SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name N,N-dimethylaniline

1.2 Other means of identification

Product number -
Other names N,N-Dimethylbenzeneamine; N,N-Dimethylaniline; Aniline,N,N-dimethyl

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.
Uses advised against no data available

1.4 Supplier's details

Company Shanghai Baishun Biotechnology Co., Ltd
Address No. 26, Lane 918, Lianye Road, Zhelin Town, Fengxian District, Shanghai, 201400, China
Telephone +86-21-37581181

1.5 Emergency phone number

Emergency phone number +86-21-37581181
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Category 3, Oral
Acute toxicity - Category 3, Dermal
Acute toxicity - Category 3, Inhalation
Carcinogenicity, Category 2
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger
Hazard statement(s) H301 Toxic if swallowed

H311 Toxic in contact with skin
H331 Toxic if inhaled
H351 Suspected of causing cancer
H411 Toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P203 Obtain, read and follow all safety instructions before use.
P273 Avoid release to the environment.

Response
P301+P316 IF SWALLOWED: Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P316 Get emergency medical help immediately.
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P318 IF exposed or concerned, get medical advice.
P391 Collect spillage.

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

Disposal
P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
N,N-dimethylaniline	N,N-dimethylaniline	121-69-7	204-493-5	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

Following ingestion

Rinse mouth. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or

death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. (ERG, 2016)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Aniline and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Special protective equipment for firefighters: Wear self contained breathing apparatus for fire fighting if necessary.

5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: Combustible material: may burn but does not ignite readily. When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Runoff may pollute waterways. Substance may be transported in a molten form. (ERG, 2016)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water. Combat fire from a sheltered position.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: chemical protection suit. Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable metal or glass containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: chemical protection suit and filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. Methods and materials for containment and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations... Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames. NO contact with oxidizing agents. Above 62°C use a closed system and ventilation. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants, acids, acid anhydrides, acid chlorides, hypochlorites, halogens and food and feedstuffs. Well closed. Store in an area without drain or sewer access.Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 5 ppm as TWA; 10 ppm as STEL; (skin); A4 (not classifiable as a human carcinogen); BEI issued.MAK: 25 mg/m3, 5 ppm; peak limitation category: II(2); skin absorption (H); carcinogen category: 3B; pregnancy risk group: D

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid.
Colour	Colourless.
Odour	Amine-like odor
Melting point/freezing point	> 1.5 - < 2.5 °C. Remarks:Other details not available.
Boiling point or initial boiling point and boiling range	185 °C. Atm. press.:960 hPa.
Flammability	Class IIIA Combustible Liquid: Fl.P. at or above 140°F and below 200°F.
Lower and upper explosion limit/flammability limit	no data available
Flash point	61 °C. Atm. press.:960 hPa.
Auto-ignition temperature	Atm. press.:960 hPa. Remarks:N,N-dimethylaniline did not catch fire on being exposed to air at room temperature of 35°C.

Decomposition temperature	no data available
pH	6.46. Remarks:Weakly acidic.
Kinematic viscosity	dynamic viscosity (in mPa s) = 11.001. Temperature:35.0°C. Remarks:Reported value: 11.88 cst.
Solubility	Insoluble in water
Partition coefficient n-octanol/water	Pow = 14.85. Temperature:35 °C.
Vapour pressure	0.5 mm Hg. Temperature:20 °C. Remarks:0.6666118421053 hPa.
Density and/or relative density	0.926 g/cm³. Temperature:35 °C.
Relative vapour density	3 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Decomposes on burning. This produces toxic and corrosive fumes including nitrogen oxides. Reacts violently with strong oxidants. Reacts with hypochlorites. This produces explosive chloroamines. Reacts with acids, acid anhydrides, acid chlorides and halogens. Attacks plastic and rubber.
Decomposes on heating. This produces highly toxic fumes of aniline and nitrogen oxides. Reacts with oxidants.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Flammable liquid when exposed to heat, flame, or oxidizers.Explosive decomposition occurred when finely divided benzoyl peroxide was allowed to react with N,N-DIMETHYLANILINE by breaking an ampoule containing 0.5 grams of dimethylaniline in an autoclave, NFPA 491M, 1991. This result may be expected with other peroxides and various oxidants.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Explodes on contact with benzoyl peroxide or diisopropyl peroxydicarbonate.

10.6 Hazardous decomposition products

When heated to decomposition it emits highly toxic fumes of aniline and NOx.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 - rat - 951 mg/kg bw. Remarks:Effects: Behavioral - somnolence (general depressed activity) Behavioral - tremor Lungs, Thorax, or Respiration - cyanosis.
- Inhalation: LCLo - rat - 250 mg/m³ air.
- Dermal: LD50 - rabbit (male) - 1 692 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Evaluation: There is inadequate evidence in humans for the carcinogenicity of N,N-dimethylaniline. There is limited evidence in experimental animals for the carcinogenicity of N,N-dimethylaniline. Overall evaluation: N,N-dimethylaniline is not classifiable as to its carcinogenicity to humans (Group 3).

Reproductive toxicity

No information is available on the reproductive or developmental effects of N,N-dimethylaniline in humans. In a study of mice exposed to N,N-dimethylaniline via gavage, no effects on survival or weight gain of dams, or birth weight, weight gain, or viability of the offspring were observed.

STOT-single exposure

If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the blood. This may result in the formation of methaemoglobin. Exposure far above the OEL could cause lowering of consciousness. The effects may be delayed. Medical observation is indicated.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis.

Aspiration hazard

A harmful contamination of the air will be reached rather slowly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - Pimephales promelas - 78.2 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 4.4 - 8.1 mg/L - 24 h.
- Toxicity to algae: LO(A)EC - Chlorella pyrenoidosa - 22 mg/L - 72 h.
- Toxicity to microorganisms: EC50 - Tetrahymena pyriformis - 110 mg/L - 24 h.

12.2 Persistence and degradability

AEROBIC: Using a mixed municipal/industrial activated sludge, 0-3% of N,N-dimethylaniline was removed over a 6 hr period at a concentration of 20 mg/L. When an industrial activated sludge that was adapted to N,N-dimethylaniline was used, 100% of the total organic carbon was removed after 6 days at a concentration of 400 mg/L. However, this test indicates that stripping may be the most important elimination process since there was no indications that biodegradation had occurred. In another test, both a municipal non-acclimated and an acclimated activated sludge were used to study the biodegradation. The non-acclimated sludge reached less than 10% of its ThOD after 28 days at a concentration of 50-200 mg/L of N,N-dimethylaniline while at the same concentration, the acclimated sludge reached 22% of its ThOD in 5 days(1). N,N-Dimethylaniline, present at 100 mg/L, reached 1.9% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI test(2).

12.3 Bioaccumulative potential

A BCF of 5.4 was measured in fish for N,N-dimethylaniline, at a concentration of 0.5 ppm, using carp (Cyprinus carpio) which were exposed over a 6-week period(1). According to a classification scheme(2), this BCF suggests that bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

The Koc of N,N-dimethylaniline was reported to be 182(1). According to a classification scheme(2), this estimated Koc value suggests that N,N-dimethylaniline is expected to have moderate mobility in soil. The pKa of N,N-dimethylaniline is 5.15(3), indicating that this

compound will exist partially in the cation form in the environment and cations generally adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(4). A Kd of 150 using montmotillonite has been reported(5).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN2253 (For reference only, please check.)	IMDG: UN2253 (For reference only, please check.)	IATA: UN2253 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: N,N-DIMETHYLANILINE (For reference only, please check.)	IMDG: N,N-DIMETHYLANILINE (For reference only, please check.)	IATA: N,N-DIMETHYLANILINE (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)	IMDG: 6.1 (For reference only, please check.)	IATA: 6.1 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: II (For reference only, please check.)	IMDG: II (For reference only, please check.)	IATA: II (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes	IMDG: Yes	IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
N,N-dimethylaniline	N,N-dimethylaniline	121-69-7	204-493-5
European Inventory of Existing Commercial Chemical Substances			Listed.

(EINECS)	
EC Inventory	Listed.
United States Toxic Substances Control Act (TSCA) Inventory	Listed.
China Catalog of Hazardous chemicals 2015	Listed.
New Zealand Inventory of Chemicals (NZIoC)	Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2019
Revision Date	July 15, 2019

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Depending on the degree of exposure, periodic medical examination is indicated.Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available.

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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