o-Toluidine hydrochloride

sc-250597

Material Safety Data Sheet

Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
o-Toluidine hydrochloride

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
C7-H9-N.HCl, CH3C6H4NH2.HCl, "2-aminotoluene hydrochloride", "o-methylaniline hydrochloride", "1-amino-2-methylbenzene hydrochloride", "2-amino-1-methylbenzene hydrochloride", "o-aminotoluene hydrochloride", "2-methyl aniline hydrochloride", "2-methyl benzeneamine hydrochloride", "1-methyl-2-aminobenzene hydrochloride", "2-methyl-1-aminobenzene hydrochloride", "2-methylaniline hydrochloride", "o-methylbenzeneamine hydrochloride", "2-methylbenzeneamine hydrochloride", "2-toluidine hydrochloride", "o-tolylamine hydrochloride", "RCRA Waste No. U222"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

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

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

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

Toxic in contact with skin.
Irritating to eyes.
May cause CANCER.
May cause SENSITISATION by skin contact.
Very toxic to aquatic organisms.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Accidental ingestion of the material may be damaging to the health of the individual.
■ The substance and/or its metabolites may bind to hemoglobin inhibiting normal uptake of oxygen.
This condition, known as "methemoglobinemia", is a form of oxygen starvation (anoxia).
■ Signs of intoxication in humans exposed to o-toluidine include methaemoglobinaemia, haematuria, marked renal and bladder irritation and physiological and psychological disturbances.
Daily gastric intubation of 225 mg o-toluidine/kg body weight to rats for 20 days produced cyanosis, splenic congestion with haemosiderosis and extramedullary haematopoiesis, hypercellularity in the bone marrow and mortalities.

EYE

■ This material can cause eye irritation and damage in some persons.

SKIN

■ Skin contact with the material may produce toxic effects; systemic effectsmay result following absorption.
■ The material is not thought to be a skin irritant (as classified using animal models).
Abrasive damage however, may result from prolonged exposures.
■ 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 respiratory irritation (as classified using animal models).
Nevertheless inhalation of dusts, or fume, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.
■ 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.
■ Clinical signs of intoxication in humans include methaemoglobinaemia and haematuria.
An exposure of 40 ppm of toluidine (all isomers) in air for 60 minutes produces severe intoxication.

CHRONIC HEALTH EFFECTS

■ Skin contact with the material is more likely to cause a sensitization reaction in some persons compared to the general population.
There is ample evidence that this material can be regarded as being able to cause cancer in humans based on experiments and other information.
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.
Absorption of o-toluidine across the placenta has produced foetal tumours in experimental animals. Bladder tumors have been produced in animals exposed too-toluidine by several routes.
When administered in the diet the hydrochloride increased the incidences of hepatocellular carcinomas or adenomas in female mice and haemangiosarcomas and haemangiomas of the abdominal viscera in both sexes of another strain; increased the incidences of sarcomas of multiple organs in rats of both sexes, subcutaneous fibromas and mesotheliomas in male rats, and sarcomas of the spleen, transitional cell papillomas and carcinomas of the urinary bladder, and mammary gland fibroadenomas and adenomas in the female rat. Although an excess of bladder cancers has often been found in workers exposed to varying combinations of dyestuffs and dyestuff intermediates, no population of workers exposed to o-toluidine alone has been described.
Most arylamines are powerful poisons to the blood-making system. High chronic doses cause congestion of the spleen and tumor formation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
o-toluidine hydrochloride	636-21-5	>98

Section 4 - FIRST AID MEASURES

SWALLOWED
· If swallowed do NOT induce vomiting. · If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

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: · Quickly but gently, wipe material off skin with a dry, clean cloth. · Immediately 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.

NOTES TO PHYSICIAN
■ The material may induce methemoglobinemia following exposure.
· Initial attention should be directed at oxygen delivery and assisted ventilation if necessary. Hyperbaric oxygen has not demonstrated substantial benefits.
· Hypotension should respond to Trendelenburg's position and intravenous fluids; otherwise dopamine may be needed.

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
· Water spray or fog.
· Foam.

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), hydrogen chloride, phosgene, nitrogen oxides (NOx), other pyrolysis products typical of burning organic material.
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

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
· Clean up waste regularly and abnormal spills immediately.
· Avoid breathing dust and contact with skin and eyes.
· Wear protective clothing, gloves, safety glasses and dust respirator.
· Use dry clean up procedures and avoid generating dust.
· Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
· Dampen with water to prevent dusting before sweeping.
· Place in suitable containers for 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.
Store in well-sealed containers protected from the light.

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	o-toluidine hydrochloride (o-Toluidine)	2	8.8						
Canada - British Columbia Occupational Exposure Limits	o-toluidine hydrochloride (o-Toluidine Revised 2009)	2							Skin; 1
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	o-toluidine hydrochloride (o-Toluidine)	2	8.8						
US OSHA Permissible Exposure Levels (PELs) - Table Z1	o-toluidine hydrochloride (o-Toluidine)	5	22						
US ACGIH Threshold Limit Values (TLV)	o-toluidine hydrochloride (o-Toluidine)	2							TLV Basis: methemoglobinemia; BEI-M
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	o-toluidine hydrochloride (o-Toluidine)	5	22						
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	o-toluidine hydrochloride (o-Toluidine)	5	22						
US - Vermont Permissible Exposure Limits Table Z-1-A	o-toluidine hydrochloride (o-Toluidine)	5	22						

Final Rule Limits for Air Contaminants							
US - Minnesota Permissible Exposure Limits (PELs)	o-toluidine hydrochloride (o-Toluidine)	5	22				
US - California Permissible Exposure Limits for Chemical Contaminants	o-toluidine hydrochloride (o-Toluidine; o-methylaniline)	2	9				
US - Idaho - Limits for Air Contaminants	o-toluidine hydrochloride (o-Toluidine)	5	22				
US - Hawaii Air Contaminant Limits	o-toluidine hydrochloride (o-Toluidine)	5	22				
US - Alaska Limits for Air Contaminants	o-toluidine hydrochloride (o-Toluidine)	5	22				
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	o-toluidine hydrochloride (o-Toluidine)	5	22	10	44		
US - Washington Permissible exposure limits of air contaminants	o-toluidine hydrochloride (o-Toluidine)	2		4			
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	o-toluidine hydrochloride (o-Toluidine)	2		4			Skin, T20
Canada - Nova Scotia Occupational Exposure Limits	o-toluidine hydrochloride (o-Toluidine)	2					TLV Basis: methemoglobinemia; BEI-M
Canada - Prince Edward Island Occupational Exposure Limits	o-toluidine hydrochloride (o-Toluidine)	2					TLV Basis: methemoglobinemia; BEI-M
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	o-toluidine hydrochloride (o-Toluidine)	5	22				
US - Michigan Exposure Limits for Air Contaminants	o-toluidine hydrochloride (o-Toluidine)	5	22				
US - Oregon Permissible Exposure Limits (Z-1)	o-toluidine hydrochloride (o-Toluidine)	5	22				

Canada - Northwest Territories Occupational Exposure Limits (English)	o-toluidine hydrochloride (o-Toluidine)	5	22	10	44

ENDOELTABLE

PERSONAL PROTECTION




RESPIRATOR

Particulate

Consult your EHS staff for recommendations

EYE

· Safety glasses with side shields.

· Chemical goggles.

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

· Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area.

· Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted.

· Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely.

· Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood.

· Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.

ENGINEERING CONTROLS

· Employees exposed to confirmed human carcinogens should be authorized to do so by the employer, and work in a regulated area.

· Work should be undertaken in an isolated system such as a "glove-box" . Employees should wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.

· Within regulated areas, the carcinogen should be stored in sealed containers, or enclosed in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens are contained within.

· Open-vessel systems are prohibited.

· Each operation should be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation.

· Exhaust air should not be discharged to regulated areas, non-regulated areas or the external environment unless decontaminated. Clean make-up air should be introduced in sufficient volume to maintain correct operation of the local exhaust system.

· For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.

· Except for outdoor systems, regulated areas should be maintained under negative pressure (with respect to non-regulated areas).

· Local exhaust ventilation requires make-up air be supplied in equal volumes to replaced air.

· Laboratory hoods must be designed and maintained so as to draw air inward at an average linear face velocity of 150 feet/ min. with a minimum of 125 feet/ min. Design and construction of the fume hood requires that insertion of any portion of the employees body, other than hands and arms, be disallowed.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.
Mixes with water.

State	Divided solid	Molecular Weight	143.62
Melting Range (°F)	419- 423	Viscosity	Not Applicable
Boiling Range (°F)	Not available	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not available	pH (1% solution)	Not available
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	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

Light-grey crystalline powder; mixes with water.

log Kow 1.29-1.32

Material	Value

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

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

STORAGE INCOMPATIBILITY

■ toluidine (all isomers):
· slowly decomposes in light
· reacts violently with strong oxidisers, including red fuming nitric acid
· is incompatible with strong acids, acid chlorides, acid anhydrides, organic anhydrides, isocyanates, aldehydes
· attacks some plastics, rubber and coatings
o-toluidine
· exothermically decomposes with maleic anhydride
· increases the explosive sensitivity of nitromethane
· reacts with nitroalkanes forming explosive products.
· Many arylamines (aromatic amines such as aniline, N-ethylaniline, o-toluidine, xylidine etc. and their mixtures) are hypergolic (ignite spontaneously) with red fuming nitric acid. When the amines are dissolved in triethylamine, ignition occurs at -60 deg. C. or less.
· Various metal oxides and their salts may promote ignition of amine-red fuming nitric acid systems. Soluble materials such as copper(I) oxide, ammonium metavanadate are effective; insoluble materials such as copper(II) oxide, iron(II) oxide, potassium dichromate are also effective.
· Avoid oxidizing agents, acids, acid chlorides, acid anhydrides.

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

Section 11 - TOXICOLOGICAL INFORMATION

o-toluidine hydrochloride

TOXICITY AND IRRITATION

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

TOXICITY	IRRITATION
Oral (rat) LD50: 2951 mg/kg	Nil Reported
Intraperitoneal (rat) LD50: 150 mg/kg	
Oral (mouse) LD50: 1100 mg/kg	
Intraperitoneal (mouse) LD50: 113 mg/kg	

■ Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's edema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.

For o-toluidine:
o-Toluidine is suspected to cause urinary bladder tumors in workers. However, this finding cannot definitely be attributed to o-toluidine because of the co-exposure to other arylamines. There is no valid study on reproductive or developmental toxicity available, however, o-toluidine is genotoxic and carcinogenic and therefore it should be regarded as potentially toxic to reproduction In a subchronic feeding study in male rats o-toluidine hydrochloride led to degeneration of seminiferous tubules and a significant increase in relative weight of testis in systemic toxic doses. In very limited developmental toxicity studies effects on kidneys, ovaries, heart and lungs in progeny were reported that were difficult to interpret. However, due to its methemoglobin forming activity like other structurally related aromatic amino or nitro compounds o-toluidine is anticipated to exert developmental toxicity at least as a secondary consequence of maternal toxicity.
Repeated dose studies show that o-toluidine is toxic to erythrocytes and a methemoglobin forming chemical. This was demonstrated in elevated methemoglobin levels up to 19.0 % in the subacute feeding study as well as in the marked splenic toxicity in the subacute gavage and subchronic feeding studies leading to hypercellularity in the bone marrow. Further target organs were liver and kidney (haemosiderin deposition) and urinary bladder (hyperplasia). Based on the hematological findings no NOAEL could be derived, the LOAEL (rat, 14-day feeding study) is 500 ppm (approx. 23.7 and 25.5 mg/kg bw/day for males and females, respectively).
Genotoxicity test results are as typical for the class of aromatic amines. o-Toluidine showed positive as well as negative results in point mutation assays in bacteria and yeast. Results from tests with mammalian cell systems (HPRT, TK, UDS) were inconsistent, too, and appear to be protocol dependent. However, positive and negative results were independent of the presence or absence of a metabolic activation system. In in-vitro tests for chromosomal aberrations o-toluidine yielded positive results in several cell systems and did induce micronuclei in human lymphocytes in-vitro. In in-vivo tests for chromosomal aberrations o-toluidine yielded negative results in bone marrow of mice. o-Toluidine did not induce micronuclei in the in-vivo mouse micronucleus tests following intraperitoneal or oral application. However, SCE assay in mice and UDS-test in rats gave positive results in vivo. o-Toluidine did not induce point mutations in the in-vivo SLRL-test with Drosophila melanogaster. Besides this, there are several, however, less reliable positive test results in Drosophila. Overall, o-toluidine showed potential for mutagenic activity in vitro and clastogenic activity in vitro and in vivo.
After oral administration to mice o-toluidine induced and increased incidence of haemangiomas and haemangiosarcomas and hepatocellular carcinomas or adenomas. In rats, oral administration increased the incidence of tumors in multiple organs, including fibromas, sarcomas, mesotheliomas, mammary fibroadenomas. and transitional cell carcinomas of the urinary bladder.
Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen
[National Toxicology Program: U.S. Dep. of Health & Human Services 2002].

CARCINOGEN

	US - Rhode Island Hazardous Substance List	IARC	C
O-TOLUIDINE HYDROCHLORIDE	US Environmental Defense Scorecard Recognized Carcinogens	Reference(s)	P65
O-TOLUIDINE HYDROCHLORIDE	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65
VPVB_(VERY~	US - Maine Chemicals of High Concern List	Carcinogen	CA Prop 65; NTP 11th ROC

Section 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms.
This material and its container must be disposed of as hazardous waste.
Avoid release to the environment.
Refer to special instructions/ safety data sheets.

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

B. Component Waste Numbers
When o-toluidine hydrochloride 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 U222 (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: 6.1
Identification Numbers: UN2811 PG: II
Label Codes: 6.1 Special provisions: IB8, IP2,
IP4, T3,
TP33
Packaging: Exceptions: 153 Packaging: Non- bulk: 212
Packaging: Exceptions: 153 Quantity limitations: 25 kg
Passenger aircraft/rail:
Quantity Limitations: Cargo 100 kg Vessel stowage: Location: B
aircraft only:
Vessel stowage: Other: None
Hazardous materials descriptions and proper shipping names:
Toxic solids, organic, n.o.s.

Air Transport IATA:

ICAO/IATA Class: 6.1 ICAO/IATA Subrisk: None
UN/ID Number: 2811 Packing Group: II
Special provisions: A3
Cargo Only
Packing Instructions: 100 kg Maximum Qty/Pack: 25 kg
Passenger and Cargo Passenger and Cargo
Packing Instructions: 676 Maximum Qty/Pack: 669
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: 1 kg Maximum Qty/Pack: Y644
Shipping Name: TOXIC SOLID, ORGANIC, N.O.S. * (CONTAINS O-
TOLUIDINE HYDROCHLORIDE)

Maritime Transport IMDG:

IMDG Class: 6.1 IMDG Subrisk: None
UN Number: 2811 Packing Group: II
EMS Number: F-A , S-A Special provisions: 274
Limited Quantities: 500 g Marine Pollutant: Yes
Shipping Name: TOXIC SOLID, ORGANIC, N.O.S.
(contains o-toluidine hydrochloride)

Section 15 - REGULATORY INFORMATION

o-toluidine hydrochloride (CAS: 636-21-5) is found on the following regulatory lists;
"Canada - Saskatchewan Environmental Persistent or Chronic Hazardous Substances","Canada Non-Domestic Substances List (NDSL)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","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 Proposition 65 - Carcinogens","US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens","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 Class A toxic air pollutants: Known and Probable Carcinogens","US - Washington Dangerous waste constituents list","US - Washington Discarded Chemical Products List - ""U"" Chemical Products","US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","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 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"

Section 16 - OTHER INFORMATION

ND
Substance CAS Suggested codes o- toluidine hydrochloride 636- 21- 5 Mut3; R68

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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