



### Section 1 - Chemical Product

**Product/Chemical Name:** Itaconic acid

**Chemical Formula:** C<sub>5</sub>H<sub>6</sub>O<sub>4</sub>

**CAS Number:** 97-65-4

**Other Designations:** BUTANEDIOIC ACID,METHYLENE-; ITACONIC ACID;  
METHYLENESUCCINIC ACID;  
2-PROPENE-1,2-DICARBOXYLIC ACID; PROPYLENEDICARBOXYLIC ACID;  
SUCCINICACID,METHYLENE**Derivation:**

**General Use:**

### Section 2 - Composition / Information on Ingredients

**Ingredient Name CAS Number EINECS/ELINCS % wt or % vol**

Itaconic acid 97-65-4 202-599-6 99

**Trace impurities:**

**OSHA PEL ACGIH TLV NIOSH REL NIOSH**

**Ingredient TWA STEL TWA STEL TWA STEL IDLH**

Itaconic acid none estab. none estab. none estab. none estab. none estab. none estab. none estab.

### Section 3 - Hazards Identification

\_\_\_\_\_ **Emergency Overview** \_\_\_\_\_

**Appearance:** white.\_

**Caution!** Hygroscopic. May cause eye and skin irritation. May cause respiratory and digestive tract irritation.\_

**Potential Health Effects**

**Primary Entry Routes:** Ingestion, inhalation, eye and skin contact.

**Target Organs:** None.

**Acute Effects**

**Inhalation:** May cause respiratory tract irritation.

**Eye:** May cause eye irritation.

**Skin:** May cause skin irritation.

**Ingestion:** May cause gastrointestinal irritation with nausea, vomiting and diarrhea.

**Carcinogenicity:** IARC, NTP, ACGIH, and OSHA do not list product name as a carcinogen.

**Medical Conditions Aggravated by Long-Term Exposure:**

**Chronic Effects:** Information not available.

#### Section 4 - First Aid Measures

**Inhalation:** Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if symptoms persist.

**Eye Contact:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately.

**Skin Contact:** Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.

Wash clothing before reuse. Get medical aid if irritation persists.

**Ingestion:** If victim is conscious and alert, give 2-4 cupfuls of milk or water.

Never give anything by mouth to an unconscious person. Get medical aid immediately.

HMISHFR100

PPE††Sec. 8

**Itaconic Acid**

Inhalation:

*After first aid, get appropriate in-plant, paramedic, or community medical support.*

**Note to Physicians:** Treat symptomatically and supportively.

#### Section 5 - Fire-Fighting Measures

**Flash Point:** N/A

**Burning Rate:**

**Autoignition Temperature:** 1472 °F (800 °C)

**LEL:** N/A

**UEL:** N/A

**Flammability Classification:**

**Extinguishing Media:** Use agent most appropriate to extinguish fire. In case of fire use water spray, dry chemical, carbon dioxide, or appropriate foam.

**Unusual Fire or Explosion Hazards:**

**Hazardous Combustion Products:**

**Fire-Fighting Instructions:** Do not release runoff from fire control methods to sewers or waterways.

**Fire-Fighting Equipment:** Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode.

#### Section 6 - Accidental Release Measures

**Spill /Leak Procedures:** Eliminate all ignition sources. Ventilate area.

**Small Spills:** Clean up spills immediately, observing precautions in the Protective Equipment section.

**Large Spills**

**Containment:** For large spills, dike far ahead of spill for later disposal. Do not release into sewers or waterways.

**Cleanup:** Sweep up, then place into a suitable container for disposal. Avoid generating dusty conditions. Provide ventilation.

**Regulatory Requirements:** Follow applicable OSHA regulations (29 CFR 1910.120).

### Section 7 - Handling and Storage

**Handling Precautions:** Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well ventilated area. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

**Storage Requirements:** Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances.

### Section 8 - Exposure Controls / Personal Protection

**Engineering Controls:** Use adequate ventilation to keep airborne concentrations low.

**Ventilation:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs

Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

**Administrative Controls:**

**Respiratory Protection:** Seek professional advice prior to respirator selection and use.

Follow OSHA respirator regulations

(29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to

provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient

oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA.

*Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA*

requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic

environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

**Protective Clothing/Equipment:** Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye and face-protection regulations

(29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

**Contaminated Equipment:** Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.—01 ONFPA

### **Itaconic Acid**

#### **Section 9 - Physical and Chemical Properties**

**Physical State:** Solid

**Appearance:** White crystalline powder

**Odor:** Characteristic odor

**Vapor Pressure:** N/A

**Vapor Density (Air=1):**

**Formula Weight:** 130.1

**Density/Specific Gravity (H<sub>2</sub>O=1, at 4 °C):** 1.573

**pH:** N/A

**Water Solubility:**

**Other Solubilities:**

**Boiling Point:** 268 °C (sublimes)

**Freezing/Melting Point:** 166.00 - 167.00 °C

**Viscosity:**

**Refractive Index:**

**Surface Tension:**

**% Volatile:**

**Evaporation Rate (BuAc=1):**

#### **Section 10 - Stability and Reactivity**

**Stability:** Itaconic acid is stable at room temperature in closed container under normal storage and handling conditions.

**Polymerization:** Hazardous polymerization will not occur.

**Chemical Incompatibilities:** Oxidizing agents, reducing agents, bases.

**Conditions to Avoid:** Incompatible materials, strong oxidants.

**Hazardous Decomposition Products:** Thermal oxidative decomposition of Itaconic acid can produce carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

#### **Section 11- Toxicological Information**

**Toxicity Data:\***

**Eye Effects:**

**Skin Effects:**

LD50/LC50: Not available.

**Carcinogenicity:** Itaconic Acid - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

**Epidemiology:** No data available.

**Teratogenicity:** No data available.

**Reproductive Effects:** No data available.

**Neurotoxicity:** No data available.

**Mutagenicity:** No data available.

\* See NIOSH, RTECS, for additional toxicity data.

#### **Section 12 - Ecological Information**

**Ecotoxicity:** Not available.

**Environmental Fate:** Not available.

**Environmental Degradation:** Not available.

**Soil Absorption/Mobility:** Not available.

#### **Section 13 - Disposal Considerations**

**Disposal:** Contact your supplier or a licensed contractor for detailed recommendations.

Follow applicable Federal, state, and local regulations.

**Disposal Regulatory Requirements:**

**Container Cleaning and Disposal:**

#### **Section 14 - Transport Information**

**DOT Transportation Data (49 CFR 172.101):** Not Regulated.

**Shipping Name:**

**Shipping Symbols:**

**Hazard Class:**

**ID No.:**

**Packing Group:**

**Label:**

**Special Provisions (172.102):**

**Packaging Authorizations**

a) **Exceptions:**

b) **Non-bulk Packaging:**

c) **Bulk Packaging:**

**Quantity Limitations**

a) **Passenger, Aircraft, or Railcar:**

b) **Cargo Aircraft Only:**

**Vessel Stowage Requirements**

a) **Vessel Stowage:**

b) **Other:**

#### **Section 15 - Regulatory Information**

US FEDERAL

TSCA

CAS# 97-65-4 is listed on the TSCA inventory.

**Itaconic Acid**

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Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

None of the chemicals in this material have an RQ.

Section 302 (TPQ)

None of the chemicals in this product have a TPQ.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.STATE

Itaconic Acid is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California No Significant Risk Level:

None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI Risk Phrases:

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases: S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

#### **Section 16 - Other Information**

**Disclaimer:** All information, recommendations and suggestions appearing herein are based upon sources believed to be reliable:

However, it is the user's responsibility to determine the safety, toxicity and suitability for its own use of this product. WEGO

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