Tris(2-ethylhexyl) trimellitate

sc-253786

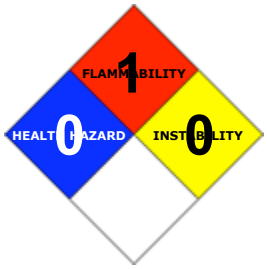
Material Safety Data Sheet

Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Tris(2-ethylhexyl) trimellitate

STATEMENT OF HAZARDOUS NATURE
CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA


SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
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
C33-H54-O6, "C6H3-1, 2, 4-[CO2CH2CH(C2H5)(CH2)3CH3]3", "tri-2-ethylhexyl trimellitate", "tris(2-ethylhexyl) trimellitate", "1, 2, 4-benzenetricarboxylic acid, tris(2-ethylhexyl)ester", trioctyltrimellitate, "normal octyl trimellitate", TOTM, NOTM, "Hatcol 200", "Kodaflex TOTM", "Monosizer W710L", "Morflex 510", "Staflex TOTM", "Trimex T 08", "Hexaplas OTM"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability:	1		
Toxicity:	0		
Body Contact:	2		
Reactivity:	1		
Chronic:	0		

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

CANADIAN WHMIS SYMBOLS
None

EMERGENCY OVERVIEW
RISK

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
■ Although ingestion is not thought to produce harmful effects, the material may still be damaging to the health of the individual following ingestion, especially where pre-existing organ (e.
g.
EYE
■ Although the liquid is not thought to be an irritant, direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).
SKIN
■ The material is not thought to produce adverse health effects or skin irritation following contact (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
■ The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis.
The material is unlikely to produce an irritant dermatitis as described in EC Directives .
■ Open cuts, abraded or irritated skin should not be exposed to this material.
■ 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
■ The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
■ 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 material has NOT been classified as "harmful by inhalation".
This is because of the lack of corroborating animal or human evidence.
■ Not normally a hazard due to non-volatile nature of product.
■ Inhalation of high concentrations of gas/vapor causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.
■ The vapor may produce discomfort of the upper respiratory tract.
Inhalation hazard is increased at higher temperatures.

CHRONIC HEALTH EFFECTS

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
trioctyl trimellitate	3319-31-1	>98

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.
EYE
■ If this product comes in contact with eyes: · Wash out immediately with water. · If irritation continues, seek medical attention.
SKIN
■ If skin or hair contact occurs: · Flush skin and hair with running water (and soap if available). · Seek medical attention in event of irritation.
INHALED
· If fumes or combustion products are inhaled remove from contaminated area. · Other measures are usually unnecessary.

NOTES TO PHYSICIAN
■ Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	< 0.01 @ 20 C
Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	0.984
Lower Explosive Limit (%):	Not available

EXTINGUISHING MEDIA
· Foam.
· Dry chemical powder.

FIRE FIGHTING
· Alert Emergency Responders and tell them location and nature of hazard.
· Wear full body protective clothing with breathing apparatus.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS
· Combustible.
· Slight fire hazard when exposed to heat or flame.
Combustion products include: carbon dioxide (CO_2), other pyrolysis products typical of burning organic material.
May emit poisonous fumes.
May emit corrosive fumes.

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-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
· Remove all ignition sources.
· Clean up all spills immediately.
MAJOR SPILLS
■ Moderate hazard.
· 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
· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.

RECOMMENDED STORAGE METHODS
· Metal can or drum
· Packing as recommended by manufacturer.

STORAGE REQUIREMENTS
· Store in original containers.
· Keep containers securely sealed.
· No smoking, naked lights or ignition sources.
· Store in a cool, dry, well-ventilated area.
· Store away from incompatible materials and foodstuff containers.
· Protect containers against physical damage and check regularly for leaks.
· Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS
The following materials had no OELs on our records
• trioctyl trimellitate: CAS:3319-31-1 CAS:89-04-3

PERSONAL PROTECTION




RESPIRATOR
• type a-p filter of sufficient capacity.

EYE
· Safety glasses with side shields.
· Chemical goggles.

HANDS/FEET
■ 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.
· Neoprene gloves.
Wear chemical protective gloves, eg. PVC.

OTHER
· Overalls.
· P.V.C. apron.
· Barrier cream.
· Skin cleansing cream.
· Eye wash unit.

ENGINEERING CONTROLS
■ General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES
Liquid.
Does not mix with water.
Floats on water.

State	Liquid	Molecular Weight	546.87
Melting Range (°F)	Not available	Viscosity	87.8 cSt@40°C
Boiling Range (°F)	>482	Solubility in water (g/L)	Immiscible
Flash Point (°F)	441(CC)	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	725	Vapour Pressure (mmHG)	< 0.01 @ 20 C
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	0.984
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	> 1
Volatile Component (%vol)	Not available	Evaporation Rate	Not available

APPEARANCE
Clear viscous colourless to pale yellow liquid with a mild odour; does not mix with water, solubility 6 mg/L. Pour point: -30 deg. C. Fire Point 278 deg. C. Viscosity @ 40 deg. C: 87.8 cSt. Residuals: di-(2-ethylhexyl) phthalate <0.2%; free trimellitic acid not more than 0.025%.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

· Presence of incompatible materials.
· Product is considered stable.

STORAGE INCOMPATIBILITY

■ Avoid reaction with oxidizing agents.

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

Section 11 - TOXICOLOGICAL INFORMATION

trioctyl trimellitate

TOXICITY AND IRRITATION

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

TOXICITY	IRRITATION
Oral (mouse) LD50: >60000 mg/kg	Eye: Mild
Oral (rat) LD50: >3200 mg/kg	
Dermal (Rabbit) LD50: >1980 mg/kg	

A single dose oral toxicity of trioctyl benzene-1,2,4-tricarboxylate (trioctyl trimellitate) revealed an LD50 value of more than 2000 mg/kg for both sexes.
The substance was evaluated for repeated dose oral toxicity and reproductive/developmental toxicity in Sprague-Dawley rats according to the OECD test guideline 422 at doses of 0, 30, 125 and 500 mg/kg. Males were administered the compound for 42 days from 2 weeks before mating to the necropsy, and females were dosed from 2 weeks before mating through gestation until day 4 of lactation.
No deaths were observed except one female in the 500 mg/kg group which died on day 23 of gestation. Temporally increase in salivation after dosing was observed in animals of the 500 mg/kg group. Although decrease in body weight gain from day 7 to 14 of gestation was observed in females of the 500 mg/kg group, there were no adverse effects on body weight change in males and food consumption in either sex. In females, decrease in erythrocyte count and increase in liver weights were observed in the 125 and 500 mg/kg groups, and decreased protein, increased glucose were observed in the 500 mg/kg group. In males, decreased protein and increased ALP were observed in the 500 mg/kg group. Histopathological examination revealed hypertrophy of hepatocytes in the centrilobular zone in males of the 500 mg/kg group. The pathological findings for other internal organs revealed no adverse changes in any treated animal.
There were no adverse effects on the estrous cycle, copulation, fertility, delivery or lactation. In addition, no alteration related to the treatment was observed with regard to the gestation index, gestation length, numbers of corpora lutea, implantation sites or implantation index. There were no changes in sex ratio, body weight, viability or morphology of pups.
In conclusion, the NOELs for repeated dose toxicity of the substance are considered to be 125 mg/kg/day for males and 30 mg/kg/day for females. The NOEL for reproductive and developmental toxicity is considered to be 500 mg/kg/day for parent animals and offspring.
Trioctyl mellitate was not mutagenic in Salmonella typhimurium TA100, TA1535, TA98, TA1537 and Escherichia coli WP2 uvrA, with or without an exogenous metabolic activation system.
Trioctyl mellitate did not induce structural chromosomal aberrations or polyploidy in CHL/IU cells, with or without an exogenous metabolic activation system.

Section 12 - ECOLOGICAL INFORMATION

No data

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
trioctyl trimellitate	HIGH	No Data Available	LOW	LOW

Section 13 - DISPOSAL CONSIDERATIONS

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 or consult manufacturer for recycling options.
· Consult Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

Section 15 - REGULATORY INFORMATION

trioctyl trimellitate (CAS: 3319-31-1,89-04-3) is found on the following regulatory lists;
"International Council of Chemical Associations (ICCA) - High Production Volume List","OECD Representative List of High Production Volume (HPV) Chemicals","US EPA High Production Volume Program Chemical List","US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory","US TSCA Section 8 (d) - Health and Safety Data Reporting"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE
■ May produce discomfort of the respiratory system*.
■ Vapours potentially cause drowsiness and dizziness*.
* (limited evidence).

Ingredients with multiple CAS Nos
Ingredient Name CAS trioctyl trimellitate 3319-31-1, 89-04-3

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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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