

# Safety Data Sheet

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 regulations

Printing date: January 31, 2017

Revision: January 31, 2017

## 1 Identification

- **Product identifier**
- **Trade name: Maleic Acid Crystals 25g**
- **Product code:** 1-2735 (1004095)
- **CAS Number:**  
110-16-7
- **Recommended use and restriction on use**
- **Recommended use:** Forensics.
- **Restrictions on use:** Contact manufacturer/supplier
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**  
Safariland, LLC  
13386 International Parkway  
Jacksonville, FL 32218  
Customer Care (800) 347-1200
- **Emergency telephone number:**  
ChemTel Inc.  
(800)255-3924 (North America)  
+1 (813)248-0585 (International)



## 2 Hazard(s) identification

- **Classification of the substance or mixture**
- Acute Tox. 4      H302 Harmful if swallowed.
- Acute Tox. 4      H312 Harmful in contact with skin.
- Skin Irrit. 2      H315 Causes skin irritation.
- Eye Irrit. 2A      H319 Causes serious eye irritation.
- Skin Sens. 1      H317 May cause an allergic skin reaction.
- STOT SE 3      H335 May cause respiratory irritation.
- Combustible Dust      May form combustible dust concentrations in air.

- **Label elements**

- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms:**



GHS07

- **Signal word:** Warning

- **Hazard statements:**

H302+H312 Harmful if swallowed or in contact with skin.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

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May form combustible dust concentrations in air.

· **Precautionary statements:**

- P261 Avoid breathing dust.
- P264 Wash thoroughly after handling.
- P280 Wear protective gloves / eye protection / face protection.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
- P330 Rinse mouth.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P405 Store locked up.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **NFPA ratings (scale 0 - 4)**



Health = 1  
Fire = 0  
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 1  
Fire = 0  
Reactivity = 0

## 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

110-16-7 maleic acid

· **Identification number(s)**

· **Index number:** 607-095-00-3

· **Components:** None in reportable quantities.

· **Additional information:** For the wording of the listed Hazard Statements refer to section 16.

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## 4 First-aid measures

- **Description of first aid measures**

- **General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Take affected persons out into the fresh air.

- **After inhalation:**

Supply fresh air.

Provide oxygen treatment if affected person has difficulty breathing.

If experiencing respiratory symptoms: Call a doctor.

- **After skin contact:**

Brush off loose particles from skin.

Wash with soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

- **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

- **After swallowing:**

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; immediately call for medical help.

- **Most important symptoms and effects, both acute and delayed:**

Coughing

Allergic reactions

Gastric or intestinal disorders when ingested.

Nausea in case of ingestion.

Irritating to eyes, respiratory system and skin.

- **Danger:**

Harmful if swallowed or in contact with skin.

Danger of impaired breathing.

- **Indication of any immediate medical attention and special treatment needed:**

Treat skin and mucous membrane with antihistamine and corticoid preparations.

If necessary oxygen respiration treatment.

Contains maleic acid. May produce an allergic reaction.

If medical advice is needed, have product container or label at hand.

## 5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

- **For safety reasons unsuitable extinguishing agents:** None.

- **Special hazards arising from the substance or mixture**

May form combustible dust concentrations in air.

Formation of toxic gases is possible during heating or in case of fire.

- **Advice for firefighters**

- **Protective equipment:**

Wear self-contained respiratory protective device.

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Wear fully protective suit.

· **Additional information:** No relevant information available.

## 6 Accidental release measures

### · **Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.

Wear protective equipment. Keep unprotected persons away.

For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.

### · **Environmental precautions**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

### · **Methods and material for containment and cleaning up**

Pick up mechanically.

Dispose contaminated material as waste according to item 13.

Send for recovery or disposal in suitable receptacles.

### · **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 Handling and storage

### · **Handling**

#### · **Precautions for safe handling:**

Thorough dedusting.

Any deposit of dust which cannot be avoided must be regularly removed.

· **Information about protection against explosions and fires:** No special measures required.

### · **Conditions for safe storage, including any incompatibilities**

#### · **Storage**

#### · **Requirements to be met by storerooms and receptacles:**

Avoid storage near extreme heat, ignition sources or open flame.

Protect from humidity and water.

#### · **Information about storage in one common storage facility:**

Store away from foodstuffs.

Do not store together with alkalis (caustic solutions).

· **Further information about storage conditions:** Keep containers tightly sealed.

· **Specific end use(s)** No relevant information available.

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## 8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

Do not eat, drink or smoke while using the product.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

- **Engineering controls:** Provide adequate ventilation.

- **Breathing equipment:**

Not required under normal conditions of use.

Use suitable respiratory protective device in case of insufficient ventilation.

- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.

- **Body protection:** Protective work clothing

- **Limitation and supervision of exposure into the environment**

No relevant information available.

- **Risk management measures**

See Section 7 for additional information.

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No relevant information available.

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## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · Appearance:

Form: Solid

Color: White

· Odor: Faint acidulous odor.

· Odor threshold: Not determined.

· pH-value at 20 °C (68 °F): < 7

· Melting point/Melting range: 139-140 °C (282-284 °F)

· Boiling point/Boiling range: 135 °C (275 °F)

· Flash point: Not applicable.

· Flammability (solid, gaseous): Not determined.

· Auto-ignition temperature: Not determined.

· Decomposition temperature: Not determined.

· Danger of explosion: Product does not present an explosion hazard.

#### · Explosion limits

Lower: Not determined.

Upper: Not determined.

· Vapor pressure: Not applicable.

· Density at 20 °C (68 °F): 1.59 g/cm<sup>3</sup> (13.269 lbs/gal)

· Relative density: Not determined.

· Vapor density: Not applicable.

· Evaporation rate: Not applicable.

· Solubility in / Miscibility with  
Water at 20 °C (68 °F): 788 g/l

· Partition coefficient (n-octanol/water): Not determined.

#### · Viscosity

Dynamic: Not applicable.

Kinematic: Not applicable.

· Other information: No relevant information available.

## 10 Stability and reactivity

· **Reactivity:** No relevant information available.

· **Chemical stability:**

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

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- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No relevant information available.
- **Incompatible materials** No relevant information available.
- **Hazardous decomposition products**

Under fire conditions only:  
Carbon monoxide and carbon dioxide

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

### 110-16-7 maleic acid

|        |      |                     |
|--------|------|---------------------|
| Oral   | LD50 | 708 mg/kg (rat)     |
| Dermal | LD50 | 1560 mg/kg (rabbit) |

- **Primary irritant effect:**
- **On the skin:** Irritant to skin and mucous membranes.
- **On the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.

- **IARC (International Agency for Research on Cancer):**

Substance is not listed.

- **NTP (National Toxicology Program):**

Substance is not listed.

- **OSHA-Ca (Occupational Safety & Health Administration):**

Substance is not listed.

- **Probable route(s) of exposure:**

Ingestion.  
Inhalation.  
Eye contact.  
Skin contact.

- **Acute effects (acute toxicity, irritation and corrosivity):**

Harmful if swallowed or in contact with skin.  
Irritating to eyes, respiratory system and skin.

- **Repeated dose toxicity:** Repeated exposures may result in skin and/or respiratory sensitivity.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** May cause respiratory irritation.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

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## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity** Likely to be toxic to aquatic organisms
- **Persistence and degradability** The material is not expected to bioaccumulate in soil or water.
- **Bioaccumulative potential:** The product is not expected to bioaccumulate in soil or water organisms.
- **Mobility in soil:** No relevant information available.
- **Additional ecological information**
- **General notes:**  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- |                                     |                |
|-------------------------------------|----------------|
| · <b>UN-Number</b>                  |                |
| · <b>DOT, ADR, IMDG, IATA</b>       | Not regulated. |
| · <b>UN proper shipping name</b>    |                |
| · <b>DOT, ADR, IMDG, IATA</b>       | Not regulated. |
| · <b>Transport hazard class(es)</b> |                |
| · <b>DOT, ADR, IMDG, IATA</b>       |                |
| · <b>Class</b>                      | Not regulated. |
| · <b>Packing group</b>              |                |
| · <b>DOT, ADR, IMDG, IATA</b>       | Not regulated. |
| · <b>Environmental hazards</b>      |                |
| · <b>Marine pollutant:</b>          | No             |

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- |  |                 |
|--|-----------------|
| · <b>Special precautions for user</b>  | Not applicable. |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |

**15 Regulatory information**

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· **Section 302 (extremely hazardous substances):**

Substance is not listed.

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act)**

Substance is listed.

· **Proposition 65 (California)**· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**· **EPA (Environmental Protection Agency):**

Substance is not listed.

· **IARC (International Agency for Research on Cancer):**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

Substance is not listed.

· **Canadian Domestic Substances List (DSL):**

Substance is listed.

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## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 01/31/2017 / -

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

LDLo: Lowest Lethal Dose Observed

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Skin Sens. 1: Skin sensitisation – Category 1

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

· **Sources**

SDS Prepared by:

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