KAFRIT NA

SAFETY DATA SHEET
PEX CATALYST MASTERBATCH

Section 1 - Identification

Product Identifier:

Product Identifier: PEX Catalyst Masterbatch

This Safety Data Sheet applies to all grades of PEX catalyst Masterbatch produced by Kafrit NA Ltd. including TA 2410 CL, TA 2411 CL, TA 2412 CL, TA 2417 CL, TA 2418 CL, TA 2419, TA 2420 CL, TA 2421 CL, TA 2422 CL, TA 2412 CX and TA 2410 CX.

Synonyms: PEX Catalyst, Catalyst Masterbatch, Catalyst MB

Chemical Name: Polymer → Polyethylene with Stabilizers and Catalyst

Product Form: Clear to white, solid pellets having minimal odour

Intended Uses of the Product:

Material Use: Catalyst masterbatch for extrusion of crosslinkable polyethylene pipes, tubing, and other profile shapes. When the product is extruded with crosslinkable polyethylene and then exposed to steam, it promotes crosslinking to result in a thermoset product.

Chemical Formula: $-(CH_2-CH_2)_x-$ plus catalyst, stabilizers and process aids

Details of the Manufacturer/Importer:

Manufactured by: Kafrit NA Ltd.

5411 275th Street, Langley, British Columbia, Canada, V4W 3X8

SDS Information: 1-604-607-6730

lab@kafrit.ca

Section 2 - Hazards Identification

Classification of the Substance:

Not classified as Dangerous Goods for transport purposes

Not classified as a controlled product under Canadian WHMIS regulations

GHS Hazard Categories: Not Classified

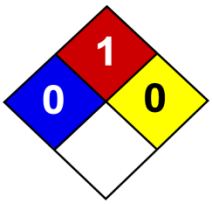
OSHA Hazard Category: Combustible Dust

OSHA-US Label Elements:

Signal Word: WARNING

Hazard statement:

If small particles are generated during further processing, handling or by other means, may form combustible dust concentrations in air



Precautionary Statements:

Prevention	---	Prevent dust formation or accumulation
	P243	Take action to prevent static discharges
	P261	Avoid breathing dust/fumes/gas/mist/vapors/spray
	P273	Avoid release to the environment
	P281	Use personal protective equipment as required
Disposal	P501	Dispose of contents/container in accordance to local, regional, national, and international regulations

Hazards Overview:

Small particles may be generated during further processing, handling or by other means. Accumulated fine dusts may form combustible dust concentrations in air. Contact with molten material may cause serious thermal burns. Dust and released vapors may be irritating to the eyes, skin, or respiratory system. Spilled material may create a slipping hazard. This product may be harmful if ingested by wildlife. Under fire conditions, the product will readily burn and emit irritating smoke.

NFPA and HMIS® Ratings: See graphics. Wear safety glasses. Wear gloves especially when handling molten material.

Section 3 - Composition/Information on Ingredients

Substances:

CAS#	Component	Percent by Weight
9002-88-04	Polyethylene*	>65
Not Available	Antioxidants***	0 to 14
Not Available	Color pigments**	0 to 10
Not Available	Light Stabilizers (UV-VIS) ***	0 to 6
106990-43-6	N,N',N'',N'''-Tetrakis(4,6-bis(butyl-(N-methyl-2,2,6,6-tetramethylpiperidin-4-yl)amino)triazin-2-yl)-4, 7-diazadecane-1, 10-diamine	0 to 5
3648-18-8	Dioctyltin dilaurate	<1
Not Available	Flouro-elastomer process aid	<0.8

Additional Information:

* The polyethylene may also be described as 1-butene, copolymer with ethene (CAS# 25087-37-7), or as 1 hexene, polymer with ethene (CAS#25213-02-9). Ethene and ethylene are interchangeable.

** Various color pigments including carbon black are used, depending on the grade.

*** Additives including antioxidants and processing aids are present in all grades. These components have a low hazard level in their pure form.

See Section 8 for applicable exposure limits. See Section 11 for applicable toxicity data.

Section 4 – First Aid Measures

First Aid Measures:

Eyes: Remove contact lenses if it can be done safely. Immediately flush your eyes with water for at least 15 minutes, while holding eyelids open. Seek medical attention if symptoms develop or persist. Seek urgent medical treatment or transport patient to hospital for burns to the eye. For burns, lay patient down and pad, do not attempt to remove any contact lenses, and block light from both eyes.

Skin: In case of contact with molten material, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten material, or molten product that has cooled, from skin without medical assistance. Do not break blisters. Do not apply ointments, oils, or butter. Prevent shock and hypothermia from cooling burns by laying the patient down, keeping extremities and the burned area elevated, if possible, while keeping the patient warm.

In case of contact with cool material, remove dusty or contaminated clothing and shoes. Wash affected area with soap and water. Seek medical attention if symptoms develop or persist.

Inhalation: Move affected individual to non-contaminated air. Loosen tight clothing such as a collar, tie, belt, or waistband to facilitate breathing. Seek immediate medical attention if the individual is not breathing, is unconscious or if any other symptoms persist. Perform artificial respiration or CPR if necessary. Inhalation of smoke following a fire may result in delayed pulmonary oedema; seek immediate medical attention.

Ingestion: Material is not expected to be absorbed from the gastrointestinal tract. DO NOT INDUCE VOMITING. Loosen tight clothing such as a collar, tie, belt, or waistband. Seek immediate medical attention if symptoms develop.

Notes to Physician:

After adequate first aid, no further treatment is necessary, unless symptoms reappear. Burns should be treated as thermal burns. Cooled molten resin will come off as healing occurs; therefore, immediate removal from the skin is not necessary. Treatment should be directed at the control of symptoms and the clinical condition of the patient. Ingested material should pass through the digestive system without injury.

Section 5 - Fire Fighting Measures

See Section 9: Physical Properties for flammability limits, flash point and auto-ignition information.

Extinguishing Media:

Water fog or water spray. In the case of small fires, dry chemical, carbon dioxide, or foam extinguishing media may be used. Avoid high pressure, direct water stream that may spread molten or burning resins.

Advice for Fire Fighters:

General Fire Hazards

Solid resins support combustion but do not meet combustible definition. Product will burn at high temperatures but is not considered flammable. Under fire conditions, this product will readily burn and emit irritating smoke. A high concentration of airborne powders or dust may form an explosive mixture with air.

Explosion Hazards

Accumulated fine dusts may form an explosive mixture with air. The risk of dust-air explosion is increased if flammable vapours are also present. The product may accumulate hazardous static charge.

Hazardous Combustion Products

Upon heating, polyethylene may emit various oligomers, waxes, and oxygenated hydrocarbons as well as carbon dioxide, carbon monoxide and small amounts of other organic vapors (e.g., aldehydes, acrolein). Inhalation of these decomposition products may be hazardous.

Fire Fighting Equipment/Instructions

Position personnel upwind of any fire. Keep unnecessary personnel away. Move containers from the fire area if you can do so without risk. Fight fire from maximum distance or use unmanned holders or monitor nozzles. Fire fighters should wear full-face, self-contained breathing apparatus and full turnout gear. Avoid inhaling any smoke and combustion materials. Remove and clean or dispose of any contaminated clothing. Cool containers with flooding quantities of water until well after the fire is out. Control runoff waters to prevent entry into sewers, drains, ditches, underground or confines spaces and waterways.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Spills:

Wear personal protective equipment (gloves). Stop the leak, isolate, and contain spill. Prevent entry into sewers, drains, ditches, underground or confined spaces, water intakes and waterways. Spilled products may create a dangerous slipping hazard. Use appropriate tools (buckets, shovels, and brooms) to put the spilled solid in an appropriate disposal or recovery container (bags, boxes, etc.). Reuse or recycle where possible.

If the product has accumulated in the form of dust or fine powder because of processing, these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dusty surfaces with compressed air). Non-sparking tools should be used for clean-up of dust.

Evacuation Procedures (large spills):

Isolate area. Keep unnecessary personnel away. Alert emergency and firefighting personnel to stand-by.

Special Procedures:

Contact local police/emergency services and appropriate emergency telephone numbers provided in Section 1. Ensure that statutory and regulatory reporting requirements in the applicable jurisdiction are met. Wear appropriate protective equipment and clothing during cleanup. Individuals without appropriate protective equipment should be excluded from the area of a spill until cleanup has been completed.

See Section 8 for recommended Personal Protective Equipment and see Section 13 for waste disposal considerations.

Section 7 - Handling and Storage

Precautions for Safe Handling:

Handle in contained and properly designed equipment systems. Use with adequate ventilation. Avoid ingestion and inhalation. Keep away from uncontrolled heat and incompatible materials. Ground all material handling and transfer equipment to dissipate any built-up static electricity. Spilled material may create a dangerous slipping hazard.

Keep handling areas free of loose pellets, powders, and dust build-up. Every effort should be made to prevent the generation of powders and fine dusts during handling and processing. If powders and fines dusts are generated accumulations around material handling systems must be prevented. Accumulated powders or fine dusts may form explosive air-dust mixtures.

Conditions for Safe Storage:

The storage area should be clearly identified, well illuminated, clear of obstruction and accessible only to trained and authorized personnel. Store the material in closed, grounded, and properly designed vessels, away from uncontrolled heat and incompatible materials. Outdoor storage of this product must be avoided. Avoid accumulation of dust by frequent cleaning and suitable construction of storage and handling areas. Keep shovels and vacuum systems readily available for cleanup of loose material. DO NOT enter bulk containers.

See Section 8 for appropriate Personal Protective Equipment and see Section 10 for information on Incompatibilities.

Section 8 - Exposure Controls / Personal Protection

Exposure Guidelines:

General Product Information:

Refer to published exposure limits - use effective control measures and PPE to maintain worker exposure to concentrations that are below these limits. Ensure that eyewash stations and safety showers are near work locations.

Component Exposure Limits:

ACGIH, OSHA, NIOSH, EPA, Alberta, and Ontario exposure limit lists have been checked for major components listed with CAS registry numbers. Other exposure limits may apply, check with proper authorities.

Polyethylene (Ethene homopolymer) (CAS# 9002-88-4)

ACGIH:	10 mg/m^3 TWA (inhalable particles, recommended); 3 mg/m^3 TWA (respirable particles, recommended) (related to Particulates (insoluble or poorly soluble) not otherwise specified (PNOS))
OSHA:	(vacated) 15 mg/m^3 TWA (total dust); 5mg/m^3 TWA (respirable fraction) (related to Nuisance particulates)
Alberta:	10 mg/m^3 TWA (total); 3 mg/m^3 TWA (respirable) (related to Particulate Not Otherwise Regulated)
Ontario:	10 mg/m^3 TWA (inhalable fraction); 3 mg/m^3 TWA (respirable fraction) (related to Particles (Insoluble or Poorly Soluble) Not Otherwise Specified (PNOS))

N, N′, N″, N‴-Tetrakis(4,6-bis(butyl-(N-methyl-2, 2, 6, 6-tetramethylpiperidin-4-yl) amino)triazin-2-yl) -4,7-diazadecane-1, 10-diamine (CAS# 106990-43-6)

No exposure limits identified. Exposure limits suggested for the base polyethylene are expected to be adequate.

Dioctyltin dilaurate (CAS# 3648-18-8) limited information, for tin compounds in general

ACGIH:	0.1 mg/m^3 as Sn(tin) TWA; 0.2 mg/m^3 as Sn(tin) STEL
OSHA:	0.1 mg/m^3 as Sn(tin) TWA PEL

OEL STEL all provinces and territories of Canada: 0.2 mg/m^3

OEL TWA all provinces and territories of Canada: 0.1 mg/m^3

Engineering Controls:

Engineering methods to reduce hazardous exposure are preferred controls. Methods include mechanical ventilation (dilution and local exhaust) process or personal enclosure, remote and automated operation, control of process conditions, leak detection and repair systems, and other process modifications.

Ensure all exhaust ventilation systems are discharged outdoors, away from air intakes and ignition sources. Supply sufficient replacement air to make up for air removed by exhaust systems. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen- deficient environment. Use only appropriately classified electrical equipment and powered industrial trucks.

Administrative (procedure) controls and use of personal protective equipment may also be required.

Personal Protective Equipment:

Eyes/Face:

Wear safety glasses during normal handling. Wear full-face shield during thermal processing if contact with molten material is likely.

Skin/Hands/Feet:

Wear thermal insulating gloves and other protective clothing (such as long-sleeved shirts and long pants) whenever molten material is present. Safety footwear with good traction is recommended to help prevent slipping. Static Dissipative (SD) rated footwear is recommended.

Respiratory:

If engineering controls and ventilation are not sufficient to prevent build-up of vapors or dusts, appropriate NIOSH approved air-purifying respirators or self-contained breathing apparatus (SCBA) appropriate for exposure potential should be used. Air-supplied breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

General:

Personal protective equipment (PPE) should not be considered a long-term solution to exposure control. Employer programs to properly select, fit, maintain, and train employees to use equipment must accompany PPE. Consult a competent industrial hygiene resource, the PPE manufacturer's recommendation, and/or applicable regulations to determine hazard potential and ensure adequate protection.

Section 9 - Physical & Chemical Properties

Information on Basic Physical and Chemical Properties:

Physical State and Appearance:	Solid, pellets	Color:	Varies by grade
Odor:	Minimal, slight amine	pH:	Not applicable
Vapor Pressure:	Not applicable	Vapor Density at 0°C (Air=1):	Not applicable
Boiling Point:	Not applicable	Melting Point:	Range: 105°C to 135°C (221°F to 275°F)
Solubility (H_20):	Insoluble	Specific Gravity (Water=1):	Range: 0.93 to 1.1
Evaporation Rate (n-Butyl Acetate = 1):	Not applicable	Octanol/H_2O Coefficient:	Not applicable
Decomposition Temperature:	Varies: >300°C (>572°F)	Softening Point:	Range: 85°C to 127°C (185°F to 261°F)
Auto Ignition:	Range: 330°C to 410°C (630° F to 770° F)	Flash Point:	>343°C (>649°F)
Flash Point Method:	Closed Cup	Upper Flammable Limit (UFL):	Not applicable
Lower Flammable Limit (LFL):	Not applicable	Flammability Classification:	Not flammable

Section 10 - Stability & Reactivity Information

Reactivity

Hazardous reactions will not occur under normal conditions.

Chemical Stability

This product is stable under normal use conditions for shock, vibration, pressure, or temperature.

Possibility of Hazardous Reactions or Hazardous Polymerization

Hazardous polymerization of this product is not likely to occur.

Conditions to Avoid

Avoid strong oxidizing agents. Avoid processing material over 300°C (572°F).

Incompatible Materials

This product may react with strong oxidizing agents. Organic solvents, ether, gasoline, lubricating oils, chlorinated hydrocarbons and aromatic hydrocarbons may react with and degrade polyethylene. Powder or dust may form an explosive mixture with air. The risk of dust-air explosion is increased if flammable vapours are also present.

Corrosivity

Not corrosive to common metals.

Hazardous Decomposition Products:

Upon heating, polyethylene may emit various oligomers, waxes, and oxygenated hydrocarbons as well as carbon dioxide, carbon monoxide and small amounts of other organic vapors (e.g., aldehydes, acrolein). Inhalation of these decomposition products may be hazardous.

Section 11 -Toxicological Information

Information on toxicological effects:

Inhaled: Inhalation of vapors may cause drowsiness or dizziness. Inhalation of dust may be damaging to health. Thermal processing may release fumes which may be highly irritating. These vapors may irritate the eyes, nose, and throat, causing red itchy eyes, coughing and sore throat. Massive exposure to processing vapors may cause pulmonary oedema or a possible asthma like response.

Ingested: The product is not considered harmful by ingestion. A single acute exposure is expected to pass through the digestive tract with little change or absorption and may produce only mild gastrointestinal irritation and disturbances. It is expected that an accumulation in the digestive tract may cause discomfort.

Skin: The product is not expected to cause adverse effects to the skin following contact. Contact with powder of fine particles may cause mechanical irritation which is increased by rubbing or if the skin is dry. Good hygiene is recommended. Contact with molten material may cause severe thermal burns.

Eyes: The product is not considered an eye irritant, though direct contact with the eye may cause discomfort resulting in tearing and redness. Contact with hot molten material may cause severe injury, including possible blindness. Smoke released from decomposition is irritating to the eyes.

Chronic: Long term exposure is not expected to cause chronic health effects. Exposure by all routes should be minimized, however.

Acute Toxicity:

A: Acute Toxicity - General Product Information

The product is considered essentially inert and non-toxic. Exposures to high levels of dust or heated fumes may cause irritation and possible pulmonary edema. Contact with molten material may cause severe thermal burns. There is no available animal toxicity information for the product. The product is expected to present less hazard since the hazardous components are incorporated in a polymer matrix.

B: Acute Toxicity - LD50/LC50

Polyethylene (Ethene homopolymer) (CAS# 9002-88-4)
Inhalation LC50 Mouse: 12 g/m^3/30M

Polyethylene (1 -Butene, polymer with ethene) (CAS# 25087-34-7)
Oral LD50 Rat: 4 g/kg

N, N', N'', N'''-Tetrakis(4,6-bis(butyl-(N-methyl-2,2,6,6-tetramethylpiperidin-4-yl) amino) triazin-2-yl)-4,7-diazadecane-1, 10-diamine (CAS# 106990-43-6)
LD50 acute oral toxicity in rats: > 5000mg/kg; LD50 dermal rat: >2000 mg/kg
Skin irritation tested on rabbits: Non-irritant; Eye irritation tested on rabbits: Irritant;
Skin sensitization on guinea pigs: Negative.

Dioctyltin Dilaurate (CAS# 3648-18-8)
LD50 acute oral toxicity in rats: >2000 mg/kg
LD50 dermal toxicity in rats: ≥ 2000 mg/kg

Chronic Toxicity:

General Product Information

Product has minimal chronic toxicity. Most polyethylene dust particles are large and non-respirable. There are no known or reported reproductive or genetic effects. The product is expected to present less hazard since the hazardous components are incorporated in a polymer matrix.

Carcinogenic Effects

ACGIH, EPA, IARC, OS HA, and NTP carcinogen lists have been checked for selected similar materials or those components with CAS registry numbers. No component of this product at levels greater than 0.1% is identified as a carcinogen.

Section 12 - Ecological Information

Toxicity:

Harmful to aquatic organisms, DO NOT discharge into sewer of waterways.

Persistence and Degradability:

Product does not readily degrade. Under optimal oxidation conditions, >99% of the polyethylene masterbatch will remain intact after exposure to microbial actions. Product will slowly change (becomes brittle) in the presence of sunlight but will not breakdown. Product buried in landfill has been found to be stable over time. No toxic degradation products are known to be produced.

Bioaccumulation Potential:

Pellets may collect in the digestive systems of birds and aquatic life, causing injury and possible death due to starvation. However, pellets are not expected to bio-accumulate in animals that feed on fish or bird which have consumed pellets.

Mobility in water and soil:

If released into watercourses, most crosslinkable polyethylene pellets float. Pellets are persistent in aquatic and terrestrial systems. Product should be recovered from water and land following spills. This product has not been found to migrate through soils.

Product Information

Polyethylene masterbatch is an essentially biologically inert solid and considered non-toxic to the aquatic environment. It is stable (does not decompose) in landfills or in aquatic systems.

Component Analysis – Eco-toxicity - Aquatic/Terrestrial Toxicity

N,N',N'',N'''-Tetrakis(4,6-bis(butyl-(N-methyl-2,2,6,6-tetramethylpiperidin-4-yl)amino)triazin-2-yl)-4,7-diazadecane-1,10-diamine (CAS# 106990-43-6)

EC50 100 mg/L (Daphnia) (21 days)	EC50 (24h) 7.3 mg/L (Daphnia)
EC50 (72h) 5.7 mg/L (Algae)	LC50 (96h) > 119 mg/L (Fish)

Dioctyltin dilaurate (CAS# 3648-18-8)

No ecological toxicity data available.

Section 13 - Disposal Considerations

Waste Treatment Methods:

This product is not known to generate hazardous wastes according to US and Canadian regulations. The use, mixing or processing of this product may alter its properties or hazards. Check federal, provincial, or state, and local environmental regulations prior to disposal. Preferred disposal methods for polymers in order of preference are:

1) clean and reuse, if possible,
2) recover and resell through plastic recyclers or resin brokers,
3) incinerate with waste heat recovery and
4) landfill.

Reuse, recycling, storing, transportation, and disposal must be in accordance with applicable federal, provincial/state and local regulations. DO NOT ATTEMPT TO DISPOSE OF BY UNCONTROLLED INCINERATION. Open burning of plastics at landfills should not be undertaken.

The waste generator is advised to carefully consider hazardous properties and control measures needed for other materials that may be found in the waste.

See Section 7 - Handling and Storage and Section 8 - Exposure Controls / Personal Protection for additional handling information that may be applicable.

Section 14 - Transportation Information

Labels Required:

Marine pollutant: NO

US DOT Information

Shipping Name: NOT REGULATED as Hazardous Material for Transportation.

Canadian TDG Information

Shipping Name: NOT REGULATED as Dangerous Goods for Transportation.

International Air Transport Association (IATA) & International Civil Aviation Organization (ICAO) Information

Shipping Name: NOT REGULATED as Dangerous Goods for Transportation.

International Maritime Dangerous Goods (IMDG) Code

Shipping Name: NOT REGULATED as Dangerous Goods for Transportation.

Section 15 - Regulatory Information

Safety, health, and environmental regulations / legislation specific for the substance or mixture:

A: International Regulations

Component Analysis - International Inventory Status

Component	CAS #	US - TSCA	CANADA - DSL	EU - EINECS
Polyethylene (Ethene homopolymer)	9002-88-4	Yes	Yes	Exempt
Polyethylene (1-Butene, polymer with ethene)	25087-34-7	Yes	Yes	Exempt
Polyethylene (1-Hexene, polymer with ethene)	25213-02-9	Yes	Yes	Exempt
N,N',N'',N'''-Tetrakis(4,6-bis(butyl-(N-methyl-2,2,6,6-tetramethylpiperidin-4-yl)amino)triazin-2-yl)-4, 7-diazadecane-1, 10-diamine	106990-43-6	Yes	Yes	Yes (Xi)*
Dioctyltin dilaurate	3648-18-8	Yes	Yes	Yes

*EEC-symbol: Xi: Irritant; R 36: Irritating to eyes; S 22: Do not breathe dust; S 24/25: Avoid contact with skin and eyes.

Jan 2021: Dioctyltin dilaurate was added to the Candidate List of Substances of Very High Concern for Authorisation. This decision was based on a determination that the substance may be Toxic for reproduction (Article 57c).

B: USA Federal & State Regulations

Ongoing occupational hygiene, medical surveillance programs, site emission or spill reporting may be required by Federal or State regulations. Check for applicable regulations.

The EPA Storm Water Regulations classify resin pellets as “significant materials”. Prevent pellets from entering drains, ditches, or waterways. Site emission reporting may be required. Check applicable regulations.

USA OSHA Hazard Communication Class

According to 29 CFR 1910.1200 (Hazard Communication), polyethylene polymer products are not hazardous.

USA Right-to-Know - Federal

No component is known to be listed under SARA 313.

Dioctyltin Dilaurate (CAS# 3648-18-8) is potentially acutely toxic according to SARA 311/312.

USA Right-to-Know - State

No components appear on one or more of the state hazardous substances lists. Some components (including those present only in trace quantities, and therefore not listed in this document) may be included on the Right-To-Know lists of various U.S. states.

California Proposition 65

This product does not contain any chemicals known in the State of California to cause cancer, birth defects, or any other reproductive harm.

C: Canadian Regulations - Federal and Provincial

Canadian Environmental Protection Act (CEPA): All components of this product are on the Domestic Substances List (DSL) and are acceptable for use under the provisions of CEPA.

WHMIS Classification

Workplace Hazardous Materials Information System (WHMIS): This product has been classified in accordance with the hazard criteria of the CPR (Controlled Products Regulations) and the SDS contains all the information required by the CPR.

NOT CONTROLLED under WHMIS.

Other Regulations

Ongoing occupational hygiene, medical surveillance programs, site emission or spill reporting may be required by Federal or Provincial regulations. Check for applicable regulations.

Section 16 - Other Information

Label Requirements

This product has been evaluated and does not require any hazard warning on the label under established regulatory criteria.

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstracts Service; CEPA = Canadian Environmental Protection Act; CERCLA = Comprehensive Environmental Response Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Products Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EC50 = Effective Concentration 50%; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; EPA = Environmental Protection Agency; EU = European Union; FDA = Food and Drug Administration; GHS = Globally Harmonized System for the Classification and Labelling of Chemicals; HCS = Hazard Communication Standard; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association: ICAO = International Civil Aviation Organization; Kow = Octanol/water partition coefficient; LC50 = Lethal Concentration 50%; LD50 = Lethal Dose 50%; LEL = Lower Explosive Limit: LFL = Lower Flammable Limit; SDS = Safety Data Sheet; NFPA = National Fire Protection Association; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OEL = Occupational Exposure Limit; OSHA = Occupational Safety and Health Administration; PEL = Permissible Exposure Limit; PPE = Personal Protective Equipment; REACH = Registration, Evaluation, Authorisation and Restriction of Chemical Substances; REL = Recommended Exposure Limit; SARA = Superfund Amendments and Reauthorization Act; SCBA = Self Contained Breathing Apparatus; SDS = Safety Data Sheet; SEPA = State Environmental Protection Administration; STEL = Short Term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average; UEL = Upper Explosive Limit: UFL = Upper Flammable Limit; WHMIS = Workplace Hazardous Materials Information Systems

SDS Prepared by: Robert Samplonius
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SDS Information Phone Number: 1-604-607-6730 extension 104

Notice to Reader:

Prior Issue Dates: January 31, 2019
August 9, 2021, Reviewed & Revised: October 17, 2022