

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 1 of 12

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

N,N-DIETHYLANILINE

OTHER NAMES

C10-H15-N, C6H5N(C2H5)2, "aniline, N, N-diethyl-", "aniline, N, N-diethyl-", "benzeneamine, N, N-dimethyl-", "benzeneamine, N, N-dimethyl-", DEA, "N, N-diethylaminobenzene", "N, N-diethylaminobenzene", diethylaniline, "N, N-diethylbenzeneamine", "N, N-diethylbenzeneamine", diethylphenylamine

PROPER SHIPPING NAME

N,N-DIETHYLANILINE

PRODUCT USE

Dyestuff intermediate; in organic syntheses.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

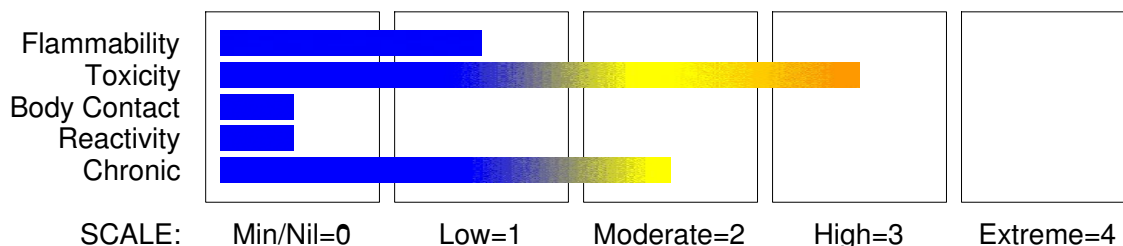
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

HAZARD RATINGS



continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 2 of 12

Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Dermal) Category 3
Acute Toxicity (Inhalation) Category 2
Acute Toxicity (Oral) Category 3
Chronic Aquatic Hazard Category 2
Organ Damage Category 2



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria:

H330 H311 H301 H373 H411

Fatal if inhaled

Toxic in contact with skin

Toxic if swallowed

May cause damage to organs through prolonged or repeated exposure.

Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS

Prevention

Do not breathe dust/fume/gas/mist/vapours/spray.

Use only outdoors or in a well ventilated area.

Wear protective gloves/clothing

Wash hands thoroughly after handling.

Wear respiratory protection.

Do not eat, drink or smoke when using this product.

Response

Immediately call a POISON CENTER or doctor/physician.

IF ON SKIN: Gently wash with plenty of soap and water.

Keep container tightly closed.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

Specific treatment: refer to Label or MSDS.

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Get medical advice/attention if you feel unwell.

Remove/Take off immediately all contaminated clothing

Wash/Decontaminate removed clothing before reuse.

Call a POISON CENTER or doctor/physician if you feel unwell.

continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 3 of 12

Section 2 - HAZARDS IDENTIFICATION

Storage

Store locked up.

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
N, N- diethylaniline	91-66-7	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.

· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.

· For advice, contact a Poisons Information Centre or a doctor.

Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

· Induce vomiting with fingers down the back of the of the throat, ONLY IF CONSCIOUS.

· Lean patient forward or place on left side (head-down position if possible) to maintain open airway and prevent aspiration.

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

· In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.

· If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.

· If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.

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.

· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

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.

continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 4 of 12

Section 4 - FIRST AID MEASURES

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses 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.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

The material may induce methaemoglobinaemia 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.
- Symptomatic patients with methaemoglobin levels over 30% should receive methylene blue. (Cyanosis, alone, is not an indication for treatment). The usual dose is 1-2 mg/kg of a 1% solution (10 mg/ml) IV over 50 minutes; repeat, using the same dose, if symptoms of hypoxia fail to subside within 1 hour.
- Thorough cleansing of the entire contaminated area of the body, including the scalp and nails, is of utmost importance.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comment
1. Methaemoglobin in blood	1.5% of haemoglobin	During or end of shift	B, NS, SQ

B: Background levels occur in specimens collected from subjects NOT exposed

NS: Non-specific determinant; also observed after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

FIRE FIGHTING

- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 5 of 12

Section 5 - FIRE FIGHTING MEASURES

FIRE/EXPLOSION HAZARD

- 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.
 - Mists containing combustible materials may be explosive.
- Other combustion products include: nitrogen oxides (NOx).

Personal Protective Equipment

Breathing apparatus.
Gas tight chemical resistant suit.
Limit exposure duration to 1 BA set 30 mins.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable labelled container for waste disposal.

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.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Water spray or fog may be used to disperse / absorb vapour.
- Contain or absorb spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

N,N-diethylaniline 350 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take

continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 6 of 12

Section 6 - ACCIDENTAL RELEASE MEASURES

protective action is:

N,N-diethylaniline 60 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:

N,N-diethylaniline 10 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:

N,N-diethylaniline 3 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



X



X



+



X



X



+

+: May be stored together

O: May be stored together with specific precautions

X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid smoking, naked lights or ignition sources.
- When handling, DO NOT eat, drink or smoke.
- Avoid contact with incompatible materials.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Working clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer's storing/handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 7 of 12

Section 7 - HANDLING AND STORAGE

SUITABLE CONTAINER

- Glass container.
- Plastic container.
- Plastic drum.
- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

Avoid storage with oxidisers and strong acids.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- N, N- diethylaniline: CAS:91- 66- 7

MATERIAL DATA

as aniline homologue

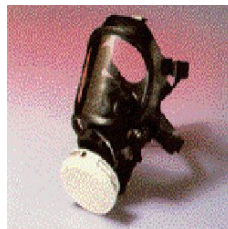
TLV TWA: 2 ppm, 7.6 mg/m³ SKIN

ES TWA: 2 ppm, 7.6 mg/m³ SKIN

Exposure limits with "skin" notation indicate that vapour and liquid may be absorbed through intact skin. Absorption by skin may readily exceed vapour inhalation exposure.

Symptoms for skin absorption are the same as for inhalation. Contact with eyes and mucous membranes may also contribute to overall exposure and may also invalidate the exposure standard.

PERSONAL PROTECTION



EYE

- Safety glasses with side shields; or as required,
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or

continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 8 of 12

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

Neoprene gloves.
Butyl rubber gloves.
Rubber boots.

OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

RESPIRATOR

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	AK- AUS	-	AK- PAPR- AUS
50 x ES	-	AK- AUS	-
100 x ES	-	AK- 2	AK- PAPR- 2 ^

^ - Full-face.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult
your

Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.

An approved self contained breathing apparatus (SCBA) may be required in some situations. Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:
solvent, vapours, degreasing etc., evaporating
from tank (in still air).
aerosols, fumes from pouring operations,

Air Speed:
0.25- 0.5 m/s (50- 100 f/min.)
0.5- 1 m/s (100- 200 f/min.)

continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 9 of 12

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

1- 2.5 m/s (200- 500 f/min.)

2.5- 10 m/s (500- 2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to capture

2: Contaminants of low toxicity or of nuisance value only.

3: Intermittent, low production.

4: Large hood or large air mass in motion

Upper end of the range

1: Disturbing room air currents

2: Contaminants of high toxicity

3: High production, heavy use

4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Yellow tinted liquid; mixes with water (1gm/70 ml).

PHYSICAL PROPERTIES

Liquid.

Mixes with water.

Toxic or noxious vapours/gas.

Molecular Weight: 149.24

Melting Range (°C): - 38

Solubility in water (g/L): Miscible

pH (1% solution): Not available

Volatile Component (%vol): Not available

Relative Vapour Density (air=1): 5.2

Lower Explosive Limit (%): Not available

Autoignition Temp (°C): 630.00

State: Liquid

Boiling Range (°C): 217

Specific Gravity (water=1): 0.938

pH (as supplied): Not applicable

Vapour Pressure (kPa): 1.33 @ 92.4 C

Evaporation Rate: Not available

Flash Point (°C): 97.78

Upper Explosive Limit (%): Not available

Decomposition Temp (°C): Not available

continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 10 of 12

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

log Kow : 3.31

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
 - Product is considered stable.
 - Hazardous polymerisation will not occur.
-

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual.

EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

SKIN

Skin contact with the material may produce toxic effects; systemic effects may result following absorption.

The material is not thought to be a skin irritant (i.e. is unlikely to produce irritant dermatitis as described in EC Directives using animal models). Temporary discomfort, however, may result from prolonged dermal exposures. Good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

Toxic effects may result from skin absorption.

Exposure limits with "skin" notation indicate that vapour and liquid may be absorbed through intact skin. Absorption by skin may readily exceed vapour inhalation exposure. Symptoms for skin absorption are the same as for inhalation. Contact with eyes and mucous membranes may also contribute to overall exposure and may also invalidate the exposure standard.

INHALED

The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation, of the material, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

CHRONIC HEALTH EFFECTS

Primary routes of exposure are usually via skin contact/absorption and inhalation of vapours.

The material may accumulate in the human body and progressively cause tissue damage.

continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 11 of 12

Section 11 - TOXICOLOGICAL INFORMATION

Severe or chronic poisoning may damage the liver, kidney and blood functions.
Haematological examinations should be performed to ensure that worker exposure is below acceptable levels. (ILO Encyclopaedia, Sax)

TOXICITY AND IRRITATION

TOXICITY

Inhalation (rat) LC50: 1920 mg/m³/4h
Intraperitoneal (rat) LD50: 420 mg/kg

IRRITATION

Nil Reported

Section 12 - ECOLOGICAL INFORMATION

Hazardous Air Pollutant: Yes
BOD5: 0
COD: 2.591
ThOD: 2.73

log Kow : 3.31
BOD 5 if unstated: 0
COD: 2.591
ThOD: 2.73

Section 13 - DISPOSAL CONSIDERATIONS

- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: TOXIC
HAZCHEM: 3X

UNDG:

Dangerous Goods Class: 6.1
UN Number: 2432
Shipping Name: N,N-DIETHYLANILINE

Subrisk: None
Packing Group: III

Air Transport IATA:

ICAO/IATA Class: 6.1
UN/ID Number: 2432
ERG Code: 6L
Shipping name: N,N-DIETHYLANILINE

ICAO/IATA Subrisk: None
Packing Group: III

continued...

N,N-DIETHYLANILINE

GHS Safety Data Sheet

Version No:2.0

Page 12 of 12

Section 14 - TRANSPORTATION INFORMATION

Maritime Transport IMDG:

IMDG Class:	6.1	IMDG Subrisk:	None
UN Number:	2432	Packing Group:	III
EMS Number:	F- A, S- A		
Shipping name:N,N-DIETHYLANILINE			

Section 15 - REGULATORY INFORMATION

REGULATIONS

N,N-diethylaniline (CAS: 91-66-7) is found on the following regulatory lists;
International Council of Chemical Associations (ICCA) - High Production Volume List
OECD Representative List of High Production Volume (HPV) Chemicals

Section 16 - OTHER INFORMATION

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 28-Jun-2018