

Material Safety Data Sheet

Adipic acid MSDS

Section 1: Chemical Product

Product Name: Adipic acid

Catalog Codes: SLA3658

CAS#: 124-04-9

RTECS: AU8400000

TSCA: TSCA 8(b) inventory: Adipic acid

CI#: Not available.

Synonym: Hexanedioic acid; 1,4-Butane Dicarboxylic Acid

Chemical Name: Adipic Acid

Chemical Formula: HOOC(CH₂)₄COOH

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Adipic acid	124-04-9	100

Toxicological Data on Ingredients: Adipic acid: ORAL (LD50): Acute: >11000 mg/kg [Rat]. 1900 mg/kg [Mouse]. >11000 mg/kg [Rabbit].

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:

Slightly hazardous in case of inhalation (lung sensitizer).

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

DEVELOPMENTAL TOXICITY: Not available.

The substance may be toxic to the nervous system, gastrointestinal tract.

Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 420°C (788°F)

Flash Points: CLOSED CUP: 196°C (384.8°F).

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO₂).

Fire Hazards in Presence of Various Substances:

Slightly flammable to flammable in presence of heat.

Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available.

Slightly explosive in presence of open flames and sparks, of heat.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Dust generation can form an explosive mixture if dispersed in a sufficient quantity of air.

Section 6: Accidental Release Measures

Small Spill:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by

spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:

Use a shovel to put the material into a convenient waste disposal container. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:

Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 25°C (77°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 5 (mg/m³) from ACGIH (TLV) [United States] Inhalation
Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (crystalline powder.)

Odor: Odorless.

Taste: Tart

Molecular Weight: 146.14 g/mole

Color: White.

pH (1% soln/water): Not available.

Boiling Point: 337.5°C (639.5°F)

Melting Point: 152°C (305.6°F)

Critical Temperature: Not available.

Specific Gravity: 1.36 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: 5.04 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: The product is equally soluble in oil and water; $\log(\text{oil/water}) = 0.1$

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, acetone.

Solubility:

Easily soluble in methanol.

Soluble in hot water, acetone.

Partially soluble in cold water.

Insoluble in Acetic acid, Petroleum Benzin, Benzene, Petroleum Ether.

Slightly soluble in Cyclohexane.

Freely soluble in Ethanol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, excess dust generation, ignition sources, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Not available.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Aqueous solutions of Adipic acid are corrosive

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 1900 mg/kg [Mouse].

Chronic Effects on Humans: May cause damage to the following organs: the nervous system, gastrointestinal tract.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects:

May cause skin irritation.

Eyes: May cause eye irritation.

Inhalation: Expected to be a low hazard for usual industrial handling. May cause respiratory tract. Symptoms

may include coughing, sneezing, and blood-tinged mucous.

Ingestion: Expected to be a low ingestion hazard if small amounts (less than a mouthful) are ingested. Ingestion of large amounts may cause gastrointestinal tract irritation with hypermotility, and diarrhea. May also affect behavior (somnia, convulsions), and metabolism, and may cause hemorrhaging.

Chronic Potential Health Effects:

Inhalation: Repeated or prolonged contact by inhalation may cause asthma.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: : Adipic Acid UNNA: NA9077 PG: III

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:

Connecticut hazardous material survey.: Adipic acid

Illinois chemical safety act: Adipic acid

New York release reporting list: Adipic acid

Rhode Island RTK hazardous substances: Adipic acid

Pennsylvania RTK: Adipic acid

Massachusetts RTK: Adipic acid

Massachusetts spill list: Adipic acid

New Jersey: Adipic acid

New Jersey spill list: Adipic acid

Louisiana spill reporting: Adipic acid

TSCA 8(b) inventory: Adipic acid

CERCLA: Hazardous substances.: Adipic acid: 5000 lbs. (2268 kg)

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):

R36/38- Irritating to eyes and skin.

S2- Keep out of the reach of children.

S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:

Gloves.

Lab coat.

Dust respirator. Be sure to use an approved/certified respirator or equivalent.

Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall ScienceLab.com be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if ScienceLab.com has been advised of the possibility of such damages.