

MATERIAL SAFETY DATA SHEET

SECTION:1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **2-Cyanoethyl-N,N,N',N'-tetraisopropylphosphorodiamidite**

Cat No. : CGIPCR-1545

CAS No 102691-36-1

Synonyms Bis(diisopropylamino)-2-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)

Flammable liquids Category 3

Acute oral toxicity Category 4

Skin Sensitization Category 1

Label Elements

Signal Word

Warning

Hazard Statements

Flammable liquid and vapor

Harmful if swallowed

May cause an allergic skin reaction



Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Wear protective gloves/protective clothing/eye protection/face protection

Skin

If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Storage

Store in a well-ventilated place. Keep cool

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Harmful to aquatic life with long lasting effects
Risk of explosion if heated under confinement

SECTION:3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Phosphorodiamidous acid, tetrakis(1-methylethyl)-, 2-cyanoethyl ester	102691-36-1	<=100

SECTION:4. FIRST-AID MEASURES

General Advice	If symptoms persist, call a physician.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects

None reasonably foreseeable. May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Notes to Physician Treat symptomatically

SECTION:5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Carbon dioxide (CO ₂). Dry chemical. Chemical foam. Water mist may be used to cool closed containers.
Unsuitable Extinguishing Media	No information available
Flash Point	60 °C / 140 °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

Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.
Combustible material.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Oxides of phosphorus.

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.
NFPA

Health 2	Flammability 2	Instability 3	Physical hazards N/A
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SECTION:6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions Should not be released into the environment. Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

SECTION:7. HANDLING AND STORAGE

Handling Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

Storage. Keep refrigerated. Keep under nitrogen. Keep away from heat, sparks and flame. Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong bases. Strong oxidizing agents.

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 Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations

and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting equipment.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

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.

Recommended Filter type: Organic gases and vapours filter. Type A. Brown. conforming to EN14387.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

SECTION: 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Clear
Odor	No information available
Odor Threshold	No information available
pH	No information available
Melting Point/Range	No data available
Boiling Point/Range	98 - 100 °C / 208.4 - 212 °F @ 5 mmHg
Flash Point	60 °C / 140 °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	0.949
Solubility	No information available

Partition coefficient; n-octanol/water No data available
 Autoignition Temperature No information available
 Decomposition Temperature No information available
 Viscosity No information available
 Molecular Formula C15 H32 N3 O P
 Molecular Weight 301.41

SECTION: 10. STABILITY AND REACTIVITY

Reactive Hazard Yes
 Stability Moisture sensitive. heat sensitive.
 Conditions to Avoid Exposure to moisture. Heat, flames and sparks. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Materials Strong bases, Strong oxidizing agents
 Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx), Oxides of phosphorus
 Hazardous Polymerization Hazardous polymerization does not occur.
 Hazardous Reactions None under normal processing.

SECTION: 11. TOXICOLOGICAL INFORMATION

Acute Toxicity
 Product Information
 Component Information
 Toxicologically Synergistic No information available
 Products
 Delayed and immediate effects as well as chronic effects from short and long-Term exposure
 Irritation No information available
 Sensitization May cause sensitization by skin contact
Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Phosphorodiamidousacid, tetrakis(1-methylethyl)-, 2-cyanoethyl ester	102691-36-1	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

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Endocrine Disruptor Information	No information available
Other Adverse Effects	The toxicological properties have not been fully investigated.

SECTION: 12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not empty into drains. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Persistence and Degradability	No information available	Bioaccumulation/
Accumulation	No information available.	
Mobility	No information available.	

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	Not regulated
Technical Name	Phosphorodiamidous acid, tetrakis(1-methylethyl)-,2-cyanoethyl ester
TDG	Not regulated

IATA

UN-No	UN1993
Proper Shipping Name	Flammable liquid, n.o.s.
Hazard Class	3
Packing Group	III

IMDG/IMO

UN-No UN1993
 Proper Shipping Name Flammable liquid, n.o.s.
 Hazard Class 3
 Packing Group III

SECTION: 15. REGULATORY INFORMATION

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active- Inactive	TSCA – EPA Regulatory Flags
Phosphorodiamidous acid, tetrakis (1-methylethyl)-, 2-cyanoethylester	102691-36-1	-	-	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable
 TSCA 12(b) - Notices of Export Not applicable

International Inventories

X = listed, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECS	KECL
Phosphorodiamidous acid, tetrakis(1-methylethyl)-, 2-cyanoethyl ester	102691-36-1	-	-	-	-	-	X	-	-	-

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 Moderate risk, Grade 2

Authorisation/Restrictions according to EU REACH Not applicable

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Phosphorodiamidous acid, tetrakis(1-methylethyl)-, 2-cyanoethyl ester	102691-36-1	-	-	-

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)

				I	
Phosphorodiamidic acid, tetrakis (1-methylethyl)-,2-cyanoethyl ester	102691-36-1	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Phosphorodiamidic acid,	102691-36-1	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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