

TRIGONOX C

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product label name tert-Butyl peroxybenzoate	
Supplier Akzo Nobel Polymer Chemicals LLC 525 West Van Buren Street Chicago, IL 60607-3823 www.akzonobel-polymerchemicals.com	
Emergency telephone + 1-914-693-6946 Dobbs Ferry, NY USA	transportation emergency CHEMTREC - USA: 1-800-424-9300 CANUTEC - CANADA: 1-613-996-6666
Intended use polymerization initiator	
Date of first issue 2005/12/08	Date of last issue / Revision # 2005/12/08 / 2.52
Chemical family peroxides	

2. COMPOSITION/INFORMATION ON INGREDIENTS

Information on hazardous ingredients			
Chemical description tert-Butyl peroxybenzoate			
Composition / information on ingredients			
Number	% w/w	CAS-number	Chemical name
1	> 98.0	000614-45-9	tert-Butyl peroxybenzoate

3. HAZARDS IDENTIFICATION

Emergency overview colorless , clear liquid with faint odor. DANGER! ORGANIC PEROXIDE. REFRIGERATED ORGANIC PEROXIDE - MAINTAIN COOLING. HEAT OR CONTAMINATION MAY CAUSE HAZARDOUS DECOMPOSITION. COMBUSTIBLE LIQUID AND VAPOR. MAY CAUSE EYE IRRITATION. CAUSES SKIN AND RESPIRATORY TRACT IRRITATION. MAY CAUSE HEADACHE, DIZZINESS AND NAUSEA. This product is a combustible liquid. Peroxides and decomposition products are flammable and can ignite with explosive force if confined.	
Health effects Skin or eye contact and inhalation of vapor or mists are the principal routes of exposure to this product. Inhalation of vapors, mist or aerosol may cause severe irritation of the nose, throat and/or respiratory system. Skin contact may cause severe irritation and redness. Eye contact may cause irritation. Ingestion may cause irritation of the mouth, throat, esophagus, and stomach. May cause diarrhea, difficult breathing, fatigue, and possibly death. Aspiration of the liquid during vomiting may produce chemical pneumonitis.	
Carcinogenicity	
Description	Applicable

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IARC	no
NTP	no
OSHA	no
ACGIH	no

4. FIRST AID MEASURES

Symptoms and effects Irritating to skin.
First aid
General In all cases of doubt, or when symptoms persist, seek medical attention.
Inhalation Remove to fresh air. If not breathing, give artificial respiration. Oxygen may additionally be given, by trained personnel, if it is available. Get medical attention if symptoms occur.
Skin Immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if irritation persists. Wash clothing before reuse. Thoroughly clean or destroy contaminated shoes.
Eye Immediately flush eyes with plenty of water. If easy to do, contact lenses should be removed during the flushing, by trained personnel. Occasionally hold the eyelids apart during the flushing to ensure rinsing the entire surface of the eye and lids with water. Get medical attention if irritation develops and persists.
Ingestion Call a physician or a poison control center immediately. Induce vomiting only if directed by medical personnel. The patient should lie on their left side while vomiting to reduce the risk of aspiration. Never give anything by mouth to an unconscious or convulsing person.
Advice to physician Persons with pre-existing skin, eye, or respiratory disease may be at increased risk from the irritant or allergic properties of this material. Attending physician should treat exposed patients symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media waterspray, foam, sand, dry chemical powder, CO ₂ .
Unsuitable extinguishing media halones.
Hazardous decomposition/ combustion products CO ₂ , Carbon monoxide, Benzoic acid, tert-Butanol, Acetone, Benzene.
Protective equipment Firefighters must wear fire resistant protective equipment. Wear approved respirator and protective gloves.
Other information Evacuate all non-essential personnel. Extinguish a small fire with powder or carbon dioxide then apply water to prevent re-ignition. Cool closed containers with water. Water used to extinguish a fire should not be allowed to enter the drainage system or water courses. After a fire, ventilate thoroughly the area and soak with water, clean the walls and metallic surfaces.
Fire and explosion hazard CAUTION: re-ignition may occur. Decomposition under effect of heating (See also Section Hazardous decomposition products). If involved in a fire, it will support combustion. Vapours may form explosive mixtures with air. In case of fire and/or explosion do not breathe fumes.

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NFPA ratings	
Hazard	Rating
Health	2
Flammability	2
Reactivity	3
Other	

6. ACCIDENTAL RELEASE MEASURES

Personal precautions Do not breathe fumes/vapour. Avoid contact with skin. For personal protection see Section 8.
Environmental precautions Do not allow to enter drains or water courses.
Methods for cleaning up Stop leakage if possible. Eliminate all sources of ignition, and do not generate flames or sparks. Collect as much as possible in a clean container for (preferable) reuse or disposal. Cover the remainder with inert absorbent (e.g. vermiculite) for disposal. Keep contents moist. The waste should NOT be confined. Flush surroundings with large amounts of water and soap.
Other information CAUTION: reignition may occur. Vapours are heavier than air and may spread along floors. Vapours may travel to a source of ignition and flash back. Evacuate personnel to safe area.

7. HANDLING AND STORAGE

Handling Never weigh out in the storage room. When using do not eat, drink or smoke. Do not pipet by mouth. Do not breathe fumes/vapour. Handle in well ventilated areas. Eliminate all sources of ignition, and do not generate flames or sparks. Keep away from reducing agents (e.g. amines), acids, alkalies and heavy metal compounds (e.g. accelerators, driers, metal soaps). Keep product and emptied container away from heat and sources of ignition. Confinement must be avoided. Avoid shock and friction. Avoid contact with skin. Avoid Incompatible materials (See Section 10).
Storage requirements Store in accordance with local/national regulations. Keep away from food, drink and animal feedingstuffs. Store in a dry well ventilated place away from sources of heat and direct sunlight. Store separate from other chemicals. Keep only in the original container. Keep container upright to prevent leakage.
Storage Avoid temperatures below 10 °C. If product freezes or separates, contact Akzo Nobel. For maximum quality store below: 25 °C.
Other information It is recommended to use electrical equipment of temperature group T3. However, autoignition can never be excluded. Wash hands thoroughly after handling or contact. Keep working clothing separately and do not take them home.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls Ensure good ventilation and local exhaustion of the working area. Explosion proof ventilation recommended.
Personal protection Respiratory The usual precautionary measures for handling chemicals should be observed. Hand Wear suitable protective gloves of neoprene or synthetic rubber.

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Eye

Wear eye/face protection. A face shield is preferred over goggles.

Skin and body

Wear suitable protective clothing.

Other information

Emergency-shower and facilities for rinsing eyes must be accessible. Launder clothes before reuse.

In this country no exposure limit has been established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor

colorless , clear liquid with faint odor.

Boiling point/range

not applicable (Decomposes)

Melting point/range

8°C / 46°F Tends to undercooling.

Flash point

Above the SADT value

Flammability

Decomposition products may be flammable.

Explosive properties

yes

Oxidizing properties

not applicable

Vapour pressure

0.04 kPa (50°C / 122°F)

Density

1040 kg/m³ (20°C / 68°F) Specific gravity = 1.04 (20°C / 68°F)

Bulk density

not applicable

Solubility in water

immiscible at 20°C / 68°F

Solubility in other solvents

Soluble in most organic solvents

pH value

neutral

Partition coefficient n-octanol/water

not determined

Relative vapour density (air=1)

not determined

Viscosity

6 mPa.s at 20°C / 68°F

Active oxygen content

8.0 %

Peroxide content

98 %

Autoignition temperature

Test method not applicable (See Section 7)

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SADT 60 °C. See also Section 10.
Explosion limits not determined
Volatile % not determined

10. STABILITY AND REACTIVITY

Stability 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 following temperature: 60 °C. Contact with incompatible substances can cause decomposition at or below the SADT 60 °C.
Conditions to avoid Avoid temperatures below 10 °C. To maintain quality store in original closed container below: 25 °C. Avoid shock and friction. Confinement must be avoided.
Incompatibles Avoid contact with rust, iron and Copper. Contact with incompatible materials such as acids, alkalies, heavy metals and reducing agents will result in hazardous decomposition. Do not mix with peroxide accelerators. Use only Stainless steel 316, PVC, polyethylene or glass-lined equipment.
Polymerization Polymerization does not occur.
Decomposition Hazardous decomposition products; Benzoic acid, tert-Butanol, Acetone, Benzene.
Other information Emergency procedures will vary depending on conditions. The customer must have an emergency response plan in place. Contact Akzo Nobel for assistance with developing an emergency response plan.

11. TOXICOLOGICAL INFORMATION

tert-Butyl peroxybenzoate
Acute toxicity Oral LD50 mouse:> 2000 mg/kg Dermal LD50 mouse:> 2000 mg/kg Inhalation LC50 rat: >200 mg/l (4 hours)
Irritation Skin Moderately irritating Eye Mildly irritating Sensitization Not sensitizing (guinea pig) Genotoxicity Ames test : mutagenic. In vivo micronucleus test : Not mutagenic

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Other toxicological information
in vitro cytogenetic test : clastogenic

12. ECOLOGICAL INFORMATION

tert-Butyl peroxybenzoate

Ecotoxicity

fish
Acute toxicity, 96h-LC50 = 8.6 mg/l. (Pimephales promelas)

algae
72h-IC50 : 1.3 mg/l.

bacteria
Activated sludge respiration inhibition test EC50 = 43 mg/l.

Fate

Degradation Biotic
Readily biodegradable (Closed bottle test).

13. DISPOSAL CONSIDERATIONS

Product
Due to the high risk of contamination recycling/recovery is not recommended. Waste disposal in accordance with regulations (most probably controlled incineration).

Contaminated packaging
According to local regulations. Emptied container might retain product residues. Follow all warnings even after the container is emptied.

Other information
For further advice contact manufacturer.

14. TRANSPORT INFORMATION

Land transport (ADR/ RID) and / or DOT

Class
5.2

TREM-Card or ERG Number
NORTH AMERICAN ERG NO:146

UN number
3103

Proper Shipping Name
Organic peroxide type c, liquid (tert-Butyl peroxybenzoate)

Required labels
ORGANIC PEROXIDE.

Sea transport (IMDG-code/ IMO)

Class
5.2

UN number
3103

EMS
F-J, S-R

Marine pollutant
no





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Proper Shipping Name Organic peroxide type c, liquid (tert-Butyl peroxybenzoate)
Other information Label(s): 5.2

<i>Air transport (ICAO-TI/ IATA-DGR)</i>
UN number 3103
Class 5.2
Proper Shipping Name Organic peroxide type c, liquid (tert-Butyl peroxybenzoate)
Other information Label(s); 5.2

15. REGULATORY INFORMATION

Products and/or components listed below are subject to the following:	
tert-Butyl peroxybenzoate	
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	3			
WHMIS Hazard classes	B-3,C,D-2B,F			
				

Other regulatory information No other regulatory information is available on this product.
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16. OTHER INFORMATION

TRIGONOX C

History**Other information**

TRIGONOX: This is a registered trademark of Akzo Nobel Chemicals BV or any of its affiliated companies in one or more territories in the world.

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Revision

2.52

Composed by

N. Shoshenskiy, Regulatory Affairs - North America. J.W. Wessels - Regulatory Affairs - Europe.

Changes were made in section

globalized

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 subject matter covered. If the date on this document is more than three years old, call to make certain that this sheet is current.