



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

DATE OF LAST REVISION: 06-03-96

CHEMICAL IDENTITY

LABEL IDENTITY	YTTRIUM METAL	
CHEMICAL NAME/SYNONYMS	YTTRIUM METAL	
FORMULA	Y	
CHEMICAL FAMILY	METAL	
HAZARDOUS INGREDIENTS	YTTRIUM	
%: >99	CAS: 7440-65-5	TLV: N/A OSHA/PEL: H

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR	Silver solid (ingot, chunk, foil, powder)/odorless
BOILING POINT	5300
DENSITY (gm/cc)	N/A
VAPOR PRESSURE @ 20°	N/A
% VOLATILE BY VOLUME (%)	0
REACTION WITH WATER	None
EVAPORATION RATE (H2O=1)	N/A
SOLUBILITY IN WATER	Insoluble
MELTING POINT	2748

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	NA
AUTOIGNITION TEMPERATURE (°C)	NA
FLAMMABILITY	Non-flammable
EXTINGUISHING MEDIA	Use dry chemical, CO₂, Class D Extinguisher
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	Avoid creating fine dusts, because as a powder, this product is capable of creating a dust explosion.

SARA TITLE III HAZARD CLASSIFICATION:

(X) Immediate (Acute) Health Hazard	() Sudden Release of Pressure Hazard
(X) Delayed (Chronic) Health Hazard	(X) Reactive Hazard
(X) Fire Hazard	

WARNING STATEMENTS:

Flammable solid when a powder or thin foil.
All forms will react with dilute acids emitting flammable/explosive hydrogen gas.
Inhalation of dust may cause lung damage.



YTTRIUM METAL MATERIAL SAFETY DATA SHEET

HEALTH HAZARD INFORMATION

TOXICITY DATA	ACGIH (TLV)	OSHA (TWA)
PARTICULATES:	10mg/m3	15mg/m3
NOT OTHERWISE:	(TWA)	total dust
REGULATED:	total dust	5mg/m3 respirable
YTTRIUM METAL:	1mg/m3	1mg/m3
AND COMPOUNDS	(TWA)	(TWA)

HMIS RATING:

HEALTH: **0*** FLAMMABILITY: **0** REACTIVITY: **0** 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 be harmful if inhaled. A comparative study showed that yttrium oxide produced pulmonary changes (diffuse sclerosis) in rats. (4)**

SWALLOWING: **Evidence suggests low toxicity potential due to poor absorption by the oral route.**

SKIN ABSORPTION: **Evidence suggests low toxicity potential due to poor skin absorption. (1)**

SKIN CONTACT: **May cause skin irritation.**

EYE CONTACT: **May cause eye irritation.**

OTHER: **Has anticoagulant effect when given intravenously. (1)**

CARCINOGENICITY: **None** NTP: **No** IARC MONOGRAPHS: **NO** OSHA REGULATE: **NO**

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **Administer 1-2 cups of water and induce vomiting, seek medical attention.**

INHALATION: **Remove from area of exposure. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. GET MEDICAL ATTENTION.**

SKIN CONTACT: **In case of contact, immediately wash with soap and plenty of water for at least 5 min. Remove contaminated clothing and shoes. Thoroughly clean contaminated clothing and shoes before reuse. Get medical attention if irritation develops or persists.**

EYE CONTACT: **In case of contact, immediately flush eyes with plenty of water for at least 15 min. using an eyewash fountain. Lift upper and lower lids and rinse well under then. Get medical attention if irritation develops or persists.**

NOTE TO PHYSICIAN: **All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibilities that over exposure to materials other than this product may have occurred. Treat symptomatically, no specific information found.**



YTTRIUM MATERIAL SAFETY DATA SHEET

REACTIVITY DATA

STABILITY	Stable
CONDITIONS CONTRIBUTING TO UNSTABILITY	Heat
INCOMPATIBILITY (MATERIALS TO AVOID)	Mg, strong acids, may act as oxidant
HAZARDOUS DECOMPOSITION PRODUCTS	Not known
HAZARDOUD POLYMERZATION	Will Not Occur
CONDITIONS TO AVOID	Avoid creating dusts, air & moisture sensitive.

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 pickup is complete.**

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

HANDLING AND STORAGE: **Store in a cool, dry place in tightly closed containers. Air and moisture sensitive. Store away from oxidizers and other materials listed under incompatibility (Section 5). STORE UNDER ARGON OR OTHER INERT ENVIRONMENT. Avoid breathing dusts. Avoid direct or prolonged contact with skin and eyes. Wash hands thoroughly after handling. Do not rub eyes with soiled hands. Do not eat, drink or smoke in the work area.**

OTHER PRECAUTIONS:

Avoid creating dusts as this product, like most materials in powder form, is capable of creating a dust explosion.

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION	NIOSH approved dust-mist-fume respirator
LOCAL EXHAUST	N/A
MECHANICAL (general)	N/A
SPECIAL	NA
OTHER	NA
PROTECTIVE GLOVES	Neoprene
EYE PROTECTION	Safety Glasses with Side Shield & Chemical workers - dust proof goggles (under dusting conditions).
OTHER PROTECTIVE EQUIPMENT	Maintain a sink, safety shower and eyewash fountain in the work area. Have oxygen readily available.



YTTRIUM MATERIAL SAFETY DATA SHEET

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.

TSCA Inventory Status:

Product is TSCA certified.

TRANSPORTATION STATUS:

POWDER AD THIN FOIL: Flammable solid, n.o.s. (yttrium metal), UN 1325
INGOT AND CHUNK: Not regulated

REPORTABLE QUANTITY (RQ), UNDER U.S. EPA CERCLA: **None listed**

SPECIFICALLY LISTED UNDER SARA TITLE III: **Not listed**

STATE/INTERNATIONAL RIGHT-TO-KNOW REGULATIONS:

FLORIDA: LISTED
ILLINOIS: LISTED
LOUISIANA: LISTED
MASSACHUSETTS: LISTED; FOOTNOTE DESIGNATION: FL
NEW JERSEY: LISTED; ID# 2019
PENNSYLVANIA: LISTED
RHODE ISLAND: LISTED; HAZARD CODE: T
CANADA: LISTED; CONC. 1% #1706

TRANSPORTATION REQUIREMENTS

DOT CLASS:
UN NUMBER: **NC**
IMCO CLASS: **NC**
OTHER: **---**

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