

## Chemical Safety Data Sheet MSDS / SDS

## Dibutylamine

Revision Date:2024-03-16 Revision Number:1

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

## Product identifier

Product name : Dibutylamine  
CBnumber : CB8416375  
CAS : 111-92-2  
EINECS Number : 203-921-8  
Synonyms : dibutylamine,DNBA

## Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

## Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

## SECTION 2: Hazards identification

## GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Danger

## Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.  
P233 Keep container tightly closed.  
P234 Keep only in original container.  
P240 Ground/bond container and receiving equipment.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 Wash hands thoroughly after handling.  
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.  
P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 Wear respiratory protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.

P304+P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continuerinsing.

P307+P311 IF exposed: call a POISON CENTER or doctor/physician.

P310 Immediately call a POISON CENTER or doctor/physician.

P320 Specific treatment is urgent (see ... on this label).

P370+P378 In case of fire: Use ... for extinction.

P390 Absorb spillage to prevent material damage.

P405 Store locked up.

#### **Hazard statements**

H226 Flammable liquid and vapour

H290 May be corrosive to metals

H301 Toxic if swallowed

H302 Harmful if swallowed

H311 Toxic in contact with skin

H314 Causes severe skin burns and eye damage

H318 Causes serious eye damage

H330 Fatal if inhaled

H370 Causes damage to organs

H401 Toxic to aquatic life

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## SECTION 3: Composition/information on ingredients

### **Substance**

Product name	: Dibutylamine
Synonyms	: dibutylamine,DNBA
CAS	: 111-92-2
EC number	: 203-921-8
MF	: C <sub>8</sub> H <sub>19</sub> N
MW	: 129.24

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## SECTION 4: First aid measures

### **Description of first aid measures**

#### **General advice**

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

#### **If inhaled**

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

#### **In case of skin contact**

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

#### **In case of eye contact**

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

#### **If swallowed**

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

#### **Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### **Indication of any immediate medical attention and special treatment needed**

No data available

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## SECTION 5: Firefighting measures

### **Extinguishing media**

#### **Suitable extinguishing media**

Carbon dioxide (CO<sub>2</sub>) Foam Dry powder

#### **Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

### **Special hazards arising from the substance or mixture**

Carbon oxides Nitrogen oxides (NO<sub>x</sub>) Combustible.

Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

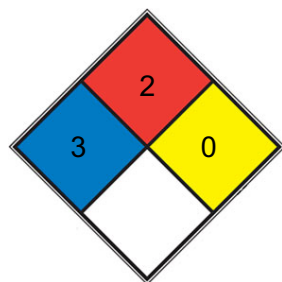
### **Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### **Further information**


Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

### **NFPA 704**



■ HEALTH 3 Short exposure could cause serious temporary or moderate residual injury (e.g. [liquid hydrogen](#), [sulfuric acid](#), [calcium hypochlorite](#), hexafluorosilicic acid)

Must be moderately heated or exposed to relatively high ambient temperature before ignition can occur and multiple finely

 FIRE 2 divided suspended solids that do not require heating before ignition can occur. Flash point between 37.8 and 93.3 °C (100 and 200 °F). (e.g. diesel fuel, [sulfur](#))

 REACT 0 Normally stable, even under fire exposure conditions, and is not reactive with water (e.g. helium, [N2](#))

 SPEC.

 HAZ.

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## SECTION 6: Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition.

Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

### Environmental precautions

Do not let product enter drains. Risk of explosion.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g.

Chemisorb?). Dispose of properly. Clean up affected area.

### Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### Precautions for safe handling

#### Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

### Conditions for safe storage, including any incompatibilities

#### Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

### **Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **SECTION 8: Exposure controls/personal protection**

### **control parameter**

#### **Hazard composition and occupational exposure limits**

Does not contain substances with occupational exposure limits.

### **Exposure controls**

#### **Personal protective equipment**

##### **Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles

##### **Skin protection**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,4 mm Break through time: 480 min

Material tested: Camatril? (KCL 730 / Aldrich Z677442, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: Chloroprene

Minimum layer thickness: 0,65 mm Break through time: 30 min

Material tested: KCL 720 Camapren?

##### **Body Protection**

Flame retardant antistatic protective clothing.

##### **Respiratory protection**

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

##### **Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

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## **SECTION 9: Physical and chemical properties**

## Information on basic physicochemical properties

Appearance	colorless clear, liquid
Odour	ammoniacal
Odour Threshold	1,59 ppm
pH	11,1 at 1 g/l at 20 °C
Melting point/freezing point	Melting point/range: -62 °C - lit.
Initial boiling point and boiling range	159 °C - lit.
Flash point	40,5 °C - closed cup
Evaporation rate	No data available
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	Upper explosion limit: 6,8 %(V) Lower explosion limit: 0,6 %(V)
Vapour pressure	2,26 hPa at 20,3 °C
Vapour density	4,46 - (Air = 1.0)
Relative density	No data available
Water solubility	3,8 g/l at 20 °C - OECD Test Guideline 105- miscible
Partition coefficient: n-octanol/water	log Pow: 2,1 at 23 °C - Bioaccumulation is not expected.
Autoignition temperature	255 °C at 1.013,25 hPa
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: 0,64 mPa.s at 40 °C 0,85 mPa.s at 20 °C
Explosive properties	No data available
Oxidizing properties	No data available

## Other safety information

Surface tension 50,6 mN/m at 1,005g/l at 20 °C

OECD Test Guideline 115

Dissociation constant 11 at 20 °C

OECD Test Guideline 112

Relative vapor density

4,46 - (Air = 1.0)

## SECTION 10: Stability and reactivity

### Reactivity

Vapor/air-mixtures are explosive at intense warming.

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines! Exothermic reaction with:  
acids anhydrides

Strong oxidizing agents

Violent reactions possible with:

Alcohols glycol ether Ketones Aldehydes Esters Nitriles phenols

### Conditions to avoid

Heating.

### Incompatible materials

nonferrous metals, Light metals, Copper, Copper alloys, Tin

### Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male - 550 mg/kg Remarks: (ECHA)

LC50 Inhalation - Rat - male and female - 4 h - 1,15 mg/l (OECD Test Guideline 403)

LD50 Dermal - Rabbit - male - 768 mg/kg Remarks: (ECHA)

#### Skin corrosion/irritation

Skin - Rabbit

Result: Causes severe burns. - 3 min - 1 h (OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit Result: Corrosive

(OECD Test Guideline 405) Causes serious eye damage.

#### Respiratory or skin sensitization

Buehler Test - Guinea pig

Result: Does not cause skin sensitization. (US-EPA)

#### Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test Test system: Mouse lymphoma test

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476

Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)

Species: Mouse

Cell type: Bone marrow Application Route: Oral

Method: OECD Test Guideline 475 Result: negative

#### Carcinogenicity

No data available

#### Reproductive toxicity

No data available

**Specific target organ toxicity - single exposure Specific target organ toxicity - repeated exposure Aspiration hazard**

## **Toxicity**

LD50 orally in rats: 550 mg/kg (Smyth)

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## **SECTION 12: Ecological information**

### **Toxicity**

#### **Toxicity to fish**

static test LC50 - *Oncorhynchus mykiss* (rainbow trout) - 5,5 mg/l - 96 h

Remarks: (in soft water) (ECHA)

static test LC50 - *Oncorhynchus mykiss* (rainbow trout) - 37 mg/l - 96 h

Remarks: (in hard water) (ECHA)

#### **Toxicity to daphnia and other aquatic invertebrates**

semi-static test LC50 - *Ceriodaphnia dubia* (water flea) - 8,4 mg/l - 48 h

(US-EPA)

#### **Toxicity to algae**

static test EC50 - *Desmodesmus subspicatus* (green algae) - 16,91 mg/l - 72 h

(OECD Test Guideline 201)

#### **Toxicity to bacteria**

EC50 - *Pseudomonas putida* - 196 mg/l - 17 h

Remarks: (IUCLID)

### **Persistence and degradability**

Biodegradability aerobic - Exposure time 28 d

Result: 95 % - Readily biodegradable. (OECD Test Guideline 301C)

### **Bioaccumulative potential**

### **Mobility in soil**

### **Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### **Other adverse effects**

No data available

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## **SECTION 13: Disposal considerations**

### **Waste treatment methods**

### **Incompatibilities**



May form explosive mixture with air. Aqueous solution is a strong base. Incompatible with acids, acid chlorides; acid anhydrides; halogens, isocyanates, vinyl acetate; acrylates, substituted allyls; alkylene oxides, epichlorohydrin, ketones, aldehydes, alcohols, strong oxidizers; reactive organic compounds. Attacks copper alloys, zinc, tin, tin alloys; galvanized steel.

## Product

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

## Waste Disposal

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. All federal, state, and local environmental regulations must be observed.

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## SECTION 14: Transport information

### UN number

ADR/RID: 2248 IMDG: 2248 IATA: 2248

### UN proper shipping name

ADR/RID: DI-n-BUTYLAMINE IMDG: DI-n-BUTYLAMINE IATA: Di-n-butylamine

### Transport hazard class(es)

ADR/RID: 8 (3) IMDG: 8 (3) IATA: 8 (3)

### Packaging group

ADR/RID: II IMDG: II IATA: II

### Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

### Special precautions for user

No data available

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## SECTION 15: Regulatory information

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

#### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015: Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances

Vietnam National Chemical Inventory: Listed. website: <https://chemicaldata.gov.vn/>

European Inventory of Existing Commercial Chemical Substances (EINECS): Listed. website: <https://echa.europa.eu/>

EC Inventory: Listed.

United States Toxic Substances Control Act (TSCA) Inventory: Listed. website: <https://www.epa.gov/>

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC): Listed. website: <https://www.mee.gov.cn/>

New Zealand Inventory of Chemicals (NZIoC): Listed. website: <https://www.epa.govt.nz/>

## SECTION 16: Other information

### 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

【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>

【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>

【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:

[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)

【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>

【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>

【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>

【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>

【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Other Information

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate spray, by a doctor or a person authorized by him/her, should be considered.

#### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.