

HEALTH	2
FLAMMABILITY	1
REACTIVITY	0

Section 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product Name	Fumaric Acid, Natural
Product Number	0248800
CAS-No.	110-17-8

1.2 Product Recommended Use

Flavorings

1.3 Preparation Information

Company	Aurochemicals 7 Nicoll Street Washingtonville, NY 10992- USA
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Telephone	845-496-6065
Fax	845-496-6248

1.4 Emergency Telephone Number

1-800-535-5053
International - 1-352-323-3500 collect

Section 2: HAZARD(s) IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Eye irritation (Category 2A), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label Elements, Including precautionary statements

Pictogram



Signal Statement

Warning

Hazard Statement(s)

H319

Causes serious eye irritation.

Precautionary Statement(s)

P264
P280

Wash skin thoroughly after handling.
Wear protective gloves/ protective clothing/ eye protection/ face protection

P305+351+
P338
P337+P313

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.

2.3 HNOC (Hazards not otherwise classified or not covered by GHS)

None

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances

Synonym	trans-1,2-Ethylenedicarboxylic Acid
Formula	C ₄ H ₄ O ₄
Molecular Weight	116.07 g/mol
CAS-No	110-17-8

Hazardous Components

Component	Classification	Concentration
Fumaric acid	Eye Irrit. 2A; H319	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

Section 4: FIRST AID MEASURES

4.1 Description of first aid measures

General Advice	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
Inhalation	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Contact with skin:	Remove contaminated clothing. Rinse skin with cool water then wash with mild soap and warm water.
Contact with eyes:	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion	DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water.
Clothing contamination:	Remove contaminated clothing and wash before reuse.

4.2 Most important symptoms and effects both acute and delayed See section 2.2 and or section 11

4.3 Indication of any immediate medical attention and special treatment needed. No data available

Section 5: FIREFIGHTING MEASURES

5.1 Extinguishing Media

Suitable Extinguishing Media For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for fire fighters

Wear self contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

Section 6: ACCIDENTAL RELEASE MEASURES

- | | | |
|-----|--|---|
| 6.1 | Personal precautions, protective equipment and emergency procedures | Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8. |
| 6.2 | Environmental precautions | Prevent further leakage or spillage. Discharge into the environment must be avoided. Do not allow to enter drains or sewage system. |
| 6.3 | Methods and materials for containment and clean up | Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). |
| 6.4 | Reference to other sections | For disposal see section 13. |

Section 7: HANDLING AND STORAGE

- | | | |
|-----|--------------------------------------|---|
| 7.1 | Precautions for safe handling | Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge. For precautions see section 2.2. |
| 7.2 | Conditions for Safe storage | Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. |
| 7.3 | Specific End use(s) | Flavorings |

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- | | | | | | | | | | | |
|--------------------------------------|--|---|--|---|--|--|---------------------|--|-----------------|--|
| 8.1 | Control parameters | Contains no substances with occupational exposure limit values | | | | | | | | |
| 8.2 | Exposure Controls | <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; padding-right: 20px;">Appropriate Engineering Controls</td> <td>Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday.</td> </tr> <tr> <td style="vertical-align: top; padding-right: 20px;">Personal protective equipment</td> <td> <p>These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situations of anticipated use by our customers. They should not be construed as offering an approval or any specific use scenario.</p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; padding-right: 20px;">Eye/face protection</td> <td>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).</td> </tr> <tr> <td style="vertical-align: top; padding-right: 20px;">Skin protection</td> <td>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.</td> </tr> </table> <p>Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 56 min
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)
data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374</p> </td> </tr> </table> | Appropriate Engineering Controls | Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday. | Personal protective equipment | <p>These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situations of anticipated use by our customers. They should not be construed as offering an approval or any specific use scenario.</p> <table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; padding-right: 20px;">Eye/face protection</td> <td>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).</td> </tr> <tr> <td style="vertical-align: top; padding-right: 20px;">Skin protection</td> <td>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.</td> </tr> </table> <p>Splash contact
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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 Impervious clothing, Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a	Appearance	Colorless to white crystalline powder
b	Odor	Odorless
c	Odor Threshold	No data available
d	pH	No data available
e	Melting Point	298 -300°C
f	Initial boiling point and boiling range	No data available
g	Flash Point	>110°C closed cup
h	Evaporation Rate	No data available
i	Flammability (Solid, Gas)	No data available
j	Upper/lower Flammability Limit	No data available
k	Vapor pressure	No data available
l	Vapor density	No data available
m	Relative density @25°C	No data available
n	Solubility	Soluble in alcohol and oils; slightly soluble in water
o	Partition coefficient:	No data available
p	Auto-ignition Temp.	No data available
q	Decomposition Temp.	No data available
r	Viscosity	No data available
s	Explosive properties	No data available
t	Oxidizing properties	No data available

9.2 Other Safety Information No data available

Section 10: STABILITY AND REACTIVITY

10.1 Reactivity No data available

10.2 Chemical Stability Stable under recommended storage conditions

10.3 Possibility of Hazardous reactions No data available

10.4 Conditions to avoid No data available

10.5 Incompatible materials No data available

10.6 Hazardous decomposition products No data available

10.7 Further Information No data available

Section 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute Toxicity

LC50-Inhalation No data available

Skin corrosion/irritation No data available

Serious eye damage/eye irritation No data available

Respiratory or skin sensitization No data available

Germ Cell mutagenicity No data available

Carcinogenicity

IARC No component of this product, present levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH No component of this product, present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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 identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity No data available

Teratogenicity No data available

Specific target organ toxicity-single exposure (GHS) No data available

Specific target organ toxicity-repeated exposures (GHS) No data available

Aspiration Hazards No data available

Signs and Symptoms of Exposure Gastrointestinal disturbance, Nausea, Headache, Vomiting

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

Synergistic effects No data available

RTECS: Not available

Section 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish semi-static test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h(Fumaric acid) (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates Immobilization EC50 - Daphnia magna (Water flea) - 212 mg/l - 48 h(Fumaric acid) (OECD Test Guideline 202)

	Toxicity to algae	Growth inhibition EC50 - Pseudokirchneriella subcapitata - > 100 mg/l - 72 h(Fumaric acid) (OECD Test Guideline 201)
	Toxicity to bacteria	Respiration inhibition EC50 - activated sludge - > 300 mg/l - 3 h(Fumaric acid) (OECD Test Guideline 209)
12.2	Persistence and degradability	
	Biodegradability	aerobic - Exposure time 28 d(Fumaric acid) Result: 67.5 % - Readily biodegradable. (OECD Test Guideline 301B)
12.3	Bioaccumulative potential	No data available
12.4	Mobility in soil	No data available
12.5	Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required / not conducted
12.6	Other adverse effects	No data available

Section 13: DISPOSAL CONSIDERATIONS

13.1	Disposal methods	
	Product:	According to local regulations
	Packaging	According to local regulations

Section 14: TRANSPORT INFORMATION

DOT (US)	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

Section 15: REGULATORY INFORMATION

SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302		
SARA 313 Components	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.		
SARA 311/312 Hazards	No SARA Hazards		
Massachusetts Right to Know components	Fumaric acid	CAS-No. 110-17-8	Rev. Date:
Pennsylvania Right to Know components	Fumaric acid	CAS-No. 110-17-8	Rev. Date:
New Jersey Right to Know components	Fumaric acid	CAS-No. 110-17-8	Rev. Date:
California Prop. 65 components	This product does not contain any chemical known to the State of California to cause cancer, birth defects, or any other reproductive harm.		

Section 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H319 Causes serious eye irritation.

HMIS Rating

Health hazard	2
Chronic Health Hazard*	
Flammability	1
Physical Hazard	0

NFPA Rating

Safety Data Sheet

Health hazard: 2
Fire Hazard: 1
Reactivity Hazard: 0

Further Information

Aurochemicals provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Aurochemicals makes no representations or warranties, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Aurochemicals will not be responsible, nor held liable, for damages resulting from use of or reliance upon this information.

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