NITROBENZENE CAS NO 98-95-3	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 : Pallav Chemicals & Solvents Pvt. Ltd
253, Shiv Shakti Industrial Estate, Opp Mittal Estate
Andheri Kurla Road, Andheri (E), Mumbai - 400050
INDIA

Telephone : +91 22 4928 4000
Email : sales@pallavchemicals.com

1.4 Emergency telephone number

Emergency Phone # : +91 22 4928 4000 (9:00am - 6:00 pm) [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 (NOx)

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
Eye/face 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. Pallav Chemicals & Solvents Pvt. Ltd. and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.pallavchemicals.com for additional terms and conditions of sale.