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SAFETY DATA SHEET

Section 1- IDENTIFICATION		
COMPOSITION GaN		PRODUCT NAME Gallium Nitride
SUPPLIER: Plasmaterials, Inc. 2268 Research Drive Livermore, CA 94550 Ph: 925-447-4030	RECOMMENDED USE: Laboratory Chemicals Scientific Research	EMERGENCY TELEPHONE NUMBERS US: 001-800-424-9300 Europe: 001-703-527-3887

Section 2- HAZARD(S) IDENTIFICATION	
Classification: This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)	
PHYSICAL HAZARDS: Not classified	
HEALTH HAZARDS: Skin Sensitization: Category 1 (H317)	
Environmental Hazards: Not Classified	OSHA Defined Hazards: Not Classified
LABEL ELEMENTS: Signal Word: Warning	
	
<u>HAZARD STATEMENTS</u>	
-H317: May cause an allergic skin reaction	
<u>PRECAUTIONARY STATEMENTS</u>	
-P261: Avoid breathing dust, fume, gas, mist, vapor, spray	
-P264: Wash thoroughly after handling	
-P270: Do not eat, drink or smoke when using this product	
-P272: Contaminated work clothing should not be allowed out of the workplace	
-P280: Wear protective gloves, protective clothing, eye protection and face protection	
-P302+P352: IF ON SKIN: Wash with plenty of water.	
-P333+P313: If skin irritation or rash occurs: Get medical advice/attention.	
-P363: Wash contaminated clothing before reuse.	
-P501: Dispose of contents/container to an approved waste disposal plant	
Hazards not otherwise classified (HNOC):	
-None known	

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS		
COMPONENT	CAS-No	Molecular Weight
Gallium Nitride	25617-97-4	83.73 g/mol

Section 4- FIRST AID MEASURES

GENERAL ADVICE: If exposed or concerned, get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

INHALATION: Remove victim from exposure to fresh air. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Call a physician if symptoms develop or persist.

SKIN CONTACT: Wash off with soap and plenty of water. Get medical attention if irritation develops and persists.

EYE CONTACT: Flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

INGESTION: Rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

MOST IMPORTANT SYMPTOMS/EFFECTS: The most important known symptoms and effects are described in the labeling (see section 2). Direct contact with eyes may cause temporary irritation.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: Provide general supportive measures and treat symptomatically.

Section 5- FIREFIGHTING MEASURES

Suitable Extinguishing Media: Water Fog, Alcohol-Resistant Foam, Dry Chemical Powder, Carbon Dioxide (CO ₂)	Unsuitable Extinguishing Media: Do not use water jet as an extinguisher, as this will spread the fire.
Specific Hazards Arising from the Chemical: Gases hazardous to health may be formed	
Protective Equipment & Precautions for Firefighters: As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.	
Firefighting Instructions/Specific Methods: Use water spray to cool unopened containers. Use standard firefighting procedures and consider the hazards of other involved materials.	
General Fire Hazards: No unusual fire or explosion hazards noted.	

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid breathing dust, vapors, mist or gas. Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. For personal protection see Section 8.

Environmental Precautions: Avoid discharge into water courses, drains and onto the ground.

Methods for Containment & Clean Up: Stop the flow of material, if this is without risk. Following product recovery, flush area with water. Never return spills to original containers for re-use. Keep in suitable, closed containers for disposal. For disposal see Section 13.

Section 7- HANDLING AND STORAGE

Handling: Avoid breathing dust. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Wear appropriate personnel protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling.

Storage: Store in original tightly closed container. Store in a dry and well-ventilated place.

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Occupational Exposure Limits/Components with Workplace Control Parameters: No exposure limit values noted for substance(s)

Biological Limit Values: No biological exposure limits noted for ingredient(s).

Engineering Measures: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

Personal Protective Equipment:

Eye/Face Protection: Wear safety glasses with side shields or goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and Body Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Wear suitable protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal Hazards: Wear appropriate thermal protective clothing, when necessary.

General Hygiene: Always observe good personal hygiene measures such as washing after handling the material and before eating, drinking and/or smoking. Wash hands before breaks and at the end of the workday. Routinely wash work clothing and protective equipment to remove contaminants.

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid

Odor: No data available

Odor Threshold: No data available

pH: No data available

Melting Point/Range: No data available

Boiling Point/Range: No data available

Flash Point: No data available

Evaporation Rate: No data available

Flammability (solid,gas): No data available

Flammability or Exposure Limits:

Upper: No data available

Lower: No data available

Vapor Pressure: No data available

Vapor Density: No data available

Relative Density: No data available

Solubility: No data available

Partition coefficient; n-octanol/water: No data available

Auto Ignition Temperature: No data available

Decomposition Temperature: No data available

Viscosity: No data available

Explosive Properties: No data available

Oxidizing Properties: No data available

Section 10- STABILITY AND REACTIVITY

Reactive Hazard: Stable and non-reactive under normal conditions of use, storage and transport

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Contact with incompatible materials.

Incompatible Materials: Strong oxidizing agents

Hazardous Decomposition Products: No data available

Hazardous Polymerization: No data available

Hazardous Reactions: No data available

Section 11- TOXICOLOGICAL INFORMATION

Information on likely Routes of Exposure:

Inhalation: No adverse effects due to inhalation are expected.

Skin Contact: No adverse effects due to skin contact are expected.

Eye Contact: Direct contact with eyes may cause temporary irritation.

Ingestion: Expected to be a low ingestion hazard

Symptoms related to the physical, chemical and toxicological characteristics: Direct contact with eyes may cause temporary irritation.

Information on Toxicological Effects:

Acute Toxicity: No data available

Skin Corrosion/Irritation: Prolonged skin contact may cause temporary irritation

Serious eye damage/irritation: Direct contact with eyes may cause temporary irritation

Respiratory or Skin Sensitization: No data available

Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA

Germ Cell Mutagenicity: No data available

Reproductive Effects: No data available

Development Effects: No data available

Specific Target Organ Toxicity – single exposure: No data available

Specific Target Organ Toxicity – repeated exposure: No data available

Aspiration Hazard: No data available

Chronic Effects: No data available

Additional Information: No data available

-To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Section 12- ECOLOGICAL INFORMATION

Toxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and Degradability: No information available

Bioaccumulation/Accumulation: No information available

Mobility in Soil: No information available

Results of PBT & vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

Other Adverse Effects: No information available.

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contaminated packaging as unused product. Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14- TRANSPORT INFORMATION

DOT: Not regulated as dangerous goods

IATA: Not regulated as dangerous goods

IMDG/IMO: Not regulated as dangerous goods

Section 15- REGULATORY INFORMATION

US Federal Regulations: This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt.D): Not regulated

U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not regulated

CERCLA Hazardous Substance List (40 CFR 302.4): Not listed

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA 304 Emergency Release Notification: Not regulated

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313

SARA 311/312 Hazards: No

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated

Safe Drinking Water Act (SDWA): Not regulated

US New Jersey Right to Know: Gallium Nitride (CAS No: 25617-97-4)

US Pennsylvania Right to Know: Gallium Nitride (CAS No: 25617-97-4)

US California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.

Section 16- OTHER INFORMATION

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulations are subject to change, the conditions of handling and use, or misuse are beyond our control, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

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REVISION: 07-26-18