Terephthaloyl chloride

sc-251123

Material Safety Data Sheet

Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Terephthaloyl chloride

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
C8-H4-Cl2-O2, C6H4(COCl)2, "1, 4-benzenedicarbonyl chloride", "1, 4-benzenedicarbonyl dichloride", "p-phenylenedicarbonyl dichloride", "p-phthaloyl chloride", "p-phthaloyl dichloride", "terephthalic acid chloride", "terephthalic acid dichloride", "terephthaloyl dichloride"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

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

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

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

Harmful if swallowed.
Causes burns.
Risk of serious damage to eyes.

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.
■ The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.
■ Ingestion of acidic corrosives may produce burns around and in the mouth.
the throat and esophagus.

EYE

■ The material can produce chemical burns to the eye following direct contact.
Vapors or mists may be extremely irritating.
■ If applied to the eyes, this material causes severe eye damage.
■ Irritation of the eyes may produce a heavy secretion of tears (lachrymation).
■ Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light and burns.
Mild burns of the epithelia generally recover rapidly and completely.

SKIN

■ The material can produce chemical burns following direct contactwith the skin.
■ Skin contact is not thought to produce harmful health effects (as classified using animal models).
Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.
■ 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.
■ Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue.

INHALED

■ If inhaled, this material can irritate the throat andlungs of some persons.
■ Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual.
■ 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.
■ Hydrogen chloride (HCl) vapour or fumes present a hazard from a single acute exposure.
Exposures of 1300 to 2000 ppm have been lethal to humans in a few minutes.
■ Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage.
There may be dizziness, headache, nausea and weakness.

CHRONIC HEALTH EFFECTS

■ Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
There is limited evidence that, skin contact with this product is more likely to cause a sensitization reaction in some persons compared to the general population.
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.
Chronic minor exposure to hydrogen chloride (HCl) vapour or fume may cause discolouration or erosion of the teeth, bleeding of the nose and gums; and ulceration of the nasal mucous membranes.
Repeated exposures of animals to concentrations of about 34 ppm HCl produced no immediate toxic effects.
Workers exposed to hydrochloric acid suffered from gastritis and a number of cases of chronic bronchitis have also been reported.
Repeated or prolonged exposure to dilute solutions of HCl may cause dermatitis.
Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and or ulceration of mouth lining. Irritation of airways to lung, with cough, and inflammation of lung tissue often occurs.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
terephthaloyl chloride	100-20-9	>98
commercial product may contain trace amounts of		
N,N-dimethylcarbamoyl chloride	79-44-7	
slowly hydrolyses in water to produce		
hydrogen chloride	7647-01-0	

Section 4 - FIRST AID MEASURES

SWALLOWED
· For advice, contact a Poisons Information Center or a doctor at once. · Urgent hospital treatment is likely to be needed.

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 or hair contact occurs: · Immediately flush body and clothes with large amounts of water, using safety shower if available. · Quickly remove all contaminated clothing, including footwear.

INHALED
· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested. Inhalation of vapors or aerosols (mists, fumes) may cause lung edema. Corrosive substances may cause lung damage (e.g.

NOTES TO PHYSICIAN
■ Treat symptomatically.
For acute or short term repeated exposures to strong acids:
· Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
· Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling.

Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg):	0.023 @ 25 C
Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	Not available
Lower Explosive Limit (%):	Not available

EXTINGUISHING MEDIA
· DO NOT use water.

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.
· Slight fire hazard when exposed to heat or flame.
Combustion products include: carbon monoxide (CO), carbon dioxide (CO_2), hydrogen chloride, phosgene, other pyrolysis products typical of burning organic material.

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

PERSONAL PROTECTION
Glasses:
Safety Glasses.
Full face- shield.
Gloves:
Respirator:
Type AB-P Filter of sufficient capacity

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

■ DO NOT use aluminum or galvanized containers.
Check regularly for spills and leaks.
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/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³	TWA F/CC	Notes
Canada - Alberta Occupational Exposure Limits	terephthaloyl chloride (Hydrogen chloride)					2	3		
Canada - British Columbia Occupational Exposure Limits	terephthaloyl chloride (Hydrogen chloride Revised 2003)					2			
US - Minnesota Permissible Exposure Limits (PELs)	terephthaloyl chloride (Hydrogen chloride)					5	7		
US ACGIH Threshold Limit Values (TLV)	terephthaloyl chloride (Hydrogen chloride)					2			TLV Basis: upper respiratory tract irritation
US NIOSH Recommended Exposure Limits (RELs)	terephthaloyl chloride (Hydrogen chloride)					5	7		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	terephthaloyl chloride (Hydrogen chloride)					5	7		
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	terephthaloyl chloride (Hydrogen chloride)	(C)5	(C)7						
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	terephthaloyl chloride (Hydrogen chloride)					5	7		
US - California Permissible Exposure Limits for Chemical Contaminants	terephthaloyl chloride (Hydrogen chloride; muriatic acid)	5	7			C			

US - Idaho - Limits for Air Contaminants	terephthaloyl chloride (Hydrogen chloride)					5	7	
US - Hawaii Air Contaminant Limits	terephthaloyl chloride (Hydrogen chloride)					5	7	
US - Alaska Limits for Air Contaminants	terephthaloyl chloride (Hydrogen chloride)					5	7	
US - Michigan Exposure Limits for Air Contaminants	terephthaloyl chloride (Hydrogen chloride)					5	7	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	terephthaloyl chloride (Hydrogen chloride)	5	7	-	-			
US - Washington Permissible exposure limits of air contaminants	terephthaloyl chloride (Hydrogen chloride)					5.0		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	terephthaloyl chloride (Hydrogen chloride)					2		
US - Oregon Permissible Exposure Limits (Z-1)	terephthaloyl chloride (Hydrogen chloride)					5	7	
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	terephthaloyl chloride (Hydrogen chloride)					5	7	
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	terephthaloyl chloride (Hydrogen chloride)					5	7,5	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	terephthaloyl chloride (Hydrogen chloride)					5	7	
Canada - Northwest Territories Occupational Exposure Limits (English)	terephthaloyl chloride (Hydrogen chloride)					5	7.5	
Canada - Nova Scotia Occupational Exposure Limits	terephthaloyl chloride (Hydrogen chloride)					2		TLV Basis: upper respiratory tract irritation

Canada - Prince Edward Island Occupational Exposure Limits	terephthaloyl chloride (Hydrogen chloride)				2	TLV Basis: upper respiratory tract irritation
Canada - Nova Scotia Occupational Exposure Limits	N,N-dimethylcarbamoyl chloride (Dimethyl carbamoyl chloride)	0.005				TLV Basis: Nasal cancer; upper respiratory tract irritation
Canada - Prince Edward Island Occupational Exposure Limits	N,N-dimethylcarbamoyl chloride (Dimethyl carbamoyl chloride)	0.005				TLV Basis: Nasal cancer; upper respiratory tract irritation
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	N,N-dimethylcarbamoyl chloride (K Dimethyl carbamyl chloride)		(See Table 16)			
Canada - British Columbia Occupational Exposure Limits	N,N-dimethylcarbamoyl chloride (Dimethyl carbamoyl chloride Revised 2007)	0.005				Skin; A2, 2A
US ACGIH Threshold Limit Values (TLV)	N,N-dimethylcarbamoyl chloride (Dimethyl carbamoyl chloride)	0.005				TLV Basis: Nasal cancer; upper respiratory tract irritation

ENDOELTABLE

PERSONAL PROTECTION




RESPIRATOR

Type AB-P Filter of sufficient capacity
Consult your EHS staff for recommendations

EYE

· Chemical goggles.
· Full face shield.

HANDS/FEET

■ Wear chemical protective gloves, eg. PVC.
NOTE: The material may produce skin sensitization in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
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.

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

Corrosive.
Acid.

State	DIVIDED SOLID	Molecular Weight	203.02
Melting Range (°F)	174.2- 177.8	Viscosity	Not Applicable
Boiling Range (°F)	510.8	Solubility in water (g/L)	Reacts
Flash Point (°F)	356	pH (1% solution)	Not available
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapor Pressure (mmHg)	0.023 @ 25 C
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	Not available
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	7
Volatile Component (%vol)	Not available	Evaporation Rate	Not available

APPEARANCE

White flakes or colourless needles; react with water and alcohol. Soluble in ether.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

· Contact with alkaline material liberates heat.

STORAGE INCOMPATIBILITY

■ Reacts with mild steel, galvanized steel / zinc producing hydrogen gas which may form an explosive mixture with air.
Segregate from alcohol, water.
· Avoid strong bases.
Segregate from alkalis, oxidizing agents and chemicals readily decomposed by acids, i.e. cyanides, sulfides, carbonates.
· NOTE: May develop pressure in containers; open carefully. Vent periodically.
Hydrogen chloride:
· reacts strongly with strong oxidisers (releasing chlorine gas), acetic anhydride, caesium cyanotridecahydrodecaborate(2-), ethylidene difluoride, hexalithium disilicide, metal acetylide, sodium, silicon dioxide, tetraselenium tetranitride, and many organic materials
· is incompatible with aliphatic amines, alkanolamines, alkylene oxides, aluminium, aluminium-titanium alloys, aromatic amines, amides, 2-aminoethanol, ammonia, ammonium hydroxide, calcium phosphide, chlorosulfonic acid, ethylenediamine, ethyleneimine, epichlorohydrin, isocyanates, metal acetylides, metal carbides, oleum, organic anhydrides, perchloric acid, 3-propiolactone, sulfuric acid, uranium phosphide, vinyl acetate, vinylidene fluoride
· attacks most metals forming flammable hydrogen gas, and some plastics, rubbers and coatings.

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

Section 11 - TOXICOLOGICAL INFORMATION

TEREPHTHALOYL CHLORIDE

TOXICITY AND IRRITATION

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

TEREPHTHALOYL CHLORIDE:
■ The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
N,N-DIMETHYLCARBAMOYL CHLORIDE:
TEREPHTHALOYL CHLORIDE:
■ The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.
TEREPHTHALOYL CHLORIDE:

TOXICITY	IRRITATION
Oral (rat) LD50: 2500 mg/kg	Nil Reported
Oral (mouse) LD50: 2140 mg/kg	
Oral (rabbit) LD50: 950 mg/kg	

■ 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.
Somnolence, dyspnae recorded

TOXICITY	IRRITATION
N,N-DIMETHYLCARBAMOYL CHLORIDE:	
Oral (rat) LD50: 1000 mg/kg	Nil Reported
Inhalation (rat) LC50: 180 ppm/6h	
Intraperitoneal (mouse) LD50: 300 mg/kg	
■ The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.	
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.	
WARNING: This substance has been classified by the IARC as Group 2A: Probably Carcinogenic to Humans.	
Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen	
[National Toxicology Program: U.S. Dep. of Health & Human Services 2002].	
HYDROGEN CHLORIDE:	
Inhalation (human) LCLo: 1300 ppm/30m	Eye (rabbit): 5 mg/30s - Mild
Inhalation (human) LCLo: 3000 ppm/5m	
Inhalation (rat) LC50: 3124 ppm/60m	
4701 ppm/30m	

CARCINOGEN

DIMETHYLCARBAMOYL CHLORIDE	US Environmental Defense Scorecard Recognized Carcinogens	Reference(s)	P65
DIMETHYLCARBAMOYL CHLORIDE	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
terephthaloyl chloride	HIGH		LOW	HIGH
N,N-dimethylcarbamoyl chloride	LOW	LOW	LOW	HIGH
hydrogen chloride	LOW		LOW	HIGH

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information
Corrosivity characteristic: use EPA hazardous waste number D002 (waste code C)
B. Component Waste Numbers
When N,N-dimethylcarbamoyl chloride is present as a solid waste as a discarded commercial chemical product, off-specification species, as a container residue, or a spill residue, use EPA waste number U097 (waste code T).

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: 8
Identification Numbers: UN2923 PG: III
Label Codes: 8, 6.1 Special provisions: IB8, IP3, T1, TP33
Packaging: Exceptions: 154 Packaging: Non- bulk: 213
Packaging: Exceptions: 154 Quantity limitations: 25 kg
Passenger aircraft/rail:
Quantity Limitations: Cargo 100 kg Vessel stowage: Location: B
aircraft only:
Vessel stowage: Other: 40, 95
Hazardous materials descriptions and proper shipping names:
Corrosive solids, toxic, n.o.s.

Air Transport IATA:

ICAO/IATA Class: 8 ICAO/IATA Subrisk: 6.1
UN/ID Number: 2923 Packing Group: III
Special provisions: A3
Cargo Only
Packing Instructions: 823 Maximum Qty/Pack: 100 kg
Passenger and Cargo Passenger and Cargo
Packing Instructions: 822 Maximum Qty/Pack: 25 kg
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: Y822 Maximum Qty/Pack: 5 kg
Shipping Name: CORROSIVE SOLID, TOXIC, N.O.S. *(CONTAINS TEREPHTHALOYL CHLORIDE)

Maritime Transport IMDG:

IMDG Class: 8 IMDG Subrisk: 6.1
UN Number: 2923 Packing Group: III
EMS Number: F-A , S-B Special provisions: 223 274
Limited Quantities: 5 kg
Shipping Name: CORROSIVE SOLID, TOXIC, N.O.S.

Section 15 - REGULATORY INFORMATION

terephthaloyl chloride (CAS: 100-20-9) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)","International Council of Chemical Associations (ICCA) - High Production Volume List","OECD Representative List of High Production Volume (HPV) Chemicals","US - Pennsylvania - Hazardous Substance List","US DOE Temporary Emergency Exposure Limits (TEELs)","US EPA High Production Volume Program Chemical List","US Inventory of Effective Food Contact Substance Notifications","US Toxic Substances Control Act (TSCA) - Inventory","US TSCA Section 8 (a) - Preliminary Assessment Information Rules (PAIR) - Reporting List","US TSCA Section 8 (d) - Health and Safety Data Reporting"

Regulations for ingredients

N,N-dimethylcarbamoyl chloride (CAS: 79-44-7) is found on the following regulatory lists;

"Canada - British Columbia Occupational Exposure Limits","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 - Designated Chemical Substances","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Ingredient Disclosure List (SOR/88-64)","Canada Non-Domestic Substances List (NDSL)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs","International Chemical Secretariat (ChemSec) REACH SIN* List (*Substitute It Now!) 1.0","US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Proposition 65 - Carcinogens","US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens","US - California Toxic Air Contaminant List Category V","US - Connecticut Hazardous Air Pollutants","US - Maine Chemicals of High Concern List","US - Massachusetts Oil & Hazardous Material List","US - Minnesota Hazardous Substance List","US - New Jersey Right to Know Hazardous Substances","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Vermont Hazardous Constituents","US - Vermont Hazardous wastes which are Discarded Commercial Chemical Products or Off-Specification Batches of Commercial Chemical Products or Spill Residues of Either","US - Washington Dangerous waste constituents list","US - Washington Discarded Chemical Products List - ""U"" Chemical Products","US ACGIH Threshold Limit Values (TLV)","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US Clean Air Act - Hazardous Air Pollutants","US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","US DOE Temporary Emergency Exposure Limits (TEELs)","US EPCRA Section 313 Chemical List","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US National Toxicology Program (NTP) 11th Report Part B. Reasonably Anticipated to be a Human Carcinogen","US NIOSH Recommended Exposure Limits (RELs)","US RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261","US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Wastes","US Toxic Substances Control Act (TSCA) - Inventory"

hydrogen chloride (CAS: 7647-01-0) is found on the following regulatory lists;

"Canada - Alberta Ambient Air Quality Objectives","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 Industrial Hazardous Substances","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Controlled Drugs and Substances Act Schedule VI","Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada National Pollutant Release Inventory (NPRI)","Canada Prohibited Toxic Substances, Schedule 2, Concentration Limits (English)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk","International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs","International Council of Chemical Associations (ICCA) - High Production Volume List","International Maritime Dangerous Goods Requirements (IMDG Code) - Goods Forbidden for Transport","OECD Representative List of High Production Volume (HPV) Chemicals","United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II","United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control - Table II","US - Alaska Limits for Air Contaminants","US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)","US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Toxic Air Contaminant List Category II","US - Connecticut Hazardous Air Pollutants","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","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 - Oregon Hazardous Materials","US - Oregon Permissible Exposure Limits (Z-1)","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 - Wyoming List of Highly Hazardous Chemicals, Toxics and Reactives","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV)","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US Clean Air Act - Hazardous Air Pollutants","US CWA (Clean Water Act) - List of Hazardous Substances","US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances","US Department of Homeland Security Chemical Facility Anti-Terrorism Standards - Chemicals of Interest","US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","US DOE Temporary Emergency Exposure Limits (TEELs)","US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals","US EPA Acute Exposure Guideline Levels (AEGLs) - Final","US EPA High Production Volume Chemicals Additional List","US EPA Master Testing List - Index I Chemicals Listed","US EPCRA Section 313 Chemical List","US Food Additive Database","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US NFPA 45 Fire Protection for Laboratories Using Chemicals - Flammability Characteristics of Common Compressed and Liquefied Gases","US NIOSH Recommended Exposure Limits (RELs)","US OSHA List of Highly Hazardous Chemicals, Toxics and Reactives","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide","US SARA Section 302 Extremely Hazardous Substances","US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants","US Toxic Substances Control Act (TSCA) - Inventory"

Section 16 - OTHER INFORMATION

ND

Substance CAS Suggested codes terephthaloyl chloride 100- 20- 9 N, N- dimethylcarbamoyl chloride 79- 44- 7 hydrogen chloride 7647- 01- 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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