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MSDS COVER SHEET

Pages including cover sheet: 8

Product Name: **Activator**

Catalog Number: **30-3150-XX, 30-3152-XX**

Product Description: 4,5-Dicyanoimidazole in
Anhydrous Acetonitrile

Glen Research Corporation provides Material Safety Data Sheets (MSDS) based on the hazardous components of each product.

Components and MSDS attached

Acetonitrile (97%)	CAS number	75-05-8
4,5-Dicyanoimidazole (3%)	CAS number	1122-28-7



Material Safety Data Sheet

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Section I: Identification & Information

Name: Acetonitrile

Chemical Family: Nitrile

Synonyms: Methyl Cyanide, Cyanomethane, and Ethyl Nitrile

Formula: CH₃CN

M.W.: 41.05

DOT Proper Shipping Name: Acetonitrile

DOT Identification No.: UN1648 CAS No.: 75-05-8

DOT Hazard Class: Flammable Liquid

Section II: Physical Properties

Appearance: Clear, colorless liquid
Vapor Pressure @ 20°C: 73mmHg
Percent Volatile by Volume: ca 100
Evaporation Rate (BuAc =1): 5.79
Boiling Point: 180°F (82°C)
Freezing point: -46°C (-51°F)

Odor: Sweet, aromatic; ether-like
Vapor Density (air=1): 1.42
Specific Gravity (H₂O=1): 0.7857
Stability: Stable
Solubility in H₂O: Soluble
Water Reactive: n/a

Section III: Reactivity Hazard Data

Stable material at room temperature in closed containers under normal storage and handling conditions. Hazardous polymerization is not expected to occur.

Conditions to avoid: Heat, sparks, open flames, open containers, poor ventilation, and direct sunlight.

Materials to avoid: Strong oxidizing agents and strong acids and bases (e.g. chlorosulfonic acid), explosives, nitrogen-fluorine compounds, sulfites, perchlorates, reducing agents, and plastics.

Hazardous decomposition products: Incomplete combustion can generate hydrogen cyanide and other toxic vapors.

Emergency First Aid:

- Ingestion: Call poison control center for assistance. Get emergency medical assistance. If conscious, and alert, give 2-4 cupfuls of water or milk. Never induce vomiting or give anything by mouth to a victim who is unconscious or having convulsions. Trained persons may administer amyl nitrate by inhalation as antidote where stupor or unconsciousness occurred.
- Eye contact: Rinse with copious amounts of water for at least 15 minutes. Get emergency medical assistance.
- Skin contact: Flush thoroughly with water for at least 15 minutes. Wash affected skin with soap and water. Remove contaminated clothes and shoes. Wash clothing before reuse. Get emergency medical assistance.
- Inhalation: Immediately remove to fresh air. If not breathing, give artificial respiration. Keep patient warm and at rest. Get emergency medical assistance.

Section VII: Special Protection

Ventilation: Adequate ventilation is required to control vapors and odor.

Respiratory Protection: Use approved respiratory equipment. Follow NIOSH and equipment manufacturer's recommendations to determine appropriate equipment.

Skin Protection: Protective rubber gloves and clothing are recommended. The choice of material must be based on chemical resistance and other user requirements.

Eye Protection: Laboratory safety glasses are minimum protection. Goggles are preferred.

Emergency eye wash fountains and safety showers should be available in the vicinity of any potential exposure. Ground and bond metal containers to minimize sparks.

Section VIII: Spill and Disposal Procedures

Wear protective clothing and use approved respiration equipment. If a spill occurs, protect from ignition. Use water spray to dilute spill to a non-flammable mixture. Ventilate area of spill. Absorb spilled material in an absorbent recommended for solvent spills and scoop with a nonsparking tool. Remove waste to a safe location for disposal by approved methods. If released to the environment, comply with all regulatory notification requirements.

Waste Disposal: Dispose of acetonitrile as an EPA Hazardous Waste.

Section IX: Storage

Acetonitrile should be stored in a cool area away from ignition sources, combustibles and oxidizing materials. Protect from temperature extremes and direct sunlight.

This chemical is subject to the notification requirements of section 313 of the Emergency Planning and Community Right-to-Know Act of 1986. This law requires certain manufacturers to report on annual emissions of specified toxic chemical and chemical categories.

The information provided herein is based on sources believed to be reliable as of 4/5/01 and pertains only to the material designated. Glen Research Corporation makes no warranty or representation to its completeness, accuracy, or currency. This material is intended for use by persons with pertinent technical skills and at their discretion and risk. It is the responsibility of the user to determine the product's suitability for its intended use, the product's safe use, and the product's proper disposal. Disposal of hazardous material may be subject to federal, state or local laws or regulations.

Key:

ca: Approximately

PEL: Permissible Exposure Level

STEL: Short Term Exposure Level

TWA: Time Weighted Average

IDLH: Immediately Dangerous to Life and Health

BuAc: Butyl Acetate

TLV: Threshold Limit Value

n/a: not available



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Section I: Identification & Information

Name: 4,5-Dicyanoimidazole

Synonyms: 4,5-imidazoledicarbonitrile

Formula: C₅H₂N₄

M.W.: 118.09

DOT Proper Shipping Name: n/a

DOT Identification No.: n/a

DOT Hazard Class: n/a

CAS No.: 1122-28-7

Section II: Physical Properties

Appearance: Off white powder

Odor: n/a

Vapor Pressure @ 20°C: n/a

Specific Gravity (H₂O=1): n/a

Percent Volatiles by volume: n/a

Evaporation Rate (Ether=1): n/a

Water Reactive: n/a

Stability: Stable

Solubility in H₂O: Soluble

Melting point: 168-175°C

Section III: Reactivity Hazard Data

Stable material under ordinary conditions of use and storage. Hazardous polymerization does not occur.

Conditions to avoid: Heat, sparks, open flames, open containers, poor ventilation.

Materials to avoid: Strong oxidizing agents.

Hazardous decomposition products: Thermal decomposition may produce carbon monoxide, carbon dioxide, and nitrogen oxides.

Section IV: Fire and Explosion Hazard Data

Flash Point: n/a

Autoignition temperature: n/a

Flammable Limits in air % by volume: Lower limit: n/a Upper limit: n/a

Extinguishing Media: water spray, dry chemical, CO₂, foam.

Special Fire Fighting Procedures: Wear full protective clothing and self-contained breathing apparatus. Prevent contact with eyes and skin.

Unusual Fire and Explosion Hazards: Emits toxic fumes under fire conditions.

Section V: Hazardous Ingredients

4,5-dicyanoimidazole, ca 100%

Section VI: Toxicity and Health Hazard Data

See Registry of Toxic Effects of Chemical Substances (RTECS).
The toxicological properties of this material have not been thoroughly investigated.

Primary routes of entry: Inhalation, skin absorption, ingestion.

- Inhalation: material is irritating to the mucous membranes of the upper respiratory tract.
- Ingestion: No information found, but this material should be handled as a potential health hazard.
- Eye contact: Causes eye irritation.
- Skin contact: Causes skin irritation. May be absorbed through the skin.

Section VII: Special Protection

Ventilation: Mechanical exhaust required. Do not breathe dust.

Respiratory Protection: NIOSH/MSHA-approved respirator.

Skin Protection: Impervious, compatible, protective rubber gloves and clothing are recommended. The choice of material must be based on chemical resistance and other user requirements.

Eye Protection: Chemical safety goggles. Contact lenses should not be worn when working with this material. Avoid contact with eyes.

Emergency eye wash fountains and safety showers should be available in the vicinity of any potential exposure.

Emergency First Aid:

- Ingestion: Wash out mouth with water, if person is conscious. Call poison control center for assistance. Get emergency medical assistance.
- Eye contact: Flush with copious amounts of water for at least 15 minutes. Get emergency medical assistance.
- Skin contact: Wash thoroughly with soap and water for at least 15 minutes. Wash contaminated clothing. Get emergency medical assistance if irritation develops.
 - Inhalation: Immediately remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Keep patient warm and at rest. Contact emergency medical assistance.

Wash thoroughly after handling.
Harmful solid.

Section VIII: Spill and Disposal Procedures

If a spill occurs, wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves. Sweep up and place in bag for waste disposal. Avoid raising dust.

Ventilate area. Wash spill area after clean up.

Waste Disposal: Dissolve or mix with combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Do not flush to sewer. Ensure compliance with local, state and federal regulations.

Section IX: Storage

Store 4,5-Dicyanoimidazole in a tightly sealed container. Store in a cool, dry area away from areas where fire hazards may be acute. Separate from oxidizing materials.

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Key:

ca: Approximately

n/a: not available

C: Ceiling

PEL: Permissible Exposure Level

STEL: Short Term Exposure Level

BuAc: Butyl Acetate

TLV: Threshold Limit Value

TWA: Time Weighted Average

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980

NSC: National Safety Council ("Fundamentals of Industrial Hygiene" 1983)

OHS: Occupational Health Services ("Hazardline")