

Akzo Nobel Polymer Chemicals LLC
MATERIAL SAFETY DATA SHEET

DATE PRINTED: 01/25/1999

PAGE 1
MSDS NO. 11-065702

Trigonox 29-40B-pd

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME
Trigonox 29-40B-pd

CHEMICAL NAME
1,1-Di-(tert-butylperoxy)-3,3,5-trimethyl-
cyclohexane on inert filler

SYNONYM
Peroxide, (3,5,5-trimethylcyclohexylidene)-
bis(1,1-dimethylethyl)

CHEMICAL FORMULA
Mixture

CAS #
MIXTURE

CHEMICAL FAMILY
Organic peroxides/peroxyketals

MANUFACTURERS NAME
Akzo Nobel Polymer Chemicals LLC

PRODUCT/TECHNICAL INFORMATION
1-800-828-7929

ADDRESS
300 South Riverside Plaza
Chicago, IL 60606

MEDICAL/HANDLING EMERGENCY
1-914-693-6946

COUNTRY
USA

TRANSPORTATION EMERGENCY
CHEMTREC 1-800-424-9300

PRODUCT USE
Polymerization initiator

REVISION DATE
12/08/1999

ISSUE DATE
3/31/1994

REVISION NO.
006

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE DESCRIPTION	PERCENT	CAS#
1,1-Di-(tert-butylperoxy)3,3,5-trimethylcyclohexane	** 38.000- 42.000	6731-36-8
Synthetic calcium silicate	** 18.800- 26.000	1344-95-2
Calcium carbonate	** 30.000- 35.000	471-34-1
Silica-crystalline cristobalite	0.800- 1.100	14464-46-1
Crystalline silica (Quartz)	0.400- 0.600	14808-60-7

** SUBSTANCE IS A COMPOUND AND/OR MIXTURE

SECTION 3. HAZARDS IDENTIFICATION

Appearance & Odor

Off-white powder with a slight odor.

STATEMENT OF HAZARDS

DANGER!

ORGANIC PEROXIDE.

HEAT OR CONTAMINATION MAY CAUSE HAZARDOUS DECOMPOSITION.

CAUSE EYE IRRITATION.

MAY CAUSE 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 duration and level of exposure.

Fire & Explosion Hazards

Peroxides and peroxide decomposition products are flammable and can ignite with explosive force if confined.

MARKETED BY

**HARWICK STANDARD
DISTRIBUTION CORPORATION**

60 S. Seiberling Street • Akron, Ohio 44305
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SECTION 3. HAZARDS IDENTIFICATION
(CONTINUED)

Primary Route of Exposure

Skin and eye contact and inhalation of dust are the principal routes of exposure to this product.

Inhalation Acute Exposure

Inhalation of dust may cause moderate irritation of the nose and throat.

Skin Contact - ACUTE

Prolonged skin contact may cause moderate irritation and redness.

Eye contact - ACUTE

Eye contact may cause severe irritation.

Ingestion - ACUTE

Irritation to the mouth, throat, esophagus and stomach may be caused by ingestion of this material.

CARCINOGENICITY

IARCNO	OSHANO
NTPNO	ACGIHNO

SECTION 4. FIRST AID MEASURES

Inhalation First Aid

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 Contact - First Aid

Remove contaminated clothing and equipment. Wash all affected areas with plenty of soap and water for at least 15 minutes. DO NOT attempt to neutralize with chemical agents. Wash any contaminated clothing before reuse. Obtain medical advice if irritation occurs.

Eye Contact - First Aid

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 - First Aid

Immediately give several glasses of water. DO NOT induce vomiting. If vomiting occurs, keep head below hips to reduce the risk of aspiration. Give fluids again. Have a physician determine if condition of patient will permit induction of vomiting or evacuation of stomach. Never give anything by mouth to a person who is unconscious or convulsing.

If victim is unconscious, monitor pulse, breathing and airway. If breathing stops, begin artificial respiration immediately. If the heart has stopped, give cardiopulmonary resuscitation (CPR). Get medical attention immediately.

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SECTION 4. FIRST AID MEASURES
(CONTINUED)

Medical conditions aggravated

Persons with pre-existing skin disease may be at an increased risk if exposed dermally to this material.

Note to Physician

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.

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT
N/D F N/D C

FLASH METHOD

AUTO IGNITION TEMPERATURE
N/D F N/D C

UPPER EXPLOSION LIMIT
N/D

LOWER EXPLOSION LIMIT
N/D

Extinguishing Media

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

Extinguish large fires with large amounts of water spray, fog or foam from a safe/protected position.

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.

Dike fire control water for later disposal. Do not allow contaminated water to enter waterways.

Fire & Explosion Hazards

Peroxides and peroxide decomposition products are flammable and can ignite with explosive force if confined.

Other Fire + Explosion Hazards

This product can produce flammable vapors which may travel to a source of ignition and flash back.

Hazardous Products/Combustion

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

NFPA HEALTH RATING
2

NFPA FLAMMABILITY RATING
1

NFPA REACTIVITY RATING
1

NFPA OTHER

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SECTION 6. ACCIDENTAL RELEASE MEASURES

Cleanup

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

SECTION 7. HANDLING AND STORAGE

Handling

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

Electrically grounded tanks and containers should always be used as should non-sparking, electrically grounded hand tools and appliances. Ground or bond to ground all vessels when transferring to prevent the accumulation of static electricity. See National Electric Code.

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).

MAXIMUM STORAGE TEMPERATURE

86.00 F 30.00 C

General Comments

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

SECTION 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 liquid or its aerosol should be minimized 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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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
(CONTINUED)

Ventilation protection

Local exhaust ventilation, enclosed system design, continuous monitoring devices, process isolation and remote control are traditional exposure control techniques which may be used to effectively minimize employee exposure.

Other Protection

Safety showers, with quick opening valves which stay open, 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 freeze-ups in cold weather.

APPLICABLE EXPOSURE LIMITS

Available exposure limits applicable to this product are shown below.

EXPOSURE LIMITS/REGULATORY INFORMATION
 (IN MG/M3)

SUBSTANCE DESCRIPTION	REG. AGENCY	PEL	TLV	TWA	STEL	CEIL
1,1-Di-(tert-butylperoxy)3,3,5-trimethylcyclohexane	OSHA	N/D	N/D	N/D	N/D	N/D
	ACGIH	N/D	N/D	N/D	N/D	N/D
	NIOSH	N/D	N/D	N/D	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D
Synthetic calcium silicate	OSHA	15.0000	N/D	N/D	N/D	N/D
	ACGIH	N/D	10.0000	N/D	N/D	N/D
	NIOSH	N/D	N/D	15.0000	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D
Calcium carbonate	OSHA	15.0000	N/D	N/D	N/D	N/D
	ACGIH	N/D	10.0000	N/D	N/D	N/D
	NIOSH	N/D	N/D	10.0000	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D
Silica-crystalline cristobalite	OSHA	0.0500	N/D	N/D	N/D	N/D
	ACGIH	N/D	0.0500	N/D	N/D	N/D
	NIOSH	N/D	N/D	0.0500	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D
Crystalline silica (Quartz)	OSHA	0.1000	N/D	N/D	N/D	N/D
	ACGIH	N/D	0.1000	N/D	N/D	N/D
	NIOSH	N/D	N/D	0.0500	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D

LEGEND:

EXPOSURE LIMIT DESCRIPTIONS

CEIL Ceiling Exposure Limit
 PEL Permissible Exposure Limit
 STEL Short Term Exposure Limit
 TLV Threshold Limit Value
 TWA Time Weighted Average

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
(CONTINUED)

N/D = Not Determined

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE (mm Hg) N/D	VAPOR DENSITY (Air = 1.0) N/D
EVAPORATION RATE N/D	VOLATILE % N/D
BOILING POINT N/D F N/D C	ODOR THRESHOLD (ppm) N/D
SPECIFIC GRAVITY N/D	BULK DENSITY N/D
SOLUBILITY IN WATER N/D Insoluble	SOLUBILITY IN OTHER SOLVENTS
COEFFICIENT OF OIL/WATER N/D	POUR POINT N/D F N/D C
MELTING POINT N/D F N/D C	pH FACTOR N/D
CLOUD POINT N/D F N/D C	FLASH POINT N/D F N/D C
FLASH METHOD N/D	UPPER EXPLOSION LIMIT
LOWER EXPLOSION LIMIT N/D	AUTO IGNITION TEMPERATURE N/D F N/D C

Other
SADT = 140 F (60 C) (See Sect. 10).

SECTION 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

This product is incompatible with strong acids, strong oxidizers, strong bases, metal salts, reducing agents and accelerators.

Polymerization

Hazardous polymerization will not occur.

Decomposition

Thermal decomposition will produce oxides of carbon and can produce flammable and/or combustible vapors and gases.

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.

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SECTION 10. STABILITY AND REACTIVITY
(CONTINUED)

Contact with incompatible materials such as acids, alkalis, heavy metals and reducing agents will also result in hazardous decomposition.

SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological - Inhalation

Acute toxicity data (LC50) is not available for this product. The LC50 in rats for the peroxide (75% in dibutyl phthalate) is greater than 200 mg/L (4 hour exposure). This product is expected to cause moderate respiratory tract irritation. This product contains crystalline silica which is known to cause silicosis.

Inhalation Chronic Exposure

Chronic inhalation exposure effects of this product are not known. This product is expected to cause moderate respiratory tract irritation. The product contains crystalline silica which is known to cause silicosis.

Toxicological - Dermal

Acute dermal (LD50) is not available for this product. The LD50 of the peroxide (75% in dibutyl phthalate) is greater than 5000 mg/kg. Calcium carbonate is a moderate skin irritant.

Skin Contact - CHRONIC

Chronic dermal effects for this product are not known. This product is expected to be moderately irritating.

Toxicological - Eye

The peroxide (75% in dibutyl phthalate) is mildly irritating to rabbits. Calcium carbonate is a severe eye irritant.

Toxicological - Ingestion

Acute oral toxicity data (LD50) is not available for this product. The oral LD50 in rats for the peroxide (75% in dibutyl phthalate) is greater than 5000 mg/kg (practically nontoxic). The oral LD50 in rats for calcium carbonate is greater than 5000 mg/kg (practically nontoxic).

Ingestion - CHRONIC

Chronic ingestion effects of this product are not known.

CARCINOGENICITY/MUTAGENICITY

The carcinogenic/mutagenic properties of this product are not known. Crystalline silica (cristobalite 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.

REPRODUCTIVE EFFECTS

The reproductive toxicity of this product is not known.

NEUROTOXICITY

The neurotoxic effects of this product are not known.

Other Toxicological Effects

No other toxic effects for this product are known.

Target Organs

Overexposure to this product may affect the skin, eyes, upper respiratory tract and lungs.

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SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

The ecological toxicity of this product is not known.

DISTRIBUTION

Other ecological information on this product is not known.

CHEMICAL FATE

Chemical fate information on this product is not known.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal

The characteristic of reactivity per RCRA would be exhibited by unused product if it becomes a waste material.

CONTAINER DISPOSAL

Containers should be drained of residual product before disposal. Empty containers should be disposed of in accordance with all applicable laws and regulations.

SECTION 14. TRANSPORT INFORMATION

SHIPPING DESCRIPTION

ORGANIC PEROXIDE TYPE D, SOLID
(1,1-DI-(TERT-BUTYLPEROXY)-3,3,5-TRIMETHYL CYCLOHEXANE, 40%)
5.2, UN3106, PG II
NORTH AMERICAN ERG NO: 145

REQUIRED LABELS

ORGANIC PEROXIDE.

ENVIRON. HAZARDOUS SUBSTANCE

This product does not contain an environmentally hazardous substance per 49 CFR 172.101, Appendix A.

SECTION 15. REGULATORY INFORMATION

Component 1,1-Di-(tert-butylperoxy)3,3,5-trimethylcyclohexane is subject to the following

Environmental List

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

Component Synthetic calcium silicate is subject to the following

Environmental List

DSL Domestic Substance List-Canada
MA. LIST Massachusetts Substance List
PA. LIST Penn. Hazardous Substance List

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SECTION 15. REGULATORY INFORMATION
(CONTINUED)

TSCA Toxic Subst. Cont. Act -listed

Component Calcium carbonate is subject to the following

Environmental List

DSL Domestic Substance List-Canada
 TSCA Toxic Subst. Cont. Act -listed

Component Silica-crystalline cristobalite is subject to the following

Environmental List

DSL Domestic Substance List-Canada
 MA. LIST Massachusetts Substance List
 NJ R-T-K New Jersey R-T-K Hazard. Sub.
 PA. LIST Penn. Hazardous Substance List
 TSCA Toxic Subst. Cont. Act -listed

Component Crystalline silica (Quartz) is subject to the following

Environmental List

DSL Domestic Substance List-Canada
 MA. LIST Massachusetts Substance List
 NJ R-T-K New Jersey R-T-K Hazard. Sub.
 PA. LIST Penn. Hazardous Substance List
 PROP 65 California Proposition 65
 TSCA Toxic Subst. Cont. Act -listed

OTHER REGULATORY INFORMATION

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

WHMIS HAZARD CLASS
 F,C, D-2A

HAZARD RATING SOURCE
 HMIS

HEALTH
 2

REACTIVITY
 1

FLAMMABILITY
 1

OTHER

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SECTION 16. OTHER INFORMATION

OTHER INFORMATION

TRIGONOX is a registered trademark of Akzo Nobel Chemicals Inc.

CREATED BY
Product Safety(914)674-5000

KEY TO ABBREVIATIONS:

EQ=Equal	LT=Less Than	GT=Greater Than
AP=Approximately	TR=Trace	ND=No Data available

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