cont. Act -listed	yes
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Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes
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
Massachusetts Substance List	yes
New Jersey R-T-K Hazard. Sub.	yes
Penn. Hazardous Substance list	yes
California Prop. 65	yes
Toxic Subst. Cont. Act -listed	yes
Domestic Substance List-Canada	yes

Other regulatory information
Warning: This product contains chemicals known to the State of California to cause cancer.

16. OTHER INFORMATION

Other information
TRIGONOX is a registered trademark of Akzo Nobel Chemicals Inc.

Created by
Product Safety(914)674-5000