

MALEIC ANHYDRIDE

0799

October 2005

CAS No: 108-31-6
 RTECS No: ON3675000
 UN No: 2215
 EC No: 607-096-00-9

2,5-Furandione
 Dihydro-2,5-dioxofuran
 Maleic acid anhydride
 cis-Butenedioic anhydride
 $C_4H_2O_3$
 Molecular mass: 98.1

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Combustible.	NO open flames.	Water spray. Alcohol-resistant foam. Carbon dioxide. NO powder.
EXPLOSION	Finely dispersed particles form explosive mixtures in air.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	

EXPOSURE		STRICT HYGIENE! PREVENT DISPERSION OF DUST!	
Inhalation	Burning sensation. Cough. Sore throat. Shortness of breath. Wheezing.	Local exhaust or breathing protection.	Fresh air, rest. Half-upright position. Refer for medical attention.
Skin	Dry skin. Redness. Pain. (See Notes).	Protective gloves. OR Heat-insulating gloves. See Notes. Protective clothing.	First rinse with plenty of water, then remove contaminated clothes and rinse again.
Eyes	Redness. Pain. Burns.	Safety goggles or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion	Nausea. Abdominal pain. Burning sensation. Vomiting. Diarrhoea.	Do not eat, drink, or smoke during work.	Rinse mouth. Give plenty of water to drink. Do NOT induce vomiting. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Personal protection: P3 filter respirator for toxic particles. Chemical protection suit. Use face shield. Thermal gloves. See Notes. Sweep spilled substance into covered containers.	C Symbol R: 22-34-42/43 S: (2-)22-26-36/37/39-45 UN Hazard Class: 8 UN Pack Group: III Airtight. Do not transport with food and feedstuffs.

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-80S2215-S NFPA Code: H3; F1; R1	Dry. Separated from strong oxidants, strong bases, food and feedstuffs.

IMPORTANT DATA

Physical State; Appearance

COLOURLESS OR WHITE CRYSTALS, WITH PUNGENT ODOUR.

Chemical dangers

The solution in water is a medium strong acid. Reacts with strong bases and strong oxidants.

Occupational exposure limits

TLV: 0.1 ppm as TWA; A4 (not classifiable as a human carcinogen); SEN; (ACGIH 2005).

MAK: 0.1 ppm, 0.41 mg/m³; sensitization of respiratory tract and skin (Sah); Peak limitation category: I(1); Pregnancy risk group: C; (DFG 2005).

Routes of exposure

The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

Inhalation risk

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20/C.

Effects of short-term exposure

The substance is severely irritating to the eyes, the skin and the respiratory tract. Inhalation of the substance may cause asthma-like reactions.

Effects of long-term or repeated exposure

Repeated or prolonged contact may cause skin sensitization. Repeated or prolonged inhalation exposure may cause asthma.

PHYSICAL PROPERTIES

Boiling point: 202/C
Melting point: 53/C
Density: 1.5 g/cm³
Solubility in water: reaction
Vapour pressure, Pa at 25/C: 25

Relative vapour density (air = 1): 3.4
Flash point: 102/C c.c.
Auto-ignition temperature: 477/C
Explosive limits, vol% in air: 1.4-7.1

ENVIRONMENTAL DATA

NOTES

Reacts violently with fire extinguishing agents such as powder.

Depending on the degree of exposure, periodic medical examination is suggested.

The symptoms of asthma often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.

Anyone who has shown symptoms of asthma due to this substance should avoid all further contact with this substance.

Maleic anhydride is transported also as hot liquid (70/C); contact of the skin should be avoided.

The odour warning when the exposure limit value is exceeded is insufficient.

ADDITIONAL INFORMATION

LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible for the use which might be made of this information