



MATERIAL SAFETY DATA SHEET

Product: Malic Acid, FCC

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTITY: DL-MALIC ACID
SYNONYMS: HYDROXYSUCCINIC ACID; HYDROXYBUTANEDIOIC ACID
GENERAL USE: CHELATING AGENT, FOOD ACIDULENT, FLAVORING
PRODUCT DESCRIPTION: ALIPHATIC CARBOXYLIC ACID

MOLECULAR FORMULA: C4-H6-O5 MOLECULAR WEIGHT: 134.09

MANUFACTURER/ DISTRIBUTOR:

DISTRIBUTOR:
AMERICAN TARTARIC PRODUCTS, INC
1865 PALMER AVE.
LARCHMONT NY 10538

MANUFACTURER:
Lonza S.p.A.
Via Vittor Pisani, 31
20124 Milano, Italy

EMERGENCY CONTACT AND PHONE NUMBER:
CHEMTREC 800-424-9300

2. COMPOSITION/ INFORMATION ON INGREDIENTS

	%	<u>CAS NO.</u>	<u>EXPOSURE LIMITS</u> <u>(ACCIH, OSHA, NIOSH)</u>
DL-MALIC ACID	99 % MIN.	617-48-1	NONE ESTABLISHED

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: COLORLESS CRYSTALS, SOUR TASTE. MATERIAL IS COMBUSTIBLE. MALIC ACID IS A MUCOUS MEMBRANE AND SKIN IRRITANT AND A SEVERE EYE IRRITATION.

POTENTIAL HEALTH AFFECTS:

INHALATION: MAY BE IRRITATION TO MUCOUS MEMBRANE

EYE CONTACT: MAY CAUSE SEVERE IRRITATING, REDNESS, PAIN AND TEARING.

INGESTION: MAY CAUSE NAUSEA, VOMITING, DIARRHEA, WEAKNESS, RESPIRATORY DISTRESS AND CYANOSIS.

CHRONIC: REPEATED AND PROLONGED CONTACT WITH SKIN MAY CAUSE DERMATITIS. REPEATED AND PROLONGED CONTACT WITH EYES MAY CAUSE CONJUNCTIVITIS.

CARCINOGEN STATUS: NONE

4. FIRST AID MEASURES



INHALATION: REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT OXYGEN MAY BE GIVEN BY QUALIFIED PERSONNEL. IF IRRITATION PERSISTS SEE A PHYSICIAN.

EYE CONTACT: FLUSH EYES THOROUGHLY WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE OCCASIONALLY LIFTING LIDS. IF IRRITATION PERSISTS SEE A PHYSICIAN.

SKIN CONTACT: REMOVE CONTAMINATED CLOTHING AND SHOES. WASH AFFECTED SKIN WITH SOAP OR MILD DETERGENT AND LARGE QUANTITIES OF WATER. IF IRRITATION DEVELOPS AND PERSISTS GET MEDICAL ATTENTION. WASH CLOTHING BEFORE RE-USE.

INGESTION: IF CONSCIOUS GIVE TWO GLASSES OF WATER AND INDUCE VOMITING. GET MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

FLASHPOINT : MATERIAL IS COMBUSTIBLE
FLAMMABLE LIMITS : LOWER – 0.091 GM/LITRE, UPPER – NOT KNOWN
AUTOIGNITION TEMPERATURE: NOT KNOWN.

GENERAL HAZARDS: MATERIAL IS COMBUSTIBLE. HIGH CONCENTRATIONS OF DUST IN THE AIR, MAY FORM EXPLOSIVE MIXTURE.

FIRE FIGHTING INSTRUCTIONS: USE WATER, SPRAY, OR FOG IN FLOODING QUANTITIES, OR STANDARDERED FOAM. COOL CONTAINERS EXPOSED TO FIRE WITH WATER SPRAY.

FIRE FIGHTING EQUIPMENT: WEAR SELF CONTAINED BREATHING APPARATUS WITH FULL FACE, PLEACE, AND PROTECTIVE CLOTHING..

HAZARDOUS DECOMPOSITION PRODUCTS: THERMAL DECOMPOSITION WILL PRODUCE ACRID SMOKE AND FUMES CONTAINING CARBON DIOXIDE AND CARBON MONOXIDE.

6. ACCIDENTAL RELEASE MEASURES

GENERAL: BIODEGRADABILITY NOT KNOWN. WEAR PROTECTIVE GLOVES AND GOGGLES. CAREFULLY SWEEP OR VACUUM INTO CLEAN FIBER CONTAINERS FOR SALVAGE OR DISPOSAL. DISPOSE OF IN A APPROVED DISPOSAL SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS. KEEP OUT OF SEWERS AND NATURAL WATERWAYS.

7. HANDLING AND STORAGE

STORAGE TEMPERATURE: AMBIENT STORAGE TEMPERATURE: ATMOSPHERIC
GENERAL: MATERIAL IS COMBUSTIBLE. STORE AWAY FROM HEAT, OUT OF DIRECT SUNLIGHT AND AWAY FROM INCOMPATIBLE MATERIALS. KEEP CONTAINER CLOSED AND PROTECT FROM DAMAGE. AVOID BREATHING DUSTS OR MISTS. AVOID



CONTACT WITH EYES OR SKIN. WEAR SAFETY GOGGLES/SAFETY GLASSES WHEN HANDLING PRODUCT. WASH THOROUGHLY AFTER HANDLING.

EMPTY CONTAINERS: EMPTY CONTAINER RETAINS PRODUCT RESADUE AND VAPORS. OBSERVE ALL LABEL PRECAUTIONS EVEN AFTER CONTAINER IS EMPTIED. DO NOT REUSE CONTAINER UNLESS THOUROUGHLY CLEANED.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENINEERING CONTROLS: PROVIDE LOCAL OR GENERAL DILUTION VENTILATION
PERSONAL PROTECTION:

GENERAL: NIOSH APPROVED DUST RESPIRATOR IN AREAS OF HIGH DUST CONCENTRATION ALONG WITH DUST RESISTANT GOGGLES AND GLOVES. CONTACT LENSES SHOULD NOT BE WORN WHEN WORKING WITH THIS MATERIAL.

9. PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE: NOT AVAILABLE VAPOR DENSITY: NOT AVAILABLE
SPECIFIC GRAVITY: (AIR = 1)
SOLUBILITY IN WATER: 58% @ 25 C EVAPERATION RT: NOT AVAILABLE
pH; ACIDIC IN SOLUTION (n-BUTYL ACETATE=1)
BOILING POINT: DECOMPOSES @ 150 C FREEZING POINT: NOT AVAILABLE
VISCOSITY: NOT APPLICABLE

10. STABILITY AND REACTIVITY

GENERAL: STABLE UNDER NORMAL TEMPERATURES AND PRESSURE.
DECOMPOSITION OCCURS AT 150 C
HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:
STRONG OXIDANTS, STRONG BASES, ALKALI METALS, ANIMES,
AND CARBOHYDRATES.

HAZARDOUS DECOMPOSITION: THERMAL DECOMPOSTION CAN RESULT IN SMOKE FUMES CONTAINING MALEIC ACID, MALEIC ANHYDRIDE, CARBON DIOXIDE AND CARBON MONIXIDE.

11. TRANSPORT INFORMATION

DOT: NOT REGULATED

12. REGULATORY INFORMATION:

TSCA (TOXIC SUBSTANCE CONTROL ACT)
THIS MATERIAL IS LISTED ON THE TSCA INVENTORY.

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, ANDLIABILITY ACT)
RATINGS: HEALTH- 1 FIRE- 0 REACTIVITY- 0 RESISTANCE- 0



SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION BILL):

MALIC ACID IS NOT SUBJECT TO REPORTING REQUIREMENTS OF SARA TITLE III

13. OTHER INFORMATION

HMIS RATINGS: HEALTH-1 FIRE-0 REACTIVITY-0
REASONS FOR REVISION: UPDATE TO NEW FORMAT.

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