

Common Name: **m-PHENYLENEDIAMINE**

Synonyms: 3-Aminoaniline; 1,3-Benzenediamine; 1,2-Phenylenediamine

CAS No: 108-45-2

 Molecular Formula: C₆H₈N₂

RTK Substance No: 1316

Description: White, crystalline solid that turns red on exposure to air

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
2 - Health 1 - Fire 0 - Reactivity DOT#: UN 1673 ERG Guide #: 153 Hazard Class: 6 (Toxic)	m-Phenylenediamine may burn, but does not readily ignite. Use dry chemical or water as extinguishing agents. POISONOUS GASES ARE PRODUCED IN FIRE , including <i>Nitrogen Oxides</i> . Use water spray to keep fire-exposed containers cool.	m-Phenylenediamine reacts with OXIDIZING AGENTS (such as PERCHLORATES , PEROXIDES , PERMANGANATES , CHLORATES , NITRATES , CHLORINE , BROMINE and FLUORINE); STRONG ACIDS (such as HYDROCHLORIC , SULFURIC and NITRIC); ACID ANHYDRIDES ; ACID CHLORIDES ; and CHLOROFORMATES . Protect from SUNLIGHT .

SPILL/LEAKS

Isolation Distance:

Spill: 25 meters (75 feet)

Fire: 800 meters (1/2 mile)

Moisten spilled material first or use a HEPA-filter vacuum for clean-up and place into sealed containers for disposal.

DO NOT wash into sewer.

m-Phenylenediamine is very toxic to aquatic organisms.

PHYSICAL PROPERTIES

Flash Point: 280° to 369°F (138° to 187°C)

LEL: 1.3%

UEL: 9.8%

Auto Ignition Temp: 1,040°F (560°C)

Vapor Density: 3.7 (air = 1)

Vapor Pressure: 0.62 mm Hg at 212°F (100°C)

Specific Gravity: 1.1 (water = 1)

Water Solubility: Very slightly soluble

Boiling Point: 540° to 543°F (282° to 284°C)

Melting Point: 145° to 147°F (63° to 64°C)

Molecular Weight: 108.2

EXPOSURE LIMITS

ACGIH: 0.1 mg/m³, 8-hr TWA

The Protective Action Criteria values are:

 PAC-1 = 0.3 mg/m³

 PAC-2 = 10 mg/m³

 PAC-3 = 125 mg/m³

PROTECTIVE EQUIPMENT

Gloves: Butyl, SilverShield®/4H®; Barrier (>8-hr breakthrough for *Amines, aromatic, primary*)

Coveralls: Tyvek® (*solid m-Phenylenediamine*); Tychem® BR and TK (>8-hr breakthrough for *Amines, aromatic, primary*)

Respirator: >0.1 mg/m³ - Full facepiece APR with *Organic vapor cartridges* and *P100 prefilters*
 >10 mg/m³ - SCBA

HEALTH EFFECTS

Eyes: Irritation

Skin: Irritation

Inhalation: Nose, throat and lung irritation, with coughing, wheezing and shortness of breath

Headache, fatigue and blue color to the skin and lips (methemoglobinemia)

FIRST AID AND DECONTAMINATION

Remove the person from exposure.

Flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn.

Quickly remove contaminated clothing and wash contaminated skin with large amounts of soap and water.

Begin artificial respiration if breathing has stopped and CPR if necessary.

Transfer promptly to a medical facility.