MATERIAL SAFETY DATA SHEET
OSHA HAZARD COMMUNICATION RULE

Date of last revision: 05-01-96

**CHEMICAL IDENTITY**

<table>
<thead>
<tr>
<th>LABEL IDENTITY</th>
<th>GALLIUM METAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEMICAL NAME/SYNONYMS</td>
<td>GALLIUM METAL</td>
</tr>
<tr>
<td>FORMULA</td>
<td>Ga</td>
</tr>
<tr>
<td>CHEMICAL FAMILY</td>
<td>METAL</td>
</tr>
<tr>
<td>CAS REGISTRY NUMBER</td>
<td>7440-55-3, LISTED IN TSCA INVENTORY</td>
</tr>
<tr>
<td>HAZARDOUS INGREDIENTS</td>
<td>GALLIUM METAL</td>
</tr>
<tr>
<td>%</td>
<td>100</td>
</tr>
<tr>
<td>TLV:</td>
<td>Not set</td>
</tr>
<tr>
<td>OSHA/PEL:</td>
<td>Not set</td>
</tr>
<tr>
<td>10mg/m³</td>
<td>15mg/m³</td>
</tr>
</tbody>
</table>

(as nuisance particles)

**PHYSICAL AND CHEMICAL PROPERTIES**

| COLOR, FORM AND ODOR | A lustrous gray solid, odorless |
| BOILING POINT | 2403 |
| DENSITY (gm/cc) | 5.904 (sol); 6.095 (lig) |
| VAPOR PRESSURE @ 20° | NA |
| % VOLATILE BY VOLUME (%) | NA |
| REACTION WITH WATER | Tarnishes in moist air or oxygen |
| EVAPORATION RATE (H₂O=1) | NA |
| SOLUBILITY IN WATER | Insoluble |
| MELTING POINT | 29.78 |
| OTHER | Soluble in acid, insoluble in alkali |

**FIRE AND EXPLOSION HAZARD DATA**

| FLASH POINT | NA |
| AUTOIGNITION TEMPERATURE (°C) | NA |
| FLAMMABILITY | Non-flammable |
| EXTINGUISHING MEDIA | Use dry chemical, CO₂, sand, graphite. |
| DO | NOT USE WATER ON METAL FIRES. |
| SPECIAL FIRE FIGHTING PROCEDURES | Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes. When heated to decomposition, it may emit toxic fumes. |
GALLIUM METAL
MATERIAL SAFETY DATA SHEET

HEALTH HAZARD INFORMATION

TOXICITY DATA

scu-rat 110mg/kg MLD

HMIS RATING:

HEALTH: 2 FLAMMABILITY: 0 REACTIVITY: 1 PERSONAL PROTECTION: E

INHALATION:

SKIN:

INGESTION:

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:

Respiratory Disorders

EFFECTS OF OVEREXPOSURE (acute and chronic):

INHALATION: may cause sneezing, coughing, difficulty breathing and irritation of the mucous membrane of the respiratory tract.

DERMAL: may cause irritation, itching, inflammation and dermatitis.

EYE: may cause burning sensation, irritation, redness and watering of the eyes if comes in contact.

OTHER: Gallium metal: highly toxic via subcutaneous route. It has a metallic taste, causes generalized maculopapular rash, exfoliative dermatitis and depression of bone marrow function. It also causes anorexia, nausea and vomiting.

CARCINOGENICITY: No NTP: No IARC MONOGRAPHS: No OSHA REGULATE: No

EMERGENCY FIRST AID PROCEDURES:

INGESTION: give 1-2 glasses of milk or water to induce vomiting.

INHALATION: remove victim to fresh air, administer oxygen if necessary.

SKIN: brush material off skin, wash affected area with soap and water.

EYE: flush with lukewarm water for at least 15 minutes.

*SEEK MEDICAL ATTENTION ON ALL OCCASIONS*

REACTIVITY DATA

STABILITY

Stable

CONDITIONS CONTRIBUTING TO UNSTABILITY

None

INCOMPATIBILITY (MATERIALS TO AVOID)

Halogens

HAZARDOUS DECOMPOSITION PRODUCTS

Ga, GaOx

HAZARDOUS POLYMERIZATION

Will Not Occur

CONDITIONS TO AVOID

Heat, flame & incompatible materials

materials
SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Wear self-contained breathing apparatus and full protective clothing. Isolate area, insure proper ventilation and vacuum spill (use high efficiency unit) and place in container for proper disposal. Take care not to raise dust.

WASTE DISPOSAL METHOD:
Consult federal, state and local regulations for proper disposal.

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION
NIOSH/MSHA approved dust-mist-fume cartridge respirator

LOCAL EXHAUST
Maintain below TLV

MECHANICAL (general)
Recommended

SPECIAL
Handle in dry, controlled atmosphere

OTHER
NA

PROTECTIVE GLOVES
Neoprene

EYE PROTECTION
Safety glasses

OTHER PROTECTIVE EQUIPMENT
Wear protective clothing to prevent contamination of skin and clothes

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:
Store in tightly closed container, store in cool, dry place, wash hands and face thoroughly after handling and before meals.

TRANSPORTATION REQUIREMENTS

DOT CLASS: ORM-B
UN NUMBER: 2803
IMCO CLASS: 9
OTHER: SPC

PRECAUTIONARY LABELING
NONE

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NA= NOT APPLICABLE
ND= NO DATA FOUND