

## MATERIAL SAFETY DATA SHEET

DATE PRINTED: 9/01/1999

PAGE 1  
MSDS NO. 11-076279

Trigonox C-40B-pd

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SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION  
-----**PRODUCT NAME**

Trigonox C-40B-pd

**CHEMICAL NAME**

tert-Butyl peroxybenzoate on inert filler

**SYNONYM**

Benzenecarboperoxoic acid, 1,1-dimethylethyl ester

**CHEMICAL FORMULA**

C11 H14 O3

**CAS #**

MIXTURE

**CHEMICAL FAMILY**

Organic peroxides/peroxyesters

**MANUFACTURERS NAME**

Akzo Nobel Chemicals Inc.

**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**

3/25/1999

**ISSUE DATE**

5/23/1997

**REVISION NO.**

003

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SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS  
-----**SUBSTANCE DESCRIPTION****PERCENT****CAS#**

tert-Butyl peroxybenzoate

39.000- 41.000 614-45-9

Calcium carbonate

\*\* 40.000- 50.000 471-34-1

Silicon dioxide, amorphous

10.000- 20.000 7631-86-9

\*\* SUBSTANCE IS A COMPOUND AND/OR MIXTURE

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SECTION 3. HAZARDS IDENTIFICATION  
-----**Appearance & Odor**

White powder with a slight odor.

**STATEMENT OF HAZARDS**

DANGER!

ORGANIC PEROXIDE.

HEAT OR CONTAMINATION MAY CAUSE HAZARDOUS DECOMPOSITION.

MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

COMBUSTIBLE VAPOR.

**Fire & Explosion Hazards**

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

**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 irritation to nose, throat and upper respiratory system.

MARKETED BY

**HARWICK STANDARD**  
DISTRIBUTION CORPORATION60 S. Seiberling Street • Akron, Ohio 44305  
Akron • Chicago • Northeast • Southern • West Coast

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SECTION 3. HAZARDS IDENTIFICATION  
(CONTINUED)**Skin Contact - ACU**

Skin contact may cause irritation and redness.

**Eye Contact - ACUTE**

Eye contact may cause moderate irritation and may cause tearing.

**Ingestion - ACUTE**

Ingestion may result in nausea and/or vomiting. May cause irritation to the gastrointestinal system.

**CARCINOGENICITY**

IARC	....NO	OSHA	....NO
NTP	....NO	ACGIH	....NO

-----  
SECTION 4. FIRST AID MEASURES  
-----**Inhalation - First Aid**

If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Skin Contact - First Aid**

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.

**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**

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.

**Medical conditions aggravated**

Persons with pre-existing skin and/or respiratory disease may be at increased risk if exposed 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.

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SECTION 5. FIRE FIGHTING MEASURES  
-----**FLASH POINT**  
N/D F

N/D C

**FLASH METHOD****AUTO IGNITION TEMPERATURE**  
716.00 F 380.00 C  
Greater than**UPPER EXPLOSION LIMIT**  
N/D**LOWER EXPLOSION LIMIT**  
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 & 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**

1

**NFPA FLAMMABILITY RATING**

2

**NFPA REACTIVITY RATING**

2

**NFPA OTHER**-----  
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 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.

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SECTION 7. HANDLING AND STORAGE  
(CONTINUED)  
-----**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.

-----  
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 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.

**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 Protection**

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 freeze-ups 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 freeze-ups in cold weather.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION  
(CONTINUED)

## APPLICABLE EXPOSURE LIMITS

Due to variability of the silica content, the OSHA PEL may vary from 2.85 mg/m<sup>3</sup> to 5 mg/m<sup>3</sup>. Both calcium carbonate and amorphous silica have 5 mg/m<sup>3</sup> respirable fraction limits - OSHA.

EXPOSURE LIMITS/REGULATORY INFORMATION  
(IN MG/M<sup>3</sup>)

SUBSTANCE DESCRIPTION	REG. AGENCY	PEL	TLV	TWA	STEL	CEIL
tert-Butyl peroxybenzoate	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
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
Silicon dioxide, amorphous	OSHA	2.6670	N/D	N/D	N/D	N/D
	ACGIH	N/D	10.0000	N/D	N/D	N/D
	NIOSH	N/D	N/D	6.0000	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  
 N/D = Not Determined

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE (mm Hg)  
N/DVAPOR DENSITY (Air = 1.0)  
N/DEVAPORATION RATE  
N/DVOLATILE %  
N/DBOILING POINT  
N/D F N/D CODOR THRESHOLD (ppm)  
N/DSPECIFIC GRAVITY  
N/DBULK DENSITY  
N/DSOLUBILITY IN WATER  
N/D

SOLUBILITY IN OTHER SOLVENTS

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES  
(CONTINUED)  
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<b>COEFFICIENT OF OIL/WATER</b> N/D		<b>POUR POINT</b> N/D F	N/D C
<b>MELTING POINT</b> N/D F	N/D C	<b>pH FACTOR</b> N/D	
<b>CLOUD POINT</b> N/D F	N/D C	<b>FLASH POINT</b> N/D F	N/D C
<b>FLASH METHOD</b>		<b>UPPER EXPLOSION LIMIT</b> N/D	
<b>LOWER EXPLOSION LIMIT</b> N/D		<b>AUTO IGNITION TEMPERATURE</b> 716.00 F 380.00 C Greater than	

**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**

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**

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).

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SECTION 11. TOXICOLOGICAL INFORMATION  
-----**Toxicological - Inhalation**

The acute LC50 for this product is unknown. In an acute inhalation study in rats, with tert-butyl peroxybenzoate, no mortality was seen following a 4 hour exposure to saturated vapor. This product may cause irritation of the respiratory tract.

**Inhalation Chronic Exposure**

Chronic inhalation exposure effects of this product are not known. However, it may cause irritation of the respiratory tract.

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SECTION 11. TOXICOLOGICAL INFORMATION  
(CONTINUED)  
-----**Toxicological - Dermal**

The acute dermal LD50 for this product is unknown. The acute dermal LD50 for tert-butyl peroxybenzoate is 3817 mg/kg (rabbit). Components of this product are irritating to the skin.

**Skin Contact - CHRONIC**

Chronic dermal exposure effects for this product are not known, However, prolonged contact with clothing saturated with neat tert-butyl peroxybenzoate may cause skin irritation. Tert-butyl peroxybenzoate is not sensitizing to guinea pigs.

**Toxicological - Eye**

Components of this product are irritating to the eyes.

**Toxicological - Ingestion**

The oral LD50 for this product is unknown. The oral LD50 (rat) for the components of this product are:  
tert-butyl peroxybenzoate - 4838 mg/kg, slightly toxic;  
Silica, amorphous > 10000 mg/kg, practically non-toxic;  
calcium carbonate - 6450 mg/kg, practically non-toxic.

**Ingestion - CHRONIC**

Chronic ingestion effects of this product are not known. However, in a 13 week NTP study of tert-butyl peroxybenzoate, toxicity was noted in the forestomach of both rats and mice. The toxicity, which was limited to the sight of contact, consisted of an increase in stomach weight and hyperplasia. No other toxicity was noted. The NOAEL for this effect in rats and mice was approximately 30 mg/kg/day (5 days/week).

**CARCINOGENICITY/MUTAGENICITY**

The carcinogenicity/mutagenicity of this product is unknown. Results for tert-butyl peroxybenzoate in the Ames test were inconclusive. Tert-butyl peroxybenzoate is mutagenic in mouse lymphoma cells. In Chinese hamster ovary cells, tert-butyl peroxybenzoate induced sister chromatid exchanges in the absence of metabolic activation and induced chromosomal aberrations in the presence and absence of metabolic activation. Micronucleated erythrocytes were not seen in mice exposed to tert-butyl peroxybenzoate at doses up to 500 mg/kg (5 days/week) for 13 weeks.

**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 and respiratory system.

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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 (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.

**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.

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SECTION 14. TRANSPORT INFORMATION  
-----**SHIPPING DESCRIPTION**

ORGANIC PEROXIDE TYPE D, SOLID  
(TERT-BUTYL PEROXYBENZOATE, 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.

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SECTION 15. REGULATORY INFORMATION  
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Component tert-Butyl peroxybenzoate 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.
TSCA	Toxic Subst. Cont. Act -listed



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SECTION 15. REGULATORY INFORMATION  
(CONTINUED)  
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Component Calcium carbonate is subject to the following

## Environmental List

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

Component Silicon dioxide, amorphous 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**OTHER REGULATORY INFORMATION**

No other regulatory information is available on this product

**WHMIS HAZARD CLASS**  
C, D-2B, F**HAZARD RATING SOURCE**  
HMIS**HEALTH**  
1**REACTIVITY**  
2**FLAMMABILITY**  
2**OTHER**-----  
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  
AP=ApproximatelyLT=Less Than  
TR=TraceGT=Greater Than  
ND=No Data available

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