

MATERIAL SAFETY DATA SHEET

ADAKEM KİMYA SAN VE TİC LTD ŞTİ

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1. IDENTIFICATION

General

Product Name : DIBUTYL MALEATE
Other Names : DIBUTYL ESTER, D-N-BUTYL MALEATE
UN No. :N/A
Dangerous Goods Class : C.2
Subsidiary Risk : None Allocated
Hazchem Code : N/A
Pack Group : 0
EPG : N/A
Poisons Schedule : N/A

Uses:

Maleic acid dibutyl esters are useful intermediates, for such purposes as the preparation of copolymers for emulsion paints, adhesives and for the production of films. Maleic acid dibutyl esters undergo the addition reactions which are customary for olefinic double bonds in Diels Alder diene synthesis. Hydrogenation or acetylation form effective intermediates which, like succinic acid dimethyl ester and other derivatives of succinic acid, are used in widely varied fields or organic synthesis.

1.1 Physical Description / Properties

Appearance: Colourless liquid
Formula: C₁₂H₂₀O₄
Boiling Point: 280 deg C
Melting Point: -85 deg C
Vapour Pressure: <1hPa mm Hg (1 atmosphere)
Specific Gravity :0.99 (water = 1)Flash Point: Test Unknown 141
pH : Not available ()
Solubility in water: 0.173 g/1 (25 deg C)
Flammability Limits (as percentage volume in air)
Lower Explosion Limit: 0.5
Upper Explosion Limit: 3.4

1.2 Other Properties

Ignition temperature: 280 deg C Danger of explosion: Product does not present an explosion hazard. Density at 20 deg C: 0.994g/cm³ Segregation coefficient (n-octanol/water): tog Pow: 3.38 Viscosity: dynamic at 20 deg C: 5.76mPas Hydrolysis half-life: (pH 7.25deg C) 2870 h

1.3 Ingredients

Chemical entity : Dibutyl Maleate
CAS no : 105-76-0
Proportions % : 100

2. HEALTH HAZARD INFORMATION

2.1 Health Effects - Acute

Swallowed

May cause irritation to the gastrointestinal tract.

Eye

Causes irritation to eyes.

Skin

Causes irritation to the skin.

Inhaled

Causes irritation of the respiratory tract.

2.2 Health Effects - Chronic

No information available.

2.3 First Aid

Swallowed

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Eye

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes, occasionally lifting upper and lower eyelids. Seek medical attention.

Skin

In case of contact, immediately flush skin with soap and water. Remove all contaminated clothing. Wash clothes before reuse. Seek medical aid.

Inhaled

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Seek medical aid.

First Aid Facilities

Ensure an eye bath and safety shower is readily available.

2.5 Advice to Doctor

Treat symptomatically and supportively.

2.6 Toxicity Data

Oral LD50 = 3700mg/kg (rat) Dermal LD50 = 10000mg/kg (kaninchen) Inhalative LC50/4 h>5mg/l (rat)

Genotoxicity: Negative Ames-test: No mutagenic potential (literature) Micronucleus-test: No mutagenic potential (literature)

3. PRECAUTIONS FOR USE

3.1 Exposure Standards

None established

3.2 Engineering Controls

Ensure adequate ventilation system to keep exposure standards at a minimum.

3.3 Personal Protection

Respiratory protection: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device. Hand protection: wear protective Butyl rubber, BR Fluorocarbon rubber (Viton) Body protection: wear protective work clothing Media resistant protective clothing.

3.4 Flammability

Product is combustible.

4. SAFE HANDLING INFORMATION

4.1 Storage / Transport

Keep containers tightly closed. Store in a cool, dry place. Avoid contact with incompatible materials such as strong oxidising agents and strong bases.

4.2 Packaging / Labelling

UN No. N/A

Class C.2

Sub Risk None Allocated

Hazchem Code N/A

Pack Group 0

EPG No. N/A

Shipping Name DIBUTYL MALEATE

Hazard IRRITANT

Risk Phrases

R36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases

526 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

527 Take off immediately all contaminated clothing.

4.3 Spills and Disposal

Spills

Wear protective equipment. Keep unprotected persons away. Do not allow to enter sewers, surface or around water. Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Disposal

After prior treatment product has to be disposed of in an incinerator for hazardous waste adhering to the regulations pertaining to the disposal of particularly hazardous waste. Dispose of in accordance with all regulations. Packagings that may not be cleansed are to be disposed of in the same manner as the product.

4.4 FIRE AND EXPLOSION HAZARD

Fire / Explosion

Product is combustible. Can form explosive gas-air mixtures. Vapors are heavier than air, they may travel to source of ignition and flash back. Emits toxic fumes such as carbon monoxide under fire conditions Avoid contact with incompatibles such as strong oxidising agents and strong bases

Extinguishing Media

Fire fighters should wear full protective equipment including self-contained breathing apparatus. Use CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5. OTHER INFORMATION

Aquatic toxicity: Toxicity for fish: LC₅₀(48h) 1.2mg/l (Regenbogenforelle) LC₅₀ (72h) 6.2mg/l
Leuciscus idus
Toxicity for algae: EC₅₀ (72h) 6.2mg/l (Scenedesmus subspicatus) Toxicity for Daphnia: EC
50 (48h) 21mg/l
(Daphnia magna) EC₅₀:15mg/l Daphnia magna

5.1 Contact Points:

TEL : ++0216-330 92 00

FAX: ++0216-330 91 81