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**1. Product and Company Identification**

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Trade Name: Gadolinium Nitrate hydrate  
Chemical Formula:  $\text{Ga}(\text{NO}_3)_3 \cdot x\text{H}_2\text{O}$   
Recommended Use: Scientific research and development

Manufacturer/Supplier: Heeger Materials Inc.

Address: 230 Steele St Denver  
CO 80206  
United States

Tel #: 925-385-8104

24-Hour Emergency Contact: 800-424-9300 (US & Canada)  
+1-703-527-3887 (International)

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**2. Hazards Identification**

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Signal Word: Danger



Hazard Statements:  
H272: May intensify fire; oxidizer  
H315: Causes skin irritation  
H319: Causes serious eye irritation  
H335: May cause respiratory irritation

Precautionary Statements:  
P210: Keep away from heat.  
P220: Keep/Store away from clothing/ combustible materials.  
P221: Take any precaution to avoid mixing with combustibles.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing  
P405: Store locked up  
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):

Health: 1  
Flammability: 0  
Physical: 2

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**3. Composition**

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Chemical Family: Ceramic  
Additional Names: Gadolinium (III) nitrate hydrate

Gadolinium Nitrate hydrate ( $\text{Ga}(\text{NO}_3)_3 \cdot x\text{H}_2\text{O}$ ):

Percentage: 100 wt%  
CAS #: 94219-55-3  
EC #: 233-437-2

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#### 4. First Aid Procedures

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General Treatment:	Seek medical attention if symptoms persist.
Special Treatment:	None
Important Symptoms:	None
Inhalation:	Remove victim to fresh air. Supply oxygen if breathing is difficult. Keep patient warm. Seek immediate medical attention.
Ingestion:	Seek immediate medical attention.
Skin:	Immediately wash affected area with mild soap and water. Remove any contaminated clothing. Seek immediate medical attention.
Eyes:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek immediate medical attention.

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#### 5. Firefighting Measures

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Flammability:	Non-flammable, except as powder
Extinguishing Media:	Do not use water due to its inefficiency – use CO <sub>2</sub> , sand, extinguishing powder.
Spec. Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

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#### 6. Accidental Release Measures

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If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Keep unprotected persons away. Isolate spill area and provide ventilation. Acts as an oxidizing agent on organic materials such as wood, paper and fats. Keep away from combustible material. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions:	Isolate runoff to prevent environmental pollution.

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## 7. Handling and Storage

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Handling Conditions:	Handle under dry protective gas. Avoid contact with skin and eyes. Wash thoroughly after handling.
Storage Conditions:	Store in a cool dry place in a tightly sealed container. Substance/product can reduce the ignition temperature of flammable substance. This substance is an oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Store away from flammable substances, reducing agents, metal powders, water/moisture. Do not store with organic materials. Store under dry inert gas. This product is hygroscopic. Protect from humidity and water. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance:	Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.

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## 8. Exposure Controls and Personal Protection

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Permissible Exposure Limits:	N/A
Threshold Limit Value:	N/A
Special Equipment:	Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Respiratory Protection:	Dust Respirator
Protective Gloves:	Rubber gloves
Eye Protection:	Safety glasses or goggles
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants.

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## 9. Physical and Chemical Characteristics

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Color	White
Form:	Crystalline
Odor:	Odorless
Water Solubility:	N/A
Boiling Point:	N/A
Melting Point:	92°C
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	2.406 g/cc
Molecular weight:	N/A

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## 10. Reactivity

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Stability:	May intensify fire; oxidizer
Reacts With:	Reducing agents, flammable substances, organic materials, metal powders
Incompatible Conditions:	Water/moisture
Hazardous Decomposition Products:	Metal oxide fume, nitrogen oxides, gadolinium oxide

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## 11. Toxicological Information

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### Potential Health Effects:

Eyes:	Causes serious eye irritation
Skin:	Causes skin irritation
Ingestion:	May cause irritation
Inhalation:	May cause respiratory irritation
Chronic:	N/A

Signs & Symptoms: N/A

Aggravated Medical Conditions: N/A

Median Lethal Dose: 3,805 mg/kg for rat by mouth

Carcinogen: IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.  
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.  
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.  
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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## 12. Ecological Information

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Aquatic Toxicity:	N/A
Persistent Bioaccumulation Toxicity:	N/A
Very Persistent, Very Bioaccumulative:	N/A
Notes:	Do not allow undiluted product or large quantities to reach ground water, water course or sewage system Avoid transfer into the environment.

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## 13. Disposal Considerations

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Dispose of in accordance with local, state, national, and international regulations.

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#### 14. Transportation Data

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Hazardous: Hazardous for transportation



Hazard Class: 5.1 Oxidizing substances  
Packing Group: III  
UN Number: UN1477  
Proper Shipping Name: Nitrates, inorganic, n.o.s. (Gadolinium Nitrate hydrate)

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#### 15. Regulatory Information

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Sec 302 Extremely Hazardous: No  
Sec 304 Reportable Quantities: N/A  
Sec 313 Toxic Chemicals: No

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#### 16. Other Information

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This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

Document Last Revised: 02/18/2019