SAFETY DATA SHEET

Di-N-Propylamine

SECTION 1. IDENTIFICATION

Product name : Di-N-Propylamine

Product code : 51168-00, P5116812, N5116811, P5116801, N5116810

Manufacturer or supplier's details

Company name of supplier : Eastman Chemical Company

Address : 200 South Wilcox Drive
          Kingsport TN 37660-5280

Telephone : (423) 229-2000

Emergency telephone : CHEMTREC: +1-800-424-9300, +1-703-527-3887 CCN7321

Recommended use of the chemical and restrictions on use

Recommended use : Chemical intermediate

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids : Category 2

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 3

Acute toxicity (Dermal) : Category 3

Skin corrosion : Category 1A

Serious eye damage : Category 1

GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H225 Highly flammable liquid and vapor.
H302 Harmful if swallowed.
H311 + H331 Toxic in contact with skin or if inhaled.
H314 Causes severe skin burns and eye damage.

Precautionary Statements : Prevention:
SAFETY DATA SHEET

Di-N-Propylamine

Version 1.2
Revision Date: 11/02/2017
SDS Number: 15000103693
Date of last issue: 06/07/2017
SDSUS / Z8 / 0001
Date of first issue: 09/06/2016

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:
P501 Dispose of contents/container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Pure substance
CAS-No. : Not Assigned

Ingredients
**SECTION 4. FIRST AID MEASURES**

General advice: Show this material safety data sheet to the doctor in attendance. Call a physician immediately.

If inhaled: Move to fresh air. If symptoms persist, call a physician.

In case of skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash off immediately with plenty of water for at least 15 minutes. Wash contaminated clothing before re-use.

In case of eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If swallowed: Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Health injuries may be delayed. Superficial burning sensation. Stomach/intestinal disorders. Harmful if swallowed. Toxic in contact with skin or if inhaled. Causes serious eye damage. Causes severe burns.

Notes to physician: Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media: Water spray. Carbon dioxide (CO2). Dry chemical. Alcohol-resistant foam.

Unsuitable extinguishing media: Do NOT use water jet.

Specific hazards during firefighting: Flash back possible over considerable distance.

Hazardous combustion products: Carbon monoxide. Nitrogen oxides (NOx).
Further information: Prevent fire extinguishing water from contaminating surface water or the ground water system. Do not allow run-off from fire fighting to enter drains or water courses.

Special protective equipment for fire-fighters: Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Local authorities should be advised if significant spillages cannot be contained.

Environmental precautions: Avoid release to the environment.

Methods and materials for containment and cleaning up: Eliminate all ignition sources if safe to do so. Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Prevent further leakage or spillage if safe to do so.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion: Keep product and empty container away from heat and sources of ignition.

Advice on safe handling: Avoid contact with skin, eyes and clothing. Do not taste or swallow. Ensure adequate ventilation, especially in confined areas. Do not breathe vapors or spray mist. Wash thoroughly after handling.

Conditions for safe storage: Keep containers tightly closed in a dry, cool and well-ventilated place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Engineering measures: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
SAFETY DATA SHEET

Di-N-Propylamine

Personal protective equipment

Respiratory protection: Wear a positive-pressure supplied-air respirator.

Hand protection

Remarks: Rubber gloves Neoprene gloves The exact break through time can be obtained from the protective glove producer and this has to be observed.

Eye protection: Safety glasses with side-shields
Face-shield

Skin and body protection: Complete suit protecting against chemicals

Protective measures: Ensure that eye flushing systems and safety showers are located close to the working place.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid
Color: colorless
Odor: ammoniacal
Odor Threshold: not determined
pH: alkaline
Melting point/freezing point: -40 °C
Boiling point/boiling range: 109.3 °C
Flash point: 7 °C
Evaporation rate: not determined
Upper explosion limit: 9.3 %(V)
Lower explosion limit: 1.8 %(V)
Vapor pressure: 26.8 hPa (25 °C)
Relative vapor density: 3.48
(Air = 1.0)
Relative density: 0.74
Density: 0.74 g/cm3 (20 °C)
Solubility(ies)
  Water solubility : 48.4 g/l (20 °C)

Partition coefficient: n-octanol/water
  log Pow: 1.33

Autoignition temperature : 260 °C

Decomposition temperature : not determined

Viscosity
  Viscosity, dynamic : 0.517 mPa.s (25 °C)
  Viscosity, kinematic : not determined

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Molecular weight : 101.19 g/mol

SECTION 10. STABILITY AND REACTIVITY

Reactivity : None reasonably foreseeable.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Hazardous decomposition products formed under fire conditions.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Strong acids and oxidizing agents
  Halogenated compounds
  Zinc
  Aluminum
  Copper

Hazardous decomposition products : Carbon monoxide
  Carbon dioxide (CO2)
  Nitrogen oxides (NOx)
  Ammonia

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
  Harmful if swallowed.
  Toxic in contact with skin or if inhaled.

Product:
  Acute oral toxicity : LD50 Oral (Rat): 495 mg/kg
Di-N-Propylamine

Remarks: Harmful if swallowed.

Acute inhalation toxicity:
- LC50 (Rat): 4.4 mg/l
- Exposure time: 4 h
- Test atmosphere: vapor

Remarks: Toxic by inhalation.

Acute dermal toxicity:
- LD50 Dermal (Rabbit): 925 mg/kg

Remarks: Toxic in contact with skin.

**Skin corrosion/irritation**
Causes severe burns.

**Product:**
Result: Corrosive

Remarks: Causes severe skin burns.

**Serious eye damage/eye irritation**
Causes serious eye damage.

**Product:**
Result: Corrosive

Remarks: Causes serious eye damage.

**Respiratory or skin sensitization**

**Skin sensitization**
Not classified based on available information.

**Respiratory sensitization**
Not classified based on available information.

**Product:**
Remarks: Did not cause sensitization on laboratory animals.

**Germ cell mutagenicity**
Not classified based on available information.

**Product:**
Germ cell mutagenicity:
- Assessment: Not mutagenic in Ames Test.

**Carcinogenicity**
Not classified based on available information.

**Product:**
Carcinogenicity - Assessment: Did not show carcinogenic effects in animal experiments.

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

Product:
Effects on fertility: Remarks: No data available

STOT-single exposure
Not classified based on available information.

Product:
Remarks: No data available

STOT-repeated exposure
Not classified based on available information.

Product:
Remarks: No data available

Repeated dose toxicity
Species: Rat
NOAEL: 300 mg/kg bw/day
Application Route: Oral

Aspiration toxicity
Not classified based on available information.

Product:
No aspiration toxicity classification
Further information

Product:
Remarks: None known.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 25 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 73.39 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 11.8 mg/l
Exposure time: 72 h

Toxicity to microorganisms : EC10 (Bacteria): 146.8 mg/l

Persistence and degradability

Product:
Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential
No data available

Mobility in soil

Product:
Distribution among environmental compartments : Koc: 155

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues : Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
SAFETY DATA SHEET

Di-N-Propylamine

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR
UN/ID No. : UN 2383
Proper shipping name : Dipropylamine
Class : 3
Subsidiary risk : 8
Packing group : II
Labels : Flammable Liquids, Corrosive
Packing instruction (cargo aircraft) : 363
Packing instruction (passenger aircraft) : 352

IMDG-Code
UN number : UN 2383
Proper shipping name : DIPROPYLAMINE

Class : 3
Subsidiary risk : 8
Packing group : II
Labels : 3 (8)
EmS Code : F-E, S-C
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

49 CFR
UN/ID/NA number : UN 2383
Proper shipping name : Dipropylamine

Class : 3
Subsidiary risk : 8
Packing group : II
Labels : Class 3 - Flammable Liquid, Class 8 - Corrosive
ERG Code : 132
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
SAFETY DATA SHEET

Di-N-Propylamine

SAFETY DATA SHEET

Di-N-Propylamine

Version 1.2

PRD

Revision Date: 11/02/2017

SDS Number: 150000103693

SDSUS / 28 / 0001

Date of last issue: 06/07/2017

Date of first issue: 09/06/2016

11

/12

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

The ingredients of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

ISHL : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Oth-
SAFETY DATA SHEET

Di-N-Propylamine

Version 1.2
Revision Date: 11/02/2017
SDS Number: 150000103693
SDSUS / Z8 / 0001
Date of last issue: 06/07/2017
Date of first issue: 09/06/2016

12/12

Revision Date : 11/02/2017

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8