



MATERIAL SAFETY DATA SHEET
COMPLIES WITH 29 CFR 1910.1200.
OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 04-29-96

CHEMICAL IDENTITY

LABEL IDENTITY	GALLIUM ARSENIDE
CHEMICAL NAME/SYNONYMS	GALLIUM MONOARSENIDE
FORMULA	GaAs
CHEMICAL FAMILY	METAL ARSENIDE
CALCULATED MOLECULAR WEIGHT	144.64
CAS REGISTRY NUMBER	1303-00-0, LISTED IN THE TSCA INVENTORY
HAZARDOUS INGREDIENTS	GALLIUM ARSENIDE
%: 100	TLV: Not Set OSHA/PEL: Not Set
	0.2mg/m3 (As) 0.5mg/kg (As)

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR	Dark gray cubic crystals, no odor
BOILING POINT	ND
DENSITY (gm/cc)	5.31
VAPOR PRESSURE @ 20°	NA
% VOLATILE BY VOLUME (%)	NA
REACTION WITH WATER	Reacts to steam to emit poisonous arsine
EVAPORATION RATE (H2O=1)	NA
SOLUBILITY IN WATER	Insoluble
MELTING POINT	ND

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	NA
AUTOIGNITION TEMPERATURE (°C)	NA
FLAMMABILITY	Non-flammable
EXTINGUISHING MEDIA	Use dry chemical, CO₂. DO NOT USE WATER
SPECIAL FIRE FIGHTING PROCEDURES	Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.
UNUSUAL FIRE & EXPLOSION HAZARDS	When heated to decomposition, it emits very toxic fumes of As. In the presence of acids, it yields arsine.



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HEALTH HAZARD INFORMATION

TOXICITY DATA ipr-mus LD50: **4700mg/kg** ipr-rat LD30: **10mg/kg**
 ipr-mus LD30: **10mg/kg**

HMIS RATING:
HEALTH: **4*** FLAMMABILITY: **0** REACTIVITY: **1** PERSONAL PROTECTION: **X**

ROUTES OF ENTRY INHALATION: **Yes**
 SKIN: **Yes**
 INGESTION: **Yes**

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **Respiratory Disorders**
EFFECTS OF OVEREXPOSURE (acute and chronic):
 INHALATION: **may cause sneezing, difficulty breathing, coughing and irritation to 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: ***SEE ATTACHED SHEET***

CARCINOGENICITY: **Yes(As)** NTP: **Yes** IARC MONOGRAPHS: **No** OSHA REGULATE: **No**

EMERGENCY FIRST AID PROCEDURES:
 INGESTION: **give 1-2 cups of milk or water and induce vomiting**
 INHALATION: **remove to fresh air, give oxygen if breathing is difficult**
 SKIN CONTACT: **brush off skin, wash area with soap & water**
 EYE CONTACT: **Flush eyes with lukewarm water for at least 15 minutes**
 SEEK MEDICAL ATTENTION FOR ALL OCCASIONS MENTIONED ABOVE

REACTIVITY DATA

STABILITY	Stable
CONDITIONS CONTRIBUTING TO UNSTABILITY	Heat and steam
INCOMPATIBILITY (MATERIALS TO AVOID)	Molten gallium arsenide attacks quartz, strong acids and acid fumes and steam
HAZARDOUS DECOMPOSITION PRODUCTS	Ga, GaOx, As, AsOx and H3As
HAZARDOUD POLYMERZATION	Will Not Occur
CONDITIONS TO AVOID	Heat, flame and incompatible materials



GALLIUM ARSENIDE MATERIAL SAFETY DATA SHEET

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 the area and insure proper ventilation, vacuum spill using a 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 approved dust-mist-fume cartridge respirator
LOCAL EXHAUST	Maintain below TLV level for As
MECHANICAL (general)	Not recommended
SPECIAL	Handle in a dry, inert, controlled environment
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 away from heat and incompatible materials, wash hands and face thoroughly after handling and before meals.

TRANSPORTATION REQUIREMENTS	DOT CLASS:	Poison B
	UN NUMBER:	1557
	IMCO CLASS:	6.1
	OTHER:	SPC

PRECAUTIONARY LABELING **NONE**

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, **ANGSTROM SCIENCES** MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

NA= NOT APPLICABLE

ND= NO DATA FOUND



ATTACHED SHEET FOR GALLIUM ARSENIDE

OTHER: FOR ALL As COMPOUNDS

Acute arsenic poisoning (from ingestion) results in marked irritation of the stomach and intestines with nausea, vomiting and diarrhea. In severe cases, the vomit and stools are bloody, and the patient goes into collapse and shock with weak, rapid pulse, a cold sweat, coma and death. Chronic arsenic poisoning (from ingestion or inhalation) may disturb the digestive system with symptoms of loss of appetite, cramps, nausea, constipation or diarrhea. Liver damage may occur causing jaundice. May disturb blood, kidneys and nervous system. May cause itching, pigmentation and cancer of the skin. Carcinogen of skin, lungs, liver, mouth, esophagus, larynx, bladder and paranasal sinus.

Metallic gallium as well as the nitrate produced no skin injury and subcutaneous injection of relatively large amounts could be tolerated both by rabbits and rats without evidence of injury. It has however, been demonstrated that gallium remains in the tissues for long periods.