



## MATERIAL SAFETY DATA SHEET

COMPLIES WITH 29 CFR 1910.1200.

OSHA HAZARD COMMUNICATION RULE

DATE OF LAST REVISION: 05-03-96

### CHEMICAL IDENTITY

LABEL IDENTITY	<b>HOLMIUM</b>
CHEMICAL NAME/SYNONYMS	<b>HOLMIUM</b>
FORMULA	<b>Ho</b>
CHEMICAL FAMILY	<b>METAL</b>
CAS REGISTRY NUMBER	<b>7440-0-0, PRODUCT IS TSCA. CERTIFIED</b>
HAZARDOUS INGREDIENTS	<b>HOLMIUM</b>
%: <b>99</b>	TLV: <b>10mg/m3 (TWA) total dust</b> OSHA/PEL: <b>15mg/m3 (total dust)</b> <b>5mg/3 (respirable)</b>

**SARA TITLE III: Fire hazard, reactive hazard**

### PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM	<b>Silver solid, (ingot, chunk, foil, powder)</b>
ODOR	<b>Odorless</b>
BOILING POINT	<b>4883</b>
DENSITY (gm/cc)	<b>NA</b>
VAPOR PRESSURE @ 20°	<b>NA</b>
% VOLATILE BY VOLUME (%)	<b>NA</b>
REACTION WITH WATER	<b>NA</b>
EVAPORATION RATE (H2O=1)	<b>NA</b>
SOLUBILITY IN WATER	<b>Insoluble, reacts</b>
MELTING POINT	<b>2685</b>

### FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	<b>NA</b>
AUTOIGNITION TEMPERATURE (°C)	<b>NA</b>
FLAMMABILITY	<b>ND</b>
EXTINGUISHING MEDIA	<b>Use dry chemical, class D extinguisher, DO NOT USE WATER.</b>
SPECIAL FIRE FIGHTING PROCEDURES	<b>Wear self-contained breathing apparatus, full protective clothing to prevent contact .</b>
UNUSUAL FIRE & EXPLOSION HAZARDS	<b>When heated, all forms of the metal (ingot, foil, powder) will react with water or steam to produce flammable/explosive H2. Avoid creating fine dusts, because a powder, this product is capable of creating a dust explosion.</b>



## HOLMIUM MATERIAL SAFETY DATA SHEET

### HEALTH HAZARD INFORMATION

TOXICITY DATA **ND**  
HMIS RATING:  
HEALTH: **nd** FLAMMABILITY: **nd** REACTIVITY: **nd** PERSONAL PROTECTION: **nd**

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

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **No data found**  
EFFECTS OF OVEREXPOSURE (single exposure):  
INHALATION: **may be harmful if inhaled. Good industrial hygiene practice suggests limiting exposure to all respirable particles.**  
INGESTION: **evidence suggests low toxicity potential due to poor absorption by the oral route (1).**  
DERMAL/EYE: **may cause skin and eye irritation.**

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

EMERGENCY FIRST AID PROCEDURES:  
INGESTION: **if swallowed and victim is fully conscious, induce vomiting by 1-2 glasses of water and sticking finger down throat. Seek Medical Attention!**  
INHALATION: **remove from area of exposure, if NOT breathing, give artificial respiration, if breathing is difficult, give oxygen. Seek Medical Attention!**  
SKIN CONTACT: **in case of skin contact immediately wash with soap and water for at least 5 minutes, remove contaminated clothing and shoes. Thoroughly clean contaminated clothing and shoes before reuse. Seek medical attention if irritation develops or persists.**  
EYE CONTACT: **in case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes using an eyewash fountain. Lift upper and lower lids and rinse well under them. Seek medical attention if irritation persists.**

### REACTIVITY DATA

STABILITY **Stable**  
CONDITIONS CONTRIBUTING TO UNSTABILITY **Avoid dusts, air and moisture**  
INCOMPATIBILITY (MATERIALS TO AVOID) **water, strong acids and oxidizers, halogens**  
HAZARDOUS DECOMPOSITION PRODUCTS **powders and thin foils will react with water at room temp to produce flammable/explosive hydrogen gas.**



## HOLMIUM MATERIAL SAFETY DATA SHEET

---

### REACTIVITY DATA CONTINUED

---

HAZARDOUS POLYMERIZATION  
CONDITIONS TO AVOID

**Will Not Occur**  
**NA**

---

### SAFE HANDLING AND USE

---

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: **eliminate all sources of ignition, evacuate area, wear appropriate protective gear. Sweep into appropriate container, avoid creating dust. DO NOT use "SHOP" vacuum, as this may cause a fire. Ventilate area, wash spill area after material pick-up is complete.**

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

---

### SPECIAL PROTECTIVE INFORMATION

---

RESPIRATORY PROTECTION  
LOCAL EXHAUST  
MECHANICAL (general)  
PROTECTIVE GLOVES  
EYE PROTECTION  
OTHER PROTECTIVE EQUIPMENT

**NIOSH/MSHA approved dust mask**  
**Maintain below TLV**  
**NA**  
**Recommended**  
**Safety glasses with side shields**  
**maintain a safety shower and eyewash fountain in the work area. Oxygen ready.**

---

### SPECIAL PRECAUTIONS

---

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE: **store in a cool, dry place in a tightly closed container. Air and moisture sensitive. Store away from oxidizers and other materials listed under incompatibility. STORE UNDER ARGON OR OTHER INERT ENVIRONMENT. Avoid breathing dusts, direct or prolong contact with skin and eyes, wash hands, do not rub eyes, do not eat, smoke or drink in the work area.**

TRANSPORTATION REQUIREMENTS  
UN NUMBER: **NC**

DOT CLASS: **NC**  
IMCO CLASS: **NC**

---

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**