Material Safety Data Sheet
m-Phenylenediamine, 99+%

ACC# 32896

Section 1 - Chemical Product and Company Identification

MSDS Name: m-Phenylenediamine, 99+%
Catalog Numbers: AC130560000, AC130560010, AC130560250, AC130562500, AC130565000
Synonyms: 1,3-Diaminobenzene.
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
108-45-2	m-Phenylenediamine	>99	203-584-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: brown-yellow solid.
Caution! May cause severe eye irritation and possible injury. Harmful if swallowed. Causes skin irritation. May cause respiratory tract irritation. May cause liver and kidney damage. The toxicological properties of this material have not been fully investigated.
Target Organs: Kidneys, liver.

Potential Health Effects
Eye: May cause eye irritation. May result in corneal injury.
Skin: Causes skin irritation. May be absorbed through the skin in harmful amounts.
Ingestion: Harmful if swallowed. May cause irritation of the digestive tract. May cause liver and kidney damage.
Inhalation: Dust is irritating to the respiratory tract.
Chronic: Prolonged or repeated skin contact may cause dermatitis.

Section 4 - First Aid Measures

Eyes: 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 water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid. Wash mouth out with water.
Inhalation: Remove from exposure and move 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.
Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.
Flash Point: Not available.
Autoignition Temperature: Not applicable.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 1

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: Wash thoroughly after handling. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation. Store protected from light.
Storage: Store in a tightly closed container. Store protected from light. Store in a cool, dry area away from incompatible substances.

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 exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
m-Phenylenediamine	0.1 mg/m3 TWA	none listed	none listed

OSHA Vacated PELs: m-Phenylenediamine: 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 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: Solid
Appearance: brown-yellow
Odor: Not available.
pH: Not available.
Vapor Pressure: 1 mm Hg @ 212 deg F (99.8 deg C)
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 282-284 deg C
Freezing/Melting Point:63-65 deg C
Decomposition Temperature: Not available.
Solubility: Insoluble in water.
Specific Gravity/Density: Not available.
Molecular Formula:C6H4(NH2)2
Molecular Weight:108.14

Section 10 - Stability and Reactivity

Chemical Stability: Unstable in air.
Conditions to Avoid: Light, dust generation.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 108-45-2: SS7700000
LD50/LC50:
CAS# 108-45-2:
Draize test, rabbit, eye: 100 uL Severe;
Oral, mouse: LD50 = 67700 ug/kg;
Oral, rabbit: LD50 = 437 mg/kg;
Oral, rat: LD50 = 280 mg/kg;
.

Carcinogenicity:
CAS# 108-45-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: TDLo(Intraperitoneal, rat) = 375 mg/kg;Effects on Embryo or Fetus - fetal death.
Mutagenicity: Mutation in microorganisms(Salmonella typhimurium)= 250 ug/plateMutation in microorganisms(Salmonella typhimurium)=10 ug/plate
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 0.028 mg/L; 96 Hr.; UnspecifiedFish: Rainbow trout: LC50 =3.9 mg/L; 96 Hr.; UnspecifiedFish: Goldfish: LC50 =5.74 mg/L; 48 Hr.; UnspecifiedWater flea Daphnia: EC50 = 3.9 mg/L; 48 Hr.; Unspecified The product is chemically identically to the natural amino acid L-Serine and can therefore be degraded microbiologically.
Environmental: An estimated BCF value of 0.33 was calculated for 1,3-benzenediamine, using an estimated log Kow of -0.33 and a recommended regression-derived equation. BCF values of 1.3 to 4.6 and <1.6 to 24 were measured for 1,3-benzenediamine in carp at 2 and 0.2 mg/l, respectively. According to a classification scheme, these BCF values suggest that bioconcentration in acquatic organisms is low.
Physical: No information found.
Other: The Koc of 1,3-benzenediamine is estimated as approximately 16, using a measured log Kow of -0.33 and a regression-derived equation. According to a recommended classification scheme, this estimated Koc value suggests that 1,3-benzenediamine is expected to have very high mobility in soil. However, anilines are expected to bind strongly to humus or organic matter in soils due to the high reactivity of the aromatic amino group; therefore, mobility may be much lower in some soils.

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:	PHENYLENEDIAMINES	PHENYLENEDIAMINES
Hazard Class:	6.1	6.1
UN Number:	UN1673	UN1673
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 108-45-2 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
None of the chemicals in this product have a TPQ.
Section 313
This material contains m-Phenylenediamine (CAS# 108-45-2, >99%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR
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:
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# 108-45-2 can be found on the following state right to know lists: New Jersey, 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 N
Risk Phrases:
R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
R 36 Irritating to eyes.
R 43 May cause sensitization by skin contact.
R 50/53 Very toxic to aquatic organisms, may cause long-term

adverse effects in the aquatic environment.
R 68 Possible risk of irreversible effects.

Safety Phrases:

S 36/37 Wear suitable protective clothing and gloves.
S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 60 This material and its container must be disposed of as hazardou s waste.
S 28A After contact with skin, wash immediately with plenty of water .
S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 108-45-2: 2

Canada - DSL/NDSL

CAS# 108-45-2 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1B, D2B.

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

CAS# 108-45-2 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 5/19/1999
Revision #5 Date: 6/20/2005