Material Safety Data Sheet
Adipic acid, 99%

ACC# 00067

Section 1 - Chemical Product and Company Identification

MSDS Name: Adipic acid, 99%
Catalog Numbers: AC102810000, AC102810010, AC102810025, AC102810030, AC102810050, AC102815000, AC9878275, XXAC10281-22
Synonyms: Hexanedioic acid, adipinic acid, 1,4-butanedicarboxylic acid; 1,6-hexanedioic acid
Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100
Emergency Number: 201-796-7100
For CHEMTREC assistance, call: 800-424-9300
For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
124-04-9	Adipic acid	99.0	204-673-3

Hazard Symbols: XI
Risk Phrases: 36

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white solid. **Warning!** Can be explosive when exposed to heat or flames. May cause respiratory and digestive tract irritation. May cause eye and skin irritation.
Target Organs: Gastrointestinal system, eyes, nervous system.

Potential Health Effects
Eye: May cause severe eye irritation.
Skin: May cause skin irritation.
Ingestion: Ingestion of large amounts may cause gastrointestinal irritation. Expected to be a low ingestion hazard.
Inhalation: May cause respiratory tract irritation. Low hazard for usual industrial handling.
Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin: Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.
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.
Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.
Extinguishing Media: For small fires, use water spray, dry chemical, carbon dioxide or chemical foam.
Flash Point: 410e deg F (210.00 deg C)
Autoignition Temperature: 788 deg F (420.00 deg C)
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 1; Flammability: 1; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation. Avoid mechanical shock and friction.
Storage: Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong bases.

Section 8 - Exposure Controls, Personal Protection

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

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Adipic acid	5 mg/m3 TWA	none listed	none listed

OSHA Vacated PELs: Adipic acid: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to minimize contact with skin.
Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Appearance: white
Odor: odorless
pH: 3.45 in 0.1% w/w
Vapor Pressure: Negligible.
Vapor Density: 5.04 (air=1)
Evaporation Rate: Negligible.
Viscosity: Not available.
Boiling Point: 639 deg F
Freezing/Melting Point:302 deg F
Decomposition Temperature:639 deg F
Solubility: 2.0 g/100g at 77 F
Specific Gravity/Density:1.36 (water=1)
Molecular Formula:C6H10O4
Molecular Weight:146.0676

Section 10 - Stability and Reactivity

Chemical Stability: Stable. Dusts may form an explosion hazard.
Conditions to Avoid: Mechanical shock, ignition sources, dust generation, alkaline materials, strong oxidants, electrical sparks, dust.
Incompatibilities with Other Materials: Strong oxidizers. Corrosive to mild steel at room temperature.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, acrid smoke and fumes.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 124-04-9: AU8400000
LD50/LC50:
CAS# 124-04-9:
Draize test, rabbit, eye: 20 mg/24H Moderate;
Oral, mouse: LD50 = 1900 mg/kg;
Oral, rabbit: LD50 = >11 gm/kg;
Oral, rat: LD50 = >11 gm/kg;

Carcinogenicity:
CAS# 124-04-9: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No data available.
Teratogenicity: No data available.
Reproductive Effects: No data available.
Neurotoxicity: ACGIH says threshold limit value is based upon neurotoxicit y.
Mutagenicity: No data available.
Other Studies: Standard Draize Test: Administration into the eye (rabbit) = 20 mg/24H (Moderate).

Section 12 - Ecological Information

Ecotoxicity: Fish: Bluegill/Sunfish: LC50 = 97-330 mg/L; 24-96 Hr.; Static conditions, 18-22 degrees C The Koc of adipic acid is estimated as approximately 26, using a measured log Kow of 0.08 and a regression-derived equation. According to a recommended classification scheme, this estimated Koc value suggests that adipic acid is expected to have very high mobility in soil.
Environmental: Adipic acid is not expected to volatilize from dry soil surfaces based on its extrapolated vapor pressure. Biodegradability screening tests indicate that adipic acid is readily biodegradable. An 84% conversion of adipic acid's carbon content to carbon dioxide was observed after 30 days aerobic incubation in soil biometer flasks at an initial adipic acid concn of 1 mg/g soil.
Physical: ATMOSPHERIC FATE: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere, adipic acid, which has an extrapolated vapor pressure of 3.2X10-7 mm Hg at 25 deg C, will exist in both the vapor and particulate phases in the ambient atmosphere. Vapor-phase adipic acid is degraded in the atmosphere by reaction with hot chemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be about 2.9 days. Particulate-phase adipic acid may be physically removed from the air.
Other: According to a classification scheme, an estimated BCF value of 0.68, from a measured log Kow, suggests that bioconcentration in aquatic organisms is low. Biodegradability screening tests indicate that adipic acid is readily biodegradable. Adipic acid was rapidly degraded in a river die-away test using Main River (Germany) water; 50% and 90% degradation being achieved in 3.5 and 7 days, respectively, at concn levels of 700 mg/l.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	No information available.				ADIPIC ACID
Hazard Class:					9.2
UN Number:					UN9077
Packing Group:					III
Additional Info:					REGULATED LIMIT 230 KG

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 124-04-9 is listed on the TSCA inventory.
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

CERCLA Hazardous Substances and corresponding RQs
CAS# 124-04-9: 5000 lb final RQ; 2270 kg final RQ
SARA Section 302 Extremely Hazardous Substances
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 depletors. This material does not contain any Class 2 Ozone depletors.
Clean Water Act:
CAS# 124-04-9 is listed as a Hazardous Substance 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
CAS# 124-04-9 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts. 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 Irritating to eyes.

Safety Phrases:

WGK (Water Danger/Protection)
CAS# 124-04-9: 0
Canada - DSL/NDSL
CAS# 124-04-9 is listed on Canada's DSL List.
Canada - WHMIS
This product has a WHMIS classification of D2B.
Canadian Ingredient Disclosure List
CAS# 124-04-9 is listed on the Canadian Ingredient Disclosure List.
Exposure Limits
CAS# 124-04-9: OEL-RUSSIA:STEL 4 mg/m3

Section 16 - Additional Information

MSDS Creation Date: 6/17/1999
Revision #3 Date: 1/02/2002