# SAFETY DATA SHEET

**Creation Date** 15-January-2015 **Revision Date** 19-May-2025 **Revision Number** 5

## 1. Identification

**Product Name** **Di-n-butylamine**

**Cat No. :** **AC390610000; AC390610100; AC390611000**

**CAS-No** 111-92-2
**Synonyms** N-Butyl-1-butanamine

**Recommended Use** Laboratory chemicals.
**Uses advised against** Food, drug, pesticide or biocidal product use.

**Details of the supplier of the safety data sheet**

**Company**
**Importer/Distributor**
Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

**Manufacturer**
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

**Emergency Telephone Number**
For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
**CHEMTREC** Tel. No. **US:**001-800-424-9300 / **Europe:**001-703-527-3887

## 2. Hazard(s) identification

**Classification**

**WHMIS 2015 Classification** Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

| | |
|---|---|
| **Flammable liquids** | Category 3 |
| **Acute oral toxicity** | Category 3 |
| **Acute dermal toxicity** | Category 3 |
| **Acute Inhalation Toxicity** | Category 2 |
| **Skin Corrosion/Irritation** | Category 1 B |
| **Serious Eye Damage/Eye Irritation** | Category 1 |
| **Health Hazards Not Otherwise Classified** | Category 1 |
| Corrosive to the respiratory tract | |

**Label Elements**

**Signal Word**
Danger

**Hazard Statements**
Flammable liquid and vapor
Fatal if inhaled
Toxic if swallowed or in contact with skin
Causes severe skin burns and eye damage
Corrosive to the respiratory tract

**Precautionary Statements**
**Prevention**
Wear respiratory protection
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take action to prevent static discharges
Do not breathe dust/fumes/gas/mist/vapours/spray
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
**Response**
IF INHALED: Remove person to fresh air and keep comfortable for breathing
Immediately call a POISON CENTER/doctor
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Rinse mouth
Do NOT induce vomiting
Wash contaminated clothing before reuse
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
**Storage**
Store locked up
Store in a well-ventilated place. Keep container tightly closed
**Disposal**
Dispose of contents/container to an approved waste disposal plant

## 3. Composition/Information on Ingredients

| Component | CAS-No | Weight % |
|---|---|---|
| Di-n-butylamine | 111-92-2 | <=100 |

## 4. First-aid measures

**General Advice** Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

**Eye Contact** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In

| | |
|---|---|
| | the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| **Skin Contact** | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required. |
| **Inhalation** | If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. Immediate medical attention is required. |
| **Ingestion** | Do NOT induce vomiting. Call a physician or poison control center immediately. |
| **Most important symptoms/effects** | Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated |
| **Notes to Physician** | Treat symptomatically |

## 5. Fire-fighting measures

| | |
|---|---|
| **Suitable Extinguishing Media** | Water mist may be used to cool closed containers. $CO_2$, dry chemical, dry sand, alcohol-resistant foam. |
| **Unsuitable Extinguishing Media** | No information available |
| **Flash Point** | 39 °C / 102.2 °F |
| **Method -** | No information available |
| **Autoignition Temperature** | 260 °C / 500 °F |
| **Explosion Limits** | |
| **Upper** | 6.8 vol % |
| **Lower** | 0.6 vol % |
| **Sensitivity to Mechanical Impact** | No information available |
| **Sensitivity to Static Discharge** | No information available |

**Specific Hazards Arising from the Chemical**
Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

**Hazardous Combustion Products**
Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide ($CO_2$).
**Protective Equipment and Precautions for Firefighters**
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

| Health | Flammability | Instability | Physical hazards |
|---|---|---|---|
| 4 | 2 | 0 | N/A |

## 6. Accidental release measures

| | |
|---|---|
| **Personal Precautions** | Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges. |
| **Environmental Precautions** | Do not flush into surface water or sanitary sewer system. |

**Methods for Containment and Clean Up** Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

## 7. Handling and storage

**Handling** Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

**Storage.** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Flammables area. Corrosives area. Incompatible Materials. Acids. Strong oxidizing agents. Amines. Chlorine. Acid anhydrides. Acid chlorides. Carbon dioxide (CO2). halogenated agents.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limitsestablished by the region specific regulatory bodies.

**Engineering Measures** Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas.
Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

**Personal protective equipment**

**Eye Protection** Goggles
**Hand Protection** Protective gloves

| Glove material | Breakthrough time | Glove thickness | Glove comments |
|---|---|---|---|
| Natural rubber<br>Nitrile rubber<br>Neoprene<br>PVC | See manufacturers recommendations | - | Splash protection only |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

**Respiratory Protection**
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
**Recommended Filter type:** Particulates filter conforming to EN 143 Ammonia and organic ammonia derivatives filter Type K Green conforming to EN14387

When RPE is used a face piece Fit Test should be conducted

**Environmental exposure controls**
Prevent product from entering drains. Do not allow material to contaminate ground water system.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

## 9. Physical and chemical properties

| | |
|---|---|
| **Physical State** | Liquid |
| **Appearance** | No information available |
| **Odor** | Rotten-egg like |
| **Odor Threshold** | No information available |
| **pH** | 11.1 |
| **Melting Point/Range** | -62 °C / -79.6 °F |
| **Boiling Point/Range** | 159 °C / 318.2 °F @ 760 mmHg |
| **Flash Point** | 39 °C / 102.2 °F |
| **Evaporation Rate** | No information available |
| **Flammability (solid,gas)** | Not applicable |
| **Flammability or explosive limits** | |
| **Upper** | 6.8 vol % |
| **Lower** | 0.6 vol % |
| **Vapor Pressure** | 2.3 mbar @ 20 °C |
| **Vapor Density** | 4.5 |
| **Specific Gravity** | 0.760 |
| **Solubility** | 4.05 g/L (25°C) |
| **Partition coefficient; n-octanol/water** | No data available |
| **Autoignition Temperature** | 260 °C / 500 °F |
| **Decomposition Temperature** | No information available |
| **Viscosity** | 0.9 mPa s at 20 °C |
| **Molecular Formula** | C8 H19 N |
| **Molecular Weight** | 129.24 |

## 10. Stability and reactivity

**Reactive Hazard** None known, based on information available

**Stability** Stable under normal conditions.

**Conditions to Avoid** Temperatures above 40°C. Incompatible products. Keep away from open flames, hot surfaces and sources of ignition.

**Incompatible Materials** Acids, Strong oxidizing agents, Amines, Chlorine, Acid anhydrides, Acid chlorides, Carbon dioxide (CO2), halogenated agents

**Hazardous Decomposition Products** Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide ($CO_2$)

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Hazardous Reactions** None under normal processing.

## 11. Toxicological information

**Acute Toxicity**

**Product Information**

**Component Information**

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|---|---|---|---|
| Di-n-butylamine | LD50 = 189 mg/kg ( Rat ) | LD50 = 768 mg/kg ( Rabbit ) | > 2 mg/L ( Rat ) 1 h |

**Toxicologically Synergistic Products** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** Causes burns by all exposure routes

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Di-n-butylamine | 111-92-2 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known
**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects,both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

**Ecotoxicity**

The product contains following substances which are hazardous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|---|---|---|---|---|
| Di-n-butylamine | EC50: = 19 mg/L, 96h static (Pseudokirchneriella subcapitata)<br>EC50: = 19 mg/L, 96h (Pseudokirchneriella subcapitata)<br>EC50: = 16.4 mg/L, 72h (Desmodesmus subspicatus)<br>EC50: = 1.16 mg/L, 96h (Desmodesmus subspicatus) | LC50: = 5.5 mg/L, 96h (Oncorhynchus mykiss) | EC50 = 196 mg/L 17 h | EC50: = 66 mg/L, 48h (Daphnia magna) |

**Persistence and Degradability** Persistence is unlikely

**Bioaccumulation/ Accumulation** No information available.

**Mobility** . Will likely be mobile in the environment due to its water solubility.

| Component | log Pow |
|---|---|
| Di-n-butylamine | 2.1 |

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

**DOT**

| | |
|---|---|
| **UN-No** | UN2248 |
| **Proper Shipping Name** | DI-N-BUTYLAMINE |
| **Hazard Class** | 8 |
| **Subsidiary Hazard Class** | 3 |
| **Packing Group** | II |

**TDG**

| | |
|---|---|
| **UN-No** | UN2248 |
| **Proper Shipping Name** | DI-N-BUTYLAMINE |
| **Hazard Class** | 8 |
| **Subsidiary Hazard Class** | 3 |
| **Packing Group** | II |

**IATA**

| | |
|---|---|
| **UN-No** | UN2248 |
| **Proper Shipping Name** | Di-n-BUTYLAMINE |
| **Hazard Class** | 8 |
| **Subsidiary Hazard Class** | 3 |
| **Packing Group** | II |

**IMDG/IMO**

| | |
|---|---|
| **UN-No** | UN2248 |
| **Proper Shipping Name** | DI-n-BUTYLAMINE |
| **Hazard Class** | 8 |
| **Subsidiary Hazard Class** | 3 |
| **Packing Group** | II |

## 15. Regulatory information

**International Inventories**

| Component | CAS-No | DSL | NDSL | TSCA | TSCA Inventory notification - Active-Inactive | EINECS | ELINCS | NLP |
|---|---|---|---|---|---|---|---|---|
| Di-n-butylamine | 111-92-2 | X | - | X | ACTIVE | 203-921-8 | - | - |

| Component | CAS-No | IECSC | KECL | ENCS | ISHL | TCSI | AICS | NZIoC | PICCS |
|---|---|---|---|---|---|---|---|---|---|
| Di-n-butylamine | 111-92-2 | X | KE-04223 | X | X | X | X | X | X |

**Legend:**
X - Listed '-' - Not Listed
**KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
**IECSC** - Chinese Inventory of Existing Chemical Substances
**KECL** - Korean Existing and Evaluated Chemical Substances
**ENCS** - Japanese Existing and New Chemical Substances
**AICS** - Australian Inventory of Chemical Substances
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**Canada**

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

**Other International Regulations**

**Authorisation/Restrictions according to EU REACH** Not applicable

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

| Component | CAS-No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|---|---|---|---|---|---|
| Di-n-butylamine | 111-92-2 | Listed | Not applicable | Not applicable | Not applicable |

| Component | CAS-No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|---|---|---|---|---|---|
| Di-n-butylamine | 111-92-2 | Not applicable | Not applicable | Not applicable | Not applicable |

## 16. Other information

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**Revision Summary** This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

**Disclaimer**
**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**

**End of SDS**