



**Silver Fern Chemical, Inc.
Safety Data Sheet
Fumaric Acid**

Revision Date: 07/10/2025

Section 1. Identification

Product identifier

Product Identity	Fumaric Acid
Other means of identification	Trans-2-butenedioic acid, (E)-Butenedionic acid, 2-butenedionic acid

Relevant identified uses of the substance or mixture and uses advised against

Used as Technical additives, Chemical preservatives. Additive used for processing in food & feed industry. Used in protective coatings, dyestuff, adhesives, polymer & resins, pharmaceutical applications and for laboratory use

Details of the supplier of the safety data sheet

Company Name	Silver Fern Chemical, Inc. 121 W. De La Guerra Street, Suite B Santa Barbara, CA 93101 USA Customer Service: 1-866-282-3384 / info@silverfernchemical.com Website - www.silverfernchemical.com
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Emergency 24 hour Emergency Telephone No.	Emergency telephone number Infotrac: 1-800-535-5053; Outside USA & Canada +1- 352-323-3500
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Customer Service:

Section 2. Hazard(s) identification

Classification of the substance or mixture under OSHA's Hazard Communication Standard (1910.1200) revised 2024 (GHS revision 7)

Serious eye damage / eye irritation, category 2A;H319	Causes serious eye irritation.
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Skin sensitizer category 1;H317

May cause an allergic skin reaction.

Label elements



Warning

H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

[Prevention]

P261 Avoid breathing dust, fume, gas, mist, vapors, spray.
P264 Wash thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves, eye protection, and face protection.

[Response]

P302+352 IF ON SKIN: Wash with plenty of soap and water.
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+313 If skin irritation or a rash occurs: Get medical advice or attention.
P337+313 If eye irritation persists: Get medical advice or attention.
P362+364 Take off contaminated clothing and wash it before reuse.

[Storage]

No GHS storage statements

[Disposal]

P501 Dispose of contents or container in accordance with local and national regulations.

Other hazards

This product contains no PBT/vPvB/vPvM chemicals.
This product contains no endocrine disrupting chemicals.



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Does not contain component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS) per the Organization for Economic Co-operation and Development (OECD) list of Per- and Polyfluoroalkyl Substances (PFASs).

Section 3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the OSHA's Hazard Communication Standard (1910.1200) revised 2024 (GHS revision 7).

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Fumaric acid CAS Number: 110-17-8 Synonyms: No available information	99.5%	Serious eye damage / eye irritation, category 2;H319	No data available
Maleic acid CAS Number: 110-16-7 Synonyms: (2Z)-But-2-enedioic acid, (Z)-But-2-enedioic acid, 2-Butenedioic acid (Z)- (9CI), but-2-enedioic acid, cis-1,2-Ethylendicarbonsäure, cis-Butendisäure	0.5%	Acute toxicity(oral), category 4;H302 Serious eye damage / eye irritation, category 2;H319 Specific target organ toxicity, Single exposure category 3;H335 Skin corrosion/irritation category 2;H315 Skin sensitizer category 1;H317 C ≥ 0.1 %	No data available

The actual concentration or concentration range is withheld as a trade secret.

*PBT/vPvB - PBT, vPvM or vPvB-substance.

The full texts of the phrases are shown in Section 16.

Section 4. First aid measures

Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious, place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes Rinse with plenty of clean water for at least 15 minutes, holding the eyelids apart and seek medical attention.



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Skin Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.
Ingestion If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

Most important symptoms and effects, both acute and delayed

Overview No specific symptom data available.
No chronic toxicity or long-term toxicity information available. Treat symptomatically. See section 2 for further details.

Eyes Causes serious eye irritation.
Skin May cause an allergic skin reaction.

Section 5. Fire-fighting measures

Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO₂, powder, water spray.
Unsuitable extinguishing media: Do not use; water jet.

Special hazards arising from the substance or mixture

Hazardous decomposition: No hazardous decomposition data available.
Avoid breathing dust, fume, gas, mist, vapors, spray.
This material may form flammable dust-air mixtures when finely divided. Prevent dust build-up by providing adequate ventilation.

Advice for fire-fighters

As with all fires, wear positive pressure, self-contained breathing apparatus, (SCBA) with a full-face piece and protective clothing. Persons without respiratory protection should leave area. Wear SCBA during clean-up immediately after fire. No smoking.

ERG Guide No. -----

Section 6. Accidental release measures



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Personal precautions, protective equipment and emergency procedures

Put on appropriate personal protective equipment (see section 8).
Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

Environmental precautions

Do not allow spills to enter drains or waterways. Remove all sources of ignition

Methods and material for containment and cleaning up

Use mechanical handling equipment. Avoid raising dust.
Flush with plenty of water. Dispose of in compliance with local and national regulations.

Section 7. Handling and storage

Precautions for safe handling

General advice: Avoid inhalation, contact with skin and eyes. Do not handle near incompatible materials. Use proper personal protective equipment. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wash hands before eating, drinks, smoking or going to the toilet. Take off all contaminated clothing and wash before reuse.

Protection against fire and explosion: Avoid dust formation. Dust can form an explosive mixture with air. Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy. Electrical devices must meet the specified temperature class.

See section 2 for further details. - [Prevention]

Conditions for safe storage, including any incompatibilities

Fumaric Acid is slightly inflammable. Store away from alkaline materials, oxidizers and strong acids. Copper oxide, nitric acid and sulfuric acid, sodium nitrite. Avoid static electricity discharges. Keep in original container, in a cool dry, well-ventilated place. Keep away from food. Store locked up, keep out of reach of children.

See section 2 for further details. - [Storage]

Specific end use(s)

No available information



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Section 8. Exposure controls / personal protection

Control parameters

Exposure Limits

CAS No.	Ingredient	Source	Value
110-16-7	Maleic acid	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
110-17-8	Fumaric acid	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit

Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Wear safety glasses with side shields to protect the eyes. An eye wash station is suggested as a good workplace practice.

Skin Avoid skin contact. Protective gloves recommended.

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details.

Section 9. Physical and chemical properties

Information on basic physical and chemical properties

Physical State Powder
Color White
Odor Odorless



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Odor threshold	No available information
Melting point / freezing point	287°C
Initial boiling point and boiling range	200°C
Flammability (solid, gas)	Not Classified as Flammable
Upper/lower flammability or explosive limits	Lower Explosive Limit: No available information Upper Explosive Limit: No available information
Flash Point	Not Applicable Solid
Auto-ignition temperature	No available information
Decomposition temperature	No Decomposition Reported below Boiling Point
pH	Acidic
Viscosity (cSt)	No available information
Solubility in Water g/L at 25°C	7
Partition coefficient n-octanol/water (Log Kow)	Log Know 0.46
Vapor pressure (Pa)	1.54 X10-4
Relative Density at 20°C	1.635
Vapor Density	No available information
Particle Characteristics	---
Evaporation rate (Ether = 1)	No available information
Oxidizing properties	Not classified as Oxidizing
Explosive properties	Not classified as Explosive
Other information	No other relevant information.

Section 10. Stability and reactivity

Reactivity

Stability and reactivity of Fumaric acid is not considered Critical.

Chemical stability

Stable under normal circumstances.

Possibility of hazardous reactions

No available information

Conditions to avoid

Temperatures over 190° C and moisture.

Incompatible materials

Strong oxidants, strong bases, alkali metals, amines, and carbonates.



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Hazardous decomposition products

Maleic Acid, Maleic Anhydride, Carbon Monoxide, and Carbon Dioxide.

Section 11. Toxicological information

Acute toxicity

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Fumaric acid - (110-17-8)	No data available.	No data available.	No data available.	No data available.	No data available.
Maleic acid - (110-16-7)	708.00, Rat - Category: 4	>2,000.00, Rabbit - Category: 5	No data available.	No data available.	No data available.

Carcinogen Data

CAS No.	Ingredient	Source	Value
110-16-7	Maleic acid	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No;
		ACGIH	No Established Limit
110-17-8	Fumaric acid	OSHA	Regulated Carcinogen: No;
		NTP	Known: No; Suspected: No;
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No;
		ACGIH	No Established Limit

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	2A	Causes serious eye irritation.
Respiratory sensitization	---	Not Applicable
Skin sensitization	1	May cause an allergic skin reaction.



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Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

Possible routes of entry: No available information

Symptoms and effects, both acute and delayed:

No specific symptom data available.

No chronic toxicity or long-term toxicity information available. Treat symptomatically.

Eyes Causes serious eye irritation.

Skin May cause an allergic skin reaction.

Section 12. Ecological information

Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/L	48 hr EC50 crustacea, mg/L	ErC50 algae, mg/L
Fumaric acid - (110-17-8)	No data available.	No data available.	No data available.
Maleic acid - (110-16-7)	75.00, Oncorhynchus mykiss	75.00, Oncorhynchus mykiss	No data available.

Persistence and degradability

There is no data available on the preparation itself.

Bioaccumulative potential

No available information

Mobility in soil

No available information

Results of PBT and vPvB assessment

This product contains no PBT/vPvB/vPvM chemicals.

Other adverse effects



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No available information

Section 13. Disposal considerations

Waste treatment methods

Observe all federal, provincial and local regulations when disposing of this substance.

Section 14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
UN number	Not Regulated	Not Regulated	Not Regulated
UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
Transport hazard class(es)	Class: Not Applicable Sub Class: Not Applicable	Class: Not Applicable Sub Class: Not Applicable	Class: Not Applicable Sub Class: Not Applicable
Packing group	Not Applicable	Not Applicable	Not Applicable

Environmental hazards

IMDG Marine Pollutant: No;
Special precautions for user

No available information

Section 15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

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Toxic Substance Control Act (TSCA)



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CAS Number	Ingredient	Toxic Substance Control Act (TSCA)	Comments	Status
0000110-17-8	Fumaric acid	Yes		ACTIVE
0000110-16-7	Maleic acid	Yes		ACTIVE

The following flags are used:

- Active - indicates commercial status designation of active
- E - indicates a substance that is the subject of a Section 5(e) Consent Order under TSCA.
- F - indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - indicates a polymeric substance containing no free-radical initiator in its Inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - indicates a commenced Premanufacture Notice (PMN) substance.
- R - indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - indicates a substance that is identified in a final Significant New Uses Rule.
- SP - indicates a substance that is identified in a proposed Significant New Uses Rule.
- T - indicates a substance that is the subject of a final Section 4 test rule under TSCA.
- UVCB Chemical Substances of Unknown or Variable Composition, Complex Reaction Products and Biological Materials •XU - indicates a substance exempt from reporting under the Chemical Data Reporting Rule, (40 CFR 711).
- Y1 - indicates a polymer that has a number-average molecular weight greater than 1,000 and that was exempt under the 1984 polymer exemption rule.
- Y2 - indicates a polymer that is a polyester and that was exempt under the 1984 polymer exemption rule.

EPCRA 302 Extremely Hazardous:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 313 Toxic Chemicals:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Carcinogens (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Developmental Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Female Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 - Male Repro Toxins (>0.0%):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

Proposition 65 Label Warning:

This product contains no chemicals known to the State of California to cause cancer



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and birth defects or other reproductive harm.

Mass RTK Substances (>1%) :

Fumaric acid

Maleic acid

New Jersey RTK Substances (>1%):

Fumaric acid

Maleic acid

Pennsylvania RTK Substances (>1%):

Fumaric acid

Maleic acid

OSHA Process Safety Management Standard Highly Hazardous Chemicals, Toxics and Reactives:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

US EPA List of Regulated Substances under the Risk Management Plan (RMP) Program:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

US EPA Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) under the Minimum Risk Exemption:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

U.S. - DEA List II or Essential Chemicals:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

U.S. - DEA - Exempt Chemical Mixtures - List 1 and 2:

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.



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US DHS Chemical Facility Anti-Terrorism Standards (CFATS):

To the best of our knowledge, there are no chemicals at levels which require reporting under this statute.

EPCRA 311/312 Chemicals and RQs (lbs):

Not Applicable

Section 16. Other information

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DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume damage or expense arising out of or in any way responsibility and expressly disclaim liability for loss, connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.

The full text of the phrases appearing in section 3 is:

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

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