

Cyhexatin

sc-239636



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

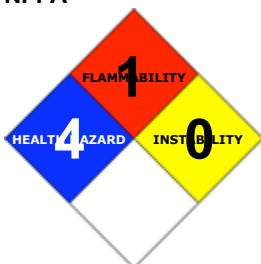
PRODUCT NAME

Cyhexatin

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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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

C18-H34-0-Sn, "stannate, tricyclohexylhydroxy", Dowco-213, "ENT 27395", "ENT 27, 395-X", plictran, plyctran, TCTH, "tin, tricyclohexylhydroxy", tricyclohexylhydroxystannane, tricyclohexylhydroxytin, tricyclohexylstannanol, "tricyclohexylstannium hydroxide"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	1	
Toxicity:	3	
Body Contact:	2	
Reactivity:	1	
Chronic:	2	

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



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Irritating to skin.

Harmful by inhalation, in contact with skin and if swallowed.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

■ Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual.

■ Subchronic exposures to mono-, di- and tri- and tetra-substituted organotin compounds may elicit toxic response in the central nervous, immune and renal systems, the liver and bile duct and the skin.

■ Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness.

Serious poisonings may result in respiratory depression and may be fatal.

EYE

■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn).

Slight abrasive damage may also result.

SKIN

■ Skin contact with the material may be harmful; systemic effects may result following absorption.

■ This material can cause inflammation of the skin on contact in some persons.

■ The material may accentuate any pre-existing dermatitis condition.

■ 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

■ Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful.

■ The material is not thought to produce respiratory irritation (as classified using animal models).

Nevertheless inhalation of dusts, or fume, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

■ The acute toxicity of inhaled organotin compounds resembles that found by other means of exposure.

CHRONIC HEALTH EFFECTS

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

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

Both tributyltins (TBT) and dibutyltins (DBT) have negative effects on the reproductive system in mammals. In line with these facts, TBT and TPT were given the highest category in a European review of endocrine disrupting chemicals (BKH, 2000): "Evidence for endocrine disruption in living organisms". TBT was also classified as "Evidence of potential to cause endocrine disruption in humans".

Organotins are also toxic by other mechanisms. For instance, several organotins are strongly immunosuppressive, display developmental and reproductive effects and are neurotoxic

TPT is classified as category 3 carcinogenic in the EU, but as category 2 (probable human carcinogenic) by the USEPA (EFSA, 2004).

DBT may actually be more toxic than TBT to certain enzyme systems. Immunotoxic and developmental effects in mammals may also be more sensitive to DBT than to TB. Both TBT and TPT may be classified as Persistent, Bioaccumulative and Toxic (PBT) and very

Persistent, very Bioaccumulative (vPvB) substances according to certain, whereas DBT and dioctyl tin (DOT) may be classified as PBT For human health, there are no epidemiological studies on chronic low level exposure available It has been suggested that toxicity was equal for DBT, TBT, DOT and TPT for humans, and proposed a group TDI of 0.1 µg Sn (kg Bw and d)-1.

Dogs fed 6 mg/kg/day in the diet for 2 years exhibited slower growth rates but exhibited no toxicological or pathological changes The no-effect level based on body weight gains was 3 mg/kg/day over 2 years.

Chronic inhalation exposure of 0.17 mg/m³ did not produce embryotoxic or teratogenic effects in rabbits.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
cyhexatin	13121-70-5	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

· Give a slurry of activated charcoal in water to drink. NEVER GIVE AN UNCONSCIOUS PATIENT WATER TO DRINK. · At least 3 tablespoons in a glass of water should be given.

EYE

■ If this product comes in contact with the eyes: · Immediately hold eyelids apart and flush the eye continuously with 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. · If dust is inhaled, remove from contaminated area. · Encourage patient to blow nose to ensure clear breathing passages. · Ask patient to rinse mouth with water but to not drink water. · Seek immediate medical attention.

NOTES TO PHYSICIAN

■ Scanty animal data indicate that BAL may be useful against dialkyl but not trialkyl organotin compounds. D-penicillamine is thought to be inactive.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	Not available
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.
When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

· Combustible solid which burns but propagates flame with difficulty.
· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.

Combustion products include: carbon monoxide (CO), carbon dioxide (CO₂), sulfur oxides (SO_x), metal oxides, other pyrolysis products typical of burning organic material.

May emit clouds of acrid smoke.

May emit poisonous 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:

Particulate dust filter.

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

· Remove all ignition sources.

- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

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

- Avoid all personal contact, including inhalation.
 - Wear protective clothing when risk of exposure occurs.
- Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
- Do NOT cut, drill, grind or weld such containers.
 - In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

RECOMMENDED STORAGE METHODS

- Glass container.
- Lined metal can, Lined metal pail/drum
- Plastic pail.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.

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 - Alberta Occupational Exposure Limits	cyhexatin (Cyhexatin (Tricyclohexyltin hydroxide))		5						
Canada - British Columbia Occupational Exposure Limits	cyhexatin (Cyhexatin)		5						
US ACGIH Threshold Limit Values (TLV)	cyhexatin (Cyhexatin)		5						TLV Basis: upper respiratory tract irritation; body weight effects; kidney damage
US NIOSH Recommended Exposure Limits (RELs)	cyhexatin (Cyhexatin)		5						
US - Minnesota Permissible Exposure Limits (PELs)	cyhexatin (Cyhexatin)		5						
US - Vermont Permissible Exposure Limits Table Z-1-A Final	cyhexatin (Cyhexatin)		5						

Rule Limits for Air Contaminants

US - California Permissible Exposure Limits for Chemical Contaminants	cyhexatin (Cyhexatin; tricyclohexyltin hydroxide)	5		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	cyhexatin (Cyhexatin)	5		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	cyhexatin (Cyhexatin)	5		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	cyhexatin (Cyhexatin)	5		10
US - Hawaii Air Contaminant Limits	cyhexatin (Cyhexatin)	5		10
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	cyhexatin (Tricyclohexyltin hydroxide (PlictranR))	5	-	10
US - Washington Permissible exposure limits of air contaminants	cyhexatin (Cyhexatin (Tricyclohexyltin hydroxide))	5		10
US - Alaska Limits for Air Contaminants	cyhexatin (Cyhexatin)	5		
Canada - Nova Scotia Occupational Exposure Limits	cyhexatin (Cyhexatin)	5		
				TLV Basis: upper respiratory tract irritation; body weight effects; kidney damage
Canada - Prince Edward Island Occupational Exposure Limits	cyhexatin (Cyhexatin)	5		
				TLV Basis: upper respiratory tract irritation; body weight effects; kidney damage
US - Michigan Exposure Limits for Air Contaminants	cyhexatin (Cyhexatin)	5		
Canada - Northwest Territories Occupational	cyhexatin (Tricyclohexyltin hydroxide (Plictran(R)))	5		10

Exposure Limits (English)

US - Idaho - Limits for Air Contaminants	cyhexatin (Tin (organic compounds) as (Sn))	0.1	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	cyhexatin (Tin, organic compounds (as Sn))	0.1	
Canada - Ontario Occupational Exposure Limits	cyhexatin (Organic compounds, as Sn / Composés organiques, en Sn)	0.1	Skin (organic compounds) / Peau (composés organiques)
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	cyhexatin (Tin, organic compounds (as Sn))	0.1	
US - Oregon Permissible Exposure Limits (Z-1)	cyhexatin (Tin (organic compounds))	-	0.1

ENDOELTABLE

PERSONAL PROTECTION



RESPIRATOR

- Particulate dust filter. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

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, AS/NZS 2161.1 or national equivalent).

- 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, AS/NZS 2161.10.1 or national equivalent) 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, AS/NZS 2161.10.1 or national equivalent) 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.
- Eyewash unit.

ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.

· Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Does not mix with water.

State	DIVIDED SOLID	Molecular Weight	385.21
Melting Range (°F)	383- 388	Viscosity	Not Applicable
Boiling Range (°F)	Not available	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	442	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	Not available
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	Not Applicable
Volatile Component (%vol)	Negligible	Evaporation Rate	Not Applicable

APPEARANCE

White crystalline solid; does not mix well with water (< 1ppm at 25 C). Solubilities: acetone 0.13%, chloroform 21.6%, methanol 3.7% (all at 25 C).

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

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

STORAGE INCOMPATIBILITY

- Avoid strong acids, bases.
- Avoid reaction with oxidizing agents.

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

Section 11 - TOXICOLOGICAL INFORMATION

cyhexatin

TOXICITY AND IRRITATION

CYHEXATIN:

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

TOXICITY	IRRITATION
Oral (rat) LD50: 180 mg/kg	Nil Reported
Inhalation (rat) LC50: 244 mg/m ³	
Dermal (rabbit) LD50: 2422 mg/kg	
ADI: 0.005 mg/kg/day	
NOEL: 0.5 mg/kg/day	

CARCINOGEN

Cyhexatin	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	A4
cyhexatin	US - Rhode Island Hazardous Substance List	IARC	

TWAPPM~	US - Maine Chemicals of High Concern List	Carcinogen	A4
PBIT_(PERS~	US - Maine Chemicals of High Concern List	Carcinogen	
SKIN			
cyhexatin	US - Washington Permissible exposure limits of air contaminants - Skin	Skin	X
cyhexatin	US ACGIH Threshold Limit Values (TLV) - Skin	Skin Designation	Yes
cyhexatin	US AIHA Workplace Environmental Exposure Levels (WEELs) - Skin	Notes	
cyhexatin	US NIOSH Recommended Exposure Limits (RELs) - Skin	Skin	Yes
cyhexatin	US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Skin	Skin	X
cyhexatin	US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) - Skin	Skin	X
cyhexatin	US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants - Skin	Skin Designation	X
cyhexatin	Canada - British Columbia Occupational Exposure Limits - Skin	Notation	Skin
cyhexatin	US - Minnesota Permissible Exposure Limits (PELs) - Skin	Skin Designation	X
cyhexatin	US - Hawaii Air Contaminant Limits - Skin Designation	Skin Designation	X
cyhexatin	US OSHA Permissible Exposure Levels (PELs) - Skin	Skin Designation	X
cyhexatin	US - Oregon Permissible Exposure Limits (Z2) - Skin	Skin	X
cyhexatin	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	X
cyhexatin	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	S
cyhexatin	Canada - Alberta Occupational Exposure Limits - Skin	Substance Interaction	1

Section 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 This material and its container must be disposed of as hazardous waste.
 Avoid release to the environment.
 Refer to special instructions/ safety data sheets.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
cyhexatin	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.
 † Puncture containers to prevent re-use and bury at an authorized landfill.
 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. 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: 6.1

Identification Numbers: UN3146 PG: III

Label Codes: 6.1 Special provisions: IB8, IP3, T1, TP33

Packaging: Exceptions: 153 Packaging: Non- bulk: 213

Packaging: Exceptions: 153 Quantity limitations: 100 kg

Passenger aircraft/rail:

Quantity Limitations: Cargo 200 kg Vessel stowage: Location: A aircraft only:

Vessel stowage: Other: 40 S.M.P.: Severe

Hazardous materials descriptions and proper shipping names:

Organotin compounds, solid, n.o.s.

Air Transport IATA:

UN/ID Number: 3146 Packing Group: III

Special provisions: A3

Cargo Only

Packing Instructions: 677 Maximum Qty/Pack: 200 kg

Passenger and Cargo Passenger and Cargo

Packing Instructions: Y645 Maximum Qty/Pack: 100 kg

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: 670 Maximum Qty/Pack: 10 kg

Shipping Name: ORGANOTIN COMPOUND, SOLID, N.O.S. *(CONTAINS CYHEXATIN)

Maritime Transport IMDG:

IMDG Class: 6.1 IMDG Subrisk: P

UN Number: 3146 Packing Group: III

EMS Number: F-A,S-A Special provisions: 43 223 274

Limited Quantities: 5 kg Marine Pollutant: Yes

Shipping Name: ORGANOTIN COMPOUND, SOLID, N.O.S.(contains cyhexatin)

Section 15 - REGULATORY INFORMATION

cyhexatin (CAS: 13121-70-5) 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 Environmental Protection Act (CEPA) 1999 - Schedule 3 Export Control List - Part 1 Prohibited Substances","International Maritime Dangerous Goods Requirements (IMDG Code) - Marine Pollutants","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","OSPAR List of Substances of Possible Concern","US - Alaska Limits for Air Contaminants","US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which production, use or other presence must be reported","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Proposition 65 - Priority List for the Development of MADLs for Chemicals Causing Reproductive Toxicity","US - California Proposition 65 - Reproductive Toxicity","US - Connecticut Hazardous Air Pollutants","US

- Hawaii Air Contaminant Limits", "US - Maine Chemicals of High Concern List", "US - Massachusetts Oil & Hazardous Material List", "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 Department of Transportation (DOT) Marine Pollutants - Appendix B", "US NIOSH Recommended Exposure Limits (RELs)"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

■ Cumulative effects may result following exposure*.

* (limited evidence).

Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.

■ 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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