



MATERIAL SAFETY DATA SHEETS

13

Adiponitrile

1. CHEMICAL IDENTITY

Chemical Name : Adiponitrile

Chemical Classification: Toxic, Reactive

Trade Name :

Synonyms: 1,4-Dicyanobutane, Hexanedinitrile, Tetramethyl cyanide

Formula : C₆H₈N₂

CAS No: 111-69-3

UN No: 2205

Regulated Identification

Shipping Name :

Hazchem Code : 3X

Codes / Label : Class 6.1, Toxic, Reactive

Hazardous Waste ID No :

HAZARDOUS INGREDIENTS	C.A.S. No.	HAZARDOUS INGREDIENTS	C.A.S. No.
1 Adiponitrile	111-69-3	3	
2		4	

2. PHYSICAL / CHEMICAL DATA

Boiling Pt. °C: 296

Physical State: Liquid

Appearance: Water-white, oily liquid; a solid below 1.1°C

Melting Pt °C: 2

Vapour Pressure @ 35°C mmHg: 0.00068 mm Hg at 25 °C

Odour: Practically odourless.

Vapour Density(Air =1): 3.73

Solubility in water at 30°C g/100ml: 50-100 g/L

Others: Soluble in alc, chloroform.

Specific Gravity (Water =1): 0.9676 g/ml @ 20 °C

pH :

3. FIRE / EXPLOSION HAZARD DATA

Flammability :

LEL: 1.7

Flash Point °C in OC: 93

TDG Flammability:

UEL: 5

Flash Point °C in CC:

Autoignition Temperature °C : 550

Explosion sensitivity to impact: Moderate when exposed to heat or flame.

Explosion sensitivity to static Electricity:

Hazardous Combustion Products : Products of combustion may be more hazardous than the material itself. By-products include hydrogen cyanide and irritants.

Hazardous Polymerization : No polymerization.

Combustible Liquid: Yes

Explosive Material:

Corrosive Material

Flammable Material:

Oxidiser :

Others:

Pyrophoric Material:

Organic Peroxide :

4. REACTIVITY DATA

Chemical Stability : Stable at room temperature in closed containers under normal storage and handling conditions.

Incompatibility with other material : Oxidizing agents

Reactivity : Forms explosive mixture with air.

Hazardous : Nitrogen oxides, carbon monoxide, irritating and toxic

Reaction Products fumes and gases, carbon dioxide, nitrogen.

5. HEALTH HAZARD DATA

Routes of entry: Inhalation, ingestion, skin and eyes.

Effects of Exposure / Symptoms:

Inhalation: Causes respiratory tract irritation. May cause anoxia, characterized by weakness, headache, dizziness, confusion, cyanosis, weak and irregular heart beat, collapse, unconsciousness, convulsions, coma and death. Skin: Causes skin irritation. Absorption into the body may cause cyanosis. Eyes: Causes eye irritation. Ingestion: Causes gastrointestinal irritation with nausea, vomiting and diarrhea.

Emergency Treatment :

Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do not use mouth-to-mouth respiration.

Skin: Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do not induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

LD50 (oral-rat) mg/kg:	155 mg/kg	STEL:	
LC50 (rat) mg/kg:	1.71 mg/l/4 hr	Odour Threshold:	
Permissible Exposure Limit:	4 ppm (18 mg/m ³)	TLV (ACGIH) :	2 ppm (8.8 mg/m ³)

NFPA Hazard	Health	Flammability	Reactivity	Special
Signals	2	2	1	

6. PREVENTIVE MEASURES

Personal Protective Equipment : Wear appropriate protective eyeglasses or chemical safety goggles.

Wear appropriate protective gloves to prevent skin exposure. Wear appropriate protective clothing to prevent skin exposure.

Handling : Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage : Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from acids.

Precautions :

7. EMERGENCY / FIRST AID MEASURES

FIRE:

Fire Extinguishing Media : Dry chemical, or carbon dioxide.

Special Procedure : Use water spray to keep fire-exposed containers cool. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Use water in flooding quantities as fog.

Unusual Hazards : Combustion products may contain hydrocyanic acid (HCN).

EXPOSURE: First Aid Measures:

Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do not use mouth-to-mouth respiration.

Skin: Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid. Do not induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Antidotes / Dosages:

SPILLS :

Steps To Be Taken : Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Remove all sources of ignition. Provide ventilation.

Waste Disposal Method:

8. ADDITIONAL INFORMATION / REFERENCES

9. MANUFACTURERS / SUPPLIERS DATA

NAME OF FIRM :

Contact person

MAILING ADDRESS :

in Emergency :

TELEPHONE / TELEX NOS :

Local Bodies involved :

TELEGRAPHIC ADDRESS :

Standard Packing :

OTHERS :

Trem Card Details / Ref :

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