



# MATERIAL SAFETY DATA SHEET

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## TRIMETHYLGALLIUM

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY.

**Product Name**  
Trimethylgallium  
**Formula**  
(CH<sub>3</sub>)<sub>3</sub>Ga  
**Company Identification**  
See footer.

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance/Preparation**  
Trimethylgallium  
**Components/Impurities**  
None  
**EC No.**  
215-897-6  
**CAS No.**  
1445-79-0

### 3. HAZARDS IDENTIFICATION

Pyrophoric liquid, decomposes violently in water. Skin contact can cause severe burns. Fumes may cause skin and eye irritation. Avoid inhalation of fumes.

### 4. FIRST AID MEASURES

Prompt medical attention is required in all cases of exposure to Trimethylgallium and its by-products. Rescue personnel should be equipped with appropriate protective equipment (e.g. Self-contained breathing apparatus) to avoid unnecessary exposure and must be aware of the fire and explosion potential of Trimethylgallium.

#### Skin

Contact may cause severe burns. Fumes may cause irritation. Immediately flush affected areas with large quantities of water. Remove affected clothing as rapidly as possible only if not stuck to skin.

#### Eyes

Contact may cause severe burns. Fumes may cause irritation. Persons with potential exposure to Trimethylgallium should not wear contact lenses. Flush contaminated eyes with large quantities of water for at least 15 minutes. Hold eyelids open to ensure complete flushing.

#### Inhalation

May cause irritation. Move exposed personnel to an uncontaminated area quickly using self-contained breathing apparatus. If breathing is difficult, give oxygen. If breathing has stopped, apply artificial respiration. Medical assistance should be sought immediately. Keep victim warm and quiet.

### 5. FIRE-FIGHTING MEASURES

#### Extinguishing Media

Always use dry powder, soda ash or lime. Never use water, foam or halogenated compounds to fight fires involving organometallic materials. Without risk, stop flow of this compound to the fire. Without risk, and if safe to do so, move container(s) away from fire area.

#### Exposure Hazards

In a controlled fire any unreacted Trimethylgallium may re-ignite when contact with air or water is renewed.

#### Special Protective Equipment for Fire-Fighters

Fire resistant clothing, self-contained breathing apparatus, face shield and safety goggles, safety shoes and fire resistant gloves.

### 6. ACCIDENTAL RELEASE MEASURES

#### Personal Precautions

Evacuate area. Use appropriate protective equipment. Purge equipment with inert gas before attempting repairs. Ensure adequate ventilation. If leak is in container call one of the emergency numbers as appropriate. (See footer).

#### Environmental Precautions

Try to stop release, if safe to do so. For fire-fighting measures see Section 5.

#### Clean up methods

Contact Epichem for specific advice.

### 7. HANDLING AND STORAGE

#### Handling

Valve outlet seals must remain in place unless container is secured and valve outlet piped to use point. Use a check valve or trap to prevent hazardous back flow into the container. Any equipment used for Trimethylgallium service must be thoroughly cleaned and prepared to eliminate contamination and must be maintained in a leak-free state. All air and moisture in the system must be eliminated before use.

#### Storage

Protect containers from physical damage. Do not allow temperatures to exceed (125F)51C. Store away from flammable material.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Exposure Controls

**OSHA or ACGIH:** None established.

**OES and MEL:** None established.

Ensure adequate ventilation.

#### Personal Protection

Self-contained breathing apparatus, fire resistant gloves, face shield and safety goggles, safety shoes, fire-resistant garments. Safety shower and eyewash.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: (131.5F) 55.7C  
Vapor Pressure:  $\log_{10} P(\text{mmHg}) = 8.07-1703/T(K)$   
Gas Density (at (70F)21C, 1 atm): Liquid  
Freezing Point: (3.5F) -15.8C  
Liquid Density: 1.151g/ml @ 15C  
Molecular Weight: 114.82 grams  
Solubility in water: Reacts violently.  
Appearance: Colorless liquid which is pyrophoric.

## 10. STABILITY AND REACTIVITY

### Conditions to avoid

Reacts pyrophorically in air.

**Note:** Trimethylgallium is stable indefinitely in an inert atmosphere at room temperature.

### Materials to avoid

Avoid water, air or other oxidizers.

### Hazardous Decomposition Products

Gallium Oxide dust, CO, CO<sub>2</sub>

## 11. TOXICOLOGICAL INFORMATION

Gallium Oxide dust formed when this compound is oxidized has caused toxic effects to the liver and kidneys in test animals.

Trimethylgallium is not listed in the IARC, NTP or OSHA Subpart Z as a carcinogen or potential carcinogen.

Trimethylgallium is listed on the TSCA inventory.

## 12. ECOLOGICAL INFORMATION

This product does not contain any Class I or Class II ozone depleting chemicals.

## 13. DISPOSAL CONSIDERATIONS

Regional and National regulations should be followed during waste disposal. Contact an Epichem representative for disposal of container and any unused quantities.

## 14. TRANSPORT INFORMATION

UN No: 2003  
CLASS: 4.2 (4.3)  
PG I  
ECCN#: 3C003  
IMDG Code: 4243  
Shipping Name: Metal alkyls, water-reactive, n.o.s.  
(Trimethylgallium)

## 15. REGULATORY INFORMATION

### Classification

Highly Flammable

### Risk and Safety Phrases

R14: Reacts violently with water.

R17: Spontaneously flammable in air.

S6: Keep under inert atmosphere.

S8: Keep container dry.

S43a: In case of fire use dry powder or lime - Never use water.

## 16. OTHER INFORMATION

Ensure operators understand the pyrophoric nature of the product. DSC data is available on request. Before using this product, it is recommended that a risk assessment and safety study be carried out. Further information on the use of this product can be obtained from the Technical Product Manager at the nearest Epichem facility.

*SAFETY NOTICE: In Order to provide our customers with the highest quality material and maintain our high standards of safety, the surface temperature of the bubbler will be monitored during the transportation of our products. We would like to monitor the surface temperature of the bubbler using a tempilabel. Tempilabel is a temperature-monitoring strip ranging from 120F to 150F (49C to 66C) which will indicate the temperature during shipment. The strip will turn black at one of the four ratings shown if the temperature is reached (normally a silver centre). If the temperature monitor is changed, please notify an Epichem representative immediately and we will assist you in the proper measures to be taken. We ask for your co-operation in our efforts of quality assurance and safety. If you have any questions or comments, please contact an Epichem representative. We thank you for your co-operation. Your assistance is greatly appreciated.*

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### 24 Hour Emergency Contact Numbers:

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