

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Gallium, Enriched Gallium
Chemical Formula	Ga
Molecular Weight	69.72
CAS No.	7440-55-3
EINECS No.	231-163-8
Synonyms	None
Hazard Symbols	XI
Risk Phrases	36/37/38
Supplier Address*	ISOFLEX USA PO Box 472615 San Francisco CA 94147 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	Infotrac/ +1 800-535-5053 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

Emergency Overview

Irritating to eyes, respiratory system and skin. Moisture-sensitive.

The toxicological properties of this material have not been fully investigated.

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 3 Flammability = 0 Reactivity = 0



HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 3 Flammability = 0 Physical Hazard = 0

HEALTH HAZARD	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

Potential Health Effects

<i>Eye</i>	Causes eye irritation
<i>Skin</i>	Causes skin irritation. May be harmful if absorbed through the skin. May cause contact dermatitis. The toxicological properties of this material have not been fully investigated.
<i>Ingestion</i>	May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed. The toxicological properties of this substance have not been fully investigated.
<i>Inhalation</i>	Causes respiratory tract irritation. May be harmful if inhaled. The toxicological properties of this substance have not been fully investigated.
<i>Chronic</i>	May cause bone marrow abnormalities with damage to blood forming tissues. Administration of gallium to humans has caused metallic taste, skin rashes, and bone marrow depression.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name:	Gallium
CAS No.:	7440-55-3
Chemical Formula:	Ga
Molecular Weight:	69.72

4. FIRST AID MEASURES

<i>Eyes</i>	In case of contact, flush eyes immediately with plenty of water for at least 15 minutes. Seek medical aid.
<i>Skin</i>	In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Seek medical aid if irritation develops and persists. Wash clothing before reuse.
<i>Ingestion</i>	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek medical aid.
<i>Inhalation</i>	If inhaled, remove to fresh air. If patient is not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical aid.
<i>Notes to Physician</i>	Treat symptomatically and supportively.

5. FIREFIGHTING MEASURES

<i>General Information</i>	As in any fire, wear self-contained breathing apparatus in pressure-demand, MSHA/NIOSH-approved or equivalent, and full protective gear.
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<i>Suitable Extinguishing Media</i>	Do NOT use water, CO ₂ or halogenated extinguishers. Use dry chemical extinguishing agents, dry sand or dry ground dolomite.
<i>Specific Hazards</i>	Gallium oxides
<i>Advice for Firefighters</i>	Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

<i>Personal Precautions</i>	Use proper personal protective equipment as indicated in Section 8. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
<i>Environmental Precautions</i>	Do not let product enter drains.
<i>Methods for Cleaning Up</i>	Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation. Do not get water inside containers. Cool material below 25 °C to solidify before attempting cleanup. Protect metal construction, as gallium will dissolve the metal/is corrosive to most metals.

7. HANDLING AND STORAGE

<i>Handling</i>	Wash thoroughly after handling product. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Avoid ingestion or inhalation. Use with adequate ventilation. Wash clothing before reuse. Keep from contact with moist air and steam.
<i>Storage</i>	Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<i>Exposure Guidelines</i>	Contains no substances with occupational exposure limit values.
<i>Engineering Controls</i>	Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Personal Protective Equipment

<i>Eyes</i>	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
<i>Skin</i>	Wear appropriate protective gloves to prevent skin exposure.
<i>Clothing</i>	Wear appropriate protective clothing to prevent skin exposure.
<i>Respirators</i>	A respiratory protection program that meets OSHA's 29 CFR :1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

<i>Form</i>	Solid
<i>Color</i>	Grey
<i>Odor</i>	Not available

Safety Data

pH:	Not available	Vapor Density:	Not available
Vapor Pressure:	1 mm Hg @ 1350 °C	Viscosity:	Not available
Evaporation Rate:	Not available	Freezing/Melting Point:	29 °C
Boiling Point:	2400 °C	Flash Point:	Not applicable
Autoignition Temperature:	Not available	Upper Explosion Limits:	Not available
Lower Explosion Limits:	Not available	Solubility:	Insoluble
Decomposition Temperature:	Not available	Molecular Formula:	Ga
Specific Gravity/Density:	5.9		
Molecular Weight:	69.72		

10. STABILITY AND REACTIVITY

<i>Chemical Stability</i>	Gallium is stable in dry air. It tarnishes in moist air or oxygen.
<i>Conditions to Avoid</i>	Dust generation, moisture, exposure to air, metals, exposure to moist air or water
<i>Incompatible Materials</i>	Hydrogen peroxides, hydrochloric acid, halogens, phosphorus, sulfur, alkalis, oxygen, metals, oxidizing agents
<i>Hazardous Decomposition Products</i>	Irritating and toxic fumes and gases
<i>Hazardous Polymerization</i>	Has not been reported

11. TOXICOLOGICAL INFORMATION

<i>RTECS No.</i>	LW8600000
<i>CAS No.</i>	7440-55-3
Acute Toxicity	
<i>LD50/LC50</i>	Not available
<i>Carcinogenicity</i>	Gallium - Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA
<i>Epidemiology</i>	No information available
<i>Teratogenicity</i>	No information available
<i>Reproductive Effects</i>	No information available
<i>Neurotoxicity</i>	No information available
<i>Mutagenicity</i>	See actual entry in RTECS for complete information

12. ECOLOGICAL INFORMATION

<i>Toxicity</i>	No data available
<i>Persistence and Degradability</i>	No data available
<i>Bioaccumulative Potential</i>	No data available
<i>Mobility in Soil</i>	No data available
<i>Results of PBT and vPvB Assessment</i>	PBT/vPvB assessment not available, as chemical safety assessment not required/not conducted
<i>Other Adverse Effects</i>	No data available

13. DISPOSAL CONSIDERATIONS

<i>Product</i>	Dispose of in a manner consistent with federal, state and local regulations. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
<i>Contaminated Packaging</i>	Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

<i>Shipping Name</i>	Gallium
<i>Hazard Class</i>	8
<i>UN Number</i>	2803
<i>Packing Group</i>	III

IMDG

<i>Proper shipping name</i>	Gallium
<i>UN Number</i>	2803
<i>Class</i>	8
<i>Packing Group</i>	III
<i>EMS No.</i>	F-A, S-B
<i>Marine Pollutant</i>	No

IATA

<i>Proper Shipping Name</i>	Gallium
<i>UN Number</i>	2803
<i>Class</i>	8
<i>Packing Group</i>	III

Canadian TDG No information available

15. REGULATORY INFORMATION

US Federal

TSCA CAS No. 7440-55-3 is listed on the TSCA inventory. This material does not contain any Class 2 Ozone depletors.

Clean Water Act None of the chemicals in this product are listed as Hazardous Substances under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA None of the chemicals in this product are considered highly hazardous by OSHA.

State

Gallium can be found on the following state Right-to-Know lists: New Jersey, Minnesota

California No Significant Risk Level. None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

<i>Hazard Symbols</i>	XI
<i>Risk Phrases</i>	R 36/37/38 Irritating to eyes, respiratory system and skin.
<i>Safety Phrases</i>	S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 37/39 Wear suitable gloves and eye/face protection.

WGK (Water Danger/Protection) No information available

Canada

CAS No. 7440-55-3 is listed on Canada's DSL List.

CAS No. 7440-55-3 is listed on Canada's Ingredient Disclosure List.

16. OTHER INFORMATION

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ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)

IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)
RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

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