



chemists helping chemists in research & industry

**aldrich chemical co.**

P.O. Box 355, Milwaukee, Wisconsin 53201 USA

Telephone: (414) 273-3850  
TWX: (910) 262-3052 Aldrichem MI  
Telex: 26 843 Aldrich MI  
FAX: (414) 273-4979

FEB 11 1991

*Chemistry*

ATTN: SAFETY DIRECTOR  
UNIVERSITY OF WISCONSIN-WHITEWATER  
800 W MAIN ST

WHITEWATER WI 53190  
JOYCE KILBY/RISK MRMNT & SAFETY

DATE: 02/05/91  
CUST#: 523216  
PO#: LETTER 1/31/91

M A T E R I A L   S A F E T Y   D A T A   S H E E T PAGE 1

IDENTIFICATION

PRODUCT #: M18-8 NAME: MALEIC ANHYDRIDE, BRIQUETTES, 99%  
CAS #: 108-31-6  
MF: C4H2O3

SYNONYMS

ANHYDRID KYSELINY MALEINOVE (CZECH) \* CIS-BUTENEDIOIC ANHYDRIDE \* 2,5-FURANDIONE \* MALEIC ACID ANHYDRIDE \* MALEIC ANHYDRIDE (ACGIH, DOT, OSHA) \* MALEINANHYDRID (CZECH) \* TOXILIC ANHYDRIDE \* RCRA WASTE NUMBER U147 \* UN 2215 (DOT) \*

TOXICITY HAZARDS

RTECS NO: DN3675000  
MALEIC ANHYDRIDE

IRRITATION DATA

EYE-RBT 1% SEV

AJOPAA 29,1363,46

TOXICITY DATA

ORL-RAT LD50:400 MG/KG  
IPR-RAT LD50:97 MG/KG  
ORL-MUS LD50:465 MG/KG  
ORL-RBT LD50:875 MG/KG  
SKN-RBT LD50:2620 MG/KG  
ORL-GPG LD50:390 MG/KG

IAEC\*\* 17JUN74  
85GMAT -,79,82  
GTPZAB 13(4),42,69  
85GMAT -,79,82  
TXAPA9 42,417,77  
85GMAT -,79,82

REVIEWS, STANDARDS, AND REGULATIONS

ACGIH TLV-TWA 0.25 PPM 85INAB 5,353,86  
MSHA STANDARD-AIR: TWA 0.25 PPM (1 MG/M3) DTLVS\* 3,148,71  
OSHA PEL: 8H TWA 0.25 PPM (1 MG/M3) FEREAC 54,2923,89  
OSHA PEL FINAL: 8H TWA 0.25 PPM (1 MG/M3) FEREAC 54,2923,89  
NOHS 1974: HZD 43660; NIS 51; TNF 5310; NOS 69; TNE 71386  
NOES 1983: HZD 43660; NIS 45; TNF 3244; NOS 57; TNE 51069; TFE 9968  
EPA TSCA CHEMICAL INVENTORY, JUNE 1990  
EPA TSCA 8(A) PRELIMINARY ASSESSMENT INFORMATION, FINAL RULE FEREAC 47,26992,82  
EPA TSCA SECTION 8(E) STATUS REPORT 8EHQ-0979-0311; 8EHQ-0278-0063  
ON EPA IRIS DATABASE  
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, SEPTEMBER 1990  
OSHA ANALYTICAL METHOD #25

TARGET ORGAN DATA

TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)  
TUMORIGENIC (TUMORS AT SITE OF APPLICATION)

ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION.

HEALTH HAZARD DATA

ACUTE EFFECTS

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.

CONTINUED ON NEXT PAGE

Belgium/Holland  
Aldrich Chemie  
Boulevard Lambertoni 140 b6  
Bd. Lambertoni 140 b6  
B-1030 Bruxelles/Brussel  
Telephone:  
Belgium 114747  
Holland 060224748  
Telex: 62302 Alchem B  
FAX: 022428216

France  
Aldrich-Chimie S.a.r.l.  
27, Fosse des Treize  
F-67000 Strasbourg  
Telephone: 89327010  
Telex: 890076 Aldrich F  
FAX: 89751283

Italy  
Aldrich Chimica S.r.l.  
Via Pietro Toselli, 4  
20127 Milano  
Telephone: 022613689  
Telex: 330862 Aldrich I  
FAX: 022896301

Japan  
Aldrich Japan  
Kyodo Bldg. Shinkanda  
10 Kanda-Mikuracho  
Chiyoda-Ku, Tokyo  
Telephone: 032580155  
FAX: 032580157

Spain  
Aldrich Quimica  
Apt. de Correos 161  
28100 Alcobendas (Madrid)  
Telephone: 916639977  
Telex: 22189 SAQS-E  
FAX: 916638084

United Kingdom  
Aldrich Chemical Co., Ltd.  
The Old Brickyard, New Road  
Gillingham, Dorset SP8 4JL  
Telephone: 0747822211  
Telex: 417238 Aldrich G  
FAX: 0747823779

West Germany  
Aldrich-Chemie GmbH & Co. KG  
D-7924 Steinheim  
Telephone: 7329870  
Telex: 714838 Aldri D  
FAX: 0732987139/239



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PAGE 2

CUST#: 523216  
PO#: LETTER 1/31/91

PRODUCT #: M18-8  
CAS #: 108-31-6  
MF: C4H2O3

NAME: MALEIC ANHYDRIDE, BRIQUETTES, 99%

----- HEALTH HAZARD DATA -----

MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES AND SKIN. INHALATION MAY BE FATAL AS A RESULT OF SPASM, INFLAMMATION AND EDEMA OF THE LARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND PULMONARY EDEMA. SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND VOMITING. CAUSES SNEEZING. DO NOT INHALE.

CHRONIC EFFECTS

ASTHMA  
DERMATITIS  
PULMONARY EDEMA. EFFECTS MAY BE DELAYED.  
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

FIRST AID

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES.  
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.  
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN.  
WASH CONTAMINATED CLOTHING BEFORE REUSE.

----- PHYSICAL DATA -----

BOILING PT: 200 C  
MELTING PT: 54 C TO 56 C  
VAPOR DENSITY: 3.4  
VAPOR PRESSURE: .16 MM @ 20 C  
1 MM @ 44 C

APPEARANCE AND ODOR

WHITE CRYSTALLINE BRIQUETTES

----- FIRE AND EXPLOSION HAZARD DATA -----

FLASHPOINT: 218 F  
AUTOIGNITION TEMPERATURE: 870 F  
LOWER EXPLOSION LEVEL: 1.4%  
UPPER EXPLOSION LEVEL: 7.1%

EXTINGUISHING MEDIA

WATER SPRAY.

CONTINUED ON NEXT PAGE

Belgium/Holland  
Aldrich Chemie  
Boulevard Lambertlan 140 b6  
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Telephone:  
Belgium 114747  
Holland 060224748  
Telex: 62302 Alchem B  
FAX: 022428216

France  
Aldrich-Chimie S.a.r.l.  
27, Fosse des Treize  
F-67000 Strasbourg  
Telephone: 88327010  
Telex: 890076 Aldrich F  
FAX: 88751283

Italy  
Aldrich Chimica S.r.l.  
Via Pietro Toselli, 4  
20127 Milano  
Telephone: 022613689  
Telex: 330862 Aldrich I  
FAX: 022896301

Japan  
Aldrich Japan  
Kyodo Bldg, Shinkanda  
10 Kanda-Mikuracho  
Chiyoda-Ku, Tokyo  
Telephone: 032580155  
FAX: 032580157

Spain  
Aldrich Quimica  
Apt. de Correos 161  
28100 Alcobendas (Madrid)  
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FAX: 916638084

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----- FIRE AND EXPLOSION HAZARD DATA -----

CARBON DIOXIDE.

DO NOT USE DRY CHEMICAL POWDER EXTINGUISHER ON THIS MATERIAL.

SPECIAL FIREFIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSION HAZARDS

THIS MATERIAL, LIKE MOST MATERIALS IN POWDER FORM, IS CAPABLE OF CREATING A DUST EXPLOSION.

----- REACTIVITY DATA -----

INCOMPATIBILITIES

STRONG OXIDIZING AGENTS

STRONG ACIDS

STRONG BASES

STRONG REDUCING AGENTS

ALKALI METALS

AMINES

MAY DECOMPOSE ON EXPOSURE TO MOIST AIR OR WATER.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

TOXIC FUMES OF:

CARBON MONOXIDE, CARBON DIOXIDE

----- SPILL OR LEAK PROCEDURES -----

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

EVACUATE AREA.

WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY

RUBBER GLOVES.

SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.

AVOID RAISING DUST.

VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.

WASTE DISPOSAL METHOD

DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A

CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER.

OBSERVE ALL FEDERAL, STATE, AND LOCAL LAWS.

--- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE ---

WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING.

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Belgium/Holland  
Aldrich Chemie  
Boulevard Lambertmont 140 b6  
Bd. Lambertmontaan 140 b6  
B-1030 Bruxelles/Brussel  
Telephone:  
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Italy  
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NAME: MALEIC ANHYDRIDE, BRIQUETTES, 99%

--- PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE ---

SAFETY SHOWER AND EYE BATH.  
USE ONLY IN A CHEMICAL FUME HOOD.  
DO NOT BREATHE DUST.  
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.  
AVOID PROLONGED OR REPEATED EXPOSURE.  
WASH THOROUGHLY AFTER HANDLING.  
CORROSIVE.  
TOXIC.  
STERNUTATOR.  
HARMFUL SOLID.  
KEEP TIGHTLY CLOSED.  
MOISTURE SENSITIVE  
STORE IN A COOL DRY PLACE.

REGULATORY INFORMATION  
THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS.

----- ADDITIONAL PRECAUTIONS AND COMMENTS -----

ADDITIONAL INFORMATION

CAUTION: MALEIC ANHYDRIDE DECOMPOSES (DECARBOXYLATION AND POLYMERIZATION) IN THE PRESENCE OF THE ALKALI METALS OR AMINES AT TEMPERATURES ABOVE 150 C. THE CONCENTRATION OF THESE IMPURITIES NECESSARY TO TRIGGER THE DECOMPOSITION IS AS LOW AS 200 PPM. THE EXOTHERMIC REACTION WILL TAKE PLACE RAPIDLY AND THE GAS WHICH IS EVOLVED CAN CAUSE EQUIPMENT TO RUPTURE.

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**ALDRICH**



**Belgium/Holland**  
Aldrich Chemie  
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