

Material Safety Data Sheet

Section 1 - IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

IDENTIFICATION OF THE SUBSTANCE OR PREPARATION:

PRODUCT NAME: Itaconic Acid
Chemical Name: Butanedioic Acid, Methylene
Synonyms: Methylene Succinic Acid
CAS #: 97-65-4
EC #: 202-599-6
Pre-registration #: 05-2114220088-57-0000

USE OF THE SUBSTANCE/PREPARATION:

Used as a comonomer for synthesis of SBR Latex.

COMPANY /UNDERTAKING IDENTIFICATION:

Jinan Huaming Biochemistray Co., Ltd.
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EMERGENCY TELEPHONE: -

Section 2 - HAZARDS IDENTIFICATION

Classification:

According to annex I of DIRECTIVE 67/548/EEC

This substance is not classified in the Annex I of Directive 67/548/EEC.

According to DIRECTIVE 67/548/EEC criteria

Physical/Chemical Hazards: None.

Health Hazards:

R41 Risk of serious damage to eyes.

Environmental Hazards:

R52 Harmful to aquatic organisms.

According to EU CLP 2008

For physical-chemical properties: None.

For health hazards:

H318 Causes serious eye damage.

For environmental hazards: None.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| Name | CAS No. | EC No. | Conc. | Classification | |
|---------------|---------|-----------|--------|----------------|----------------|
| | | | | CLP | 67/548/EEC |
| Itaconic Acid | 97-65-4 | 202-599-6 | ≥99.6% | Eye Dam. 1 | Xi R41; R52 |

Section 4 - FIRST AID MEASURES

EYE

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Transport to hospital or doctor without delay.

SKIN

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. In event of visible or subsequent irritation seek medical attention.

INHALED

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If pain persists or recurs seek medical attention.

SWALLOWED

If swallowed, do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. Seek medical attention.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING MEDIA:

Dry chemical, appropriate foam, CO₂, water spray/water fog.

UNSUITABLE EXTINGUISHING MEDIA:

None

SPECIAL HAZARDS:

Combustible solid which burns but propagates flame with difficulty. Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition. On combustion, may emit toxic fumes of carbon monoxide (CO), carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS.

Glasses: Chemical goggles

Gloves: Chemical protective gloves.

Respirator: Self-sustained breathing apparatus

Section 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Remove ignition sources. Control personal contact by using protective equipment. Personal protective equipments refer to Section 8.

METHODS FOR CLEANING UP

IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. IF WET: Vacuum/shovel up and place in labelled containers for disposal.

ENVIRONMENTAL PRECAUTIONS

Prevent the material or washing water entering water environment.

Section 7 - HANDLING AND STORAGE

HANDLING

Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with incompatible materials. When handling DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Use good occupational work practice. Observe manufacturer's storing and handling recommendations. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions. Incompatibility information as indicated in Section 10.

STORAGE

Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Observe manufacturer's storing and handling recommendations. Incompatibility information as indicated in Section 10.

SPECIFIC USE

None

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

ACGIH: None listed

NIOSH: None listed

OSHA: None listed

IOELVs: None listed

WELs: None listed

ENGINEERING CONTROLS

Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction. Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace. Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding. Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

EXPOSURE CONTROLS

RESPIRATORY PROTECTION

Use a European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

HAND PROTECTION

Use chemical protective gloves (polyethylene, PVC).

EYE PROTECTION

Use chemical goggles

SKIN PROTECTION

Wear appropriate protective clothing to prevent skin exposure.

ENVIRONMENTAL EXPOSURE CONTROLS

Local exhaust ventilation usually required. As much as possible, keep from being washed into surface waters.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

GENERAL INFORMATION

White crystalline powder.

IMPORTANT HEALTH, SAFETY AND ENVIRONMENTAL INFORMATION

| | |
|--|---|
| pH: 2 (80 mg/l) | Boiling Point (°C): 268°C (sublimation) |
| Flash Point (°C): Not applicable | Flammability (solid or gas): Combustible |
| Explosive properties: Not applicable | Oxidising properties: Not an oxidiser |
| Vapour Pressure: Not available | Relative Density (water=1): 1.5730 |
| Solubility | |
| -water: Soluble, 83 g/l (20°C) | -fat: Soluble in alcohol |
| Partition coefficient (n-octant/water): -0.4 (25°C) | |
| Viscosity: Not available | Vapour density: Not available |
| Evaporation rate: Not available | |
| Freezing/Melting Point: 165-169°C | |

Section 10 - STABILITY AND REACTIVITY

Chemical stability:

Stable under normal temperatures and pressures

CONDITIONS TO AVOID

Dust generation, exposure to air.

MATERIALS TO AVOID

Oxidizing agents, reducing agents, bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide, carbon dioxide.

Hazardous Polymerization:

Not reported.

Section 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Skin, rat: LD₀ >2000 mg/kg (EEC 84/449-B3 GLP);
Oral, rat: LD₅₀ = 2969 mg/kg (EEC 84/449-B1 GLP)

SKIN/EYE IRRITATION

There were no signs of toxicity during the observation period after the substance was applied on the intact skin for 4 hours. No dermal response to treatment was observed in any animal throughout the observation period.

Six male albino New Zealand rabbits were each administered a single ocular dose of 0.1 g of itaconic acid. The responses were very severe: chemosis (score 4), enanthema (score 3), iris lesion (score 2), and corneal opacity (score 4). Because of the increasing severity in the lesions the study was terminated on human grounds. Itaconic acid is considered as severe irritant to the eyes.

SENSITIZATION

No clinical signs and no deaths were observed throughout maximisation method of Magnusson and Kligman.

MUTAGENICITY

Ames test: Negative +/- S9 mix (EEC 84/449-B4 GLP)

HPRT/V79 CHO test: Negative +/- S9 mix (OECD 476 GLP)

Mice/Swiss test: Negative +/- S9 mix (EEC 84/449 GLP)

CARCINOGENICITY

Not Listed by ACGIH, NIOSH, IARC, NTP, or OSHA.

REPRODUCTIVE TOXICITY

Not available.

SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSE

If inhaled, may cause respiratory tract irritation.

SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSE

Oral, 4w: NOEL = 500 mg/kg/d (highest dose tested) (EEC 84/449-B7 GLP)

Oral, 13w: NOEL = 14000 ppm (1050 mg/kg/d) (EEC 87/302 GLP)

ASPIRATION HAZARD

Not available.

Section 12 - ECOLOGICAL INFORMATION

ECOTOXICITY

LC50 (24 h) = 190 mg/l (Salmo gairdneri) (EEC 84/449-C1-GLP)

EC50 (24 h) = 240 mg/l (Daphnia magna) (EEC 84/449-C2-GLP)

EC50 (72 h) = 47 mg/l (Scenidesmus subspicatus) (EEC 87/302 GLP)

MOBILITY

Not available

PERSISTENCE AND DEGRADABILITY

Readily biodegradable: 96% after 13 days (Modified OECD screening test, GLP)

BIOACCUMULATIVE POTENTIAL

Not available

RESULTS OF PBT ASSESSMENT

Not classified as PBT or vPvB.

OTHER ADVERSE EFFECTS

Not available

Section 13 - DISPOSAL CONSIDERATIONS

According to the European Waste Catalogue, Waste Codes are not product specific but application specific. Waste Codes should be assigned by the User based on the application in which the product is used.

Recycle wherever possible. Bury or incinerate residue at an approved site. Dispose of in compliance with national, regional, and local provisions.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: ADR, IATA, IMDG

Section 15 - REGULATORY INFORMATION

Dangerous as defined by 67/548/EEC

CLASSIFICATION: Irritating



Symbol: Xi

RISK PHRASES:

R41 Risk of serious damage to eyes.

R52 Harmful to aquatic organisms.

SAFE PHRASES:

S25 Avoid contact with eyes.

Dangerous as defined by the EU CLP 2008.

For the health hazards:

Eye Damage

Eye Dam. 1 H318 Causes serious eye damage

Labeling:



Signal Word: Danger

Hazard Statement:

H318 Causes serious eye damage.

Precautionary statements:

P280 Wear eye protection/face protection.

P301+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

Supplement Hazard statements: None.

This safety data sheet is in compliance with the following EU legislation and its adaptations – as far as applicable - : (EC) No.1907/2006 and (EC) No.1272/2008.

Section 16 - OTHER INFORMATION

EU Dangerous substance/Preparations Directives

R41, R52

S25

EU CLP 2008

H318

P280, P301+P351+P338, P310

ABBREVIATION

TLV Threshold Limit Value

TWA Time Weighted Average

ES Exposure Standard

| | |
|--------|--|
| IOELVs | Indicative Occupational Exposure Limit Values |
| WELs | Workplace Exposure Limits |
| STEL | Short Term Exposure Limit |
| RTECS | Registry of Toxic Effects of Chemical Substances |
| IARC | International Agency for Research on Cancer |
| NOEL | No observed effect level |

DISCLAIMER:

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Completed on: 21/12/2010

Completed by: CJ