

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE PRODUCT AND THE COMPANY

Product Name: Peptide Nucleic Acid (PNA)
Catalog Number: PN-CNxxx-xxx ; PN-CPxxx-xxx ; PN-TCxxx-xxx ; PN-TGxxx-xxx
Purpose: Research Use Only
Supplier: PANAGENE Inc.
54, Techno 10-ro, Yuseong-gu, Daejeon, 34027, Korea
Tel: +82-42-861-9296

2. COMPOSITION/INFORMATION ON INGREDIENTS

Product Name	Component	CAS Number
Peptide Nucleic Acid (PNA)	Hazardous components < 1%	None

3. HAZARDS IDENTIFICATION

Prolonged or repeated contact with this product may cause slight irritation on the skin, eyes, gastrointestinal and respiratory systems.

4. FIRST AID MEASURES

Inhalation Move to uncontaminated area. If not breathing, give artificial respiration. Get medical attention immediately.
Skin contact Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.
Eye contact Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.
Ingestion If swallowed, wash out mouth with water and get medical attention.

5. FIRE-FIGHTING MEASURES

Fire and explosion hazards N/A.
Extinguishing media CO₂, extinguishing powder or water spray.
Fire fighting Move the container from the fire area if it can be done without risk. Avoid inhalation of the gas of the combustion of the material or the by-products. Stay upwind of the fumes and keep out of the low areas.
Hazardous combustion products Thermal decomposition products or combustion: oxides of carbon, oxides of sulfur

6. ACCIDENTAL RELEASE MEASURES

Sweep up the material and place in a closed bag or a container for disposal. Avoid raising dust. Ventilate the area and wash spill site after material pickup is completed.

7. HANDLING AND STORAGE

Storage	Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.
Handling	User Exposure: Avoid inhalation. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering control	Mechanical exhaust required. Safety shower and eye bath.
General hygiene measures	Wash thoroughly after handling.
Exposure limits	No occupational exposure limits established.
Personal protective equipments	Eyes: Wear chemical safety goggles. Hands: Wear compatible chemical-resistant gloves. Respiratory: Wear government approved respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid (Powder)	
ODOR: None	WATER SOLUBILITY: N/A
BOILING POINT: N/A	PH: N/A
MELTING POINT: N/A	VOLATILITY: N/A
VAPOR PRESSURE: N/A	ODOR THRESHOLD: N/A
VAPOR DENSITY: N/A	EVAPORATION RATE: N/A
SPECIFIC GRAVITY: N/A	COEFFICIENT OF WATER/OIL DISTRIBUTION: N/A

10. STABILITY AND REACTIVITY

Reactivity	Stable at normal temperature and pressure.
Conditions to avoid	Avoid heat.
Incompatibilities	Strong acids, strong oxidizing materials.
Hazardous decomposition	Will not occur.
Polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

Health effects	ADDITIONAL DATA: The toxicological properties have not been fully investigated.
Inhalation	ACUTE EXPOSURE: May cause irritation. CHRONIC EXPOSURE: No data available.
Skin contact	ACUTE EXPOSURE: May cause irritation. CHRONIC EXPOSURE: No data available.
Eye contact	ACUTE EXPOSURE: May cause irritation. CHRONIC EXPOSURE: No data available.
Ingestion	ACUTE EXPOSURE: May cause irritation. CHRONIC EXPOSURE: No data available.

12. ECOLOGICAL INFORMATION

N/A

13. DISOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

US Department of transportation:	No classification assigned.
LAND TRANSPORT ADR:	No classification assigned.
LAND TRANSPORT RID:	No classification assigned.
AIR TRANSPORT IATA:	No classification assigned.
AIR TRANSPORT ICAO:	No classification assigned.
MARITIME TRANSPORT IMDG:	No classification assigned.

15. REGULATORY INFORMATION

U.S. REGULATIONS:	CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated. SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30): Not regulated. SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40): Not regulated. SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21): ACUTE: No CHRONIC: No FIRE: No REACTIVE: No SUDDEN RELEASE: No SARA TITLE III SECTION 313 (40 CFR 372.65): Not regulated. OSHA PROCESS SAFETY (29CFR1910.119): Not regulated.
NATIONAL INVENTORY STATUS:	U.S. INVENTORY (TSCA): Not listed on inventory. For purposes of 40 CFR 720.36, this product is for Research and Development (R&D) Use Only. TSCA 12(b) EXPORT NOTIFICATION: Not listed.

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.