

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

FUMARIC ACID

Revision Date: 04-Jan-2011

Revision Number: 6

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Name FUMARIC ACID

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

Recommended Use Additive

Uses Advised Against No information available

Details of the supplier of the safety data sheet

Halliburton Manufacturing Services, Ltd.
Halliburton House, Howemoss Crescent
Kirkhill Industrial Estate
Dyce
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United Kingdom

Emergency Phone Number: +44 1224 795277 or +1 281 575 5000

www.halliburton.com

For further information, please contact

E-Mail address: fdunexchem@halliburton.com**Emergency telephone number**

+44 1224 795277 or +1 281 575 5000

Emergency telephone \$45 - (EC)1272/2008

Europe	112
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO): + 47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Serious Eye Damage / Eye Irritation

Category 2- H319

Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R-phrases mentioned in this Section, see Section 16

2. HAZARDS IDENTIFICATION**Classification** Xi - Irritant.**Risk Phrases** R36 Irritating to eyes.**Label Elements****Hazard Pictograms****Signal Word****Warning****Hazard Statements**

H319 - Causes serious eye irritation

Contains**Substances**
Fumaric acid**CAS Number**
110-17-8**Precautionary Statements - EU (§28, 1272/2008)**

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear protective gloves/eye protection/face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313 - If eye irritation persists: Get medical advice/attention

Other Hazards

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances	EINECS	CAS Number	PERCENT	EEC Classification	EU - CLP Substance Classification	REACH No.
Fumaric acid	203-743-0	110-17-8	60 - 100%	Xi; R36	Eye Irrit. 2 (H319)	No data available

For the full text of the R-phrases mentioned in this Section, see Section 16**4. FIRST AID MEASURES****Description of first aid measures****Inhalation**

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes

In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing. Wash with soap and water. Get medical attention if irritation persists.

Skin**Ingestion**

Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

4. FIRST AID MEASURES

Most Important symptoms and effects, both acute and delayed

May cause skin irritation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

None known.

Special hazards arising from the substance of mixture

Special Exposure Hazards

Decomposition in fire may produce toxic gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

Advice for firefighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust.

See Section 12 for additional information

Environmental precautions

Prevent from entering sewers, waterways, or low areas.

Methods and material for containment and cleaning up

Scoop up and remove.

Reference to other sections

See Section 12 for additional information.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Wash hands after use. Launder contaminated clothing before reuse.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Conditions for safe storage, including any incompatibilities

Store away from oxidizers. Store away from alkalis. Store in a cool, dry location. Product has a shelf life of 12 months.

Specific End Use(s)

Exposure Scenario No information available

Other Guidelines No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Substances	EU	UK OEL	Netherlands	France OEL	Germany MAK/TRK
Fumaric acid	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Substances	Italy	Poland	Hungary	Czech Republic	Denmark
Fumaric acid	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Derived No Effect Level (DNEL) No information available.
Predicted No Effect Concentration (PNEC) No information available.

Exposure controls**Engineering Controls**

Use in a well ventilated area.

Personal protective equipment**Respiratory Protection**

Dust/mist respirator. (N95, P2/P3)

Hand Protection

Impervious rubber gloves.

Skin Protection

Rubber apron.

Eye Protection

Dust proof goggles.

Other Precautions

Eyewash fountains and safety showers must be easily accessible.

Environmental Exposure Controls

No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties**Physical State:** Solid**Color:** White**Odor:** Odorless**Odor Threshold:** No information availablePropertyValuesRemarks/ Method**pH:**

No data available

Melting Point/Range

No data available

Freezing Point/Range (C):

No data available

Boiling Point/Range

290°C

Flash Point

148°C

PMCC

Evaporation rate

No data available

Vapor Pressure

No data available

Vapor Density

No data available

Specific Gravity

1.63

Water Solubility

Insoluble in water

Solubility in other solvents

No data available

Partition coefficient: n-octanol/water

No data available

Autoignition Temperature

393°C

Decomposition Temperature

No data available

Viscosity

No data available

Explosive Properties

No information available

Oxidizing Properties

No information available

Other information**Molecular Weight**

116.06

VOC Content (%)

No data available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable

Chemical Stability

Stable

Possibility of Hazardous Reactions

Will Not Occur

Conditions to Avoid

None anticipated

Incompatible Materials

Strong alkalis. Strong oxidizers.

Hazardous Decomposition Products

Carbon monoxide and carbon dioxide.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects**Acute Toxicity**

11. TOXICOLOGICAL INFORMATION

Inhalation	May cause respiratory irritation.
Eye Contact	May cause moderate eye irritation.
Skin Contact	May cause mild skin irritation.
Ingestion	Irritation of the mouth, throat, and stomach.

Chronic Effects/Carcinogenicity No data available to indicate product or components present at greater than 1% are chronic health hazards.

Substances	LD50 Oral	LD50 Dermal	LC50 Inhalation
Fumaric acid	10700 mg/kg	20000 mg/kg	No data available

12. ECOLOGICAL INFORMATION

Toxicity
Ecotoxicity Effects

Substances	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Fumaric acid	No information available	No information available	No information available	No information available

Persistence and degradability
Readily biodegradable

Bioaccumulative potential
No information available

Mobility in soil
No information available

Results of PBT and vPvB assessment
No information available.

Other adverse effects
Endocrine Disruptor Information
This product does not contain any known or suspected endocrine disruptors

13. DISPOSAL CONSIDERATIONS

<u>Waste treatment methods</u>	
Disposal Method	Bury in a licensed landfill according to federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION**IMDG/IMO**

UN Number:	Not restricted.
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable

RID

UN Number:	Not restricted.
UN Proper Shipping Name:	Not restricted

14. TRANSPORT INFORMATION

Transport Hazard Class(es): Not applicable

ADR

UN Number: Not restricted.
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable

IATA/ICAO

UN Number: Not restricted.
UN Proper Shipping Name: Not restricted
Transport Hazard Class(es): Not applicable

Special Precautions for User None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable

15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture****International Inventories**

EINECS Inventory This product, and all its components, complies with EINECS
US TSCA Inventory All components listed on inventory or are exempt.
Canadian DSL Inventory All components listed on inventory or are exempt.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering WGK 1: Low hazard to waters.
Classes (WGK)

Chemical Safety Assessment

No information available

16. OTHER INFORMATION**Full text of R-phrases referred to under Sections 2 and 3**

R36 Irritating to eyes.

Key literature references and sources for datawww.ChemADVISOR.com/

Revision Date: 04-Jan-2011
Revision Note: Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**Disclaimer Statement**

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End of Safety Data Sheet