Right to Know Hazardous Substance Fact Sheet

Emergency Responders Quick Reference

Common Name: **ADIPONITRILE**

Synonyms: 1,4-Dicyanobutane; Hexanedinitrile Tetramethylene Cyanide
CAS No: 111-69-3
Molecular Formula: $C_6H_8N_2$
RTK Substance No: 0027
Description: Colorless, nearly odorless, oily liquid

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
3 - Health **2 - Fire** **1 - Reactivity** **DOT#:** UN 2205 **ERG Guide #:** 153 **Hazard Class:** 6.1 (Poison)	COMBUSTIBLE LIQUID Use dry chemical, CO_2, water spray, or alcohol-resistant foam as extinguishing agents. POISONOUS GASES ARE PRODUCED IN FIRE, including *Hydrogen Cyanide*. 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.	**Adiponitrile** reacts violently with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE). **Adiponitrile** is not compatible with STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC) and STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE). **Adiponitrile** decomposes above 194°F (90°C) to release toxic *Hydrogen Cyanide gas*.

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

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

Gloves: Butyl Rubber, Silver Shield®/4H® and Barrier® (>8-hr breakthrough for *Nitriles*, *aliphatic*)

Coveralls: Tychem® BR, Responder® and TK; Zytron® 400 and 500; ONESuit®TEC; and Trellchem® HPS and VPS (>8-hr breakthrough for *Nitriles*, *aliphatic*)

Respirator: >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.