

## SAFETY DATA SHEET

### ACIDE FUMARIQUE

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#### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

##### 1.1. Product identifier

Product name: Acide fumarique

##### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Industry, wine and food

##### 1.3. Details of the supplier of the safety data sheet

Company details: Institut Œnologique de Champagne  
Z.I. de Mardeuil – Allée de Cumières – BP 25  
51201 EPERNAY Cedex  
FRANCE  
Tel: + 33 (0) 3.26.51.96.00.  
Fax: + 33 (0) 3.26.51.02.20.  
[fds@ioc.eu.com](mailto:fds@ioc.eu.com)

##### 1.4. Emergency telephone number

112

#### SECTION 2. HAZARDS IDENTIFICATION

##### 2.1. Classification of the substance or mixture

Hazard classes and Hazard statement Code(s) Serious eye damage/eye irritation Eye Irrit. 2  
H319: Causes serious eye irritation.

Hazard Class and Category Code(s)  
Eye Irrit. 2

##### 2.2. Label elements

Pictograms:



WARNING

Hazard statement:  
H319: Causes serious eye irritation.

Precautionary statements:

P264: Wash eyes thoroughly after handling.

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

P280: wear protective gloves/eye protection/face protection. (see MSDS).

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

##### 2.3. Other hazards

#### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

##### 3.1. Substances

Synonyms: Acide (E)-but\*2-ène-1,4-dioïque

Molecular formula: C<sub>4</sub>-H<sub>4</sub>-O<sub>4</sub>

N°CAS: 110-17-8

N°CE: 203-743-0

Molecular weight: 116.07 g/mol

Concentration [%]: ≥ 99,7

##### 3.2. Mixtures

#### SECTION 4. FIRST AID MEASURES

##### 4.1. Description of first aid measures

General advice: get away from the danger zone. Show this safety data sheet to the attending physician.

Inhalation: Move to fresh air in case of accidental inhalation of dust or fumes from overheating. If disorders persist, consult a doctor.

Skin contact: Remove contaminated clothing and shoes immediately. Wash with soap and plenty of water.

Eye contact: Immediately flush eyes (eyes) with plenty of water. Remove contact lenses. Protect the intact eye. Keep your eye open while flushing. If eye irritation persists, seek medical attention.

Ingestion: Rinse mouth with water and drink plenty of water. Do not drink milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Call a doctor.

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#### 4.2. Most important symptoms and effects, both acute and delayed

No data available

#### 4.3. Indication of any immediate medical attention and special treatment needed

No data available

### SECTION 5. FIREFIGHTING MEASURES

#### 5.1. Extinguishing media

Appropriate fire-fighting equipment: spray water or use alcohol resistant foam or dry powder.

#### 5.2. Special hazards arising from the substance or mixture

Carbon oxide.

#### 5.3. Advice for firefighters

In case of fire, wear self-contained breathing apparatus.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

#### 6.1. Personal precautions, protective equipment and emergency procedures

Use individual protective gear. Avoid dust formation. Avoid inhalation of dust. Ensure adequate ventilation.

#### 6.2. Environmental precautions

Try to prevent the penetration of equipment into sewers or waterways. No special precautions for the environment required.

#### 6.3. Methods and material for containment and cleaning up

Neutralize with alkaline solutions, lime or ammonia. Pick up and evacuate without creating dust. Sweep and shovel.

#### 6.4. Reference to other sections

No data available

### SECTION 7. HANDLING AND STORAGE

#### 7.1. Precautions for safe handling

Advice on safe handling: Avoid contact with skin and eyes. Personal protective equipment, see section 8. Do not eat, smoke or drink in work area.

Advice on protection against fire and explosion: Avoid dust formation. Provide adequate ventilation to areas where dust is formed. Avoid the accumulation of electrostatic charges.

#### 7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep container tightly closed and away from moisture.

Other data: no decomposition if product is stored and used as prescribed.

#### 7.3. Specific end use(s)

No data available

### SECTION 8. EXPOSURE CONTROL / PERSONAL PROTECTION

#### 8.1. Control parameters

No data available

#### 8.2. Exposure controls

Respiratory protection: Mask with P3 dust filter if solid or with type A filter for organic vapors and gases with a boiling point > 65°C if molten. (EN 149).

Skin protection: The glove material has to be impermeable and stable with the substance. Not available specific information regarding the suitability of the material and the thickness of the gloves. Consult the glove supplier for specific information on glove suitability. Replace the gloves in case of internal contamination, when they are punctured or if the external contamination cannot be eliminated. The actual length of protection offered depends on the conditions of use.

Eye protection: safety glasses with side shields conforming to EN166.

Body protection: Use appropriate chemical protective clothing

Hygiene Measures: Handle in accordance with good industrial hygiene practice and safety guidelines. Wash your hands before breaks and at the end of the working day

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

#### 9.1. Information on basic physical and chemical properties

Appearance: White solid in crystalline powder

Odor: Characteristic

Odor threshold: No data available.

pH: 2.1 à 4.9 g/L à 20°C

Melting point / freezing point: 298-300 °C

Initial boiling point and boiling range: No data available.

Flash point: No data available

Evaporation rate: No data available.

Flammability: No data available.

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Upper / lower flammability or explosive limits: 40 % - 3%.

Vapor pressure: 2.2 hPa at 165 °C.

Vapor density: No data available

Solubilities: No data available

Partition coefficient: 0.46 à 20°C

Autoignition temperature: 399°C

Decomposition temperature: No data available.

Viscosity: No data available

Explosive Properties: No data available

Oxidising properties: No data available

#### 9.2. Other information

### SECTION 10. STABILITY AND REACTIVITY

#### 10.1. Reactivity

No data available.

#### 10.2. Chemical stability

Stable under normal conditions

#### 10.3. Possibility of hazardous reactions

Dusts can form an explosive mixture with air. No decomposition in intended use

#### 10.4. Conditions to avoid

Avoid the formation of electrostatic charges. Avoid exposure to heat sources. Avoid dust formation

#### 10.5. Incompatible materials

Strong acids and strong bases. Strong oxidizers.

#### 10.6. Hazardous decomposition products

No data available.

### SECTION 11. TOXICOLOGICAL INFORMATION

#### 11.1. Information on toxicological effects

##### Acute toxicity:

Oral:

Method: Equivalent or Similar to OECD Guideline 401 (Acute Oral Toxicity)

rat (Sprague-Dawley) male/female; oral route: gastric tube.

Results:

LD50: 10700 mg/kg bw (male)

LD50: 9300 mg/kg bw (female)

##### Dermal:

Method:

equivalent or similar to OECD guideline 402 (acute dermal toxicity)

rabbit (New Zealand White) female; Bandage: occlusive

Results:

LD50: 20000 mg/kg bw (female)

Inhalation: not available

##### Skin Corrosion/Irritation:

Method:

OECD Guideline 404 (acute skin irritation / corrosion)

Rabbit (small white Russian), Bandage: occlusive (shaved)

Results: slightly irritating

##### Serious eye damage / eye irritation:

Method:

OECD Guideline 405 (acute eye irritation/corrosion)

Rabbit (little white Russian)

Results: Moderately irritating

Respiratory or skin sensitization:

Respiratory sensitization: not available

##### Skin sensitization:

Method:

OECD Guideline 406 (Skin Sensitization) Guinea Pig (Bor: DHPW) Female;

Guinea pig maximization test; Induction: intradermal, epicutaneous, occlusive.

Result: Non-sensitizing

Germ cell mutagenicity:

##### In vitro:

##### Mammalian cell gene mutation test (gene mutation):

Method:

Equivalent and similar to OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)

L5178Y mouse lymphoma cells (with and without metabolic activation);

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Results: negative

Chromosomal aberration test in mammals (chromosomal aberration):

Method:

equivalent or similar to OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)

Chinese hamster lung fibroblasts (V79) (with and without metabolic activation).

Results: negative

In Vivo: Data not available

Carcinogenicity: not available

Reproductive toxicity:

Effects on Sexual Function and Fertility:

Supporting study:

Method:

others; male/female guinea pig; first generation study; oral: feed

Results:

NOAEL (P): > 400 mg/kg bw/day (nominal) (male/female) (no observed effect)

NOAEL (F1): > 400 mg/kg bw/day (nominal) (no observed effect)

Specific Target Organ Toxicity (STOT) - Single Exposure:

unavailable

Specific Target Organ Toxicity (STOT) - Repeated Exposure:

Oral:

Method:

equivalent or similar to OECD Guideline 452 (Chronic Toxicity Studies).

rat (Osborne-Mendel) male, chronic (oral route: feeding)

Results:

NOAEL: 600 mg/kg bw/day (nominal) (male)

Aspiration hazard: not available

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1. Toxicity

Acute Aquatic Toxicity:

Fish:

Method:

OECD Guideline 203 (Fish, Acute Toxicity Test);

Brachydanio rerio (new name: Danio rerio), freshwater, semi-static.

Results:

CL50 (7 d): > 100 mg/L test mat. (nominal)

Aquatic invertebrates:

Method:

OECD Guideline 202 (Acute Immobilization Test for Daphnia sp.)

Daphnia magna, freshwater, semi-static.

Results:

EC50 (48 h): > 100 mg/L test mat. (nominal) based on: mobility

Method:

Ecological Research Series EPA-660 / 3-75-009

Daphnia magna, freshwater, static.

Results:

EC50 (48 h): 212 mg/L test mat. (nominal) based on: mobility

Algae and other aquatic plants:

Method:

OECD Guideline 201 (Algae, growth inhibition test)

Pseudokirchnerella subcapitata (seaweed), freshwater, static.

Results:

EC50 (72 h): > 100 mg/L test mat. (nominal) based on: biomass

EC50 (72 h): > 100 mg/L test mat. (nominal) based on: growth rate

NOEC (72 h): 100 mg/L test mat. (nominal) based on: biomass

NOEC (72 h): 100 mg/L test mat. (nominal) based on: growth rate

Aquatic micro-organisms:

Method:

OECD Guideline 209 (activated sludge, respiration inhibition test);

activated sludge from a predominantly domestic wastewater treatment plant; fresh water, static.

Results:

EC50 (3h): > 300 mg/L test mat. (nominal) based on: respiratory rate

Long term aquatic toxicity: No data available.

### 12.2. Persistence and degradability

Readily biodegradable

### 12.3. Bioaccumulative potential

No data available

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#### 12.4. Mobility in soil

No data available

#### 12.5. Results of PBT and vPvB assessment

No data available.

#### 12.6. Other adverse effects

No data available

### SECTION 13. DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment methods

Product: do not throw waste into the sewer. Do not contaminate ponds, waterways or ditches with material or used container. Return excess and non-recyclable solutions to a licensed disposal company.

Contaminated packaging: dispose of as unused product. Do not reuse empty containers.

### SECTION 14. TRANSPORT INFORMATION

#### 14.1. UN number

Not regulated.

#### 14.2. UN proper shipping name

Not regulated

#### 14.3. Transport hazard class(es)

Not regulated

#### 14.4. Packing group

Not regulated

#### 14.5. Environmental hazards

Not regulated

#### 14.6. Special precautions for user

Not regulated

#### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not regulated

### SECTION 15. REGULATORY INFORMATION

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

No data available

#### 15.2. Chemical safety assessment

No.

### SECTION 16. OTHER INFORMATION

Complete review of compliance with Regulation (EU) No 453/2010 of 20 May 2010

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