

Common Name: **ADIPONITRILE**

Synonyms: 1,4-Dicyanobutane; Hexanedinitrile Tetramethylene Cyanide

CAS No: 111-69-3

Molecular Formula: C<sub>6</sub>H<sub>8</sub>N<sub>2</sub>

RTK Substance No: 0027

Description: Colorless, nearly odorless, oily liquid

## HAZARD DATA

Hazard Rating	Firefighting	Reactivity
<b>3 - Health</b> <b>2 - Fire</b> <b>1 - Reactivity</b> <b>DOT#:</b> UN 2205 <b>ERG Guide #:</b> 153 <b>Hazard Class:</b> 6.1 (Poison)	<b>COMBUSTIBLE LIQUID</b> Use dry chemical, CO <sub>2</sub> , water spray, or alcohol-resistant foam as extinguishing agents. <b>POISONOUS GASES ARE PRODUCED IN FIRE, including Hydrogen Cyanide.</b> Use water spray to keep fire-exposed containers cool. Vapor is heavier than air and may travel a distance to cause a fire or explosion far from the source.	<b>Adiponitrile</b> reacts violently with <b>OXIDIZING AGENTS</b> (such as <b>PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE</b> ). <b>Adiponitrile</b> is not compatible with <b>STRONG ACIDS</b> (such as <b>HYDROCHLORIC, SULFURIC and NITRIC</b> ) and <b>STRONG BASES</b> (such as <b>SODIUM HYDROXIDE and POTASSIUM HYDROXIDE</b> ). <b>Adiponitrile</b> decomposes above 194°F (90°C) to release toxic <i>Hydrogen Cyanide gas</i> .

## SPILL/LEAKS

**Isolation Distance:**

Small Spill: 60 meters (200 feet)

Large Spill: 270 meters (900 feet)

Fire: 800 meters (1/2 mile)

Absorb liquids in vermiculite, dry sand, earth, or a similar material and deposit in sealed containers.

DO NOT wash into sewer.

Animals and aquatic life are endangered by potential *Cyanide* production.

## PHYSICAL PROPERTIES

<b>Odor Threshold:</b>	Nearly odorless
<b>Flash Point:</b>	199°F (93°C)
<b>LEL:</b>	1 to 1.7%
<b>UEL:</b>	5%
<b>Auto Ignition Temp:</b>	1,022°F (550°C)
<b>Vapor Density:</b>	3.73 (air = 1)
<b>Vapor Pressure:</b>	0.002 mm Hg at 68°F (20°C)
<b>Specific Gravity:</b>	0.97 (water = 1)
<b>Water Solubility:</b>	Slightly soluble
<b>Boiling Point:</b>	563°F (295°C)
<b>Freezing Point:</b>	34°F (1°C)
<b>Molecular Weight:</b>	108.1

## EXPOSURE LIMITS

**NIOSH:** 4 ppm, 10-hr TWA**ACGIH:** 2 ppm, 8-hr TWA**IDLH:** None

The Protective Action Criteria values are:

PAC-1 = 3.85 ppm PAC-2 = 3.85 ppm PAC-3 = 150 ppm

## PROTECTIVE EQUIPMENT

<b>Gloves:</b>	Butyl Rubber, Silver Shield®/4H® and Barrier® (>8-hr breakthrough for <i>Nitriles, aliphatic</i> )
<b>Coveralls:</b>	Tychem® BR, Responder® and TK; Zytron® 400 and 500; ONESuit®TEC; and Trelchem® HPS and VPS (>8-hr breakthrough for <i>Nitriles, aliphatic</i> )
<b>Respirator:</b>	>2 ppm - Supplied air >150 ppm - SCBA

## HEALTH EFFECTS

**Eyes:** Irritation and burns**Skin:** Irritation and burns**Inhalation:** Nose, throat and lung irritation with coughing, wheezing and shortness of breath

Headache, weakness, confusion, nausea and vomiting, pounding of the heart and trouble breathing, coma and death

## 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. Seek medical attention immediately.**Quickly** remove contaminated clothing. Immediately wash contaminated skin with large amounts of soap and water.**Begin** artificial respiration if breathing has stopped and CPR if necessary.**Transfer** to a medical facility.