SAFETY DATA SHEET

Updated on 14/08/2025

1. Material Identification

Product Name : N,N-Dimethylbenzylamine
Catalog Number : io-406860
CAS Number : 103-83-3
Identified uses : Laboratory chemicals, manufacture of chemical compounds
Company : Ionz

>> R&D Use only

2. Hazards Identification

GHS Classification:

Flammable liquid (category 2)
Acute toxicity, oral (Category 3)
Acute toxicity, dermal (Category 3)
Acute toxicity, inhalation (Category 3)
Specific target organ toxicity, single exposure (Category 1)

Pictogram(s)

GHS Hazard Statements

>> H226: Flammable liquid and vapor [Warning Flammable liquids]

>> H302: Harmful if swallowed [Warning Acute toxicity, oral]

>> H312: Harmful in contact with skin [Warning Acute toxicity, dermal]

>> H314: Causes severe skin burns and eye damage [Danger Skin corrosion/irritation]

>> H332: Harmful if inhaled [Warning Acute toxicity, inhalation]

>> H412: Harmful to aquatic life with long lasting effects [Hazardous to the aquatic environment, long-term hazard]

Precautionary Statement Codes

>> P210, P233, P240, P241, P242, P243, P260, P261, P264, P270, P271, P273, P280, P301+P317, P301+P330+P331, P302+P352, P302+P361+P354, P303+P361+P353, P304+P340, P305+P354+P338, P316, P317, P321, P330, P362+P364, P363, P370+P378, P403+P235, P405, and P501

Note

>> This chemical does not meet GHS hazard criteria for 0.1% (1 of 850) of reports.

Health Hazards:

>> Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomitting. (USCG, 1999)

ERG 2024, Guide 132 (Benzyldimethylamine)

>> May cause toxic effects if inhaled or ingested.

>> Contact with substance may cause severe burns to skin and eyes.

>> Fire will produce irritating, corrosive and/or toxic gases.

>> Vapors may cause dizziness or asphyxiation, especially when in closed or confined areas.

>> Runoff from fire control or dilution water may cause environmental contamination.

>> Special Hazards of Combustion Products: Toxic vapors are generated when heated. (USCG, 1999)

ERG 2024, Guide 132 (Benzyldimethylamine)

>> Flammable/combustible material.

>> May be ignited by heat, sparks or flames.

>> Vapors may form explosive mixtures with air.

>> Vapors may travel to source of ignition and flash back.

>> Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks, etc.).

>> Vapor explosion hazard indoors, outdoors or in sewers.

>> Those substances designated with a (P) may polymerize explosively when heated or involved in a fire.

>> Runoff to sewer may create fire or explosion hazard.

>> Containers may explode when heated.

>> Many liquids will float on water.

>> Flammable. Gives off irritating or toxic fumes (or gases) in a fire. Above 57 °C explosive vapour/air mixtures may be formed.

3. Composition/Information On Ingredients

Chemical name : N,N-Dimethylbenzylamine
CAS Number : 103-83-3
Molecular Formula : C9H13N
Molecular Weight : 135.2100 g/mol

4. First Aid Measures

First Aid:

>> INHALATION: Remove victim to fresh air and call a physician at once; administer oxygen until physician arrives.

>> INGESTION: Get medical attention at once.

>> EYES or SKIN: Flush with plenty of water for at least 15 min; if cyanosis is present, shower with soap and warm water, with special attention to scalp and finger nails; remove any contaminated clothing. (USCG, 1999)

ERG 2024, Guide 132 (Benzyldimethylamine)

>> General First Aid:

>> Call 911 or emergency medical service.

>> Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and avoid contamination.

>> Move victim to fresh air if it can be done safely.

>> Administer oxygen if breathing is difficult.

>> If victim is not breathing:

>> DO NOT perform mouth-to-mouth resuscitation; the victim may have ingestedor inhaled the substance.

>> If equipped and pulse detected, wash face and mouth, then give artificial respiration using a proper respiratory medical device (bag-valve mask, pocket mask equipped with a one-way valve or other device).

>> If no pulse detected or no respiratory medical device available, provide continuouscompressions. Conduct a pulse check every two minutes or monitor for any signs of spontaneous respirations.

>> Remove and isolate contaminated clothing and shoes.

>> For minor skin contact, avoid spreading material on unaffected skin.

>> In case of contact with substance, remove immediately by flushing skin or eyes with running water for at least 20 minutes.

>> For severe burns, immediate medical attention is required.

>> Effects of exposure (inhalation, ingestion, or skin contact) to substance may be delayed.

>> Keep victim calm and warm.

>> Keep victim under observation.

>> For further assistance, contact your local Poison Control Center.

>> Note: Basic Life Support (BLS) and Advanced Life Support (ALS) should be done by trained professionals.

>> Specific First Aid:

>> For corrosives, in case of contact, immediately flush skin or eyes with running water for at least 30 minutes. Additional flushing may be required.

>> In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin.

>> In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping paper and/or the "ERAP" section.

First Aid Measures

Inhalation First Aid

>> Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.

Skin First Aid

>> Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Eye First Aid

>> First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Ingestion First Aid

>> Rinse mouth. Do NOT induce vomiting. Refer for medical attention .

5. Fire Fighting Measures

>> Excerpt from ERG Guide 132 [Flammable Liquids - Corrosive]:

>> Some of these materials may react violently with water.

>> SMALL FIRE: Dry chemical, CO2, water spray or alcohol-resistant foam.

>> LARGE FIRE: Water spray, fog or alcohol-resistant foam. If it can be done safely, move undamaged containers away from the area around the fire. Dike runoff from fire control for later disposal. Do not get water inside containers.

>> FIRE INVOLVING TANKS, RAIL TANK CARS OR HIGHWAY TANKS: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks in direct contact with flames. For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from area and let fire burn. (ERG, 2024)

>> Use water spray, powder, alcohol-resistant foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

6. Accidental Release Measures

Isolation and Evacuation:

Isolation and evacuation measures to take when a large amount of this chemical is accidentally released in an emergency.

>> Excerpt from ERG Guide 132 [Flammable Liquids - Corrosive]:

>> IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area for at least 50 meters (150 feet) in all directions.

>> SPILL: Increase the immediate precautionary measure distance, in the downwind direction, as necessary.

>> FIRE: If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2024)

Evacuation: ERG 2024, Guide 132 (Benzyldimethylamine)

>> Immediate precautionary measure

>> Isolate spill or leak area for at least 50 meters (150 feet) in all directions.

>> Spill

>> For non-highlighted materials: increase the immediate precautionary measure distance, in the downwind direction, as necessary.

>> Fire

>> If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Spillage Disposal:

Methods for containment and safety measures to protect workers dealing with a spillage of this chemical.

>> Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Cautiously neutralize remainder. Then wash away with plenty of water.

Accidental Release Measures

Public Safety: ERG 2024, Guide 132 (Benzyldimethylamine)

>> CALL 911. Then call emergency response telephone number on shipping paper. If shipping paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.

>> Keep unauthorized personnel away.

>> Stay upwind, uphill and/or upstream.

>> Ventilate closed spaces before entering, but only if properly trained and equipped.

Spill or Leak: ERG 2024, Guide 132 (Benzyldimethylamine)

>> ELIMINATE all ignition sources (no smoking, flares, sparks or flames) from immediate area.

>> All equipment used when handling the product must be grounded.

>> Do not touch or walk through spilled material.

>> Stop leak if you can do it without risk.

>> Prevent entry into waterways, sewers, basements or confined areas.

>> A vapor-suppressing foam may be used to reduce vapors.

>> Absorb with earth, sand or other non-combustible material.

>> For hydrazine, absorb with DRY sand or inert absorbent (vermiculite or absorbent pads).

>> Use clean, non-sparking tools to collect absorbed material.

>> Large Spill

>> Dike far ahead of liquid spill for later disposal.

>> Water spray may reduce vapor, but may not prevent ignition in closed spaces.

7. Handling And Storage

Safe Storage:

>> Fireproof. Separated from strong oxidants, strong acids and food and feedstuffs.

8. Exposure Control/ Personal Protection

Emergency Response: ERG 2024, Guide 132 (Benzyldimethylamine)

>> Some of these materials may react violently with water.

>> Small Fire

>> Dry chemical, CO2, water spray or alcohol-resistant foam.

>> Large Fire

>> Water spray, fog or alcohol-resistant foam.

>> If it can be done safely, move undamaged containers away from the area around the fire.

>> Dike runoff from fire control for later disposal.

>> Do not get water inside containers.

>> Fire Involving Tanks, Rail Tank Cars or Highway Tanks

>> Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles.

>> Cool containers with flooding quantities of water until well after fire is out.

>> Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

>> ALWAYS stay away from tanks in direct contact with flames.

>> For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Inhalation Risk:

>> No indication can be given about the rate at which a harmful concentration of this substance in the air is reached on evaporation at 20 °C.

Effects of Short Term Exposure:

>> The substance is corrosive to the eyes, skin and respiratory tract. Inhalation of the vapour may cause lung oedema. The effects may be delayed. Medical observation is indicated.

Fire Prevention

>> NO open flames, NO sparks and NO smoking. Above 57 °C use a closed system, ventilation and explosion-proof electrical equipment.

Exposure Prevention

>> AVOID ALL CONTACT! IN ALL CASES CONSULT A DOCTOR!

Inhalation Prevention

>> Use ventilation, local exhaust or breathing protection.

Skin Prevention

>> Protective gloves. Protective clothing.

Eye Prevention

>> Wear face shield.

Ingestion Prevention

>> Do not eat, drink, or smoke during work.

Exposure Control and Personal Protection

Protective Clothing: ERG 2024, Guide 132 (Benzyldimethylamine)

>> Wear positive pressure self-contained breathing apparatus (SCBA).

>> Wear chemical protective clothing that is specifically recommended by the manufacturer when there is NO RISK OF FIRE.

>> Structural firefighters' protective clothing provides thermal protection but only limited chemical protection.

9. Physical And Chemical Properties

Molecular Weight:

>> 135.21

Exact Mass:

>> 135.104799419

Physical Description:

>> Benzyldimethylamine appears as a colorless to light yellow liquid with an aromatic odor. Slightly less dense than water and slightly soluble in water. Corrosive to skin, eyes and mucous membranes. Slightly toxic by ingestion, skin absorption and inhalation. Used in the manufacture of adhesives and other chemicals.

>> COLOURLESS LIQUID WITH CHARACTERISTIC ODOUR.

Boiling Point:

>> 357.8 °F at 760 mmHg (USCG, 1999)

>> 180 °C

Melting Point:

>> -103 °F (USCG, 1999)

>> -75 °C

Flash Point:

>> 140 °F

>> 57 °C o.c.

Solubility:

>> Solubility in water, g/100ml: 1.2 (moderate)

Density:

>> 0.915 at 50 °F (USCG, 1999) - Less dense than water; will float

>> Relative density (water = 1): 0.9

Vapor Pressure:

>> 0.58 [mmHg]

LogP:

>> 1.91

Dissociation Constants:

10. Stability And Reactivity

>> Flammable. Slightly soluble in water.

11. Toxicological Information

Exposure Routes:

>> The substance can be absorbed into the body by inhalation of its vapour, through the skin and by ingestion.

Signs and Symptoms:

Symptoms of exposure to this chemical through various routes (for example, ingestion, inhalation, skin contact, and eye contact).

Inhalation Exposure

>> Sore throat. Cough. Burning sensation. Shortness of breath. Laboured breathing. Symptoms may be delayed.

Skin Exposure

>> Pain. Redness. Blisters. Skin burns.

Eye Exposure

>> Pain. Redness. Severe deep burns.

Ingestion Exposure

>> Burning sensation. Abdominal pain. Shock or collapse.

Adverse Effects:

An adverse effect is an undesired harmful effect resulting from a medical treatment or other intervention.

>> Dermatotoxin - Skin burns.

>> Toxic Pneumonitis - Inflammation of the lungs induced by inhalation of metal fumes or toxic gases and vapors.

Toxicity Data:

>> LCLo (rat) = 1,200 mg/m3/2H

12. Ecological Information

ICSC Environmental Data:

>> The substance is harmful to aquatic organisms.

13. Disposal Considerations

Spillage Disposal

>> Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Cautiously neutralize remainder. Then wash away with plenty of water.

14. Transport Information

DOT

N,N-Dimethylbenzylamine
8
UN Pack Group: II

IATA

N,N-Dimethylbenzylamine
8, 3
UN Pack Group: II

15. Regulatory Information

Regulatory Information

The Australian Inventory of Industrial Chemicals

>> Chemical: Benzenemethanamine, N,N-dimethyl-

REACH Registered Substance

>> Status: Active Update: 18-04-2023 https://echa.europa.eu/registration-dossier/-/registered-dossier/13869

New Zealand EPA Inventory of Chemical Status

>> Benzyldimethylamine: Does not have an individual approval but may be used under an appropriate group standard

New Jersey Worker and Community Right to Know Act

>> The New Jersey Worker and Community Right to Know Act requires public and private employers to provide information about hazardous substances at their workplaces. (N.J.S.A. 34:5A-1 et. seq.)

16. Other Information

Other Safety Information

Chemical Assessment

>> Evaluation - Chemicals that are unlikely to require further regulation to manage risks to human health

"The information provided is believed to be accurate but is not comprehensive and should be used as a reference. It reflects our current knowledge and is intended for safety guidance related to the product. This document does not constitute a warranty of the product's properties. Ionz is not responsible for any damages resulting from handling or contact with the product incorrectly."