



MATERIAL SAFETY DATA SHEET

SDS/MSDS

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

1.1 Product identifiers

Product name : **NITROBENZENE**

CAS-No. : 98-95-3

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

Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet

Company Bio-Chem Chemicals
5455 Nicholson Road, Science Market
Ambala Cantt, 133001 - Haryana
+91 82952 41953
info@biofinechemical.com - www.biofinechemical.com

1.4 Emergency telephone number

Emergency Phone # +91 99921 51495 (10.00am - 06.30pm) (Office Hours)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 3), H301

Acute toxicity, Inhalation (Category 3), H331 Acute toxicity, Dermal (Category 3), H311 Carcinogenicity (Category 2), H351 Reproductive toxicity (Category 1B), H360F

Specific target organ toxicity - repeated exposure (Category 1), Blood, H372 Chronic aquatic toxicity (Category 3), H412

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

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Hazard statement(s)

H301 + H311 + H331

Toxic if swallowed, in contact with skin or if inhaled

H351

Suspected of causing cancer.

H360F

May damage fertility.

H372

Causes damage to organs (Blood) through prolonged or repeated exposure.

H412

Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201

Obtain special instructions before use.

P280

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

P301 + P330 + P331 + P310

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON

CENTER or doctor/ physician.

P302 + P352 + P312 IF ON SKIN: Wash with plenty of water.
P304 + P340 + P311 Call a POISON CENTER or doctor/ physician if you feel unwell.
P308 + P313 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/ attention.
Supplemental Hazard Statements : NONE

2.3 Other hazards

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. Rapidly absorbed through skin.

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula : C₆H₅NO₂
Molecular weight : 123,11 g/mol
CAS-No. : 98-95-3
EC-No. : 202-716-0
Index-No. : 609-003-00-7

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component Classification Concentration

Nitrobenzene

CAS-No. 98-95-3 Acute Tox. 3; Carc. 2; Repr. <= 100 %
EC-No. 202-716-0 1B; STOT RE 1; Aquatic
Index-No. 609-003-00-7 Chronic 3; H301, H331, H311,
H351, H360F, H372, H412

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

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 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

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO_x)

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations.

Vapours can accumulate in low areas.

For personal protection see section 8.

6.2 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.

6.3 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 (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. 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.

Store under nitrogen.

Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eyeface protection

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

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.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- a) Appearance Form: liquid, clear Colour: colourless, yellow
- b) Odour: pungent
- c) Odour Threshold : No data available
- d) pH 8,0 - 8,5 at 1,00000 g/l at 20,0 °C
- e) Melting point/freezingPoint : Melting point/range: 5 - 6 °C - lit. point
- f) Initial boiling point and boiling range : 210 - 211 °C - lit.
- g) Flash point 88,0 °C - closed cup
- h) Evaporation rate No data available
- i) Flammability (solid, gas) No data available
- j) Upper/lower Upper explosion limit: 40 %(V)
flammability or Lower explosion limit: 1,8 %(V)
explosive limits
- k) Vapour pressure 66,7 hPa at 120,0 °C
0,3 hPa at 20,0 °C
- l) Vapour density No data available
- m) Relative density 1,196 g/cm³ at 25 °C
- n) Water solubility 1,9 g/l at 20 °C
- o) Partition coefficient: n- log Pow: 1,86 at 24,5 °C
octanol/water
- p) Auto-ignition temperature : 482,0 °C
- q) Decomposition temperature : No data available
- r) Viscosity No data available
- s) Explosive properties No data available
- t) Oxidizing properties No data available

9.2 Other safety information

Surface tension 43,4 mN/m at 20,0 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents, Strong reducing agents, Strong bases

10.6 Hazardous decomposition products

Other decomposition products - No data available In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male - 588 mg/kg

LC50 Inhalation - Rat - 4 h - 556 ppm

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Lacrimation. Behavioral:Tremor. Cyanosis

LD50 Dermal - Rabbit - 760 mg/kg

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

Respiratory or skin sensitisation

- Mouse

Result: Did not cause sensitisation on laboratory animals. (OECD Test Guideline 429)

Germ cell mutagenicity

unscheduled DNA synthesis assay rat hepatocytes

Result: negative

OECD Test Guideline 474 Mouse - male and female Result: negative

Carcinogenicity

Suspected human carcinogens

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Nitrobenzene)

Reproductive toxicity

Presumed human reproductive toxicant

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Inhalation - Causes damage to organs through prolonged or repeated exposure. - Blood Inhalation - Blood

Aspiration hazard

No data available

Additional Information

Repeated dose Rat - male and female - Oral - 28 d - LOAEL : 5 mg/kg toxicity

Rat - male and female - Inhalation - 14 d - NOAEL : 0,625 mg/l - LOAEL : < 0,05 mg/l - OECD Test Guideline 412 RTECS: DA6475000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., Exposure to and/or consumption of alcohol may increase toxic effects.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish

Toxicity to daphnia and

other aquatic

invertebrates

Toxicity to algae

flow-through test LC50 - Danio rerio (zebra fish) - 92 mg/l - 96,0 h

(OECD Test Guideline 203)

static test EC50 - Daphnia magna (Water flea) - 35 mg/l - 48 h

Growth inhibition EC50 - Chlorella pyrenoidosa - 18 mg/l - 96 h (OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 14 d

Result: 3,3 % - Not readily biodegradable.

(OECD Test Guideline 301C)

12.3 Bioaccumulative potential

Bioaccumulation Cyprinus carpio (Carp) - 42 d

at 25 °C - 0,125 mg/l

Bioconcentration factor (BCF): 3,1 - 4,8 (OECD Test Guideline 305C)

12.4 Mobility in soil

No data available

12.5 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.

12.6 Other adverse effects

Harmful to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1662 IMDG: 1662 IATA: 1662

14.2 UN proper shipping name

ADR/RID: NITROBENZENE

IMDG: NITROBENZENE

IATA: Nitrobenzene

14.3 Transport hazard class(es)

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

14.4 Packaging group

ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards

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

14.6 Special precautions for user

No data available

SECTION 15: Regulatory information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use

REACH - Restrictions on the manufacture, placing on : 202-716-0

the market and use of certain dangerous substances, preparations and articles (Annex XVII)

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H301 Toxic if swallowed.

H301 + H311 + Toxic if swallowed, in contact with skin or if inhaled

H331

H311 Toxic in contact with skin.

H331 Toxic if inhaled.

H351 Suspected of causing cancer.

H360F May damage fertility.

H372 Causes damage to organs (/\$/*_ORGAN_REPEAT/\$/) through prolonged or repeated exposure.

H412 Harmful to aquatic life with long lasting effects.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.