



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

DATE OF LAST REVISION: 06-20-96

CHEMICAL IDENTITY

LABEL IDENTITY	ZIRCONIUM NITRIDE
CHEMICAL NAME/SYNONYMS	ZIRCONIUM NITRIDE
FORMULA	ZrN
CHEMICAL FAMILY	METAL NITRIDE
CAS REGISTRY NUMBER	25658-42-8, LISTED IN THE TSCA INVENTORY
HAZARDOUS INGREDIENTS	ZIRCONIUM NITRIDE
%: 100	TLV: 5mg/m3 OSHA/PEL: 5mg/m3 (for Zr compounds as Zr)

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR	Yellow brown crystalline powder, no odor
BOILING POINT	ND
DENSITY (gm/cc)	7.09
VAPOR PRESSURE @ 20°	NA
% VOLATILE BY VOLUME (%)	NA
REACTION WITH WATER	None
EVAPORATION RATE (H2O=1)	NA
SOLUBILITY IN WATER	Insoluble
MELTING POINT	2980 ±50

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	NA
AUTOIGNITION TEMPERATURE (° C)	NA
FLAMMABILITY	Not considered a flammable nitride
EXTINGUISHING MEDIA	Agents for metal fires: G-1 powder, TEC or MET-L-X.
SPECIAL FIRE FIGHTING PROCEDURES	None
UNUSUAL FIRE & EXPLOSION HAZARDS	None



ZIRCONIUM NITRIDE MATERIAL SAFETY DATA SHEET

HEALTH HAZARD INFORMATION

TOXICITY DATA

No data

HMIS RATING:

HEALTH: **1** FLAMMABILITY: **1** REACTIVITY: **1** PERSONAL PROTECTION: **X**

ROUTES OF ENTRY

INHALATION: **Yes**
SKIN: **No**
INGESTION: **Yes**

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **Pre-existing lung disorders**

EFFECTS OF OVEREXPOSURE (acute and chronic):

INHALATION: **no data available on effects of inhalation. This material can be slightly corrosive and therefore, may cause mucous membrane and respiratory tract irritation.**

DERMAL/EYE: **mild irritation to the skin. As a slightly corrosive substance ZrN may cause irritation and redness in contact with the skin.**

OTHER: **no data on effects of ingestion. Ingestion could cause G.I. injury, though most insoluble zirconium compounds exhibit low oral toxicity.**

CARCINOGENICITY: **None** NTP: **no** IARC MONOGRAPHS: **no** OSHA REGULATE: **no**

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **DO NOT induce vomiting, seek medical attention**

INHALATION: **Remove to fresh air**

SKIN CONTACT: **Flush with water**

EYE CONTACT: **Flush with plenty of water for at least 15 minutes**

REACTIVITY DATA

STABILITY

Stable

CONDITIONS CONTRIBUTING TO UNSTABILITY

None

INCOMPATIBILITY (MATERIALS TO AVOID)

Strong acids

HAZARDOUS DECOMPOSITION PRODUCTS

Nox NH3 possible under fire conditions

HAZARDOUS POLYMERIZATION

Will Not Occur

CONDITIONS TO AVOID

None



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SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Vacuum equipped with HEPA filter.

WASTE DISPOSAL METHOD:

Dispose of with normal refuse.

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION

Half mask air purifying respirator for very dusty conditions

LOCAL EXHAUST

Use if extremely dusty conditions

MECHANICAL (general)

Use with adequate ventilation

PROTECTIVE GLOVES

Neoprene

EYE PROTECTION

Safety goggles

OTHER PROTECTIVE EQUIPMENT

Disposable coveralls

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:

Wash thoroughly after handling. Keep container closed.

TRANSPORTATION REQUIREMENTS

DOT CLASS:

Not Classified

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

NR=NOT RECORDED



ATTACHED SHEET FOR: **Zirconium Nitride**

Toxicity Data continued:

ZrOCl₂

ipr-mus LD50:	333mg/kg
ipr-rat LD50:	440mg/kg
orl-mus LD50:	1227mg/kg
orl-rat LD50:	3500mg/kg
scu-rat LDLO:	500mg/kg