N,N-Dimethyldipropylenetriamine

sc-228767

Material Safety Data Sheet

Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
N,N-Dimethyldipropylenetriamine

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-H21-N3, "prop-anediamine 3aminopropyldimethyl", "13propanediamine N3aminopropylNNdimet ()", "aliphatic polyamine hardener", "dimethyldipropylene triamine", "dimethyldipropylene tri-amine & ethers", "NNdimethyldipropylen triamine & with polyethylene, polypropylene glycol, ", "monomethyl ether", "dimethyldipropyltria -& ethoxylated, propoxylated, methylated", NNd-ime-thy-ld-ipropyltr, "(+-)-3dimethylaminopropyl l1H-4-[i-[[m-(i, d-azolylmethyldi)-2-(xo-", "xolanylm-1-ethoxyph)-1, 3-enylpiper-4-az]inecarb]oxylat]-1-e-1-", "(+-)-N3dimethylaminopropy yl2-1-[H-[[i-(m, i-dazol1ylmethyl)-1-(3d-", "ixoxolan-4-ylmethox)-y, p-henyl1pip-e-ra]zine1ca]rboxyl]-a-te--", DIDITRI, DMAPAPA

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

Causes burns.
Risk of serious damage to eyes.
May cause SENSITISATION by skin contact.
Harmful in contact with skin and if swallowed.

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 amine epoxy-curing agents (hardeners) may cause severe abdominal pain, nausea, vomiting or diarrhea.
The vomitus may contain blood and mucous.

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.
■ Vapors of volatile amines irritate the eyes, causing excessive secretion of tears, inflammation of the conjunctiva and slight swelling of the cornea, resulting in "halos" around lights.
This effect is temporary, lasting only for a few hours.

SKIN

■ Skin contact with the material may be harmful; systemic effects may resultfollowing absorption.
■ The material can produce chemical burns following direct contactwith the skin.
■ Amine epoxy-curing agents (hardeners) may produce primary skin irritation and sensitization dermatitis in predisposed individuals.
Cutaneous reactions include erythema, intolerable itching and severe facial swelling.
■ 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

■ If inhaled, this material can irritate the throat andlungs of some persons.
■ Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.
■ Inhalation of epoxy resin amine hardeners (including polyamines and amine adducts) and may produce bronchospasm and coughing episodes lasting several days after cessation of the exposure.
Even faint traces of these vapors may trigger an intense reaction in individuals showing "amine asthma".
■ Inhalation hazard is increased at higher temperatures.

CHRONIC HEALTH EFFECTS

■ Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue.
Skin contact with the material is more likely to cause a sensitization reaction in some persons compared to the general population.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
There is some evidence that inhaling this product is more likely to cause a sensitization reaction in some persons compared to the general population.
Inhalation of epoxy resin amine hardeners (including polyamines and amine adducts) and may produce bronchospasm and coughing episodes lasting several days after cessation of the exposure. Even faint traces of these vapors may trigger an intense reaction in individuals showing "amine asthma".
Respiratory sensitization may result in allergic/asthma like responses; from coughing and minor breathing difficulties to bronchitis with wheezing, gasping.
Sensitization may give severe responses to very low levels of exposure, i.e. hypersensitivity.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
dimethyldipropylenetriamine	10563-29-8	>98

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. · Avoid giving milk or oils. · Avoid giving alcohol.

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 highly alkaline materials:
· Respiratory stress is uncommon but present occasionally because of soft tissue edema.
· Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.

Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg):	0.75 mm Hg (20 C)
Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	0.87
Lower Explosive Limit (%):	Not available

EXTINGUISHING MEDIA
· Foam.
· Dry chemical powder.

FIRE FIGHTING
· Alert Emergency Responders and tell them location and nature of hazard.
· Wear full body protective clothing with breathing apparatus.
When any large container (including road and rail tankers) is involved in a fire,
consider evacuation by 800 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS
· Combustible.
· Slight fire hazard when exposed to heat or flame.
· Heating may cause expansion or decomposition leading to violent rupture of containers.
· On combustion, may emit toxic fumes of carbon monoxide (CO).
· May emit acrid smoke. May emit corrosive fumes.
Combustion products include: carbon dioxide (CO_2), nitrogen oxides (NOx), other pyrolysis products typical of burning organic material.
May emit corrosive 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:
Safety Glasses.
Full face- shield.
Gloves:
Respirator:
Type AK-P Filter of sufficient capacity

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.
· Clean up all spills immediately.
· Avoid breathing vapors and contact with skin and eyes.
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

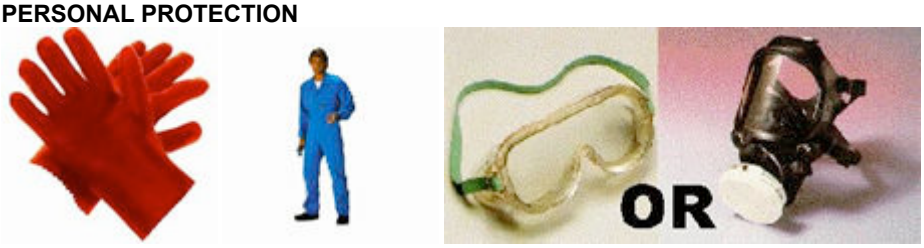
PROCEDURE FOR HANDLING
· DO NOT USE brass or copper containers / stirrers.
· DO NOT allow clothing wet with material to stay in contact with skin.
· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.

RECOMMENDED STORAGE METHODS
· DO NOT use aluminium, galvanised or tin-plated containers.
· 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.
DO NOT store near acids, or oxidizing agents.
· No smoking, naked lights, heat or ignition sources.
· Store below 38 deg. C.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS
The following materials had no OELs on our records
• dimethyldipropylenetriamine: CAS:10563-29-8

PERSONAL PROTECTION


RESPIRATOR
• type ak-p filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
Consult your EHS staff for recommendations

EYE
· Chemical goggles.
· Full face shield.

HANDS/FEET
■ Wear chemical protective gloves, eg. PVC.
· When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.
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, AS/NZS 2161.1 or national equivalent).
· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
· Contaminated gloves should be replaced.
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
Leather wear not recommended: Contaminated leather footwear, watch bands, should be destroyed, i.e. burnt, as it cannot be adequately decontaminated.

OTHER
· Overalls.
· PVC Apron.

ENGINEERING CONTROLS
■ Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.
Mixes with water.
Corrosive.
Alkaline.

State	Liquid	Molecular Weight	159.27
Melting Range (°F)	-76	Viscosity	5.2 cSt@40°C
Boiling Range (°F)	455~	Solubility in water (g/L)	Miscible
Flash Point (°F)	228(DIN 51758)	pH (1% solution)	12 (10% sol)
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	482 (DIN 51794)	Vapor Pressure (mmHg)	0.75 mm Hg (20 C)
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	0.87
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	Not available
Volatile Component (%vol)	Not available	Evaporation Rate	Not available

APPEARANCE

Colourless liquid with typical amine odour; mixes with water. Dynamic viscosity 5.2 mPa.s~

log Kow 0.5

Material	Value

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

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

STORAGE INCOMPATIBILITY

■ Avoid cross contamination between the two liquid parts of product (kit). If two part products are mixed or allowed to mix in proportions other than manufacturer's recommendation, polymerization with gelation and evolution of heat (exotherm) may occur.
Avoid strong acids.
· Avoid contact with copper, aluminium and their alloys.
Avoid reaction with oxidizing agents.

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

Section 11 - TOXICOLOGICAL INFORMATION

dimethyldipropylenetriamine

TOXICITY AND IRRITATION

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

TOXICITY	IRRITATION
Oral (rat) LD50: 1710 mg/kg *	Eye (rabbit): CORROSIVE **
Dermal (rabbit) LD50: 1300 mg/kg *	Skin (rabbit): CORROSIVE **

■ 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.
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. 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.
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.
Skin allergy was observed in guinea pigs following repeated exposure. No genetic changes were observed in
tests using bacteria **
* Hoechst MSDS
** Arkema MSDS

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
dimethyldipropylenetriamine	HIGH	No Data Available	LOW	MED

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information
Corrosivity characteristic: use EPA hazardous waste number D002 (waste code C)

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. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. 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: UN2735 PG: III
Label Codes: 8 Special provisions: IB3, T7,
TP1, TP28
Packaging: Exceptions: 154 Packaging: Non- bulk: 203
Packaging: Exceptions: 154 Quantity limitations: 5 L
Passenger aircraft/rail:
Quantity Limitations: Cargo 60 L Vessel stowage: Location: A
aircraft only:
Vessel stowage: Other: 52
Hazardous materials descriptions and proper shipping names:
Amines, liquid, corrosive, n.o.s., or Polyamines, liquid, corrosive, n.o.s.

Air Transport IATA:

UN/ID Number: 2735 Packing Group: III
Special provisions: A3
Cargo Only
Packing Instructions: 856 Maximum Qty/Pack: 60 L
Passenger and Cargo Passenger and Cargo
Packing Instructions: Y841 Maximum Qty/Pack: 5 L
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: 852 Maximum Qty/Pack: 1 L
Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. *(CONTAINS
DIMETHYLDIPROPYLENETRIAMINE)

Maritime Transport IMDG:

IMDG Class: 8 IMDG Subrisk: None
UN Number: 2735 Packing Group: III
EMS Number: F-A,S-B Special provisions: 223 274
Limited Quantities: 5 L
Shipping Name: AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.(contains dimethyldipropylenetriamine)

Section 15 - REGULATORY INFORMATION

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

■ Inhalation may produce health damage*.
■ Cumulative effects may result following exposure*.
■ Possible respiratory sensitiser*.
* (limited evidence).

Denmark Advisory list for selfclassification of dangerous substances

Substance CAS Suggested codes dimethyldipropylenetriamine 10563- 29- 8 Xn; R22 R43 Xi; R38

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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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