

MATERIAL SAFETY DATA SHEET

Innovassynth Technologies (I) Ltd; TEL # +91 02192 260100
 MSDS Creation Date: April 05, 2021; Revision Date: April 05, 2026

PRODUCT: LNA N-dmf Guanosine Amidite

Section 1 - Chemical Product and Company Identification

CHEMICAL NAME: 5'-O-(4, 4'-dimethoxytrityl)-LNA-N²-dimethylformamidine guanosine-3'-[(2-cyanoethyl)-(N, N-diisopropyl)] phosphoramidite.

SYNONYM: LNA N-dmf Guanosine Amidite

CAS NO: [709641-79-2]

Section 2 - Composition, Information on Ingredients

ESSENTIALLY 100%: 5'-ODMT-LNA N2-dmf Guanosine-3'-OCEPA

MOLECULAR FORM: C₄₄H₅₃N₈O₈P

MOLECULAR WEIGHT: 852.91

Section 3 - Hazards Identification

The product is a solid. may cause irritation in case of direct contact with skin, eyes, tissue and mucous membrane. Presumed harmful if ingested. this compound has been prepared for experimental use and little or no health hazard information is available at this stage. in an emergency situation, the affected parties should avoid exposure by inhalation and skin and eye contact in order to minimize potential hazards.

LABEL PRECAUTIONARY STATEMENTS

Irritant Irritating to eyes, respiratory system and skin.

in case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Wear suitable protective clothing

POTENTIAL HEALTH EFFECTS

EYE: May cause eye irritation and or serious injury to eyes. any previously existing eye ailment may be aggravated by exposure.

SKIN: May cause skin irritation. any previously existing skin ailment may be aggravated by exposure. systemic effects of skin absorption are unknown.

INGESTION: May cause irritation of the digestive tract. the toxicological properties of this substance have not been fully investigated.

INHALATION: May cause irritation to mucous membrane and respiratory tract. any previously existing pulmonary (breathing) ailment such as bronchitis or asthma may be aggravated by exposure. the toxicological properties of this substance have not been fully investigated.

CHRONIC: Adverse reproductive effects have been reported in animals.

CARCINOGENITY: No information available.

MUTAGENACITY: No information available.

TERATOGENICITY: No information available.

The information within this section reflects health information we have found in the literature to date. Where information is limited or unknown, care should be exercised since the hazards have not been thoroughly investigated and exposure to the product poses an unknown degree of risk.

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Section 4 - First Aid Measures

EYES: IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNT OF WATER FOR AT LEAST 15 MINUTES

SKIN: In case of contact, immediately wash skin with soap and copious amount of water

INHALATION: If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

INGESTION: If swallowed, wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical aid immediately. Call a physician. Wash contaminated clothing before reuse.

NOTES TO PHYSICIAN: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

GENERAL INFORMATION: As in any fire, wear a self-contained breathing apparatus in pressure-demand, msha/niosh (approved or equivalent), and full protective gear

EXTINGUISHING MEDIA: Water spray, carbon dioxide, dry chemical powder or appropriate foam.

SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS: Emits toxic fumes under fire conditions.

FLASH POINT: Not available.

AUTO IGNITION TEMPERATURE: Not available.

EXPLOSION LIMITS LOWER: Not available. **UPPER:** Not available.

Section 6 - Accidental Release Measures

GENERAL INFORMATION: Use proper personal protective equipment viz; respirator, chemical safety goggles, rubber boots and heavy rubber gloves.

SPILLS/LEAKS: Clean up spills immediately, observing precautions in the protective equipment section. Sweep up, place in a bag and hold for waste disposal. Avoid raising dust.

Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing.

Avoid ingestion and inhalation.

STORAGE: Keep container closed when not in use. Store at -20°C, dry area, away from incompatible substances. **Do not expose to direct sunlight or moisture.**

Section 8 - Exposure Controls, Personal Protection

VENTILATION: Local exhaust ventilation for point of generation, general exhaust ventilation for work area.

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RESPIRATORY PROTECTION: Air purifying respirator equipped with organic vapor cartridge or wear appropriate niosh / msha – approved respirator,
EYES: Chemical safety goggles or face mask.
SKIN PROTECTION: Chemical protective suit.
HAND PROTECTION: Compatible resistant gloves.
EXPOSURE GUIDELINE: No information is available.

Section 9 - Physical and Chemical Properties

PHYSICAL STATE: Solid
APPEARANCE: White to off white crystalline powder
ODOR: None reported
pH: Not available.
VAPOR PRESSURE: Not available.
VAPOR DENSITY: Not available.
EVAPORATION RATE: Not available.
VISCOSITY: Not available.
BOILING POINT: Not available.
FREEZING/MELTING POINT: Not available.
DECOMPOSITION TEMPERATURE: Not available.
SOLUBILITY (WATER): Insoluble.
SPECIFIC GRAVITY/DENSITY: Not available.

Section 10 - Stability and Reactivity

CHEMICAL STABILITY: Stable under normal temperatures and pressures.
CONDITIONS TO AVOID: Incompatible materials, dust generation, excess heat, strong oxidants.
INCOMPATIBILITIES WITH OTHER MATERIALS: Oxidizing agents.
HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
HAZARDOUS POLYMERIZATION: Has not been reported

Section 11 - Toxicological Information

INTRAPERITONEAL MOUSE LD50: 500 MG / KG
INTRAVENOUS MOUSE LD50: 1800 MG/ KG
 See registry of toxic effects of chemical substances for list of toxicology citations.
NO INFORMATION IS AVAILABLE. DATA FOR RELATED PRODUCT (GUANOSINE) USED FOR COMPARIOSION
CARCINOGENITY: No information available.
MUTAGENACITY: No information available.
TERATOGENICITY: No information available.
NEURO-TOXICITY: No information found

Section 12 - Ecological Information

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No information available.

Section 13 - Disposal Considerations

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an after burner and scrubber. Observe all federal, state and local environmental regulations.

RCRA P-SERIES: None listed.

RCRA U-SERIES: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Road	Not Regulated as a Hazardous Material	No information available.
Air (IATA)	Not regulated	
Sea (IMDG)	Not regulated	

Section 15 - Regulatory Information

US FEDERAL

HEALTH & SAFETY REPORTING LIST

Not on the health & safety reporting list.

CHEMICAL TEST RULES

Not under a chemical test rule.

CLEAN AIR ACT:

This material does not contain any hazardous air pollutants.

This material does not contain any class 1 ozone depleters.

This material does not contain any class 2 ozone depleters.

CLEAN WATER ACT:

This product is not listed as hazardous substances under the CWA.

This product is not listed as priority pollutants under the CWA.

This product is not listed as toxic pollutants under the CWA.

OSHA:

This product is not considered highly hazardous by OSHA.

EUROPEAN/INTERNATIONAL REGULATIONS

EUROPEAN LABELING IN ACCORDANCE WITH EC DIRECTIVES

HAZARD SYMBOLS: NOT AVAILABLE.

RISK PHRASES AND SAFETY PHRASES:

R36 / 37 / 38 Irritating to eyes, respiratory system and skin. avoid contact with skin and eyes.

S 36 / 37 Wear suitable protective clothing and suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 26 / 28A After contact with skin, wash immediately with plenty of water



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Section 16 - Additional Information

The information above is believed to be accurate and represents the best information currently available to us but does not purport to be all inclusive and shall be used as a guide. However, Innovassynth technologies (India) limited shall not be held liable for any damage resulting from handling or from contact with the above product. This material is intended **for research and development purposes only and is not intended for household, medicinal or cosmetic use.** Users should make their own investigations to determine the suitability of the information for their particular purposes.