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| DI-N-BUTYL MALEATE CAS NO 105-76-0 | MATERIAL SAFETY DATA SHEET SDS/MSDS |
|---|--|

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

1.1 Product identifiers

Product name : Di-n-Butyl Maleate

CAS-No. : 105-76-0

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 : Central Drug House (P) Ltd
7/28 Vardaan House
Ansari Road Daryaganj
New Delhi -110002
INDIA

Telephone : +91 11 49404040

Email : care@cdhfinechemical.com

1.4 Emergency telephone number

Emergency Phone # : +91 11 49404040 (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

Skin sensitisation (Category 1), H317

Specific target organ toxicity - repeated exposure (Category 2), H373

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

Pictogram



Signal word

Warning

Hazard statement(s)

H317

May cause an allergic skin reaction.

H373

May cause damage to organs through prolonged or repeated exposure.

Precautionary statement(s)

P280

Wear protective gloves.

Supplemental Hazard

none

Statements

2.3 Other hazards - none

SECTION 3: Composition/information on ingredients

3.1 Substances

| | | |
|------------------|---|--|
| Formula | : | C ₁₂ H ₂₀ O ₄ |
| Molecular weight | : | 228.29 g/mol |
| CAS-No. | : | 105-76-0 |
| EC-No. | : | 203-328-4 |

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

| Component | | Classification | Concentration |
|------------------------|-----------|--------------------------|---------------|
| Dibutyl maleate | | | |
| CAS-No. | 105-76-0 | Skin Sens. 1; STOT RE 2; | <= 100 % |
| EC-No. | 203-328-4 | H317, H373 | |

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. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

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

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe 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.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. 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 contact with skin and eyes. Avoid inhalation of vapour or mist.
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.
Storage class (TRGS 510): Combustible liquids not in Storage Class 3

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

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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 (US) or type ABEK (EN 14387) respirator cartridges as a backup to engine 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---------------|---|
| a) Appearance | Form: clear, liquid Colour: colourless |
|---------------|---|

| | |
|---|--|
| b) Odour | ester-like |
| c) Odour Threshold | No data available |
| d) pH | No data available |
| e) Melting point/freezing point | Melting point/range: -85 °C at 1,013 hPa |
| f) Initial boiling point and boiling range | 281 °C - lit. |
| g) Flash point | 138 °C - closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | 0.0027 hPa at 20 °C - OECD Test Guideline 104 |
| l) Vapour density | 7.88 - (Air = 1.0) |
| m) Relative density | 0.988 g/cm ³ at 25 °C - lit. |
| n) Water solubility | slightly soluble |
| o) Partition coefficient: n-octanol/water | log Pow: 3.39 at 25 °C - OECD Test Guideline 117 |
| p) Auto-ignition temperature | 265 °C at 1,013 hPa |
| 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

Relative vapour density 7.88 - (Air = 1.0)

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

No data available

10.5 Incompatible materials

Strong oxidizing agents, Strong bases

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

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 and female - \geq 3,730 mg/kg(Dibutyl maleate)
LC50 Inhalation - Rat - male and female - $>$ 5,000 mg/m³(Dibutyl maleate)
(OECD Test Guideline 403)
LD50 Dermal - Rabbit - male and female - $>$ 2,000 mg/kg(Dibutyl maleate)
(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit(Dibutyl maleate)
Result: Mild skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit(Dibutyl maleate)
Result: Mild eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation

Maximisation Test - Guinea pig(Dibutyl maleate)
May cause sensitisation by skin contact.

Germ cell mutagenicity

in vitro assay(Dibutyl maleate)
S. typhimurium
Result: negative
Mutagenicity (micronucleus test)(Dibutyl maleate)
Mouse - male and female
Result: negative

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available(Dibutyl maleate)

Specific target organ toxicity - single exposure

No data available(Dibutyl maleate)

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.
Oral - Kidney - Kidney disorders(Dibutyl maleate)

Aspiration hazard

No data available(Dibutyl maleate)

Additional Information

Repeated dose toxicity - Rat - male and female - Oral(Dibutyl maleate)
RTECS: ON0875000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(Dibutyl maleate)

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish static test LC50 - Oncorhynchus mykiss (rainbow trout) - 1.2 mg/l - 96 h(Dibutyl maleate)
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 21 mg/l - 18 h(Dibutyl maleate) (OECD Test Guideline 202)

Toxicity to algae static test EC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - 6.2 mg/l - 72 h(Dibutyl maleate) (OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 19 d(Dibutyl maleate)
Result: 95 % - Readily biodegradable
Remarks: No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available(Dibutyl maleate)

12.5 Results of PBT and vPvB assessment

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

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

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: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no 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.

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.

H317 May cause an allergic skin reaction.

H373 May cause damage to organs through prolonged or repeated exposure.

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. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.