EN

**** MATERIAL SAFETY DATA SHEET ****

Maleic anhydride, 99%

**** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ****

MSDS Name: Maleic anhydride, 99%
Catalog Numbers:
36494-0000, 36494-0010, 36494-0050, 36494-0250
Synonyms:
MA2,5-Furandione
Company Identification (Europe): Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium
Company Identification (USA): Acros Organics
One Reagent Lane
Fairlawn, NJ 07410
For information in North America, call: 800-ACROS-01
For information in Europe, call: 0032(0) 14575211
For emergencies in the US, call CHEMTREC: 800-424-9300
For emergencies in Europe, call: 0032(0) 14575299

**** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ****

| CAS# | Chemical Name | % | EINECS# | Haz Symbols | Risk Phrases |
|---|---|---|---|---|---|
| 108-31-6 | Maleic anhydride | 99% | 203-571-6 | | |

Hazard Symbols: C
Risk Phrases: 22 34 42/43

**** SECTION 3 - HAZARDS IDENTIFICATION ****

EMERGENCY OVERVIEW

Harmful if swallowed. Causes burns. May cause sensitization by inhalation and skin contact.Moisture sensitive.

Potential Health Effects

Eye:
Causes eye burns. May cause conjunctivitis. Causes redness and pain.

Skin:
Causes skin burns. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Causes redness and pain. May cause blistering of the skin.

Ingestion:
Harmful if swallowed. Causes gastrointestinal tract burns.

Inhalation:
May cause allergic respiratory reaction. May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Causes chemical burns to the respiratory tract.

Chronic:
Repeated exposure may cause allergic respiratory reaction (asthma). Prolonged or repeated contact may cause possible eczema.

**** SECTION 4 - FIRST AID MEASURES ****

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin:
Get medical aid immediately. Immediately flush skin with plenty of

water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion:
Get medical aid immediately. Wash mouth out with water.

Inhalation:
Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician:
Treat symptomatically and supportively.

**** SECTION 5 - FIRE FIGHTING MEASURES ****

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air.

Extinguishing Media:
Use carbon dioxide. Use alcohol foam. Do NOT use dry powder.

**** SECTION 6 - ACCIDENTAL RELEASE MEASURES ****

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Vacuum or sweep up material and place into a suitable disposal container.

**** SECTION 7 - HANDLING and STORAGE ****

Handling:
Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes. Take precautionary measures against static discharges.

Storage:
Store in a cool, dry place. Store in a tightly closed container. Store protected from moisture.

**** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ****

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Personal Protective Equipment

Eyes:
Wear chemical goggles.

Skin:
Wear appropriate protective gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

**** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ****

| | |
|---|---|
| Physical State: | Flakes |
| Color: | white |
| Odor: | pungent odor |
| pH: | Not available. |

Vapor Pressure: 0.16 mm Hg @ 20 deg C
Viscosity: 1.6 mPa.s @60 deg C
Boiling Point: 200 deg C @ 760 mmHg
Freezing/Melting Point: 52-55 deg C
Autoignition Temperature: 477 deg C ( 890.60 deg F)
Flash Point: 103 deg C ( 217.40 deg F)
Explosion Limits, lower: 1.40 vol %
Explosion Limits, upper: 7.10 vol %
Decomposition Temperature: >150 deg C
Solubility in water: 79g/100ml in water (25•C)
Specific Gravity/Density:
Molecular Formula: C4H2O3
Molecular Weight: 98.06

**** SECTION 10 - STABILITY AND REACTIVITY ****

Chemical Stability:
Stable.
Conditions to Avoid:
Incompatible materials, ignition sources, dust generation, exposure to moist air or water.
Incompatibilities with Other Materials:
Strong oxidizing agents, strong reducing agents, strong acids, strong bases, alkali metals, alkaline earth metals, amines, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), triethylamine, pyridine, ammonium ions.
Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

**** SECTION 11 - TOXICOLOGICAL INFORMATION ****

RTECS#:
CAS# 108-31-6: ON3675000
LD50/LC50:
CAS# 108-31-6: Dermal, guinea pig: LD50 = >20 gm/kg; Draize test, rabbit, eye: 1% Severe; Oral, mouse: LD50 = 465 mg/kg; Oral, rabbit: LD50 = 875 mg/kg; Oral, rat: LD50 = 400 mg/kg; Skin, rabbit: LD50 = 2620 mg/kg.
Carcinogenicity:
Maleic anhydride -
Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
See actual entry in RTECS for complete information.

**** SECTION 12 - ECOLOGICAL INFORMATION ****

Ecotoxicity:
Fish: Mosquito Fish: LC50 = 240 mg/l; 96 H; .Fish: Bluegill/Sunfish: LC50 = 150 mg/l; 24 H; .Bacteria: Phytobacterium phosphoreum: EC50 = 44 ppm; 30 min.; Microtox testDaphnia: LC50 = 330 mg/l; 48 H; .Fish: Rainbow trout: LC50 = 75 mg/l; 96 H; .
Other
Do not empty into drains.

**** SECTION 13 - DISPOSAL CONSIDERATIONS ****

Dispose of in a manner consistent with federal, state, and local regulations.

**** SECTION 14 - TRANSPORT INFORMATION ****

IATA
Shipping Name: MALEIC ANHYDRIDE
Hazard Class: 8
UN Number: 2215
Packing Group: III
IMO

Shipping Name: MALEIC ANHYDRIDE
Hazard Class: 8
UN Number: 2215
Packing Group: III
RID/ADR
Shipping Name: MALEIC ANHYDRIDE
Hazard Class: 8
UN Number: 2215
Packing group: III
USA RQ:CAS# 108-31-6: 5000 lb final RQ; 2270 kg final RQ

**** SECTION 15 - REGULATORY INFORMATION ****

European/International Regulations
European Labeling in Accordance with EC Directives
Hazard Symbols: C
Risk Phrases:
R 22 Harmful if swallowed.
R 34 Causes burns.
R 42/43 May cause sensitization by inhalation and skin contact.
Safety Phrases:
S 22 Do not breathe dust.
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
WGK (Water Danger/Protection)
CAS# 108-31-6: 1
United Kingdom Occupational Exposure Limits

United Kingdom Maximum Exposure Limits
CAS# 108-31-6: MEL-United Kingdom, TWA 1 mg/m3 TWA
CAS# 108-31-6: MEL-United Kingdom, STEL 3 mg/m3 STEL
Canada
CAS# 108-31-6 is listed on Canada's DSL List.
CAS# 108-31-6 is listed on Canada's Ingredient Disclosure List.
Exposure Limits
CAS# 108-31-6: OEL-AUSTRALIA:TWA 0.25 ppm (1 mg/m3)
OEL-BELGIUM:TWA 0.25 ppm (1 mg/m3)
OEL-CZECHOSLOVAKIA:TWA 1 mg/m3;STEL 1 mg/m3
OEL-DENMARK:TWA 0.2 ppm (0.8 mg/m3)
OEL-FINLAND:TWA 0.25 ppm (1 mg/m3);STEL 0.75 ppm (3 mg/m3);Skin
OEL-FRANCE:STEL 1 mg/m3
OEL-GERMANY:TWA 0.2 ppm (0.8 mg/m3)
OEL-HUNGARY:TWA 1 mg/m3;STEL 2 mg/m3
OEL-THE NETHERLANDS:TWA 0.25 ppm (1 mg/m3)
OEL-THE PHILIPPINES:TWA 0.25 ppm (1 mg/m3)
OEL-RUSSIA:STEL 1 mg/m3
OEL-SWEDEN:TWA 0.3 ppm (1.2 mg/m3);STEL 0.6 ppm (2.5 mg/m3)
OEL-SWITZERLAND:TWA 0.2 ppm (0.8 mg/m3);STEL 0.4 ppm (1.6 mg/m3)
OEL-UNITED KINGDOM:TWA 0.25 ppm (1 mg/m3)
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV
US FEDERAL
TSCA
CAS# 108-31-6 is listed on the TSCA inventory.

**** SECTION 16 - ADDITIONAL INFORMATION ****

MSDS Creation Date: 11/21/2001 Revision #0 Date: Original.

The information above is believed to be accurate and represents the best

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