

Dansyl Chloride

sc-359844



The Power to Question

Material Safety Data Sheet

Hazard Alert Code
Key:

EXTREME

HIGH

MODERATE

LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Dansyl 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

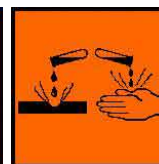
C12-H12-Cl-N-O2-S, 1-chlorosulfonyl-5-dimethylaminonaphthalene, "dimethylaminonaphthalenesulfonyl chloride", "1-dimethylaminonaphthalene-5-sulfonyl chloride", "1-(dimethylamino)-5-naphthalenesulfonyl chloride", "5-dimethylaminonaphthalene-1-sulfonyl chloride", "5-dimethylaminonaphthyl-5-sulfonyl chloride"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

| | Min | Max |
|--------------|-----|-----|
| Flammability | 1 | |
| Toxicity | 0 | |
| Body Contact | 4 | |
| Reactivity | 1 | |
| Chronic | 2 | |

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



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Contact with water liberates toxic gas.
Causes severe burns.
Risk of serious damage to eyes.
May cause SENSITISATION by skin contact.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

- The material can produce severe 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 oesophagus. Immediate pain and difficulties in swallowing and speaking may also be evident.
 - The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion".
- This is because of the lack of corroborating animal or human evidence.

EYE

- The material can produce severe chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.
 - If applied to the eyes, this material causes severe eye damage.
 - 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 severe chemical burns following direct contact with the skin.
- 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.
- Skin contact is not thought to have harmful health effects (as classified under EC Directives); 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.

- Solution of material in moisture on the skin, or perspiration, may markedly increase skin corrosion and accelerate tissue destruction.

INHALED

- The material can cause respiratory irritation in some persons.
- The body's response to such irritation can cause further lung damage.
- Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage.

There may be dizziness, headache, nausea and weakness.

- 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.

If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.

- 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.

CHRONIC HEALTH EFFECTS

■ 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. Chronic exposure may inflame the skin or conjunctiva.

Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.

Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.

Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

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. Prime symptom is breathlessness; lung shadows show on X-ray.

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.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME | CAS RN | % |
|-----------------------------------|-----------|-----|
| dansyl chloride | 605-65-2 | >98 |
| hydrolysis yields | | |
| hydrogen chloride | 7647-01-0 | |

Section 4 - FIRST AID MEASURES

SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- 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.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.

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.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating

first aid procedures.

- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
- Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.

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
- Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the dessicating action of the acid on proteins in specific tissues.

Section 5 - FIRE FIGHTING MEASURES

| | |
|----------------------------|----------------|
| Vapour Pressure (mmHG) | Negligible |
| Upper Explosive Limit (%) | Not available. |
| Specific Gravity (water=1) | Not available |
| Lower Explosive Limit (%) | Not available |

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.

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.
- Acids may react with metals to produce hydrogen, a highly flammable and explosive gas.
- Heating may cause expansion or decomposition leading to violent rupture of containers.

Combustion products include carbon monoxide (CO), carbon dioxide (CO₂), hydrogen chloride, phosgene, nitrogen oxides (NO_x), sulfur oxides (SO_x), other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
- Check regularly for spills and leaks.
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- WARNING To avoid violent reaction, ALWAYS add material to water and NEVER water to material.

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 aluminium or galvanised containers
- Check regularly for spills and leaks
- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.

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.

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STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.

May decompose in moist air or water.

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 | dansyl chloride (Hydrogen chloride) | | | | | 2 | 3 | | |

| | | | | | |
|---|--|------|------|--------------------|---|
| Canada - British Columbia Occupational Exposure Limits | dansyl chloride (Hydrogen chloride Revised 2003) | C 2 | | | |
| US - Minnesota Permissible Exposure Limits (PELs) | dansyl chloride (Hydrogen chloride) | 5 | 7 | | |
| US ACGIH Threshold Limit Values (TLV) | dansyl chloride (Hydrogen chloride) | 2 | | TLV® Basis URT irr | |
| US NIOSH Recommended Exposure Limits (RELs) | dansyl chloride (Hydrogen chloride) | 5 | 7 | | |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants | dansyl chloride (Hydrogen chloride) | 5 | 7 | | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants | dansyl chloride (Hydrogen chloride) | (C)5 | (C)7 | | |
| US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants | dansyl chloride (Hydrogen chloride) | 5 | 7 | | |
| US - California Permissible Exposure Limits for Chemical Contaminants | dansyl chloride (Hydrogen chloride; muriatic acid) | 5 | 7 | C | |
| US - Idaho - Limits for Air Contaminants | dansyl chloride (Hydrogen chloride) | 5 | 7 | | |
| US - Hawaii Air Contaminant Limits | dansyl chloride (Hydrogen chloride) | 5 | 7 | | |
| US - Alaska Limits for Air Contaminants | dansyl chloride (Hydrogen chloride) | 5 | 7 | | |
| US - Michigan Exposure Limits for Air Contaminants | dansyl chloride (Hydrogen chloride) | 5 | 7 | | |
| Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances | dansyl chloride (Hydrogen chloride) | 5 | 7 | - | - |
| US - Washington Permissible exposure limits of air contaminants | dansyl chloride (Hydrogen chloride) | 5.0 | | | |
| Canada - Saskatchewan Occupational Health and Safety Regulations | dansyl chloride (Hydrogen chloride) | 2 | | | |

| - Contamination Limits | | | | |
|--|---|--------|-----|---|
| US - Oregon Permissible Exposure Limits (Z-1) | dansyl chloride (Hydrogen chloride) | 5 | 7 | |
| US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants | dansyl chloride (Hydrogen chloride) | 5 | 7 | |
| Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English) | dansyl chloride (Hydrogen chloride) | 5 | 7,5 | |
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | dansyl chloride (Hydrogen chloride) | 5 | 7 | |
| Canada - Northwest Territories Occupational Exposure Limits (English) | dansyl chloride (Hydrogen chloride) | 5 | 7.5 | |
| Canada - Nova Scotia Occupational Exposure Limits | dansyl chloride (Hydrogen chloride) | 2 | | TLV Basis upper respiratory tract irritation |
| Canada - Prince Edward Island Occupational Exposure Limits | dansyl chloride (Hydrogen chloride) | 2 | | TLV® Basis URT irr |
| Canada - Ontario Occupational Exposure Limits | dansyl chloride (Specified (PNOS) / Particules (insolubles ou peu solubles) non précisées par ailleurs) | 3 (R) | | |
| Canada - Ontario Occupational Exposure Limits | dansyl chloride (Particles (Insoluble or Poorly Soluble) Not Otherwise) | 10 (I) | | |

PERSONAL PROTECTION



RESPIRATOR

•Type AB-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 1432000 & 1492001, ANSI Z88 or national equivalent)

EYE

- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in

laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure

- Chemical goggles whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.

HANDS/FEET

- Elbow length PVC gloves

NOTE

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.

ENGINEERING CONTROLS

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Corrosive.

Acid.

Contact with water liberates toxic gas.

| | | | |
|---------------------------|----------------|---------------------------------|----------------|
| State | DIVIDED SOLID | Molecular Weight | 269.8 |
| Melting Range (°F) | 162- 165 | Viscosity | Not Applicable |
| Boiling Range (°F) | Not available | Solubility in water (g/L) | Reacts |
| 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 Vapour Density (air=1) | >1 |
| Volatile Component (%vol) | Negligible | Evaporation Rate | Not applicable |

APPEARANCE

Powder; does not mix well with water. Soluble in acetone, pyridine, benzene, dioxane.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Contact with alkaline material liberates heat
- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

STORAGE INCOMPATIBILITY

‡ 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 alkaline materials, acetic anhydride, acetylides, aliphatic amines, alkanolamines, alkylene oxides, aluminium, aluminium-titanium alloys, aromatic amines, amines, amides, 2-aminoethanol, ammonia, ammonium hydroxide, borides, calcium phosphide, carbides, carbonates, cyanides, chlorosulfonic acid, ethylenediamine, ethyleneimine, epichlorohydrin, formaldehyde, isocyanates, metals, metal oxides, metal hydroxides, metal acetylides, metal carbides, oleum, organic anhydrides, potassium permanganate, perchloric acid, phosphides, 3-propiolactone, silicides, sulfides, sulfites, sulfuric acid, uranium phosphide, vinyl acetate, vinylidene fluoride
- attacks most metals forming flammable hydrogen gas, and some plastics, rubbers and coatings
- reacts with zinc, brass, galvanised iron, aluminium, copper and copper alloys
- Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air.
- Segregate from alcohol, water.
- Avoid strong bases.
- Segregate from alkalies, oxidising agents and chemicals readily decomposed by acids, i.e. cyanides, sulfides, carbonates.
- NOTE May develop pressure in containers; open carefully. Vent periodically.

Avoid strong bases.

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

Section 11 - TOXICOLOGICAL INFORMATION

dansyl chloride

TOXICITY AND IRRITATION

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
 - The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
 - 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.
 - Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.
- The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.
- 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.

No significant acute toxicological data identified in literature search.

CARCINOGEN

| | | | |
|------------------------------|---|---------------------|--|
| PBIT_(PERS~ | US - Maine Chemicals of High Concern List | Carcinogen | |
| Hydrochloric acid | International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs | Group | 3 |
| Acid mists, strong inorganic | International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs | Group | 1 |
| Hydrogen chloride | US ACGIH Threshold Limit Values (TLV) - Carcinogens | Carcinogen Category | A4 |
| hydrogen chloride | US - Rhode Island Hazardous Substance List | IARC | |
| TWA_MG_M3~ | US - Maine Chemicals of High Concern List | Carcinogen | A4 |
| TWA_MG_M3~ | Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens | Notes | TLV® Basis URT irr |
| TWAPPM~ | Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens | Notes | TLV Basis upper respiratory tract irritation |

Section 12 - ECOLOGICAL INFORMATION

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

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

| Name / EHS Cas No / RTECS No | TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|----------|-----|-----|----|----|-----|----|-----|-----|-----|-----|-----|----|----|----|----|
| Poly(2+ cyclic aromati cs / CAS:605 - 65- 2 / | 224 6 | 574 | 4 | 4 | NR | (4) | NI | (1) | (1) | (2) | (1) | (1) | CM | | S | 3 |

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acuteaquatic toxicity LC/ECIC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acutemammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information

Corrosivity characteristic: use EPA hazardous waste number D002 (waste code C)

Reactivity characteristic: use EPA hazardous waste number D003 (waste code R).

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

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. In most instances the supplier of the material should be consulted.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.

Recycle wherever possible.

- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Treat and neutralise at an approved treatment plant. Treatment should involve: Mixing or slurring in water; Neutralisation with soda-lime or soda-ash followed by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers with 5% aqueous sodium hydroxide or soda ash, followed by water. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION

DOT:

| | | | |
|---|--------|---|-------------------------|
| Symbols: | None | Hazard class or Division: | 8 |
| Identification Numbers: | UN3261 | PG: | II |
| Label Codes: | 8 | Special provisions: | IB8, IP2, IP4, T3, TP33 |
| Packaging: Exceptions: | 154 | Packaging: Non-bulk: | 212 |
| Packaging: Exceptions: | 154 | Quantity limitations: Passenger aircraft/rail: | 15 kg |
| Quantity Limitations: Cargo aircraft only: | 50 kg | Vessel stowage: Location: | B |
| Vessel stowage: Other: | None | | |

Hazardous materials descriptions and proper shipping names:

Corrosive solid, acidic, organic, n.o.s.

Air Transport IATA:

| | | | |
|---|------|---|-------|
| ICAO/IATA Class: | 8 | ICAO/IATA Subrisk: | None |
| UN/ID Number: | 3261 | Packing Group: | II |
| Special provisions: | A3 | | |
| Cargo Only | | | |
| Packing Instructions: | 863 | Maximum Qty/Pack: | 50 kg |
| Passenger and Cargo | | Passenger and Cargo | |
| Packing Instructions: | 859 | Maximum Qty/Pack: | 15 kg |
| Passenger and Cargo Limited Quantity | | Passenger and Cargo Limited Quantity | |
| Packing Instructions: | Y844 | Maximum Qty/Pack: | 5 kg |

■ Air transport may be forbidden if this material is flammable, corrosive or toxic gases may be released under normal conditions of transport.

Shipping name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.(contains dansyl chloride)

Maritime Transport IMDG:

| | | | |
|---------------------|---------|---------------------|------|
| IMDG Class: | 8 | IMDG Subrisk: | None |
| UN Number: | 3261 | Packing Group: | II |
| EMS Number: | F-A,S-B | Special provisions: | 274 |
| Limited Quantities: | 1 kg | | |

Shipping name: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.(contains dansyl chloride)

Section 15 - REGULATORY INFORMATION

dansyl chloride (CAS: 605-65-2) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)", "US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory"

Regulations for ingredients

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 CEPA Environmental Registry Substance Lists - List of substances on the DSL that meet the human health criteria for categorization (English)", "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 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", "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 (Red List) - 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 - Delaware Pollutant Discharge Requirements - Reportable Quantities","US - Florida Essential Chemicals","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Louisiana Minimum Emission Rates Toxic Air Pollutants","US - Louisiana Toxic Air Pollutant Ambient Air Standards","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 - Washington Toxic air pollutants and their ASIL, SQER and de minimis emission values","US - Wisconsin Control of Hazardous Pollutants - Emission Thresholds, Standards and Control Requirements (Hazardous Air Contaminants)","US - Wisconsin Control of Hazardous Pollutants - Substances of Concern for Sources of Incidental Emissions of Hazardous 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 FDA CFSAN GRAS Substances evaluated by the Select Committee on GRAS Substances (SCOGS)","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) - Chemical Substance Inventory","US USDA National Organic Program - Synthetic substances allowed for use in organic crop production"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

■ Cumulative effects may result following exposure*.

* (limited evidence).

Denmark Advisory list for selfclassification of dangerous substances

| Substance | CAS | Suggested codes |
|-------------------|-------------|----------------------------------|
| dansyl chloride | 605- 65- 2 | Xn; R22 R43 Xi; R38 N; R50/53 |
| hydrogen chloride | 7647- 01- 0 | Xn; R22 R43 Xi; R38 N; R50/53 |

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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.

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