



NORAC

THE NORAC COMPANY, INC.
Azusa, CA

MATERIAL SAFETY DATA SHEET

NOROX 600

HEALTH: 1
FLAMMABILITY: 2
REACTIVITY: 2

MSDS 1
Reference
Norox 600 v0008

Print Date
09/06/05

SECTION 1 - IDENTIFICATION OF THE PRODUCT AND THE COMPANY

PRODUCT NAME	Norox 600	EMERGENCY TELEPHONE	(626) 334-2908
MANUFACTURER	The Norac Company, Inc.	CHEMTREC	1-800-424-9300
ADDRESS	405 S. Motor Ave. ,Azusa, CA 91702	CAS NO.	15520-11-3
CHEMICAL NAME	Di-(4-tert-butylcyclohexyl) peroxydicarbonate	CHEMICAL FORMULA	
CHEMICAL FAMILY	Peroxydicarbonate		C ₂₂ H ₃₈ O ₆

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	%
Di-(4-tert-butylcyclohexyl) peroxydicarbonate	15520-11-3	95 - 99

SECTION 3 - HAZARD IDENTIFICATION OF THE PREPARATION

ROUTES OF EXPOSURE

Skin Contact	May produce moderate skin irritation including redness, swelling and burning sensation.
Eye Contact	May produce moderate to severe eye and mucous membrane irritation.
Ingestion	Relatively non-toxic by ingestion
Inhalation	May be moderately irritating to the nose, throat and mucous membranes

EFFECTS OF OVER-EXPOSURE

None established.

SECTION 4 - FIRST-AID MEASURES

Skin	Wash contaminated area thoroughly with soap and water.
Eyes	Flush eyes with water for 15 minutes and seek medical attention.
Ingestion	Do Not induce vomiting. Drink plenty of water. Immediately call a physician. For aid to physician, suggest local Poison Control Center.
Inhalation	Remove to fresh air, if breathing becomes labored or irritation develops, seek medical attention.

SECTION 5 - FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA	Water from a safe distance - preferably with a fog nozzle. In case of very small fires, other means such as carbon dioxide, foam or dry chemical extinguishers may be effective.
SPECIAL FIRE FIGHTING PROCEDURES	Firemen should be equipped with protective clothing and SCBA's. In case of fire near storage area, cool the containers with water spray.
UNUSUAL FIRE AND EXPLOSION HAZARDS	The heat of decomposition of the peroxides adds to the heat of the fire. In case of decomposition without flames, explosion risk exists due to the developing air/gas mixture..

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN EVENT OF SPILL OR RELEASE	Evacuate area of all unnecessary personnel. Refer to protective measures listed in sections 7 and 8. Soak spilled material with water. The addition of water will reduce the concentration of the peroxide and reduce its hazard potential. Keep spilled material from entering drains, sewers, streams, etc. Carefully collect the material and transfer into a clean polyethylene lined or a polyethylene drum disposal container. Label container and store in a secure area for proper disposal. Observe recommended storage temperature for this material
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SECTION 7 - HANDLING AND STORAGE

HANDLING	Keep containers closed to prevent contamination. Rotate stock using the oldest material first. Never add to hot solvents or monomers as a violent decomposition and/or reaction may result. <u>DO NOT USE NEAR FOOD OR DRINK.</u> Avoid skin and eye contact. Do not transfer to rigid containers with tight closures. Wear personal protection equipment recommended in section 8.
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Norox 600

STORAGE

Keep material in its original container away from any incompatible materials, direct sunlight or other sources of heat. **DO NOT STORE WITH FOOD OR DRINK.** Store in an isolated, well-ventilated area below 68°F. Keep below 86°F at all times. Temperatures above 95°F may lead to vigorous decomposition and fire.

OTHER PRECAUTIONS

Unmixed, uncontaminated material, remaining at the end of the day, shall be returned to a proper organic peroxide storage area¹. Under no circumstances should material be returned to the original container.²

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

VENTILATION

Use adequate ventilation.

RESPIRATORY PROTECTION

Not generally required unless necessary to prevent respiratory irritation. In case of spill or leak of unknown concentration, use NIOSH/MSHA approved supplied air respirator.

EYE PROTECTION

Safety goggles recommended, goggles with a face shield are preferred.

HAND PROTECTION

Protective gloves recommended, butyl rubber (solvent resistant).

OTHER

A safety shower and eyewash is highly recommended when the risk of a significant exposure exists.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: White solid with mild odor.

BOILING POINT in °F: Decomposes

FLASH POINT: Decomposes.

pH: Not applicable

VAPOR PRESSURE mm Hg: N/A

VAPOR DENSITY (Air=1): N/A

SPECIFIC GRAVITY (Water=1) Unknown

FLAMMABLE LIMITS: Unknown

% VOLATILE BY VOLUME N/A

EVAPORATION RATE N/A

SOLUBILITY IN WATER Insoluble

SECTION 10 - STABILITY AND REACTIVITY

STABILITY

Unstable.

CONDITIONS TO AVOID

Storage in direct sunlight, heat, flames, sparks. Prevent product contamination.

MATERIALS TO AVOID

Promoters, accelerators, metals, acids, corrosives, oxidizing and reducing agents, or any hot material.

HAZARDOUS DECOMPOSITION PRODUCTS

Decomposition produces flammable gasses.

HAZARDOUS POLYMERIZATION

Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

COMPONENTS

Di-(4-tert-butylcyclohexyl)
peroxydicarbonate

CAS NO.

15520-11-3

%

95 - 99

HAZARD DATA

Oral--Rat LD₅₀: > 5000 mg/kg

Skin--Rabbit: Non irritating (24-hr. exp.)

Eye--Rabbit: Slight irritant

SECTION 12 - ECOLOGICAL INFORMATION

No data is available on the preparation itself. The product should be prevented from entering drains, sewers, streams, etc.

SECTION 13 - DISPOSAL CONSIDERATIONS

Prevent material from entering drains, sewers, streams, etc.

Immediately dispose of waste material at a RCRA approved hazardous waste management facility in accordance with federal, state and local regulations.

¹ See CCR Title 8 Section 5461, NFPA 432, and UFC (91) Sec. 80.307.

² See NFPA 14-3

Norox 600

RCRA Classification of unadulterated product as a waste
 Reactive (D003)
 Ignitable (D001)

SECTION 14 - TRANSPORT INFORMATION

DOT Shipping Name: ORGANIC PEROXIDE TYPE C, SOLID, TEMPERATURE CONTROLLED, (DI-(4-TERT-BUTYLCYCLOHEXYL) PEROXYDICARBONATE, ≤ 100%)
DOT Hazard Class: 5.2
UN/NA ID No.: UN3114
DOT Packing Group: PG II

2000 ERG GUIDE NO.: 148

SECTION 15 - REGULATORY INFORMATION

The following chemicals are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent</u>
NONE		

TSCA Status

This product is listed in the US Toxic Substances Control Act (TSCA) Inventory of Chemicals.

Status of Carcinogenicity

Not recognized as a carcinogen by the IARC, NTP or OSHA.

SECTION 16 - OTHER INFORMATION**NFPA 704 Rating**Health

2

Flammability

3

Reactivity

2

HMIS RatingHealth

1

Flammability

2

Reactivity

2

DISCLAIMER OF LIABILITY

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use, or disposal of the product.

This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.



MATERIAL SAFETY DATA SHEET

HEALTH
FLAMMABILITY: 2
REACTIVITY: 2



NOROX[®] 425

SECTION 1 - IDENTIFICATION OF THE PRODUCT AND THE COMPANY

PRODUCT NAME	NOROX[®] 425	TELEPHONE	626-334-2908
MANUFACTURER	Norac, Inc.	CHEMTREC (24hr) (USA)	800-424-9300
ADDRESS	405 S. Motor Ave., Azusa, CA 91702	(Maritime/International)	703-527-3887
CHEMICAL NAME	tert-Butylperoxy-3,5,5-trimethylhexanoate	CAS NO.	13122-18-4
CHEMICAL FAMILY	Organic peroxide - Peroxyester	CHEMICAL FORMULA	C ₁₃ H ₂₆ O ₃

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	%
tert-Butylperoxy-3,5,5-trimethylhexanoate	13122-18-4	99

SECTION 3 - HAZARD IDENTIFICATION OF THE PREPARATION

PHYSICAL HAZARDS	Organic Peroxide. Decomposition.
HEALTH HAZARDS	Irritant.
EXPOSURE LIMITS	Both ACGIH and OSHA PEL have not been established for this chemical.
ROUTES OF EXPOSURE	
Skin Contact	Irritating to the skin. May cause sensitization by skin contact..
Eye Contact	May cause slight eye irritation, including redness and swelling.
Ingestion	May be toxic by ingestion.
Inhalation	No known applicable information.
EFFECTS OF OVER-EXPOSURE	No known applicable information.

SECTION 4 - FIRST-AID MEASURES

Skin	Immediately remove any contaminated clothing. Wash contaminated area thoroughly with soap and copious amounts of water for at least 15 minutes. If irritation or adverse symptoms develop seek medical attention.
Eyes	Remove any contact lenses at once. Flush eyes with water for at least 15 minutes. Ensure adequate flushing by separating the eyelids with fingers. If irritation or adverse symptoms develop seek medical attention.
Ingestion	Contact a physician, hospital or Poison Control Center at once. DO NOT INDUCE VOMITING. If conscious and not convulsing, give copious amounts of water.
Inhalation	Remove to fresh air, if coughing, breathing becomes labored, irritation develops or other symptoms develop, seek medical attention at once, even if symptoms develop several hours after the exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

FLASH POINT	~ 201°F (94°C) SETAFLASH
FLAMMABLE LIMITS	No data available
AUTOIGNITION POINT	No data available
EXTINGUISHING MEDIA	Water from a safe distance - preferably with a fog nozzle. In case of very small fires, other means such as carbon dioxide, foam or dry chemical extinguishers may be effective.
SPECIAL FIRE FIGHTING PROCEDURES	Firemen should be equipped with protective clothing and SCBA's. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. In case of fire near storage area, cool the containers with water spray.
UNUSUAL FIRE AND EXPLOSION HAZARDS	The heat of decomposition of the peroxides adds to the heat of the fire. Chemicals may explode when exposed to heat.
HAZARDOUS COMBUSTION PRODUCTS	Irritating and highly toxic gases may be generated along with carbon dioxide and carbon monoxide.

NOROX[®] 425**SECTION 6 - ACCIDENTAL RELEASE MEASURES****STEPS TO BE TAKEN IN
EVENT OF SPILL OR
RELEASE**

Evacuate area of all unnecessary personnel. Remove all sources of ignition. Refer to protective measures listed in sections 7 and 8. Spilled material should be swept up with an inert, moist diluent such as perlite, vermiculite, or sand. Keep spilled material from entering drains, sewers, streams, etc. Carefully collect the material and transfer into a clean polyethylene lined or a polyethylene drum disposal container. Moisten container with water prior to sealing. Label container and store in a secure area for proper disposal.

SECTION 7 - HANDLING AND STORAGE**HANDLING**

Rotate stock using the oldest material first. Avoid contact with skin, eyes and clothing. Avoid breathing vapors and use with adequate ventilation. Use PPE as specified in Section 8. Keep containers closed to prevent contamination. Keep away from sources of heat, sparks or flame. Do not add to hot solvents or monomers as a violent decomposition and/or reaction may result. Keep in original container. **DO NOT USE NEAR FOOD OR DRINK.** Wash thoroughly after handling.

STORAGE

Store in original containers and keep sealed. Cool storage at 68°F (20°C) or below is recommended for longer shelf life and stability. Prolonged storage at elevated temperatures of 80°F (27°C) and higher will cause product degradation, gassing and potential container rupture which can result in a fire and/or explosion. Store out of direct sunlight in a well ventilated area away from combustible and incompatible materials. **DO NOT STORE WITH FOOD OR DRINK.** Refer to NFPA 432 Code for the Storage of Organic Peroxide Formulations from the National Fire Protection Association for additional storage information.

OTHER PRECAUTIONS

Unmixed, uncontaminated material, remaining at the end of the day, shall be returned to a proper organic peroxide storage area. Under no circumstances should material be returned to the original container.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION**VENTILATION**

Use adequate ventilation.

RESPIRATORY PROTECTION

Not generally required unless necessary to prevent respiratory irritation. If necessary use NIOSH/MSHA approved cartridge respirator with organic vapor cartridges. In case of spill or leak of unknown concentration, use NIOSH/MSHA approved supplied air respirator.

EYE PROTECTION

Safety goggles recommended, goggles with a face shield are preferred.

HAND PROTECTION

Protective gloves recommended, solvent resistant.

OTHER

A safety shower and eyewash is highly recommended when the risk of a significant exposure exists.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:	Colorless liquid with a mild ester-like odor.		
BOILING POINT:	Decomposes	SPECIFIC GRAVITY:	.9
VAPOR PRESSURE:	No data available	FLASH POINT:	~ 201°F (94°C)
VAPOR DENSITY:	No data available	FLAMMABLE LIMITS:	No data available
EVAPORATION RATE:	No data available	SADT:	60°C (140°F)
% VOLATILE BY VOLUME:	No data available	pH:	No data available
SOLUBILITY IN WATER:	Insoluble		

NOROX® 425**SECTION 10 - STABILITY AND REACTIVITY**

STABILITY	Unstable.
CONDITIONS TO AVOID	Storage in direct sunlight, heat, flames, sparks. Storage above SADT. Contamination.
MATERIALS TO AVOID	Promoters, accelerators, strong acids, strong bases, heavy metal salts, oxidizing and reducing agents, or any hot material. Contaminants (e.g. rust, dust, ash). Combustible or flammable materials.
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon dioxide and carbon monoxide. Flammable/explosive, irritating, corrosive, harmful toxic gases and vapors..
HAZARDOUS POLYMERIZATION	Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION**tert-Butylperoxy-3,5,5-trimethylhexanoate****Hazard Data:****Toxicity****Inhalation:** Rat-LC₅₀: >.8mg/l (4hr, max. concentration)**Dermal:** Rabbit-LD₀: >2000 mg/kg.**Oral:** Rat-LD₅₀: >5000 mg/kg**SECTION 12 - ECOLOGICAL INFORMATION**

The product should be prevented from entering drains, sewers, streams, etc. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Fish Toxicity: O. mykiss-LD₅₀: 7 mg/l/96hr**Biodegradability:** SCAS-test: Readily biodegradable
Modified Strum-test: Not easy biodegradable.**SECTION 13 - DISPOSAL CONSIDERATIONS**

Prevent material from entering drains, sewers, streams, etc.

Immediately dispose of waste material at a RCRA approved hazardous waste management facility in accordance with federal, state and local regulations.

Controlled burning is the preferred disposal method. This material may be burned in a chemical incinerator equipped with an afterburner and a scrubber.

SECTION 14 - TRANSPORT INFORMATION

DOT Shipping Name:	ORGANIC PEROXIDE TYPE D, LIQUID (tert-Butyl peroxy-3,5,5-trimethylhexanoate, ≤100%)
DOT Hazard Class:	5.2
UN/NA ID No.:	UN3105
DOT Packing Group:	PG II
Labels:	5.2 (Organic Peroxide)
2004 ERG GUIDE NO.:	145

SECTION 15 - REGULATORY INFORMATION

The following chemicals are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent</u>
NONE		

NOROX[®] 425**Canadian Domestic Substances List (DSL)**

The ingredients in this product are listed in the Canadian DSL Inventory.

European Inventory of Existing Commercial Chemical Substances (EINECS)

The ingredients in this product are listed in the European EINECS Inventory.

TSCA Status

This product is listed in the US Toxic Substances Control Act (TSCA) Inventory of Chemicals.

Status of Carcinogenicity

Not recognized as a carcinogen by the IARC, NTP or OSHA.

SECTION 16 - OTHER INFORMATION**VOC Information**

No VOC data is currently available.

NFPA 432 Organic Peroxide Classification

Class III

NFPA 704 Rating

Health

2

Flammability

3

Reactivity

3

HMIS Rating

Health

2

Flammability

2

Reactivity

2

MSDS Reference: Norox 425 MSDS 0501.1

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