

SAFETY DATA SHEET

CHINA
AMINES

Diethylamine

Version
1.5
PRD

Revision Date:
25.03.2021

SDS Number:
150000103690
SDSAU / EN / 0001

Date of last issue: 21.03.2021
Date of first issue: 27.07.2017

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Diethylamine
Product code : 51165-00, N5116510, P5116514, P5116512, N5116511,
P5116501, P5116510

Manufacturer or supplier's details

Company : China Amines Co., Ltd
Address : UNIT 1021, BEVERLEY COMMERCIAL CENTRE, 87-105CHATHAM
ROAD SOUTH, TSIM SHA TSUI, KOWLOON HONG KONG
Telephone : +86 18938922889
Emergency telephone : +86 18938922889

Recommended use of the chemical and restrictions on use

Recommended use : Chemical intermediate
Restrictions on use : None known.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 2
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Acute toxicity (Dermal) : Category 3
Skin corrosion/irritation : Category 1A
Serious eye damage/eye irritation : Category 1
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms : 

Signal Word : Danger

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- Hazard Statements : H225 Highly flammable liquid and vapour.
H302 + H332 Harmful if swallowed or if inhaled.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
- Precautionary Statements : **Prevention:**
P210 Keep away from heat/ sparks/ open flames/ hot surfaces.
No smoking.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equip-
ment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ 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 protec-
tion/ face protection.
- Response:**
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT
induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off
immediately all contaminated clothing. Rinse skin with water/
shower.
P304 + P340 + P310 IF INHALED: Remove victim to fresh air
and keep at rest in a position comfortable for breathing. Imme-
diately call a POISON CENTER or doctor/ physician.
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.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or
alcohol-resistant foam for extinction.
- Storage:**
P403 + P233 Store in a well-ventilated place. Keep container
tightly closed.
P405 Store locked up.
- Disposal:**
P501 Dispose of contents/ container to an approved waste
disposal plant.

Other hazards which do not result in classification

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Pure substance

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Components

Chemical name	CAS-No.	Concentration (% w/w)
diethylamine	109-89-7	>= 60 -<= 100

SECTION 4. FIRST AID MEASURES

- General advice : Show this 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 : Causes severe skin burns and eye damage.
Lung oedema
Pneumonia
corrosive effects
Health injuries may be delayed.
- 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 fire fighting : Flash back possible over considerable distance.
- Hazardous combustion products : Carbon monoxide
Nitrogen oxides (NO_x)
- Specific extinguishing methods : Prevent fire extinguishing water from contaminating surface water or the ground water system.

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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.

Hazchem Code : •2WE

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.

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

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

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
diethylamine	109-89-7	STEL	25 ppm 75 mg/m ³	AU OEL
		TWA	10 ppm 30 mg/m ³	AU OEL
		TWA	5 ppm	ACGIH
		STEL	15 ppm	ACGIH

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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.

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

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 : Wear suitable protective clothing.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : clear

Odor : ammoniacal

Odor Threshold : not determined

pH : 13 (20 °C)
Concentration: 100 g/l

Melting point/freezing point : -50 °C

Boiling point/boiling range : 55.5 °C

Flash point : -26 °C

Evaporation rate : not determined

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Self-ignition	:	312 °C
Upper explosion limit / Upper flammability limit	:	10.1 %(V)
Lower explosion limit / Lower flammability limit	:	1.8 %(V)
Vapor pressure	:	316 hPa (25 °C)
Relative vapor density	:	2.5 (Air = 1.0)
Relative density	:	No data available
Density	:	0.71 g/cm ³ (20 °C)
Solubility(ies) Water solubility	:	completely soluble
Partition coefficient: n-octanol/water	:	log Pow: 0.58
Autoignition temperature	:	312 °C
Decomposition temperature	:	not determined
Viscosity Viscosity, dynamic	:	0.319 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	:	73.14 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. Exposure to air or moisture over prolonged periods.
Incompatible materials	:	Strong oxidizing agents Strong acids and strong bases
Hazardous decomposition	:	Carbon monoxide

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products
Carbon dioxide (CO₂)
Nitrogen oxides (NO_x)
Ammonia

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:

diethylamine:

Acute oral toxicity : LD50 Oral (Rat): 540 mg/kg
Acute inhalation toxicity : LC50 (Rat): 17.3 mg/l
Exposure time: 4 h
Acute dermal toxicity : LD50 Dermal (Rabbit): 582 mg/kg

Skin corrosion/irritation

Components:

diethylamine:

Species : Rabbit
Exposure time : 24 h
Result : Corrosive

Serious eye damage/eye irritation

Components:

diethylamine:

Species : Rabbit
Result : Corrosive

Respiratory or skin sensitization

Components:

diethylamine:

Remarks : Did not cause sensitization on laboratory animals.

Chronic toxicity

Germ cell mutagenicity

Components:

diethylamine:

Germ cell mutagenicity - Assessment : Did not show mutagenic effects in animal experiments.

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Carcinogenicity

Product:

Remarks : This information is not available.

Components:

diethylamine:

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Product:

Effects on fertility : Remarks: No data available

Components:

diethylamine:

Reproductive toxicity - Assessment : No toxicity to reproduction

STOT - single exposure

Components:

diethylamine:

Assessment : May cause respiratory irritation.

Repeated dose toxicity

Components:

diethylamine:

Species : Rat
: 47 mg/m³
Application Route : Inhalation
Exposure time : 93 d
Target Organs : Respiratory system, Heart, Cardio-vascular system, Eyes, Skin

Aspiration toxicity

Product:

No data available

Routes of exposure

Product:

Inhalation : Remarks: Harmful if inhaled.
May cause respiratory irritation.

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Skin contact	:	Remarks: Toxic in contact with skin. Causes severe skin burns.
Eye contact	:	Remarks: Causes serious eye damage.
Ingestion	:	Remarks: Harmful if swallowed. Causes digestive tract burns.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

diethylamine:

Toxicity to fish	:	LC50 (Fish): 25 - 182 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 4.6 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	LC50 (Chlorella pyrenoidosa (aglae)): 20 mg/l Exposure time: 96 h
Toxicity to microorganisms	:	EC10 (Bacteria): > 1,000 mg/l Exposure time: 0.5 h

Persistence and degradability

Components:

diethylamine:

Biodegradability	:	Result: Readily biodegradable.
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Bioaccumulative potential

Components:

diethylamine:

Partition coefficient: n-octanol/water	:	log Pow: 0.58
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Mobility in soil

Components:

diethylamine:

Distribution among environmental compartments	:	Koc: 45.59
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Other adverse effects

No data available

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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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

- UN/ID No. : UN 1154
Proper shipping name : Diethylamine
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 1154
Proper shipping name : DIETHYLAMINE
- 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

ADG

- UN number : UN 1154
Proper shipping name : DIETHYLAMINE
Class : 3
Subsidiary risk : 8
Packing group : II
Labels : 3 (8)
Hazchem Code : •2WE

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Standard for the Uniform Scheduling of Medicines and Poisons : No poison schedule number allocated

Prohibition/Licensing Requirements : There is no applicable prohibition, authorisation and restricted use requirements, including for carcinogens referred to in Schedule 10 of the model WHS Act and Regulations.

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

TCSI : On the inventory, or in compliance with the inventory
TSCA : All substances listed as active on the TSCA inventory
AIIC : On the inventory, or in compliance with the inventory
DSL : All components of this product are on the Canadian DSL
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
NZIoC : On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

Revision Date : 25.03.2021
Date format : dd.mm.yyyy

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
AU OEL : Australia. Workplace Exposure Standards for Airborne Contaminants.
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit

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AU OEL / TWA : Exposure standard - time weighted average
AU OEL / STEL : Exposure standard - short term exposure limit

AICS - Australian Inventory of Chemical Substances; AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this 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.

AU / EN