

Ethyl 3-ethoxypropionate

sc-279086



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Ethyl 3-ethoxypropionate

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

Santa Cruz Biotechnology, Inc.
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800.457.3801 or 831.457.3800

EMERGENCY:

ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS

C7-H14-O3, CH₃CH₂OCH₂CH₂COOCH₂CH₃, "ethyl 3-ethoxypropionate", "ethyl 3-ethoxy propionate", "ethoxypropionic acid ethyl ester", "propionic acid 3-ethoxy-ethyl ester", "ethyl beta-ethoxypropionate", PAEEE, "KAN 970309", "PM 12470-00"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	2	
Toxicity:	2	
Body Contact:	2	
Reactivity:	2	
Chronic:	2	

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Harmful by inhalation.

HARMFUL - May cause lung damage if swallowed.

Flammable.

May cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733).

■ The material is not thought to produce adverse health effects following ingestion (as classified using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.

■ The main effects of simple esters are irritation, stupor and insensibility. Headache, drowsiness, dizziness, coma and behavioral changes may occur.

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EYE

■ The liquid produces a high level of eye discomfort and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated.

■ Limited evidence or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals. Prolonged eye contact may cause inflammation characterized by a temporary redness of the conjunctiva (similar to windburn).

SKIN

■ There is some evidence to suggest that the material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ Inhalation of vapors or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.

■ Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.

■ There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.

■ The main effects of simple esters are irritation, stupor and insensibility. Headache, drowsiness, dizziness, coma and behavioral changes may occur.

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■ If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death.

CHRONIC HEALTH EFFECTS

■ Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS].

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
ethyl-3-ethoxypropionate	763-69-9	>98
readily forms peroxides on ageing, requires stabiliser, usually with BHT 100 ppm as		
2,6-di-tert-butyl-4-methylphenol	128-37-0	

Section 4 - FIRST AID MEASURES

SWALLOWED

· Immediately give a glass of water. · First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor. · If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

■ Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically.

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Treat symptomatically.

for simple esters:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.

Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg):	0.668
Upper Explosive Limit (%):	12.1 @ 120 C
Specific Gravity (water=1):	0.95
Lower Explosive Limit (%):	1.05 @ 88 C

EXTINGUISHING MEDIA

- Alcohol stable foam.
- Dry chemical powder.

FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- May be violently or explosively reactive.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 500 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Liquid and vapor are flammable.
 - Moderate fire hazard when exposed to heat or flame.
- Combustion products include: carbon monoxide (CO), carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.
- WARNING: Long standing in contact with air and light may result in the formation of potentially explosive peroxides.

FIRE INCOMPATIBILITY

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:

Chemical goggles.

Gloves:

Respirator:

Type A Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- DO NOT allow clothing wet with material to stay in contact with skin.

The substance accumulates peroxides which may become hazardous only if it evaporates or is distilled or otherwise treated to concentrate

the peroxides. The substance may concentrate around the container opening for example.

Purchases of peroxidisable chemicals should be restricted to ensure that the chemical is used completely before it can become peroxidised.

- A responsible person should maintain an inventory of peroxidisable chemicals or annotate the general chemical inventory to indicate which chemicals are subject to peroxidation. An expiration date should be determined. The chemical should either be treated to remove peroxides or disposed of before this date.

- The person or laboratory receiving the chemical should record a receipt date on the bottle. The individual opening the container should add an opening date.

- Unopened containers received from the supplier should be safe to store for 18 months.

- Opened containers should not be stored for more than 12 months.

- Avoid all personal contact, including inhalation.

- Wear protective clothing when risk of overexposure occurs.

Do NOT distill to dryness. Avoid excess temperatures or prolonged reflux, such as in batch distillations.

RECOMMENDED STORAGE METHODS

■ Packing as supplied by manufacturer. Plastic containers may only be used if approved for flammable liquid.

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- For low viscosity materials (i): Drums and jerricans must be of the non-removable head type. (ii): Where a can is to be used as an inner package, the can must have a screwed enclosure.

- For materials with a viscosity of at least 2680 cSt. (23 deg. C).

STORAGE REQUIREMENTS

- Store in original containers in approved flammable liquid storage area.

- DO NOT store in pits, depressions, basements or areas where vapors may be trapped.

Easily peroxidizable. Products formed as a result of peroxidation are not only safety hazards but may chemically alter the chemical behavior of the parent compound.

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Rotate all stock to prevent ageing. Use on FIFO (First In-First Out) basis.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
Canada - Ontario Occupational Exposure Limits	ethyl-3-ethoxypropionate (Ethyl-3-ethoxy propionate)		300						
Canada - Ontario Occupational Exposure Limits	ethyl-3-ethoxypropionate (Ethyl-3-ethoxy propionate)	50							
Canada - Alberta Occupational Exposure Limits	2,6-di-tert-butyl-4-methylphenol (Butylated hydroxytoluene (BHT) (2,6-Di-tert-butyl-p-cresol))		10						
Canada - British Columbia Occupational Exposure Limits	2,6-di-tert-butyl-4-methylphenol (Butylated hydroxytoluene (BHT), Inhalable, (2,6-Di-tert-butyl-p-cresol))		2 (V)						
US ACGIH Threshold Limit Values (TLV)	2,6-di-tert-butyl-4-methylphenol (Butylated hydroxytoluene [BHT])		2						TLV Basis: upper respiratory tract irritation
US NIOSH Recommended Exposure Limits (RELs)	2,6-di-tert-butyl-4-methylphenol (2,6-Di-tert-butyl-p-cresol)		10						
US - Minnesota Permissible Exposure Limits (PELs)	2,6-di-tert-butyl-4-methylphenol (2,6-Di-tert-butyl-p-cresol)		10						

US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	2,6-di-tert-butyl- 4-methylphenol (2,6-Di-tert-butyl- p-cresol)	10			
US - California Permissible Exposure Limits for Chemical Contaminants	2,6-di-tert-butyl- 4-methylphenol (2,6-Di-tert-butyl- p-cresol)	10			
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	2,6-di-tert-butyl- 4-methylphenol (2,6-Di-tert-butyl- p-cresol)	10			
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	2,6-di-tert-butyl- 4-methylphenol (2,6-Di-tert-butyl- p-cresol)			10	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	2,6-di-tert-butyl- 4-methylphenol (2,6-Di-tert-butyl- p-cresol (butylated hydroxytoluene or BHT) (inhalable fraction++ and vapour))	2		4	
US - Hawaii Air Contaminant Limits	2,6-di-tert-butyl- 4-methylphenol (2,6-Di-tert-butyl- p-cresol)	10		20	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	2,6-di-tert-butyl- 4-methylphenol (2,6-Di-tert-butyl- p-cresol)	-	10	-	20
US - Washington Permissible exposure limits of air contaminants	2,6-di-tert-butyl- 4-methylphenol (2, 6-Di-tert-butyl- p-cresol)	10		20	
US - Alaska Limits for Air Contaminants	2,6-di-tert-butyl- 4-methylphenol (2,6-Di-tert-butyl- p-cresol)	10			
Canada - Nova Scotia Occupational Exposure Limits	2,6-di-tert-butyl- 4-methylphenol (Butylated hydroxytoluene [BHT])	2			TLV Basis: upper respiratory tract irritation
Canada - Prince Edward Island Occupational Exposure Limits	2,6-di-tert-butyl- 4-methylphenol (Butylated hydroxytoluene [BHT])	2			TLV Basis: upper respiratory tract irritation
US - Michigan Exposure Limits for Air Contaminants	2,6-di-tert-butyl- 4-methylphenol (2,6-Di-tert-butyl- p-cresol (Butylated hydroxytoluene))	10			
Canada - Northwest Territories Occupational Exposure Limits	2,6-di-tert-butyl- 4-methylphenol (2,6-Di-tert-butyl- p-cresol)	10		20	

(English)

ENDOELTABLE

PERSONAL PROTECTION



RESPIRATOR

Type A Filter of sufficient capacity

Consult your EHS staff for recommendations

EYE

- Safety glasses with side shields.
- Chemical goggles.

HANDS/FEET

- Wear chemical protective gloves, eg. PVC.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
- Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

OTHER

- Overalls.
- PVC Apron.
- Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.
- For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets), non sparking safety footwear.

ENGINEERING CONTROLS

- For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.

Mixes with water.

State	Liquid	Molecular Weight	146.19
Melting Range (°F)	<-58 (glass set)	Viscosity	1.2 cSt@40°C
Boiling Range (°F)	329	Solubility in water (g/L)	Miscible
Flash Point (°F)	136.4	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	710.6	Vapor Pressure (mmHg)	0.668
Upper Explosive Limit (%)	12.1 @ 120 C	Specific Gravity (water=1)	0.95
Lower Explosive Limit (%)	1.05 @ 88 C	Relative Vapor Density (air=1)	5.0
Volatile Component (%vol)	100	Evaporation Rate	0.1 BuAc=1 Slow

APPEARANCE

- Presence of a stabilizing inhibitor prevents/retards peroxide formation. Clear flammable liquid; floats on water. Ester odour. Slightly soluble in water = 2.9%.

log Kow 1.25

Material	Value
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Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Polymerisation may occur at elevated temperatures.
 - Polymerisation may be accompanied by generation of heat as exotherm.
- Presence of a stabilizing inhibitor prevents/retards peroxide formation.

STORAGE INCOMPATIBILITY

- Esters react with acids to liberate heat along with alcohols and acids.
- Strong oxidizing acids may cause a vigorous reaction with esters that is sufficiently exothermic to ignite the reaction products.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

ETHYL-3-ETHOXYPROPIONATE

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

ETHYL-3-ETHOXYPROPIONATE:

TOXICITY	IRRITATION
Oral (rat) LD50: 5000 mg/kg	Skin (rabbit):10 mg/24h Open Mild
Oral (rat) LD50: 5140 mg/kg	Eye (rabbit): 500mg/24h - Mild
Dermal (rabbit) LD50: 10000 mg/kg	
Dermal (rabbit) LD50: 4076 mg/kg	
Inhalation (rat) LC50: 1250 ppm/4h	

■ The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

* Union Carbide

** Endura Manufacturing

TOXICITY	IRRITATION
2,6-DI-TERT-BUTYL-4-METHYLPHENOL:	
Oral (woman) TDLo: 80 mg/kg	Skin (human): 500 mg/48h - Mild
Oral (rat) LD50: 890 mg/kg	Skin (rabbit):500 mg/48h-Moderate
	Eye (rabbit): 100 mg/24h-Moderate

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

For hindered phenols:

Acute oral and dermal toxicity data are available for all but two of the substances in the group. The data show that acute toxicity of these substances is low.

Mutagenicity. Data from bacterial reverse mutation assays and in vitro and in vivo chromosome aberration studies were reviewed. All assays, with and without metabolic activation, were negative. The weight of evidence for mutagenic potential for this category indicates these substances are not mutagenic.

In Vitro Chromosome Aberration Studies. In vitro chromosome aberration studies are available for several members

All except 2,6-di-tert-butyl-p-cresol were negative

In Vivo Chromosome Aberration Studies. In vivo studies evaluating chromosome damage are available for six of the hindered phenols. All in vivo evaluations were negative.

Repeated Dose Toxicity. Repeated dose toxicity data of approximately three months (90-day, 12- and 13-week) are available for most of the substances in this group. The liver was the target organ in rats for almost all of the substances with subchronic toxicity data in that species. Other target organs included thyroid and kidney and mesenteric lymph nodes. NOAELs in rats ranged from 100 ppm (approximately 5 mg/kg/day) to 10,000 ppm (500 mg/kg/day)

Carcinogenicity:

Data is available for 2,6-di-tert-butyl-p-cresol (128-37-0); and 4,4'-thiobis-6-(t-butyl-m-cresol) (96-69-5). Liver adenomas were reported for 2,6-di-tert-butyl-p-cresol (128-37-0) and a NOAEL was established for the study at 25 mg/kg/day. 4,4'-Thiobis-6-(t-butyl-m-cresol) (96-69-5) was not carcinogenic in rats or mice, but the kidney was identified as a target organ in female rats.

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA.

Section 12 - ECOLOGICAL INFORMATION

May cause long-term adverse effects in the aquatic environment.
This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
ethyl-3-ethoxypropionate	LOW		LOW	HIGH
2,6-di-tert-butyl-4-methylphenol	HIGH		LOW	LOW

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No _____
Ethyl- 3- 143 321 1 NI 1 NR 2 NI 0 0 2 1 1 FD 2 ethoxypro 9 pionate / CAS:763- 69- 9 / UF3325000

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships)
NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acuteaquatic toxicity LC/ECIC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information

Ignitability characteristic: use EPA hazardous waste number D001 (waste code I)

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

! Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION

DOT:

Symbols: None Hazard class or Division: 3

Identification Numbers: UN3272 PG: III

Label Codes: 3 Special provisions: B1, IB3, T4, TP1, TP29

Packaging: Exceptions: 150 Packaging: Non- bulk: 203

Packaging: Exceptions: 150 Quantity limitations: 60 L

Passenger aircraft/rail:

Quantity Limitations: Cargo 220 L Vessel stowage: Location: A aircraft only:

Vessel stowage: Other: None

COMBUSTIBLE LIQUID

A flammable liquid with a flash point at or above 38 deg.C (100 deg.F) that does not meet the definition of any other hazard class may be reclassified as a combustible liquid. This provision does not apply to transportation by vessel or aircraft, except where other means of transportation is impracticable. An elevated temperature material that meets the definition of a Class 3 material because it is intentionally heated and offered for transportation or transported at or above its flash point may not be reclassified as a combustible liquid. Refer to 49 CFR 173.120(b)(2)

Air Transport IATA:

ICAO/IATA Class: 3 ICAO/IATA Subrisk: None

UN/ID Number: 3272 Packing Group: III

Special provisions: A3

Cargo Only

Packing Instructions: 310 Maximum Qty/Pack: 220 L

Passenger and Cargo Passenger and Cargo

Packing Instructions: 309 Maximum Qty/Pack: 60 L

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: Y309 Maximum Qty/Pack: 10 L

Shipping Name: ESTERS, N.O.S. *(CONTAINS ETHYL-3-ETHOXYPROPIONATE)

Maritime Transport IMDG:

IMDG Class: 3 IMDG Subrisk: None

UN Number: 3272 Packing Group: III

EMS Number: F-E , S-D Special provisions: 223 274

Limited Quantities: 5 L

Shipping Name: ESTERS, N.O.S.

Section 15 - REGULATORY INFORMATION

ethyl-3-ethoxypropionate (CAS: 763-69-9) is found on the following regulatory lists;

"Canada - Ontario Occupational Exposure Limits", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD Representative List of High Production Volume (HPV) Chemicals", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes", "US EPA High Production Volume Program Chemical List", "US NFPA 30B Manufacture and Storage of Aerosol Products - Chemical Heat of Combustion", "US Toxic Substances Control Act (TSCA) - Inventory"

Regulations for ingredients

2,6-di-tert-butyl-4-methylphenol (CAS: 128-37-0) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits", "Canada - British Columbia Occupational Exposure Limits", "Canada - Northwest Territories Occupational Exposure Limits (English)", "Canada - Nova Scotia Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits", "Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens", "Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)", "Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits", "Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances", "Canada Ingredient Disclosure List (SOR/88-64)", "Canada National Pollutant Release Inventory (NPRI)", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD Representative List of High Production Volume (HPV) Chemicals", "US - Alaska Limits for Air Contaminants", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - California Permissible Exposure Limits for Chemical Contaminants", "US - Connecticut Hazardous Air Pollutants", "US - Hawaii Air Contaminant Limits", "US - Michigan Exposure Limits for Air Contaminants", "US - Minnesota Hazardous Substance List", "US - Minnesota Permissible Exposure Limits (PELs)", "US - New Jersey Right to Know Hazardous Substances", "US - Pennsylvania - Hazardous Substance List", "US - Rhode Island Hazardous Substance List", "US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants", "US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants", "US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants", "US - Washington Permissible exposure limits of air contaminants", "US ACGIH Threshold Limit Values (TLV)", "US ACGIH Threshold Limit Values (TLV) - Carcinogens", "US Cosmetic Ingredient Review (CIR) Cosmetic ingredients found safe as used", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US EPA High Production Volume Program Chemical List", "US FDA Direct Food Substances Generally Recognized as Safe", "US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use Only as Components of Adhesives - Adhesives", "US Food Additive Database", "US NFPA 499 Combustible Dusts", "US NIOSH Recommended Exposure Limits (RELs)", "US Toxic Substances Control Act (TSCA) - Inventory"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

- Potentially explosive peroxides may form on standing.*.
- Cumulative effects may result following exposure*.
- May produce discomfort of the eyes, respiratory tract and skin*.
- Repeated exposure potentially causes skin dryness and cracking*.
- Vapours potentially cause drowsiness and dizziness*.

* (limited evidence).

ND

Substance CAS Suggested codes 2, 6- di- tert- butyl- 4- methylphenol 128- 37- 0

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- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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