

Plasmaterials, Inc.
2268 Research Drive
Livermore, CA 94550
Ph: (925) 447-4030 Fx: (925) 447-4031
<http://plasmaterials.com>

SAFETY DATA SHEET

Section 1- IDENTIFICATION

COMPOSITION Ga2O3		PRODUCT NAME Gallium Oxide
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

Physical Hazards: Not Classified	Health Hazards: Not Classified
Environmental Hazards: Not Classified	OSHA Defined Hazards: Not Classified
LABEL ELEMENTS:	
Hazard Symbol: None	Signal Word: None
HAZARD STATEMENTS -This material does not meet the criteria for classification.	
PRECAUTIONARY STATEMENTS - Observe good industrial hygiene practices. -P264: Wash face, hands, and any exposed skin thoroughly after handling -P280: Wear protective gloves/protective clothing/eye protection/face protection -P501: Dispose of contents/container in accordance with local/regional/national/international regulations	
Hazards not otherwise classified (HNOC): -None identified.	

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS-No	Molecular Weight
Gallium Oxide	12024-21-4	187.44 g/mol

Section 4- FIRST AID MEASURES

<p>GENERAL ADVICE: Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.</p> <p>Inhalation: Remove victim from exposure to fresh air. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Consult a physician if symptoms develop and/or persist.</p> <p>Skin Contact: Take off immediately all contaminated clothing. Wash off with soap and water. Consult a physician if irritation develops and/or persists.</p> <p>Eye Contact: Flush eyes with plenty of 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/or persists.</p> <p>Ingestion: Rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.</p> <p>Most Important Symptoms/Effects: Direct contact with eyes may cause temporary irritation.</p> <p>Indication of any Immediate Medical Attention and Special Treatment Needed: Not available</p>

Section 5- FIREFIGHTING MEASURES

Suitable Extinguishing Media:

No special restrictions – use suitable extinguishing agent for surrounding material and type of fire.

Unsuitable Extinguishing Media:

None known

Specific Hazards Arising from the Chemical: No information available.

General Fire Hazards: No unusual fire or explosion hazards noted.

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.

Specific Methods: Use standard firefighting procedures and consider the hazards of other involved materials.

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep unnecessary personnel away. Wear protective gloves/protective clothing/eye protection/face protection. Ensure adequate ventilation. Avoid breathing dusts/fumes. For personnel protection see Section 8.

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

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

Section 7- HANDLING AND STORAGE

Handling: Wear protective gloves/protective clothing/eye protection/face protection. Observe good industrial hygiene practices.

Storage: Store in a dry area in original tightly closed container.

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Occupational Exposure Limits: No PEL, TLV, or other recommended exposure limit values noted for substance

Biological Limit Values: No biological exposure limits noted for the substance

Appropriate Engineering Controls: 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.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of the workday. When using do not smoke, eat, or drink. Keep away from food and drink. Wash thoroughly after handling and before eating, drinking and/or smoking. 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 impervious 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. Required when dusts are generated. 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.

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Odor: No information available
Odor Threshold: No information available
pH: No information available
Melting Point/Range: 1,900 °C (3,452 °F)
Boiling Point/Range: No information available
Flash Point: No information available
Evaporation Rate: No information available
Flammability (solid,gas): No information available
Flammability or Explosive Limits:
 Upper: No information available
 Lower: No information available
Vapor Pressure: No information available
Vapor Density: No information available
Relative Density: No information available
Solubility (water): No information available
Partition coefficient; n-octanol/water: No information available
Auto Ignition Temperature: No information available
Decomposition Temperature: No information available
Viscosity: No information available
Density: 6.44 g/cm³
Explosive Properties: No information available
Oxidizing Properties: No information available

Section 10- STABILITY AND REACTIVITY

Reactive Hazard: No information available.
Stability: Stable under normal conditions.
Conditions to Avoid: Contact with incompatible materials.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Metal oxide fume.
Hazardous Polymerization: No information available
Hazardous Reactions: No information available

Section 11- TOXICOLOGICAL INFORMATION

Information on likely Routes of Exposure:
 Inhalation: No information available
 Skin Contact: May cause irritation
 Eye Contact: May cause irritation.
 Ingestion: Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics: No information available
Information on Toxicological Effects:
 Acute Toxicity: No information available
 Skin Corrosion/Irritation: May cause irritation
 Serious eye damage/irritation: May cause irritation
 Respiratory or Skin Sensitization: No information available
 Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.
 Germ Cell Mutagenicity: No information available
 Reproductive Toxicity: No information available
 Development Effects: No information available

Specific Target Organ Toxicity – single exposure: No information available
Specific Target Organ Toxicity – repeated exposure: No information available
Aspiration Hazard: No information available
Chronic Effects: No information available
-To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Section 12- ECOLOGICAL INFORMATION

Toxicity: No information available.
Persistence and Degradability: No information available
Bioaccumulation/Accumulation: No information available
Mobility in Soil: No information available
Other Adverse Effects: No information available.

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Collect and reclaim or dispose in sealed containers to a 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:

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt.D): Not regulated
U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052): Not Listed
CERCLA Hazardous Substance List (40 CFR 302.4): Not Listed
SARA 302 Extremely Hazardous Substance: 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 311/312 Hazardous Chemical: No
SARA 313 (TRI Reporting): 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
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 California Proposition 65: This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.
US Massachusetts Right to Know Components: No information available
US New Jersey Right to Know Components: Gallium Oxide (CAS No: 12024-21-4)
US Pennsylvania Right to Know: Gallium Oxide (CAS No: 12024-21-4)

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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