

METCO INC, SUB OF THE PERKIN-ELMER CORP -- METCO 201B-NS-1 ZIRCONIUM OXIDE POWDER  
-- 3439-01-391-8640

===== Product Identification =====

Product ID:METCO 201B-NS-1 ZIRCONIUM OXIDE POWDER  
MSDS Date:05/05/1993  
FSC:3439  
NIIN:01-391-8640  
MSDS Number: BYSHV  
=== Responsible Party ===  
Company Name:METCO INC, SUB OF THE PERKIN-ELMER CORP  
Address:1101 PROSPECT AVENUE  
City:WESTBURY  
State:NY  
ZIP:11590-2724  
Country:US  
Info Phone Num:516-334-1300  
Emergency Phone Num:202-483-7616/800-424-9300(CHEMTREC)  
CAGE:39918

=== Contractor Identification ===  
Company Name:METCO INC, SUB OF THE PERKIN-ELMER CORP  
Address:1101 PROSPECT AVENUE  
Box:City:WESTBURY  
State:NY  
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Phone:516-334-1300  
CAGE:39918

===== Composition/Information on Ingredients =====

Ingred Name:ZIRCONIUM OXIDE  
CAS:1314-23-4  
RTECS #:ZH8800000  
Fraction by Wt: 91.5%  
Other REC Limits:NONE RECOMMENDED

Ingred

Name:CALCIUM CARBONATE (MARBLE) (LIMESTONE)

CAS:1317-65-3

RTECS #:EV9580000

Fraction by Wt: 5.0%

Other REC Limits:NONE RECOMMENDED

OSHA PEL:15 MG/M3 TDUST

ACGIH TLV:10 MG/M3 TDUST; 9495

Ingred Name:ORGANIC BINDER

Fraction by Wt: 1.0%

Other REC Limits:NONE RECOMMENDED

Ingred Name:HAFNIUM OXIDE

CAS:12055-23-1

Fraction by Wt: 2.0%

Other REC Limits:NONE RECOMMENDED

Ingred Name:SILICON (II) OXIDE

CAS:10097-28-6

Fraction by Wt: 0.5%

Other REC Limits:NONE RECOMMENDED

==== Hazards

Identification =====

LD50 LC50 Mixture:NONE SPECIFIED BY MANUFACTURER.

Routes of Entry: Inhalation:YES Skin:YES Ingestion:NO

Reports of Carcinogenicity:NTP:NO IARC:NO OSHA:NO

Health Hazards Acute and Chronic:ZIRCONIUM OXIDE:INHAL/SKIN

HAZ.NUISANCE DUST.IRRIT RESP TRACT.SKIN IRRIT,SKIN

GRANULOMAS.CALCIUM CARBONATE:INHAL/EYE HAZ.LUNG/EYE IRRIT.ORG

BINDER:MILDLY TOXIC BY INGEST.GENERAL PUPOSE FOOD ADDITIVE.HAFNIUM

OXIDE:SKIN/EYE/INHAL HAZ.RESP TRACT IRRIT,SKIN

/EYE MILD

IRRIT.SILICON OXIDE:INHAL/EYE HAZ.RESP TRACT IRRIT,(SUPPL)

Effects of Overexposure:POSSIBLE EYE IRRIT, POSSIBLE SKIN IRRIT, INHAL

IRRIT, POSSIBLE INGEST IRRIT.

Medical Cond Aggravated by Exposure:CONSULT PHYSICIAN. TARGET

ORGANS:RESP TRACT, SKIN, LUNGS, EYES, GASTROINTESTINAL TRACT.

==== First Aid Measures =====

First Aid:EYE:FLUSH W/WATER.IF IRRIT PERSISTS CONSULT PHYSICIAN.

SKIN:WASH W/SOAP/WATER. INHAL:EXPOSE TO FRESH AIR.CONS

ULT PHYSICIAN

IF IRRIT OR RESPIRATORY DISTRESS PERSISTS. INGEST:CONSULT  
PHYSICIAN.

===== Fire Fighting Measures =====

Extinguishing Media:NON-FLAMMABLE.

Fire Fighting Procedures:NONE.

Unusual Fire/Explosion Hazard:IF IGNITED, CALCIUM CARBONATE MAY PRODUCE  
CARBON MONOXIDE/CARBON DIOXIDE.

===== Accidental Release Measures =====

Spill Release Procedures:VACUUM LOOSE POWDER ONLY W/VACUUMS EQUIPPED  
W/HEPA FILTRATION. VA

CUUMS APPROPRIATE FOR USE W/METALLIC DUSTS

SHOULD BE UTILIZED. WIPE AREA CLEAN. DO NOT USE WAER FOR CLEAN UP  
OPERATIONS. DO NOT DRY SWE EP. AVOID GENERATING AIRBORNE DUST.

Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

===== Handling and Storage =====

Handling and Storage Precautions:STORE AWAY FROM INCOMPATIBLES.STORE  
PROD CONTNRS IN WELL-VENTI,CLEAN,COOL,DRY AREA.STORE IN MANNER TO  
MINIMIZE PUNCTURES/BREAKAGE OF CNTNRS.

Other Precautions

:AVOID INGEST/INHAL/EXCESSIVE SKIN CONTACT.AVOID

CONTACT OF POWDER W/WATER/OXIDIZERS.GOGG:COMBUST SPRAY

SHADE#5,PLASMA SPRAY UP TO 40KW SHADE#9,40-60KW SHADE#10,>60KW

SHADE#11.GOGG MAY BE APPROPRIATE T O AVOID EYE IRRIT DURING OTHER  
PROD HNDL

===== Exposure Controls/Personal Protection =====

Respiratory Protection:RESPIRATOR APPROVED BY NIOSH W/FILTER CARTRIDGES  
APPROVED FOR DUST/FUME/MISTS SHOULD BE WORN AT ALL TIMES DURING  
THERMAL SPRAY PROCESS TO PR

OTECT OPERATOR FROM EXPO TO

DUST/FUMES.RESP MAY ALSO BE WORN WHEN PRODUCT HDNGL GENERATES  
DUST.

Ventilation:PRODUCT SHOULD BE USED W/APPROPRIATE LOCAL EXHAUST  
VENTILATION PROVIDED.

Protective Gloves:ALUMINIZED GLOVE-PLASMA SPRAY,RUBB-OTHER

Eye Protection:(SEE OTHER PRECAUTION SECITON OF MSDS.)

Other Protective Equipment:EAR PROT-EXCESS NOISE LEVELS.AL APRON-PLASMA  
SPRAY PROCESS.OTH APPRO PROT CLOTH AS NECESSARY-PROD HDLG EXCESS  
SKIN(SUPP)

Work Hygienic Practices:WASH HANDS A

FTER HANLDING.

Supplemental Safety and Health

HAZ DECOMP PROD:POWDER. ORGBINDER EMIT TOX NA2O FUMES WHEN HEAT TO  
DECOMP. HEA HAZ:SILICOSIS,PULM FIB(IBROTIC CHANGES ON XRAY  
EXAM,SHORT OF BREATH,COUGH,DECR CHEST EXPAN,LESS WORK CAP,INCRE  
SUSC TO TUB ERCULOSIS)CONJ,EYE IRRIT. OTH PROT EQPT:CONTACT,EYEWASH  
STATION,WASH FACI.

===== Physical/Chemical Properties =====

HCC:N1

Melt/Freeze Pt:M.P/F.P Text:4500F,2482C

Spec Gravity:2.1

Solubility in Water:NEGATIV

E.

Appearance and Odor:POWDER, NO ODOR.

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

OXIDIZERS,ACIDS,SULFUR,NI(NO3)2,COMBUST.SODIUM OXIDE IN ORG BINER VERY  
REACTIVE-COMBINES VIOL W/WATER TO FORM NAOH.

Stability Condition to Avoid:NONE SPECIFIED BY MANUFACTURER.

Hazardous Decomposition Products:OZONE & NITRIC OXIDE ARE FORMED BY  
PLASMA FLAME(SIMILAR TO WELDING FUMES).THIS ACTION IS INDEPENDENT  
OF CERAMIC (SUPP)

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===== Disposal Considerations =====

Waste Disposal Methods:EMPTY PRODUCT CNTNRS/PROD WASTE/CLEANING MEDIA  
SHOULD BE STORED & DISPOSE OF ACCORDING TO APPROPRIATE  
LOC/STATE/FED REGULATORY GUIDELINES.

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