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S A F E T Y D A T A S H E E T

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #:	01181
NAME:	MALEIC ACID
SYNONYMS:	cis-Butenedioic acid
24 HOUR EMERGENCY TELEPHONE:	(800) 535-5053(USA) 352-323-3500 (INTERNATIONAL)
TO REQUEST AN MSDS:	(800) 869-9290
CUSTOMER SERVICE:	(630) 766-2112

SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)

ACUTE TOXICITY, ORAL (CATEGORY 4), H302
ACUTE TOXICITY, DERMAL (CATEGORY 4), H312
SKIN CORROSION (CATEGORY 1B), H314
SERIOUS EYE DAMAGE (CATEGORY 1), H318
SKIN SENSITISATION (CATEGORY 1), H317
ACUTE AQUATIC TOXICITY (CATEGORY 3), H402

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS
PICTOGRAM**



SIGNAL WORD DANGER

HAZARD STATEMENT(S)

H302 + H312	HARMFUL IF SWALLOWED OR IN CONTACT WITH SKIN.
H314	CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
H317	MAY CAUSE AN ALLERGIC SKIN REACTION.
H319	CAUSES SERIOUS EYE IRRITATION.
H402	HARMFUL TO AQUATIC LIFE.

**SUPPLEMENTAL
HAZARD
STATEMENTS** CORROSIVE TO THE RESPIRATORY TRACT.

PRECAUTIONARY STATEMENT(S)

P260	DO NOT BREATHE DUST
P264	WASH SKIN THOROUGHLY AFTER HANDLING.
P270	DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT.
P272	CONTAMINATED WORK CLOTHING SHOULD NOT BE ALLOWED OUT OF THE WORKPLACE.
P273	AVOID RELEASE TO THE ENVIRONMENT.
P280	WEAR EYE PROTECTION/ FACE PROTECTION.
P301 + P312 + P330	IF SWALLOWED: CALL A POISON CENTER OR DOCTOR/ PHYSICIAN IF YOU FEEL UNWELL. RINSE MOUTH.
P301 + P330 + P331	IF SWALLOWED: RINSE MOUTH. DO NOT INDUCE VOMITING.
P303 + P361 + P353	IF ON SKIN (OR HAIR): TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/ SHOWER.
P304 + P340 + P310	IF INHALED: REMOVE PERSON TO FRESH AIR AND KEEP COMFORTABLE FOR BREATHING. IMMEDIATELY CALL A POISON CENTER/ DOCTOR.
P305 + P351 + P338 + P310	IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING. IMMEDIATELY CALL A POISON CENTER/ DOCTOR.
P333 + P313	IF SKIN IRRITATION OR RASH OCCURS: GET MEDICAL ADVICE/ ATTENTION.
P362 + P364	TAKE OFF CONTAMINATED CLOTHING AND WASH IT BEFORE REUSE.
P405	STORE LOCKED UP.
P501	DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.

**HAZARDS NOT
OTHERWISE
CLASSIFIED** NONE

(HNOC) OR NOT
COVERED BY GHS

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: C₄H₄O₄

MW: 116.07

CAS-NO. 110-16-7

PURITY: ≥ 99% (Assay on anhydrous basis)

HAZARDOUS COMPONENTS

COMPONENT	CAS-NO.	CONCENTRATION
MALEIC ACID	110-16-7	>= 80 - <= 100

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

SECTION 4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

GENERAL ADVICE	FIRST AIDERS NEED TO PROTECT THEMSELVES. SHOW THIS SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.
IF INHALED	AFTER INHALATION: FRESH AIR. CALL IN PHYSICIAN.
IN CASE OF SKIN CONTACT	IN CASE OF SKIN CONTACT: TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/ SHOWER. CALL A PHYSICIAN IMMEDIATELY.
IN CASE OF EYE CONTACT	AFTER EYE CONTACT: RINSE OUT WITH PLENTY OF WATER. IMMEDIATELY CALL IN OPHTHALMOLOGIST. REMOVE CONTACT LENSES.
IF SWALLOWED	AFTER SWALLOWING: MAKE VICTIM DRINK WATER (TWO GLASSES AT MOST), AVOID VOMITING (RISK OF PERFORATION). CALL A PHYSICIAN IMMEDIATELY. DO NOT ATTEMPT TO NEUTRALISE
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
PROTECTION OF FIRST-	FOR PERSONAL PROTECTION SEE SECTION 8.

AIDERS

NOTES TO PHYSICIAN NO DATA AVAILABLE

SECTION 5. FIRE AND EXPLOSION DATA

EXTINGUISHING MEDIA

**SUITABLE
EXTINGUISHING MEDIA** SUITABLE EXTINGUISHING MEDIA
WATER, FOAM, CARBON DIOXIDE (CO₂), DRY POWDER

UNSUITABLE EXTINGUISHING MEDIA
FOR THIS SUBSTANCE/MIXTURE NO LIMITATIONS OF
EXTINGUISHING AGENTS ARE GIVEN.

**SPECIFIC HAZARDS
DURING FIRE FIGHTING** COMBUSTIBLE.
DEVELOPMENT OF HAZARDOUS COMBUSTION GASES
OR VAPOURS POSSIBLE IN THE EVENT OF FIRE.

**HAZARDOUS
COMBUSTION
PRODUCTS** CARBON OXIDES

**SPECIFIC
EXTINGUISHING
METHODS** NO DATA AVAILABLE

**FURTHER
INFORMATION** PREVENT FIRE EXTINGUISHING WATER FROM
CONTAMINATING SURFACE WATER OR THE GROUND
WATER SYSTEM.

**SPECIAL PROTECTIVE
EQUIPMENT FOR
FIREFIGHTERS** STAY IN DANGER AREA ONLY WITH SELF-CONTAINED
BREATHING APPARATUS. PREVENT SKIN CONTACT BY
KEEPING A SAFE DISTANCE OR BY WEARING SUITABLE
PROTECTIVE CLOTHING.

SECTION 6. ACCIDENTAL RELEASE MEASURES

**PERSONAL
PRECAUTIONS,
PROTECTIVE
EQUIPMENT AND
EMERGENCY
PROCEDURES** ADVICE FOR NON-EMERGENCY PERSONNEL: AVOID
INHALATION OF DUSTS. AVOID SUBSTANCE CONTACT.
ENSURE ADEQUATE VENTILATION. EVACUATE THE
DANGER AREA, OBSERVE EMERGENCY
PROCEDURES, CONSULT AN EXPERT. ADVICE FOR
EMERGENCY RESPONDERS: FOR PERSONAL
PROTECTION SEE SECTION 8.

**ENVIRONMENTAL
PRECAUTIONS** DO NOT LET PRODUCT ENTER DRAINS.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

COVER DRAINS. COLLECT, BIND, AND PUMP OFF SPILLS. OBSERVE POSSIBLE MATERIAL RESTRICTIONS (SEE SECTIONS 7 AND 10). TAKE UP DRY. DISPOSE OF PROPERLY. CLEAN UP AFFECTED AREA. AVOID GENERATION OF DUSTS.

REFERENCE TO OTHER SECTIONS

FOR DISPOSAL SEE SECTION 13.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

FURTHER PROCESSING OF SOLID MATERIALS MAY RESULT IN THE FORMATION OF COMBUSTIBLE DUSTS. THE POTENTIAL FOR COMBUSTIBLE DUST FORMATION SHOULD BE TAKEN INTO CONSIDERATION BEFORE ADDITIONAL PROCESSING OCCURS. AVOID CONTACT WITH SKIN AND EYES. AVOID FORMATION OF DUST AND AEROSOLS. PROVIDE APPROPRIATE EXHAUST VENTILATION AT PLACES WHERE DUST IS FORMED. FOR PRECAUTIONS SEE SECTION 2.2.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE. KEEP IN A DRY PLACE. STORAGE CLASS 8A, COMBUSTIBLE, CORROSIVE HAZARDOUS MATERIALS

STORE AT RT

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

CONTROL PARAMETERS

INGREDIENTS WITH WORKPLACE CONTROL PARAMETERS

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES.

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.

FULL CONTACT

MATERIAL: NITRILE RUBBER

MINIMUM LAYER THICKNESS: 0.11 MM

BREAK THROUGH TIME: 480 MIN

MATERIAL TESTED:DERMATRIL® (KCL 740, SIZE M)

SPLASH CONTACT

MATERIAL: NITRILE RUBBER

MINIMUM LAYER THICKNESS: 0.11 MM

BREAK THROUGH TIME: 480 MIN

MATERIAL TESTED:DERMATRIL® (KCL 740, SIZE M)

IF USED IN SOLUTION, OR MIXED WITH OTHER SUBSTANCES, AND UNDER CONDITIONS WHICH DIFFER FROM EN 374, CONTACT THE SUPPLIER OF THE CE APPROVED GLOVES. THIS RECOMMENDATION IS ADVISORY ONLY AND MUST BE EVALUATED BY AN INDUSTRIAL HYGIENIST AND SAFETY OFFICER FAMILIAR WITH THE SPECIFIC SITUATION OF ANTICIPATED USE BY OUR CUSTOMERS. IT SHOULD NOT BE CONSTRUED AS OFFERING AN APPROVAL FOR ANY SPECIFIC USE SCENARIO.

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. ACID-RESISTANT PROTECTIVE CLOTHING

**RESPIRATORY
PROTECTION**

REQUIRED WHEN DUSTS ARE GENERATED. OUR RECOMMENDATIONS ON FILTERING RESPIRATORY PROTECTION ARE BASED ON THE FOLLOWING STANDARDS: DIN EN 143, DIN 14387 AND OTHER ACCOMPANYING STANDARDS RELATING TO THE USED RESPIRATORY PROTECTION SYSTEM.

RECOMMENDED FILTER TYPE: : FILTER TYPE P2

THE ENTREPRENEUR HAS TO ENSURE THAT MAINTENANCE, CLEANING AND TESTING OF RESPIRATORY PROTECTIVE DEVICES ARE CARRIED OUT ACCORDING TO THE INSTRUCTIONS OF THE PRODUCER. THESE MEASURES HAVE TO BE PROPERLY DOCUMENTED.

**CONTROL OF
ENVIRONMENTAL
EXPOSURE**

PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS. DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	WHITE CRYSTALLINE POWDER
ODOUR	NO DATA AVAILABLE
ODOUR THRESHOLD	NO DATA AVAILABLE
PH	1.3 (68 °F / 20 °C)
	CONCENTRATION: 100 G/L
MELTING	132 - 135 °C
POINT/FREEZING POINT	
INITIAL BOILING POINT	316.0 °F / 157.8 °C (997 HPA)
AND BOILING RANGE	METHOD: OECD TEST GUIDELINE 103
	GLP: YES
FLASH POINT	NO DATA AVAILABLE
EVAPORATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	NO DATA AVAILABLE
UPPER/LOWER	LOWER EXPLOSION LIMIT: 2.7 %(V)
FLAMMABILITY OR	
EXPLOSIVE LIMITS	
VAPOUR PRESSURE	< 0.1 HPA (68 °F / 20 °C)
	METHOD: OECD TEST GUIDELINE 104
	GLP: YES
VAPOUR DENSITY	4.0 (68 °F / 20 °C)
RELATIVE DENSITY	NO DATA AVAILABLE
WATER SOLUBILITY	478.8 G/L COMPLETELY SOLUBLE (68 °F / 20 °C)
	PH: 0.2 - 0.3
	METHOD: OECD TEST GUIDELINE 105
	GLP: YES

PARTITION	LOG POW: -1.3 (68 °F / 20 °C)
COEFFICIENT: N-	PH: 2.5
OCTANOL/WATER	METHOD: OECD TEST GUIDELINE 107
	GLP: YES
	BIOACCUMULATION IS NOT EXPECTED.
AUTO-IGNITION	NO DATA AVAILABLE
TEMPERATURE	
DECOMPOSITION	> 275 °F / > 135 °C
TEMPERATURE	
VISCOSITY	NO DATA AVAILABLE
EXPLOSIVE	NOT CLASSIFIED AS EXPLOSIVE.
PROPERTIES	
OXIDIZING PROPERTIES	NO DATA AVAILABLE

OTHER SAFETY INFORMATION

MINIMUM IGNITION	> 30 - < 100 MJ
ENERGY	
PARTICLE	NO DATA AVAILABLE
CHARACTERISTICS	
PARTICLE SIZE	

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY	THE FOLLOWING APPLIES IN GENERAL TO FLAMMABLE ORGANIC SUBSTANCES AND MIXTURES: IN CORRESPONDINGLY FINE DISTRIBUTION, WHEN WHIRLED UP A DUST EXPLOSION POTENTIAL MAY GENERALLY BE ASSUMED.
CHEMICAL STABILITY	THE PRODUCT IS CHEMICALLY STABLE UNDER STANDARD AMBIENT CONDITIONS (ROOM TEMPERATURE).
POSSIBILITY OF HAZARDOUS REACTIONS	VIOLENT REACTIONS POSSIBLE WITH: OXIDIZING AGENTS BASES REDUCING AGENTS
CONDITIONS TO AVOID	NO DATA AVAILABLE
INCOMPATIBLE MATERIALS	NO DATA AVAILABLE
HAZARDOUS DECOMPOSITION PRODUCTS	IN THE EVENT OF FIRE: SEE SECTION 5

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY	LD50 ORAL - RAT - MALE - 1,030 MG/KG (OECD TEST GUIDELINE 401) REMARKS: (ECHA) INHALATION: NO DATA AVAILABLE LD50 DERMAL - RABBIT - 1,560 MG/KG REMARKS: (ECHA) NO DATA AVAILABLE
SKIN CORROSION/IRRITATION	SKIN - IN VITRO MEMBRANE BARRIER RESULT: CAUSES BURNS. - 0.41 H (OECD TEST GUIDELINE 435) REMARKS: (ECHA)
SERIOUS EYE DAMAGE/EYE IRRITATION	EYES – RABBIT RESULT: CAUSES SERIOUS EYE DAMAGE. (OECD TEST GUIDELINE 405)
RESPIRATORY OR SKIN SENSITISATION	MAXIMISATION TEST - GUINEA PIG RESULT: POSITIVE (OECD TEST GUIDELINE 406) LOCAL LYMPH NODE ASSAY (LLNA) – MOUSE RESULT: POSITIVE (OECD TEST GUIDELINE 429) (REGULATION (EC) NO 1272/2008, ANNEX VI)
GERM CELL MUTAGENICITY	NO DATA AVAILABLE
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.
NTP:	NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A KNOWN OR ANTICIPATED CARCINOGEN BY NTP.
OSHA:	NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS ON OSHA'S LIST OF REGULATED CARCINOGENS.
REPRODUCTIVE TOXICITY	NO DATA AVAILABLE
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	MAY CAUSE RESPIRATORY IRRITATION. - RESPIRATORY SYSTEM

**SPECIFIC TARGET
ORGAN TOXICITY -
REPEATED EXPOSURE**

NO DATA AVAILABLE

ASPIRATION HAZARD

NO DATA AVAILABLE

**ADDITIONAL
INFORMATION**

RTECS: NOT AVAILABLE

GASTROINTESTINAL DISTURBANCE

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL,
PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE
NOT BEEN THOROUGHLY INVESTIGATED.

SYSTEMIC EFFECTS:
AFTER ABSORPTION:
ALLERGIC REACTIONS
COUGH
IRRITATIONS
SHORTNESS OF BREATH
VOMITING
LUNG OEDEMA

POSSIBLE EFFECTS:
DAMAGE TO: RESPIRATORY TRACT

OTHER DANGEROUS PROPERTIES CAN NOT BE
EXCLUDED.

HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL
HYGIENE AND SAFETY PRACTICE.

SECTION 12. ECOLOGICAL INFORMATION

**TOXICITY
COMPONENTS: MALEIC ACID:**

**TOXICITY TO DAPHNIA
AND OTHER AQUATIC
INVERTEBRATES**

EC50 (DAPHNIA MAGNA (WATER FLEA)): 42.81 MG/L
END POINT: IMMOBILIZATION
EXPOSURE TIME: 48 H
TEST TYPE: STATIC TEST
ANALYTICAL MONITORING: YES
METHOD: OECD TEST GUIDELINE 202
GLP: YES

TOXICITY TO ALGAE/AQUATIC PLANTS	ERC50 (PSEUDOKIRCHNERIELLA SUBCAPITATA (GREEN ALGAE)): 74.35 MG/L EXPOSURE TIME: 72 H TEST TYPE: STATIC TEST ANALYTICAL MONITORING: YES METHOD: OECD TEST GUIDELINE 201 GLP: YES
TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES (CHRONIC TOXICITY)	EC50 (DAPHNIA MAGNA (WATER FLEA)): 77 MG/L END POINT: REPRODUCTION RATE EXPOSURE TIME: 21 D REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE FOLLOWING SUBSTANCES: (ECHA) THE VALUE IS GIVEN IN ANALOGY TO THE FOLLOWING SUBSTANCES: MALEIC ANHYDRIDE
TOXICITY TO MICROORGANISMS	EC10 (PSEUDOMONAS PUTIDA): 44.6 MG/L END POINT: GROWTH RATE EXPOSURE TIME: 18 H TEST TYPE: STATIC TEST METHOD: DIN 38 412 PART 8 REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE FOLLOWING SUBSTANCES: THE VALUE IS GIVEN IN ANALOGY TO THE FOLLOWING SUBSTANCES: MALEIC ANHYDRIDE
ECOTOXICOLOGY ASSESSMENT	
CHRONIC AQUATIC TOXICITY	THIS PRODUCT HAS NO KNOWN ECOTOXICOLOGICAL EFFECTS.
PERSISTENCE AND DEGRADABILITY	
COMPONENTS: MALEIC ACID:	
BIODEGRADABILITY	AEROBIC INOCULUM: ACTIVATED SLUDGE CONCENTRATION: 33.3 MG/L RESULT: READILY BIODEGRADABLE. BIODEGRADATION: 97.08 % EXPOSURE TIME: 28 D METHOD: OECD TEST GUIDELINE 301B GLP: YES
THOD	830 MG/G REMARKS: (LIT.)
BOD/THOD	77 % REMARKS: (LIT.)
BIOACCUMULATIVE POTENTIAL	
COMPONENTS: MALEIC ACID:	
PARTITION COEFFICIENT:	LOG POW: -1.3 (68 °F / 20 °C)
NOCTANOL/WATER	PH: 2.5 METHOD: OECD TEST GUIDELINE 107 GLP: YES REMARKS: BIOACCUMULATION IS NOT EXPECTED.
MOBILITY IN SOIL	NO DATA AVAILABLE

**RESULTS OF PBT AND
VPVB ASSESSMENT**

PBT/VPVB ASSESSMENT NOT AVAILABLE AS
CHEMICAL SAFETY ASSESSMENT NOT REQUIRED/NOT
CONDUCTED

OTHER ADVERSE EFFECTS

Ozone-Depletion
Potential

REGULATION: 40 CFR PROTECTION OF ENVIRONMENT;
PART 82 PROTECTION OF STRATOSPHERIC OZONE -
CAA SECTION 602 CLASS I SUBSTANCES
REMARKS: THIS PRODUCT NEITHER CONTAINS, NOR
WAS MANUFACTURED WITH A CLASS I OR CLASS II
ODS AS DEFINED BY THE U.S. CLEAN AIR ACT
SECTION 602 (40 CFR 82, SUBPT. A, APP.A + B).

COMPONENTS: MALEIC ACID:

RESULTS OF PBT AND
VPVB ASSESSMENT

SUBSTANCE DOES NOT MEET THE CRITERIA FOR PBT
OR VPVB ACCORDING TO REGULATION (EC) NO
1907/2006, ANNEX XIII.

ADDITIONAL
ECOLOGICAL
INFORMATION

DISCHARGE INTO THE ENVIRONMENT MUST BE
AVOIDED.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

WASTE FROM RESIDUES

WASTE MATERIAL MUST BE DISPOSED OF IN
ACCORDANCE WITH THE NATIONAL AND LOCAL
REGULATIONS. LEAVE CHEMICALS IN ORIGINAL
CONTAINERS. NO MIXING WITH OTHER WASTE. HANDLE
UNCLEANED CONTAINERS LIKE THE PRODUCT ITSELF.

SECTION 14. TRANSPORT INFORMATION

DOT (US)

PROPER SHIPPING NAME: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (MALEIC
ACID)
UN NUMBER: 3261
CLASS: 8
PACKING GROUP: II
LABELS CLASS 8 - CORROSIVE SUBSTANCES
ERG CODE 154
MARINE POLLUTANT NO
POISON INHALATION NO
HAZARD:

IMDG

PROPER SHIPPING NAME: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (MALEIC
ACID)

UN NUMBER: 3261
CLASS: 8
PACKING GROUP: II
LABELS 8
EMS CODE F-A, S-B
MARINE POLLUTANT NO

IATA

PROPER SHIPPING NAME: CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (MALEIC ACID)
UN NUMBER: 3261
CLASS: 8
PACKING GROUP: II
LABELS CLASS 8 - CORROSIVE SUBSTANCES
PACKING INSTRUCTION (CARGO AIRCRAFT) 863
PACKING INSTRUCTION (PASSENGER AIRCRAFT) 859

SPECIAL PRECAUTIONS FOR USER

THE TRANSPORT CLASSIFICATION(S) PROVIDED HEREIN ARE FOR INFORMATIONAL PURPOSES ONLY, AND SOLELY BASED UPON THE PROPERTIES OF THE UNPACKAGED MATERIAL AS IT IS DESCRIBED WITHIN THIS SAFETY DATA SHEET. TRANSPORTATION CLASSIFICATIONS MAY VARY BY MODE OF TRANSPORTATION, PACKAGE SIZES, AND VARIATIONS IN REGIONAL OR COUNTRY REGULATIONS.

SECTION 15. REGULATORY INFORMATION

CERCLA REPORTABLE QUANTITY

COMPONENTS	CAS-NO.	COMPONENT RQ (LBS)	CALCULATED PRODUCT RQ (LBS)
MALEIC ACID	110-16-7	5000	5000

SARA 304 EXTREMELY HAZARDOUS SUBSTANCES REPORTABLE QUANTITY

THIS MATERIAL DOES NOT CONTAIN ANY COMPONENTS WITH A SECTION 304 EHS RQ.

SARA 302 EXTREMELY HAZARDOUS SUBSTANCES THRESHOLD PLANNING QUANTITY

THIS MATERIAL DOES NOT CONTAIN ANY COMPONENTS WITH A SECTION 302 EHS TPQ.

SARA 311/312 HAZARDS ACUTE HEALTH HAZARD

SARA 313

THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD (DE MINIMIS) REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313.

CLEAN AIR ACT

THIS PRODUCT NEITHER CONTAINS, NOR WAS MANUFACTURED WITH A CLASS I OR CLASS II ODS AS DEFINED BY THE U.S. CLEAN AIR ACT SECTION 602 (40 CFR 82, SUBPT. A, APP.A + B).

THIS PRODUCT DOES NOT CONTAIN ANY HAZARDOUS AIR POLLUTANTS (HAP), AS DEFINED BY THE U.S. CLEAN AIR ACT SECTION 112 (40 CFR 61).

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS LISTED UNDER THE U.S. CLEAN AIR ACT SECTION 112(R) FOR ACCIDENTAL RELEASE PREVENTION (40 CFR 68.130, SUBPART F).

THE FOLLOWING CHEMICAL(S) ARE LISTED UNDER THE U.S. CLEAN AIR ACT SECTION 111 SOCMI INTERMEDIATE OR FINAL VOC'S (40 CFR 60.489):

MALEIC ACID	110-16-7	>= 90 - <= 100 %
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CLEAN WATER ACT

THE FOLLOWING HAZARDOUS SUBSTANCES ARE LISTED UNDER THE U.S. CLEANWATER ACT, SECTION 311, TABLE 116.4A:

MALEIC ACID	110-16-7	>= 90 - <= 100 %
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THE FOLLOWING HAZARDOUS CHEMICALS ARE LISTED UNDER THE U.S. CLEANWATER ACT, SECTION 311, TABLE 117.3:

MALEIC ACID	110-16-7	>= 90 - <= 100 %
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THIS PRODUCT DOES NOT CONTAIN ANY TOXIC POLLUTANTS LISTED UNDER THE U.S. CLEAN WATER ACT SECTION 307

THIS PRODUCT DOES NOT CONTAIN ANY PRIORITY POLLUTANTS RELATED TO THE U.S. CLEAN WATER ACT

US STATE REGULATIONS

MASSACHUSETTS RIGHT TO KNOW

	CAS-NO.	REVISION DATE
MALEIC ACID	110-16-7	

PENNSYLVANIA RIGHT TO KNOW

	CAS-NO.	REVISION DATE
MALEIC ACID	110-16-7	

MAINE CHEMICALS OF HIGH CONCERN

PRODUCT DOES NOT CONTAIN ANY LISTED CHEMICALS

VERMONT CHEMICALS OF HIGH CONCERN

PRODUCT DOES NOT CONTAIN ANY LISTED CHEMICALS

WASHINGTON CHEMICALS OF HIGH CONCERN

PRODUCT DOES NOT CONTAIN ANY LISTED CHEMICALS

THE COMPONENTS OF THIS PRODUCT ARE REPORTED IN THE FOLLOWING INVENTORIES:

TSCA	ALL SUBSTANCES LISTED AS ACTIVE ON THE TSCA INVENTORY
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TSCA LIST

NO SUBSTANCES ARE SUBJECT TO A SIGNIFICANT NEW USE RULE.

NO SUBSTANCES ARE SUBJECT TO TSCA 12(B) EXPORT NOTIFICATION REQUIREMENTS.

SECTION 16. OTHER INFORMATION

FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.

H302 + H312	HARMFUL IF SWALLOWED OR IN CONTACT WITH SKIN.
H314	CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
H317	MAY CAUSE AN ALLERGIC SKIN REACTION.
H319	CAUSES SERIOUS EYE IRRITATION.
H402	HARMFUL TO AQUATIC LIFE.

MSDS LEGEND

MW:	MOLECULAR WEIGHT
MF:	MOLECULAR FORMULA
VOC:	VOLATILE ORGANIC COMPOUNDS
ACGIH:	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGINISTS
CAS:	CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER
OSHA:	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEL:	PERMISSIBLE EXPOSURE LIMIT (OSHA)
TLV:	THRESHOLD LIMIT VALUE (ACGIH)

IMPORTANT:

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