

Adipic Acid

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Adipic Acid

Synonyms/Generic Names: Hexanedioic acid; 1,4-butanedicarboxylic acid

SDS Number: 11.00

Product Use: For Educational Use Only

Manufacturer: Columbus Chemical Industries, Inc.
N4335 Temkin Rd.
Columbus, WI. 53925

For More Information Contact: Ward's Science
5100 West Henrietta Rd.
PO Box 92912-9012
Rochester, NY 14692
(800) 962-2660 (Monday-Friday 7:30-7:00 Eastern Time)

In Case of Emergency Call: CHEMTREC – 800-424-9300 or 703-527-3887 (24 Hours/Day, 7 Days/Week)

2. HAZARDS IDENTIFICATION

OSHA Hazards: Irritant

Target Organs: Not Available

Signal Words: Danger

Pictograms



GHS Classification:

Skin corrosion	Category 1
Eye irritation	Category 2A
Acute aquatic toxicity	Category 3

GHS Label Elements, including precautionary statements:

Hazard Statements:

H314	Causes severe skin burns and eye damage.
H402	Harmful to aquatic life.

Precautionary Statements:

P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing, Rinse skin with water/shower.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Potential Health Effects

Eyes	May cause moderate eye irritation.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Occasional contact causes irritation. Prolonged or repeated skin exposure may cause dermatitis.
Ingestion	Known to be slightly toxic if ingested.

NFPA Ratings

Health	2
Flammability	1
Reactivity	0
Specific hazard	Not Available

HMIS Ratings

Health	2
Fire	1
Reactivity	0
Personal	E

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Weight %	CAS #	EINECS# / ELINCS#	Formula	Molecular Weight
Adipic Acid	100	124-04-9	204-673-3	C ₆ H ₁₀ O ₄	146.14 g/mol

4. FIRST-AID MEASURES

Eyes	Rinse with plenty of water for at least 15 minutes and seek medical attention.
Inhalation	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin	Flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention.
Ingestion	Do Not Induce Vomiting! Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention.

5. FIREFIGHTING MEASURES

Suitable (and unsuitable) extinguishing media	Product is flammable. Apply dry chemical, spray water, alcohol foam or expose to carbon dioxide. Use appropriate media on adjacent fires. Cool unopened containers with water.
Special protective equipment and precautions for firefighters	Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
Specific hazards arising from the chemical	Fine dust dispersal in the air near a heat or flame source is a potential dust explosion hazard. Minimum concentration in air as dust is 10-15 mg/L. Emits toxic fumes (carbon oxides) under fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Evacuate unprotected personnel from area. Eliminate all ignition sources. See section 8 for recommendations on the use of personal protective equipment.
Environmental precautions	Prevent spillage from entering drains. Any release to the environment may be subject to a federal/national or local reporting requirements.
Methods and materials for containment and cleaning up	Cleanup personnel need personal protection from inhalation and skin/eye contact. Evacuate and ventilate the area. Sweep up and place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste or cleanup materials in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

See section 8 for recommendations on the use of personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of aerosols.

Conditions for safe storage, including any incompatibilities

Store in tightly closed container. Store in a dry, cool and ventilated area. Protect against physical damage. Isolate from incompatible substances.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls: Ventilation and appropriate grounding of containers.

Component	Exposure Limits	Basis	Entity
Adipic Acid	5 mg/m ³	TLV	ACGIH
	5 mg/m ³	CEIL	AIHA

TWA: Time Weighted Average over 8 hours of work.

TLV: Threshold Limit Value over 8 hours of work.

REL: Recommended Exposure Limit

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit during x minutes.

IDLH: Immediately Dangerous to Life or Health

WEEL: Workplace Environmental Exposure Levels

CEIL: Ceiling

Personal Protection

Eyes	Wear chemical safety glasses and/or full face shield where dust formation is possible.
Inhalation	Provide local exhaust, preferably mechanical. If exposure levels are excessive, use an approved respirator.
Skin	Wear rubber gloves, protective clothing with lab coat or coveralls/apron. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Other	Not Available

Other Recommendations

Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling. Have supplies and equipment for neutralization and running water available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.)	Colorless or white crystalline solid.
Odor	Odorless.
Odor threshold	Not Available
pH	3.2 (0.1% aq soln.) @25°C
Melting point/freezing point	152°C (306°F)
Initial boiling point and boiling range	337°C (639°F) @ 760 mmHg (Decomposes)
Flash point	196°C (385°F)
Evaporation rate	Not Available
Flammability (solid, gas)	Slight flammability when exposed to heat or flame.
Upper/lower flammability or explosive limit	Not Available
Vapor pressure (mmHg)	1 @ 159.5°C (320°F)
Vapor density	(air=1) 5.04
Relative density	Not Available
Solubility (ies)	Soluble
Partition coefficient: n-octanol/water	Not Available
Auto-ignition temperature	420°C (788°F)
Decomposition temperature	Not Available

10. STABILITY AND REACTIVITY

Chemical Stability	Stable
Possibility of Hazardous Reactions	Will not occur.
Conditions to Avoid	Heat, air and dusting conditions.
Incompatible Materials	Can react with oxidizing materials, strong bases, reducing agents, alcohols, glycols, aldehydes, epoxides or polymerized compounds.
Hazardous Decomposition Products	Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Skin	LD50 Dermal- rabbit- 7,940 mmHg
Eyes	Eyes-rabbit- Moderate eye irritation- 24 h
Respiratory	Not Available
Ingestion	LD50 Oral- rat- 5,050 mg/kg LD50 Oral- rat > 11 g/kg

Carcinogenicity

IARC	No components of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP	No components of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA	No components of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs & Symptoms of Exposure

Skin	Irritation.
Eyes	Redness, pain, watering eyes.
Respiratory	Sneezing and coughing.
Ingestion	Irritation, swelling or bleeding of the gastrointestinal tract.

Chronic Toxicity	Not Available
Teratogenicity	Not Available
Mutagenicity	Not Available
Embryotoxicity	Not Available
Specific Target Organ Toxicity	Not Available
Reproductive Toxicity	Not Available
Respiratory/Skin Sensitization	Not Available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic Vertebrate	LC50- Pimephales promelas (fathead minnow)- 97 mg/l – 96 h
Aquatic Invertebrate	EC50- Daphnia magna (water flea)= 85.7 mg/l- 48 h
Terrestrial	EC50- Desmodesmus subspicatus (green algae)- 31.3 mg/l- 72 h

Persistence and Degradability	Easily biodegrades.
Bioaccumulative Potential	Not Available
Mobility in Soil	Not Available
PBT and vPvB Assessment	Not Available
Other Adverse Effects	When released into the air, moderate biodegradation occurs by reaction with photochemically produced hydroxyl radicals.

13. DISPOSAL CONSIDERATIONS

Waste Residues	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste products or residues.
Product Containers	Users should review their operations in terms of the applicable federal/national or local regulations and consult with appropriate regulatory agencies if necessary before disposing of waste product container.

The information offered in section 13 is for the product as shipped. Use and/or alterations to the product may significantly change the characteristics of the material and alter the waste classification and proper disposal methods.

14. TRANSPORTATION INFORMATION

US DOT	Not Dangerous Goods
TDG	Not Dangerous Goods
IMDG	Not Dangerous Goods
Marine Pollutant	No.
IATA/ICAO	Not Dangerous Goods

15. REGULATORY INFORMATION

TSCA Inventory Status	All ingredients are listed on the TSCA inventory.
DSCL (EEC)	All ingredients are listed on the DSCL inventory.
California Proposition 65	Not Listed
SARA 302	Not Listed
SARA 304	Not Listed
SARA 311	Acute Health Hazard
SARA 312	Acute Health Hazard
SARA 313	Not Listed
WHMIS Canada	Class D-2B: Poisonous and infectious material- Other effects- Toxic

16. OTHER INFORMATION

Revision	Date
Revision 1	01/28/2013
Revision 2	06/19/2013

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