# MATERIAL SAFETY DATA SHEET

## SECTION:1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| Product Name: | 2-Cyanoethyl N,N-diisopropylchlorophosphoramidite |
| Cat No. : | CGIPCR-1544 |
| CAS No | 89992-70-1 |
| Synonyms | Chloro(diisopropylamino)-beta-cyanoethoxyphosphine |

| | |
|---|---|
| Recommended Use | Laboratory chemicals. |
| Uses advised against | Food, drug, pesticide or biocidal product use. |

Details of the supplier of the safety data sheet
Manufacturer or supplier's

**ChemGenes India Pvt. Ltd**
207 Regency Plaza,
5-A Park road, Lucknow-226001
Ph: +91-8687421036
Email: info@chemgenesindia.com

## SECTION:2. HAZARD(S) IDENTIFICATION

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|---|---|
| Pyrophoric liquids | Category 1 |
| Skin Corrosion/Irritation | Category 1B |
| Serious Eye Damage/Eye Irritation | Category 1 |

**Label Elements**
Signal Word
Danger

Hazard Statements
Catches fire spontaneously if exposed to air
Causes severe skin burns and eye damage

**Precautionary Statements**
Prevention
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Do not allow contact with air

**Response**
Immediately call a POISON CENTER or doctor/physician
**Inhalation**
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
**Skin**
Wash contaminated clothing before reuse
IF ON SKIN: Immerse in cool water/wrap with wet bandages
**Eyes**
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
**Ingestion**
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting
**Fire**
In case of fire: Use CO2, dry chemical, or foam for extinction
**Storage**
Store locked up
Store contents under inert gas
**Disposal**
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Risk of explosion if heated under confinement

## SECTION:3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS No | Weight % |
|---|---|---|
| Phosphoramidochloridous acid, bis (1methylethyl)-,2-cyanoethyl ester | 89992-70-1 | >95 |

## SECTION:4. FIRST-AID MEASURES

General Advice — Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Eye Contact — Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing.

Skin Contact — Wash off immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Call a physician immediately.

Inhalation — Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Ingestion — Do NOT induce vomiting. Call a physician immediately. Never give anything by mouth to an unconscious person. Clean mouth with water.

Most important symptoms and effects

Causes burns by all exposure routes. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Notes to Physician Treat symptomatically

## SECTION:5. FIRE-FIGHTING MEASURES

| | |
|---|---|
| Suitable Extinguishing Media | CO 2, dry chemical, dry sand, alcohol-resistant foam. |
| Unsuitable Extinguishing Media | No information available |
| Flash Point | 110 °C / 230 °F |
| Method - | No information available |
| Autoignition Temperature | No information available |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

Hazardous Combustion Products
Nitrogen oxides (NOx). Carbon monoxide (CO). Carbon dioxide (CO2). Oxides of phosphorus. Thermal decomposition can lead to release of irritating gases and vapors. Hydrogen chloride gas.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.
NFPA

| Health | Flammability | Instability | Physical hazards |
|---|---|---|---|
| 3 | 4 | 3 | N/A |

## SECTION:6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| Personal Precautions | Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment as required. Ensure adequate ventilation. |
| Environmental Precautions | Should not be released into the environment. See Section 12 for additional Ecological Information. |

**Methods for Containment and Clean Up**
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

## SECTION:7. HANDLING AND STORAGE

| | |
|---|---|
| Handling | Do not breathe mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Use only. under a chemical fume hood. Wear personal protective equipment/face protection. Do not ingest. If swallowed then seek immediate medical assistance. |
| Storage. | Corrosives area. Store in freezer. Store under an inert atmosphere. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong oxidizing agents. Strong bases. Alcohols. |

## SECTION:8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | |
|---|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering Measures | Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. |

**Personal Protective Equipment**

| | |
|---|---|
| Eye/face Protection | Tight sealing safety goggles. Face protection shield. |
| Skin and body protection | Wear appropriate protective gloves and clothing to prevent skin exposure. |
| Respiratory Protection | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| Hygiene Measures | Handle in accordance with good industrial hygiene and safety practice. |

## SECTION: 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Physical State | Liquid |
| Appearance | Colorless |
| Odor | No information available |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | No data available |
| Boiling Point/Range | No information available |
| Flash Point | 110 °C / 230 °F |
| Evaporation Rate | No information available |
| Flammability (solid,gas) | Not applicable |
| Flammability or explosive limits | |

| | |
|---|---|
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | No information available |
| Vapor Density | No information available |
| Specific Gravity | 1.061 |
| Solubility | Reacts violently with water |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | No information available |
| Decomposition Temperature | No information available |
| Viscosity | No information available |
| Molecular Formula | C9 H18 Cl N2 O P |
| Molecular Weight | 236.68 |

## SECTION: 10. STABILITY AND REACTIVITY

| | |
|---|---|
| Reactive Hazard | Yes |
| Stability | heat sensitive. Moisture sensitive. |
| Conditions to Avoid | Incompatible products. Exposure to moisture. Heat. |
| Incompatible Materials | Strong oxidizing agents, Strong bases, Alcohols |
| Hazardous Decomposition Products | Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO2), Oxides of phosphorus, Thermal decomposition can lead to release of irritating gases and vapors, Hydrogen chloride gas |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | Reacts violently with water. Heating may cause an explosion. |

## SECTION: 11. TOXICOLOGICAL INFORMATION

Acute Toxicity

| | |
|---|---|
| Product Information | No acute toxicity information is available for this product |
| | Component Information |
| Toxicologically Synergistic Products | No information available |

Delayed and immediate effects as well as chronic effects from short and long-term exposure

| | |
|---|---|
| Irritation | No information available |
| Sensitization | No information available |
| Carcinogenicity | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component | CAS No | IARC | NTP | ACGIH | OSHA | Mexico |
|---|---|---|---|---|---|---|
| Phosphoramidochloridous acid, bis(1-methylethyl)-, 2-cyanoethyl ester | 89992-70-1 | Not listed | Not listed | Not listed | Not listed | Not listed |

| | |
|---|---|
| Mutagenic Effects | No information available |
| Reproductive Effects | No information available. |
| Developmental Effects | No information available. |

| | |
|---|---|
| Teratogenicity | No information available. |
| STOT - single exposure | None known |
| STOT - repeated exposure | None known |
| Aspiration hazard | No information available |
| Symptoms / effects,both acute and delayed | Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| Endocrine Disruptor Information | No information available |
| Other Adverse Effects | The toxicological properties have not been fully investigated. |

## SECTION: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Reacts with water so no ecotoxicity data for the substance is available.

| | |
|---|---|
| Persistence and Degradability | Persistence is unlikely based on information available. |
| Bioaccumulation/ Accumulation | No information available. |
| Mobility | Is not likely mobile in the environment. |

## SECTION:13. DISPOSAL CONSIDERATIONS

| | |
|---|---|
| Waste Disposal Methods | Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification. |

## SECTION: 14. TRANSPORT INFORMATION

DOT

| | |
|---|---|
| UN-No | UN2845 |
| Proper Shipping Name | PYROPHORIC LIQUIDS, ORGANIC, N.O.S. |
| Technical Name | Phosphoramidochloridous acid, bis(1-methylethyl)-, 2-cyanoethyl ester |
| Hazard Class | 4.2 |
| Packing Group | I |

TDG

| | |
|---|---|
| UN-No | UN2845 |
| Proper Shipping Name | PYROPHORIC LIQUIDS, ORGANIC, N.O.S. |
| Hazard Class | 4.2 |
| Packing Group | I |

IATA

| | |
|---|---|
| UN-No | UN2845 |
| Proper Shipping Name | PYROPHORIC LIQUIDS, ORGANIC, N.O.S. |

| | |
|---|---|
| Hazard Class | 4.2 |
| Packing Group | I |

IMDG/IMO

| | |
|---|---|
| UN-No | UN2845 |
| Proper Shipping Name | PYROPHORIC LIQUIDS, ORGANIC, N.O.S. |
| Hazard Class | 4.2 |
| Packing Group | I |

## SECTION: 15. REGULATORY INFORMATION

United States of America Inventory

| Component | CAS No | TSCA | TSCA Inventory notification – Active Inactive | TSCA – EPA Regulatory Flags |
|---|---|---|---|---|
| Phosphoramidochloridous acid, bis(1-methylethyl)-, 2-cyanoethyl ester | 89992-70-1 | - | - | - |

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component | CAS No | DSL | NDSL | EINECS | PICCS | ENCS | ISHL | AICS | IECSC | KECL |
|---|---|---|---|---|---|---|---|---|---|---|
| Phosphoramidochloridous acid, bis(1-methylethyl)-, 2-cyanoethylester | 89992-70-1 | - | - | - | - | - | | - | - | - |

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

**U.S. Federal Regulations**

| | |
|---|---|
| SARA 313 | Not applicable |
| SARA 311/312 Hazard Categories | See section 2 for more information |
| CWA (Clean Water Act) | Not applicable |
| Clean Air Act | Not applicable |

OSHA - Occupational Safety and Health Administration Not applicable

| | |
|---|---|
| CERCLA | Not applicable |
| California Proposition 65 | This product does not contain any Proposition 65 chemicals. |
| U.S. State Right-to-Know Regulations | Not applicable |
| U.S. Department of Transportation Reportable Quantity (RQ): | N |

DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade Slight risk, Grade 1

Authorisation/Restrictions according to EU REACH

Safety, health and environmental regulations/legislation specific for the substance or mixture

| Component | CAS No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|---|---|---|---|---|---|
| Phosphoramidochloridous acid, bis(1-methylethyl)-, 2-cyanoethyl ester | 89992-70-1 | Not applicable | Not applicable | Not applicable | Not applicable |

| Component | CAS No | Seveso III Directive (2012/18/EC) - Qualifying Quantitiesfor Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantitiesfor Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|---|---|---|---|---|---|
| Phosphoramidochloridous acid, bis(1-methylethyl)-,2-cyanoethyl ester | 89992-70-1 | Not applicable | Not applicable | Not applicable | Not applicable |

## SECTION: 16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. ChemGenes (I) Pvt. Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product.



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