



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

DATE OF LAST REVISION: 05-08-90

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## CHEMICAL IDENTITY

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LABEL IDENTITY	<b>Gallium Oxide</b>	
CAS NUMBER	<b>12024-21-4</b>	
FORMULA	<b>Ga<sub>2</sub>O<sub>3</sub></b>	
MOLECULAR WEIGHT	<b>187.44</b>	
CHEMICAL FAMILY	<b>Metal Oxide</b>	
HAZARDOUS INGREDIENTS	<b>Gallium Oxide</b>	
%: <b>100</b>	AGCIH TLV: <b>NE</b>	OSHA/PEL: <b>NE</b>

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## PHYSICAL AND CHEMICAL PROPERTIES

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COLOR, FORM AND ODOR	<b>White crystalline powder, no odor</b>
BOILING POINT	<b>NA</b>
DENSITY (gm/cc)	<b>6.44</b>
VAPOR PRESSURE @ 20°	<b>NA</b>
% VOLATILE BY VOLUME (%)	<b>ND</b>
REACTION WITH WATER	<b>None</b>
EVAPORATION RATE (H <sub>2</sub> O=1)	<b>ND</b>
SOLUBILITY IN WATER	<b>Insoluble</b>
MELTING POINT	<b>1900° C</b>

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## FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT METHOD	<b>NA</b>
AUTOIGNITION TEMPERATURE (°C)	<b>NA</b>
FLAMMABILITY	<b>Non-flammable</b>
EXTINGUISHING MEDIA	<b>Dry chemical</b>
SPECIAL FIRE FIGHTING PROCEDURES	<b>Wear NIOSH/MSHA approved self-contained breathing apparatus &amp; full protective clothing</b>
UNUSUAL FIRE & EXPLOSION HAZARDS	<b>Gallium compounds may emit acrid smoke &amp; fumes when involved in a fire.</b>

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## HEALTH HAZARD INFORMATION

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Route (s) of entry:                      Inhalation (x)                                      Skin (x)                                      Ingestion (x)

Effects of Overexposure: (Acute and Chronic)

INHALATION: **Mild respiratory irritant. May cause dry throat and cough.**

DERMAL/EYE: **Mild irritant to skin and eyes. May cause redness and watery eyes.**

OTHER: **Via ingestion; may cause behavioral changes such as sleepiness, loss of appetite, may cause vomiting, metallic taste, itching and sweating.**



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### HEALTH HAZARD INFORMATION CONTINUED

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MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: **None**

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CARCINOGENICITY            NTP: **no**    IARC MONOGRAPHS: **no**    OSHA REGULATE: **no**

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#### EMERGENCY FIRST AID PROCEDURES:

INGESTION: **Rinse mouth out; give 1-2 glasses milk & induce vomiting. Seek Medical attention.**

INHALATION: **Remove to fresh air; administer oxygen; seek medical attention.**

SKIN CONTACT: **Brush off material. Wash affected area with soap and water.**

EYE CONTACT: **Flush eyes with water for 15 minutes, seek medical attention.**

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### REACTIVITY DATA

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STABILITY	<b>Stable</b>
CONDITIONS CONTRIBUTING TO UNSTABILITY	<b>NA</b>
INCOMPATIBILITY (MATERIALS TO AVOID)	<b>Magnesium metal and heat</b>
HAZARDOUS DECOMPOSITION PRODUCTS	<b>None</b>
HAZARDOUS POLYMERIZATION	<b>Will Not Occur</b>
CONDITIONS TO AVOID	<b>NA</b>

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### SAFE HANDLING AND USE

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: **Wear full protective clothes, isolate area & insure proper ventilation, vacuum spill & place in container for disposal.**

WASTE DISPOSAL METHOD: **Dispose of in accordance with regulations.**

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### SPECIAL PROTECTIVE INFORMATION

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RESPIRATORY PROTECTION	<b>Wear NIOSH/MSHA approved respirator</b>
LOCAL EXHAUST	<b>To maintain low level concentration</b>
MECHANICAL (general)	<b>Recommended</b>
PROTECTIVE GLOVES	<b>Rubber gloves</b>
EYE PROTECTION	<b>Safety glasses with side shields</b>
OTHER PROTECTIVE EQUIPMENT	<b>Maintain sink, safety shower and eyewash fountain in the work area. Wear full protective clothing at all times.</b>



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### SPECIAL PRECAUTIONS

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PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE: **Store in tightly closed containers in a cool, dry place. Wash hands and face thoroughly after using.**

#### TRANSPORTATION REQUIREMENTS

DOT CLASS: **ND**  
UN NUMBER: **ND**  
IMCO CLASS: **ND**  
OTHER: **ND**

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 NR: NOT RECORDED NE: NOT ESTABLISHED**