CODING FORMS FOR SRC INDEXING

Microfiche No.	
OTS0000951	

New Doc ID	Old Doc ID
FYI-OTS-0794-0951	84940000051

Date Produced	Date Received	TSCA Section
02/16/87	07/26/94	FYI

Submitting Organization
ETHYL CORP

Contractor

Document Title
INITIAL SUBMISSION: MATERIAL SAFETY DATA SHEET ON DECABROMODIPHENYLOXIDE, DATED 2/16/87

Chemical Category
DECABROMODIPHENYLOXIDE

8EHQ-0794-00095/

MATERIAL SAFETY DATA SHEET

Ethyl Chemicals Group

Emergency Phone 504-344-7147

FYI-94-000951
INIT 07/26/94

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PRODUCT IDENTIFICATION

TRADE NAME:	Saytex® 102, 102E Flame Retardant
CHEMICAL NAME:	Decabromodiphenyloxide (DBDPO)
CHEMICAL FAMILY:	Brominated Aromatic Ether
CHEMICAL FORMULA:	$C_{12}Br_{10}O$
CAS NO.:	1163-19-5

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THIS MATERIAL IS IN COMPLIANCE WITH THE TOXIC SUBSTANCES CONTROL ACT (15 USC 2601 - 2629).

CHEMICAL AND PHYSICAL PROPERTIES

APPEARANCE/ODOR:	Creamy white powder/virtually odorless.
MELTING RANGE:	300-310°C/572-590°F.
VAPOR PRESSURE:	Not applicable.
SOLUBILITY IN WATER:	Insoluble.
SPECIFIC GRAVITY:	3.0

FIRE AND EXPLOSION HAZARDS

FLASH POINT (METHOD):	Not applicable.
FLAMMABLE LIMITS:	Not applicable.
EXTINGUISHING MEDIA:	Dry chemical, water spray (fog), foam or carbon dioxide.

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Ethyl Corporation - Chemicals Group
Ethyl Tower 451 Florida Blvd., Baton Rouge, LA 70801
REPRESENTING ETHYL FOREIGN SALES CORPORATION FOR EXPORT SALES

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TRADE NAME: Saytex® 102, 102E Flame Retardant

HAZARDOUS THERMAL DECOMPOSITION PRODUCTS: Include hydrogen bromide.

SPECIAL FIRE FIGHTING PROCEDURES: High temperature may evolve toxic gases. Do not breathe smoke or fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

REACTIVITY DATA

	STABILITY:	Stable.
REACTIVITY DATA	**CONDITIONS TO AVOID:**	Temperatures above 320°C/ 608°F.
	MATERIALS TO AVOID:	Strong oxidizing agents.
	HAZARDOUS POLYMERIZATION:	Will not occur.

	ACUTE EFFECTS:	None known.
HEALTH HAZARDS	**CHRONIC EFFECTS OF OVEREXPOSURE:**	The National Toxicology Program concluded that DBDPO showed "some evidence" of carcinogenicity in male and female rats based on an increased incidence of benign tumor-like lesions of the liver (neoplastic nodules) in lifetime bioassays. The relevance of these findings is questionable in light of the excessive dose levels (25,000 ppm and 50,000 ppm in the diet) employed. In Ethyl's opinion, these data indicate an ample margin of safety for production and use of DBDPO when exposures are kept below the AIHA WEEL (Workplace Environmental Exposure Level) of 5 mg/m^3 TWA_8.
	TOXICITY DATA:	ORAL LD_{50} (rat): > 5000 mg/kg.

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TRADE NAME: Saytex® 102, 102E Flame Retardant

EMERGENCY FIRST AID PROCEDURES	**INHALATION:**	If symptoms occur, remove to fresh air.
	EYE CONTACT:	Begin immediate eye irrigation with cool water.
	SKIN CONTACT:	Wash contaminated area with soap and water.
	INGESTION:	Give two glasses of water.

	EXPOSURE LIMITS:	Not established by OSHA/ ACGIH. AIHA WEEL established in 1981 is 5 mg/m^3 TWA_8.
EXPOSURE CONTROL INFORMATION	**EYE PROTECTION:**	Safety glasses or chemical goggles.
	PROTECTIVE GLOVES:	Resistant to chemical penetration.
	RESPIRATORY PROTECTION:	NIOSH approved dust respirator.
	MECHANICAL VENTILATION:	Recommended.
	LOCAL EXHAUST:	At source of dust.
	OTHER:	If repeated or prolonged skin contact or contamination of clothing is likely, protective clothing should be worn.

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TRADE NAME: Saytex® 102, 102E Flame Retardant

	SPILLS OR LEAKS:	Sweep or shovel spills into appropriate container for disposal. Residue may be washed down with water.
ENVIRONMENTAL PROTECTION	**DISPOSAL METHODS:**	Under the CERCLA/RCRA regulations in effect Dec. 29, 1986, this product is not regulated as a hazardous waste or material. Therefore, it may be disposed of as an industrial waste in a manner acceptable to good waste management practice and in compliance with applicable local, state, and federal regulations. However, we strongly recommend disposal of this product in a chemically secure landfill.
	STORAGE REQUIREMENTS:	No special storage needed.

REVISED: 02/16/87 **SUPERSEDES:** 11/21/85

MSDS prepared by: Toxicology and Industrial Hygiene Department
Ethyl Corporation

FOR ADDITIONAL NONEMERGENCY MSDS INFORMATION, CONTACT:
TOXICOLOGY AND INDUSTRIAL HYGIENE DEPARTMENT
ETHYL CORPORATION
451 FLORIDA ST.
BATON ROUGE, LA 70801
(504) 388-7717

THIS MATERIAL SAFETY DATA SHEET CONTAINS AT LEAST THE INFORMATION REQUIRED BY THE FEDERAL OSHA HAZARD COMMUNICATION RULE, 29 CFR 1910.1200(g)(2).

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EXPLANATION OF MATERIAL SAFETY DATA SHEET TERMINOLOGY

PRODUCT IDENTIFICATION

TRADE NAME AND SYNONYMS
The name under which the product is sold and common synonyms.

CHEMICAL NAME AND FORMULA
Chemical descriptive name and the chemical formula.

CAS NO.
Chemical Abstract Service registry number which identifies the product.

SUMMARY OF HAZARDS

Emphasizes major hazard(s) associated with the product. Further details are provided in subsequent sections.

COMPONENTS

COMPONENT NAME
Chemical, generic, or proprietary name that identifies the product or components of a mixture. Inclusion of a component is not necessarily based on hazard criteria.

EXPOSURE LIMIT
The airborne concentration at which most workers can be exposed without any expected adverse effects. Source may be Ethyl guideline, ACGIH TLV® (Threshold Limit Value), or OSHA PEL(Permissible Exposure Limit).

TYPES OF EXPOSURE LIMITS
TWA - the time-weighted average concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect.

STEL (Short-Term Exposure Limit) - a 15 minute time-weighted average exposure which should not be exceeded at any time during a workday even if the 8-hour time-weighted average is within the TLV.

CEILING - the concentration that should not be exceeded during any part of the working exposure.

Peak - The maximum concentration and duration of exposure allowable above the ceiling concentration for an 8-hour shift.

ACGIH - American Conference of Governmental Industrial Hygienists.

OSHA - Occupational Safety and Health Administration.

NIOSH - National Institute of Occupational Safety and Health.

CARCINOGENICITY LISTING
Indicates whether a component is thought to be a cancer hazard based on human experience and animal data.

NTP - National Toxicology Program.

IARC - International Agency for Research on Cancer.

OTHER - May include preliminary data or studies not yet evaluated by the major agencies. Also includes ACGIH and NIOSH listings.

CHEMICAL AND PHYSICAL PROPERTIES

APPEARANCE/ODOR
Description of material at normal temperature and pressure that may be useful in identifying the presence of the product.

BOILING POINT
The temperature at which the vapor pressure of the liquid is equal to the pressure of the atmosphere.

MELTING POINT (FREEZING POINT)
Temperature at which a substance changes from the solid to liquid state

VAPOR PRESSURE
The pressure exerted at any temperature by a vapor existing in equilibrium with its liquid or solid phase.

SOLUBILITY IN WATER
The amount of the product, by weight, that will dissolve in a given weight of water at a specified temperature.

	grams/100 H_2O
Negligible	< 0.1
Slight	0.1 - 1.0
Moderate	1 - 10
Appreciable	> 10
Complete	Soluble in all proportions

SPECIFIC GRAVITY
Ratio of the weight of a volume of the product to the weight of an equal volume of water (liquids/solids) or air (gases).

EVAPORATION RATE
Ratio of the rate of vaporization of the product to the rate of a known material.

PERCENT VOLATILES
The percentage of the product (liquid or solid) that will evaporate at ambient temperature.

POUR POINT
The lowest temperature at which a liquid will flow when the container is inverted.

VISCOSITY
A measure of flow characteristics of a liquid, expressed in units called Centistokes (cSt).

FIRE AND EXPLOSION HAZARDS

FLASH POINT (CLOSED CUP METHOD)
Lowest temperature at which the product will give off enough vapor to ignite.

FLAMMABLE LIMITS
Range of vapor concentration (percent by volume in air) which will burn or explode in the presence of spark of flame. LEL is the lower explosive limit and UEL is the upper explosive limit.

EXTINGUISHING MEDIA
The fire fighting agents which are recommended for use.

HAZARDOUS THERMAL DECOMPOSITION PRODUCTS
Known hazardous products resulting from heating or burning the compound.

SPECIAL FIREFIGHTING PROCEDURES
General firefighting procedures of chemical fires are not described, but special procedures are given, if required.

UNUSUAL FIRE AND EXPLOSION HAZARDS
Hazards not covered by other sections of the MSDS pertaining to chemical reactions in the presence of heat and/or fire.

REACTIVITY DATA

STABILITY
Indicates the susceptibility of the product to dangerous decomposition.

CONDITIONS AND MATERIALS TO AVOID
Gives the conditions and materials that may cause undesirable reactions or instability of the product.

HAZARDOUS DECOMPOSITION PRODUCTS
Describes the hazardous materials produced from a chemical reaction.

HAZARDOUS POLYMERIZATION
Indicates the tendency of the product's molecules to combine in a violent reaction.

HEALTH HAZARDS

Gives the immediate effects of overexposure to the product by skin or eye contact, breathing vapors or dust, and ingestion. Common symptoms which may occur from exposure to the product are given.

CHRONIC EFFECTS
Refers to the effects that may occur after repeated or prolonged overexposure to the product.

OTHER HEALTH EFFECTS
Includes medical conditions which may be aggravated by exposure to the product.

TOXICITY
Gives numerical results from animal tests on the product. LD_{50} or LC_{50} is the dose level that kills half of the animals tested.

EMERGENCY FIRST AID

Gives emergency and first aid instructions for treating overexposure by inhalation, ingestion, and skin and eye contact.

NOTE TO PHYSICIAN
May give any contraindicated treatment or recommended treatment for a licensed health care professional to conduct.

EXPOSURE CONTROL INFORMATION

EYE PROTECTION
Specification of eyes or face protection beyond normal use of safety glasses.

PROTECTIVE GLOVES
Indicates the need for protective gloves when skin contact may occur.

RESPIRATORY PROTECTION
Specification of the type of respirator recommended for use during routine or emergency situations.

VENTILATION
Specification of the type (local/general) of ventilation recommended to capture contaminants or prevent the build-up of hazardous atmospheres.

OTHER
Specification of other recommended personal protective equipment based on type and degree of hazard.

ENVIRONMENTAL PROTECTION

SPILLS AND LEAKS
Indicates special precautions for clean-up of spills and leaks and preparation of chemical for disposal.

DISPOSAL METHOD
Tells the EPA classification of the product as well as the proper disposal procedure.

EPA
Environmental Protection Agency

RQ
Reportable Quantity - The amount of the product or one of its components that, when spilled, must be reported to the EPA and possibly other regulatory agencies.

RCRA - Resource Conservation and Recovery Act.

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act.

STORAGE REQUIREMENTS
Any unusual requirements or precautions for storage of the product.

ADDITIONAL PRECAUTIONS OR COMMENTS

States or re-emphasizes any special precautions or handling requirements.