SAFETY DATA SHEET

[Required under safety and health regulations for shipping and handling]

Version: 2022
Date Updated: February 08, 2022

SECTION 1. - - - - - - - - - PRODUCT AND COMPANY IDENTIFICATION- - - - - - - - - -

Product Name	Dibutylamine
Product Code(s)	DC3670
Recommended Use	For Laboratory Research Use Only Not for Human or Animal Drug Use
Supplier	Bio Basic Inc.
Address	20 Konrad Crescent, Markham, Ontario, Canada, L3R 8T4
Telephone	(905) 474 4493
Fax	(905) 474 5794
For Chemical Emergency Phone#	(416) 995 9730

SECTION 2. - - - - - - - - - - HAZARDS IDENTIFICATION - - - - - - - - -

GHS Classification in accordance with Hazardous Products Regulations (HPR) (SOR/2015-17)

Flammable liquids (Category 3), H226 Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 2), H330 Acute toxicity, Dermal (Category 3), H311 Skin corrosion (Category 1A), H314

Serious eye damage (Category 1), H318

Short-term (acute) aquatic hazard (Category 2), H401

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H401	Toxic to aquatic life.

Precautionary statement(s)

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264	Wash skin thoroughly after handling.

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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.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
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.
P361 + P364	Take off immediately all contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS

- none

SECTION 3. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - - -

Chemical Name	EC No.	CAS-No	Weight %
Dibutylamine	203-921-8	111-92-2	95-100

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4. - - - - - - - - - - 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) and/or in section 11

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Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5. - - - - - - - - - FIRE FIGHTING MEASURES - - - - - - - - - -

Suitable extinguishing media
Carbon dioxide (CO2) 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 (NOx) 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.

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. Chemizorb®). Dispose of properly. Clean up affected area.

Reference to other sections
For disposal see section 13.

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.

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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.

Storage class

Storage class (TRGS 510): 3: Flammable liquids

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -

Exposure controls

Appropriate engineering controls

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

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

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

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)

Splash contact Material:
Nitrile rubber

Minimum layer thickness: 0.4 mm Break
through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)
data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our
customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Flame retardant antistatic protective clothing.

Respiratory protection

required when vapours/aerosols are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

SECTION 9. - - - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - - - -

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Information on basic physical and chemical properties

a)	Appearance	Form: clear, liquid Color: colorless
b)	Odor	ammoniacal
c)	Odor Threshold	1.59 ppm
d)	pH	11.1 at 1 g/l at 20 °C (68 °F)
e)	Melting point/freezing point	Melting point/range: -62 °C (-80 °F) - lit.
f)	Initial boiling point and boiling range	159 °C 318 °F - lit.
g)	Flash point	40.5 °C (104.9 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 6.8 %(V) Lower explosion limit: 0.6 %(V)
k)	Vapor pressure	2.26 hPa at 20.3 °C (68.5 °F)
l)	Vapor density	4.46 - (Air = 1.0)
m)	Density	0.767 g/mL at 25 °C (77 °F) - lit.
	Relative density	No data available
n)	Water solubility	3.8 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - miscible
o)	Partition coefficient: log Pow: 2.1 at 23 °C (73 °F) - Bioaccumulation is not expected. n-octanol/water	
p)	Autoignition temperature	255 °C (491 °F) at 1,013.25 hPa
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	none

Other safety information

Surface tension	50.6 mN/m at 1.005g/l at 20 °C (68 °F) - OECD Test Guideline 115
Dissociation constant	11 at 20 °C (68 °F) - 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

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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

SECTION 11. - - - - - - - - - TOXICOLOGICAL INFORMATION - - - - - - - -

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)
No data available

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

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No data available

Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

RTECS: HR7780000

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

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
No data available

Mobility in soil
No data available

Results of PBT and vPvB assessment

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PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects
No data available

SECTION 13. - - - - - - - - - DISPOSAL CONSIDERATIONS - - - - - - - - -

Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. - - - - - - - - - - TRANSPORT INFORMATION - - - - - - - - -

DOT (US)
UN number: 2248 Class: 8 (3) Packing group: II
Proper shipping name: Di-n-butylamine
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2248 Class: 8 (3) Packing group: II EMS-No: F-E, S-C
Proper shipping name: DI-n-BUTYLAMINE
Marine pollutant: No

IATA
UN number: 2248 Class: 8 (3) Packing group: II
Proper shipping name: Di-n-butylamine

SECTION 15. - - - - - - - - - REGULATORY INFORMATION - - - - - - - - - -

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

SECTION 16. - - - - - - - - - - OTHER INFORMATION- - - - - - - - - - -

Further information: no limited for paper copy, just for internal uses.
For research use only. Not intended for human or animal diagnostic or therapeutic uses.

Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

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End of SDS

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