

Flexsys America L.P.

Material Safety Data Sheet

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Draft Date: 2/11/00

MSDS Number: FLXP0042

SANTONOX TBMC

Section 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: **SANTONOX TBMC**
MSDS Number: FLXP0042
Chemical Name: 4,4'-Thiobis(6-tert-butyl-m-cresol)
Synonyms: SANTONOX; SANTONOX R; SANTOWHITE CRYSTALS; Phenol, 4,4'-thiobis[2-(1,1-dimethylethyl)-5-methyl; 4,4'-Dithio-bis(3-methyl-6-t-butylphenol); ECL 4,4'-Thiobis(3-methyl-6-tert-butylphenol)

Supplying: Flexsys America L.P.
Company: 260 Springside Drive
Akron, Ohio 44333 USA

**EMERGENCY NUMBERS: CHEMTREC 800-424-9300 TOLL FREE [USA and TERRITORIES]
703-527-3887 ELSEWHERE [COLLECT CALLS ACCEPTED]
CANUTEC 613-996-6666 [Canada] SETIQ 91-800-00-214 [Mexico]**

Section 2. COMPOSITION/INFORMATION ON INGREDIENTS

Component:	CAS Number:	Usage Percentage:
4,4'-Thiobis(6-tert-butyl-m-cresol)*	96-69-5	~100

*This substance is identified as a hazardous chemical under the criteria of the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Hazardous Products Act (Canada).

Section 3. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview: **COMBUSTIBLE DUST - EXPLOSION POTENTIAL
CAUSES SKIN IRRITATION
MAY CAUSE EYE IRRITATION**

Potential Routes of Exposure:

Eye Contact: May cause eye irritation based upon animal data.
Skin Contact: Repeated or prolonged contact can cause skin irritation.
Inhalation: No acute inhalation data available. Inhalation of dust may cause sneezing and mucous membrane irritation.
Ingestion: This material is slightly toxic if swallowed, based upon animal data.

MARKETED BY

**HARWICK STANDARD
DISTRIBUTION CORPORATION**
60 S. Seiberling Street • Akron, Ohio 44305

Section 4. FIRST AID MEASURES

IN EYES: Immediately flush eyes with plenty of water. DO NOT RUB EYES! Hold eyelids apart to ensure complete rinsing of all eye surfaces. Contact lenses should not be worn when working with this material. Get medical attention if irritation develops.

ON SKIN: Immediately flush the area with plenty of water. Remove contaminated clothing promptly. Wash exposed skin with plenty of soap and water. Launder contaminated clothing and clean contaminated shoes and equipment before reuse. Seek medical attention if irritation develops.

INHALED: Remove to fresh air. Other measures are usually unnecessary. However, if there are respiratory problems, get medical attention. If victim is not breathing, begin artificial respiration. If breathing is difficult, give oxygen and get medical attention.

SWALLOWED: Get medical attention immediately. Contact a physician or Poison Control Center. Do not induce vomiting unless directed to do so by a medical professional. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON.

Section 5. FIRE FIGHTING MEASURES

White to tan powder; white crystals

Flash Point °F/°C:	420°F / 215°C
Autoignition Temp °F/°C:	Not available /
Flash Method:	Pensky Martens Open Cup
Extinguishing Method:	Water spray or other Class A extinguishing agent
Procedures and Equipment:	Evacuate non-essential persons from the area. Firefighters and other emergency responders exposed to products of combustion should wear full protective clothing including positive pressure/pressure demand self-contained breathing apparatus, impervious protective clothing and boots. Dike fire water for later disposal. Do not allow this material to enter storm sewers, watersheds or waterways. Equipment should be thoroughly decontaminated after use.
Hazardous Products:	Carbon monoxide and sulfur dioxide gases are products of combustion.
Fire & Explosion Hazards:	This material is sometimes sold as a milled grade. This fine particle size creates the potential for dust explosions or fires. For any operations involving milled material or for any addition to flammable solvents, use only electrical service suitable for the hazard classification of the area. See NFPA 70, NEC Article 500, Hazardous (Classified) Locations. Ensure that all equipment is adequately grounded.

As with any dry material, pouring SANTONOX, allowing it to free-fall or air-convey through chutes or pipes can accumulate dust and generate electrostatic charge. This may cause ignition of the product, of any flammable material in contact with the product, or the product container. When transferring this material, it is important to ground all equipment, provide an inert atmosphere and properly design material handling equipment to prevent electrostatic charge formation.

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Section 6. ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK:

Wear gloves, respiratory and eye protection. Remove or shut off all potential ignition sources in the area.

Sweep, then shovel up spilled material and place into clean, dry, covered container for reuse or chemical disposal. Avoid creating dust clouds as this material, when dispersed in air, poses a dust explosion hazard. Keep this material out of storm sewers, watersheds and waterways.

CERCLA REPORTABLE QUANTITY (RQ): Not Applicable

Section 7. HANDLING AND STORAGE

Handling:

Keep away from heat, sparks and flame.
Avoid creating a dust cloud in handling, transfer, and clean-up.
Ensure that all equipment is properly grounded.
Avoid contact with skin, eyes and clothing.
Wash thoroughly with soap and water after handling.
Empty container retains vapor and product residue. Observe all labeled safeguards until container is destroyed.
Do not reuse this container for other materials.

Storage:

Store closed container in a cool (below 35°C) dry, well-ventilated area.
Avoid exposure to direct sunlight.
DO NOT DOUBLE STACK!

Section 8. EXPOSURE CONTROL/PERSONAL PROTECTION

EYE PROTECTION:

This material causes mild eye irritation. No special protection is required beyond normal good industrial hygiene practices of avoiding eye contact with any material.

SKIN PROTECTION:

Wear chemical resistant gloves and clothing to prevent skin contact. Consult glove manufacturer for appropriate glove type. Wash exposed skin promptly and thoroughly with mild soap. Remove contaminated clothing immediately and launder before reuse. Clean protective equipment and shoes before reuse.

RESPIRATORY PROTECTION:

Avoid breathing dust of this material. Use NIOSH/MSHA approved respiratory protection equipment when airborne exposure is excessive. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 CFR 1910.134.

VENTILATION:

Provide natural or mechanical ventilation to minimize exposure. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

AIRBORNE EXPOSURE LIMITS

Product: 4,4'-Thiobis(6-tert-butyl-m-cresol)

OSHA PEL/8-hour TWA:	15 mg/m ³	(Total Dust)
OSHA PEL/8-hour TWA:	5 mg/m ³	(Respirable Dust)
ACGIH TLV/8-hour TWA:	10 mg/m ³	

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White to tan powder; white crystals	
Odor:	Slight aromatic	
Specific Gravity:	1.06-1.12 at 25°C	
Water Solubility:	Insoluble	
Other Solubility:	Soluble in alcohol, acetone, naphtha, DMSO, ether, toluene.	
Density:	Not available at this time.	
Note:	Melting Range:	158-164°C
	Molecular Weight:	358.58
	Molecular Formula:	C22-H30-S-O2

Section 10. STABILITY AND REACTIVITY

Stability: Stable under normal handling, storage and use conditions.

Materials to avoid: None known.

Conditions to avoid: Excess exposure to light, heat and high humidity. Compaction may occur during prolonged storage at elevated temperatures and/or high humidity or when product is double stacked.

Hazardous Polymerization: Does not occur.

Section 11. TOXICOLOGICAL INFORMATION

Target Organ(s): Respiratory system, eyes, skin

Oral LD50 (rat):	4150 mg/kg	Slightly Toxic
Dermal LD50 (rabbit)	>5010 mg/kg	Practically Non-Toxic
Eye Irritation (rabbit):	6.0/110.0	Slightly Irritating
Skin Irritation (rabbit):	0.9/8.0	Practically Non-Irritating

Inhalation: Inhalation of dust can cause mucous membrane irritation.

Skin: Occupational exposure to this materials has been reported to cause skin irritation. A similar material produced no allergic skin reaction, no cumulative irritation and no primary irritation in controlled contact studies with human volunteers.

Eye: This material caused only slight eye irritation in laboratory animal tests.

Ingestion: This product is slightly toxic by single-dose ingestion. Repeated ingestion in laboratory animals resulted in decreased growth rates and food consumption, increased liver weights and changes in spleen weights and blood.

Carcinogenicity/mutagenicity: No adverse genetic changes were observed in standard tests using bacterial and yeast cells and animals. This product has not been classified as a carcinogen or suspected carcinogen by the IARC, NTP, OSHA or ACGIH.

Reproductive Effects: Not known

Neurotoxicity: Not known

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Section 12. ECOLOGICAL INFORMATION

Acute aquatic toxicity:

96-Hr LC50 Trout:	0.16 mg/l	Highly Toxic
96-Hr LC50 Bluegill:	0.24 mg/l	Highly Toxic
96-Hr LC50 Fathead Minnow:	0.36 mg/l	Highly Toxic
48-Hr LC50 Daphnia:	0.70 mg/l	Highly Toxic
96-Hr EC50 Algae Cell Count:	126 mg/l	Practically Non-Toxic
48-Hr LC50 Midge:	>1000 mg/l	Non-Toxic

Bioconcentration Factor: 11.00

Ready Biodegradability: 1.90

Section 13. DISPOSAL CONSIDERATIONS

When discarded, this material is not a "hazardous waste" as defined by the Resource Conservation and Recovery Act (RCRA), 40 CFR 261. Disposal via incineration is recommended.

Burn in an approved waste incinerator or landfill in a secure landfill in accordance with all applicable local, state and federal regulations.

Empty container retains vapor and product residue. Empty containers should be disposed of in accordance with all applicable regulations. Do not reuse this container for other materials.

Section 14. TRANSPORT INFORMATION

Not regulated in transport.

Section 15. REGULATORY INFORMATION

Worldwide chemical inventory status: TSCA USA
DSL Canada
AICS Australia
EINECS Europe 202-525-2
ENCS 3-1118, 3-1132
ECL KE-33767

RCRA: Not Regulated

CERCLA: Not Applicable

DOT: Not Regulated

SARA Hazard Notifications

Hazard Categories under Title III: Immediate, Fire

Title III Section 313 Toxic Chemicals: None

FDA - Regulated for Use under the following sections of 21 CFR:

175.105 Components of Adhesives

177.2600 Rubber Articles Intended for Repeated Use in Contact with Food

178.2010 Antioxidants and/or Stabilizers for Polymers

"4,4'-Thiobis(6-tert-butyl-m-cresol)" appears on the following:

Massachusetts Substance List

Pennsylvania Hazardous Substance List

New Jersey Right-To-Know Hazardous Substance List

Illinois Right-To-Know Toxic Substance List

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WHMIS Ingredient Disclosure List (Canada)

WHMIS Hazard Class: D2(B)- Materials Causing Other Toxic Effects

This product has been classified in accordance with the hazard criteria of the CPR and this MSDS contains all information required by the CPR.

Hazard Rating	Health	Flammability	Reactivity	Other
HMIS	1	1	0	N/A

Section 16. OTHER INFORMATION

Product Use: Antioxidant

Last Revision: Add CANUTEC and SETIQ phone numbers (Section 1)

FOR NON-EMERGENCY INFORMATION: FLEXSYS AMERICAS PRODUCT SAFETY (330) 668-8281

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