

Material Safety Data Sheet

Piperidine, 99%

ACC# 01214

Section 1 - Chemical Product and Company Identification

MSDS Name: Piperidine, 99%

Catalog Numbers: AC147180000, AC147180010, AC147180025, AC147180050, AC147185000

Synonyms:

Company Identification:

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
110-89-4	Piperidine	99	203-813-0

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless clear liquid. Flash Point: 16 deg C.

Danger! Causes eye and skin burns. Causes digestive and respiratory tract burns. **Flammable liquid and vapor.** Harmful if absorbed through skin or if inhaled.

Target Organs: Kidneys, liver, respiratory system, gastrointestinal system, eyes, nervous system, skin.

Potential Health Effects

Eye: Causes eye burns. Causes redness and pain.

Skin: Causes skin burns. Causes redness and pain. Toxic in contact with skin. Absorbed through the skin.

Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns. May cause central nervous system effects. May cause burning sensations, coughing, wheezing, laryngitis, shortness of breath and headache.

Inhalation: Causes chemical burns to the respiratory tract. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Toxic if inhaled. May cause liver damage.

Chronic: Not available.

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: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

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. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire. Flammable liquid and vapor.

Extinguishing Media: Use water spray to cool fire-exposed containers. Use foam, dry chemical, or carbon dioxide.

Flash Point: 16 deg C (60.80 deg F)

Autoignition Temperature: 320 deg C (608.00 deg F)

Explosion Limits, Lower: 1.15 Vol%

Upper: 8.7 Vol%

NFPA Rating: (estimated) Health: ; Flammability: ; Instability:

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Do not flush into a sewer. Remove all sources of ignition. Use a spark-proof tool.

Section 7 - Handling and Storage

Handling: Use spark-proof tools and explosion proof equipment. Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Take precautionary measures against static discharges. Use only in a chemical fume hood.

Storage: Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Piperidine	none listed	none listed	none listed

OSHA Vacated PELs: Piperidine: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Not available.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Clear liquid

Appearance: colorless

Odor: amine-like

pH: 12.6(100g/l aq.sol.)

Vapor Pressure: 24.75 mm Hg @20 deg C

Vapor Density: 3.0 (air=1)

Evaporation Rate:Not available.

Viscosity: 1.46 mPa@ 20 deg C

Boiling Point: 106 deg C @ 760 mmHg

Freezing/Melting Point:-11 deg C

Decomposition Temperature:> 500 deg C

Solubility: Miscible.

Specific Gravity/Density:0.8622g/cm3

Molecular Formula:C5H11N

Molecular Weight:85.15

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, ignition sources.

Incompatibilities with Other Materials: Strong oxidizing agents, acids, acid chlorides, aluminum, carbon dioxide, zinc, acid anhydrides, sulfur trioxide.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 110-89-4: TM3500000

LD50/LC50:

CAS# 110-89-4:

Draize test, rabbit, eye: 250 ug/24H Severe;

Draize test, rabbit, skin: 5 mg/24H Severe;

Inhalation, mouse: LC50 = 6000 mg/m3/2H;

Oral, mouse: LD50 = 30 mg/kg;

Oral, rabbit: LD50 = 145 mg/kg;

Oral, rat: LD50 = 400 mg/kg;

Skin, rabbit: LD50 = 276 mg/kg;

Carcinogenicity:

CAS# 110-89-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.

Teratogenicity: No data available.

Reproductive Effects: Inhalation, Rat: TCLo = 3 mg/m3/24H - fetotoxic effects. Inhalation, rat: TCLo = 100 mg/m3/24H - effected litter size

Mutagenicity: Mutagenic at 5050 æmol/L in mouse lymphocyte.

Neurotoxicity: Intravenous, rabbit: LDLo = 160 mg/kg. Caused spastic paralysis and convulsions or effect on seisure threshold.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. log POW = 0.84

Environmental: No information available.

Physical: No information available.

Other: Avoid entering into waters or underground water. Do not empty into drains.

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	Canada TDG
Shipping Name:	PIPERIDINE	PIPERIDINE
Hazard Class:	8	8(3)
UN Number:	UN2401	UN2401
Packing Group:	I	I
Additional Info:		FLASHPOINT 16 C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 110-89-4 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.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

CAS# 110-89-4: 1000 lb TPQ

SARA Codes

CAS # 110-89-4: immediate, fire.

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

CAS# 110-89-4 can be found on the following state right to know lists: New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

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:

T F C

Risk Phrases:

R 11 Highly flammable.

R 34 Causes burns.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 27 Take off immediately all contaminated clothing.

S 45 In case of accident or if you feel unwell, seek medical advice

immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 110-89-4: 1

Canada - DSL/NDSL

CAS# 110-89-4 is listed on Canada's DSL List.

Canada - WHMIS

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 11/12/1997

Revision #2 Date: 10/03/2005

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 Fisher 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 Fisher has been advised of the possibility of such damages.