

HUGHES DEFENSE COMMUNICATIONS CO,MAHWAH ELECTRO OPTICS CTR -- LENS, AFOCAL,  
ZOOM, P/N 1002073-1 -- 6210-01-311-5162

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

Product ID:LENS, AFOCAL, ZOOM, P/N 1002073-1

MSDS Date:12/11/1999

FSC:6210

NIIN:01-311-5162

Status Code:A

MSDS Number: CJWCS

=== Responsible Party ===

Company Name:HUGHES DEFENSE COMMUNICATIONS CO,MAHWAH ELECTRO OPTICS CTR

Address:1300 MACARTHUR BLVD

City:MAHWAH

State:NJ

ZIP:07430-2502

Country:US

Info Phone Num:

201-327-7700

Emergency Phone Num:603-889-2500

Preparer's Name:HMIS, VBA, DSCR

CAGE:30881

=== Contractor Identification ===

Company Name:B64-USARMY MISSILE COMMAND, REDSTONE ARSENAL

Address:REDSTONE ARSENAL

Box:City:REDSTONE ARSENAL

State:AL

ZIP:35898-5230

Country:US

Phone:205-955-8656, DSN 897-1421

Contract Num:DAAH01-95-C-0178

CAGE:TO381

Company Name:HUGHES DEFENSE COMMUNICATIONS CO,MAHWAH ELECTRO OPTICS CTR

Address:1300 MACARTHUR BLVD

Box:City:MAHWAH

State:NJ

ZIP:07430-2502

Country:US

Phone:201

-327-7700

CAGE:30881

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

Ingred Name:THORIUM-232

CAS:7440-29-1

RTECS #:XO6400000

===== Hazards Identification =====

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

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

Health Hazards Acute and Chronic:THE AVENGER FORWARD LOOKING INFRARED  
(FLIR) DEVICE CONTAINS 8 - LENSES, EACH HAVE A SOLID THORIUM  
FLUORIDE COATING. THE THORIUM IN THI

S COATING IS A RADIOACTIVE ALPHA EMITTER, THORIUM 232, WITH A SPECIFIC ACTIVITY OF 0.1091 MICROCURIES PERGRAM. THE TOTAL RADIOACTIVITY FOR THE EIGHT LENSES TOTAL 0.024 MICROCURIES. THERE ARE NO RADIATION HAZARDS TO THE OPERATOR DURING NORMAL HANDLING/OPERATING. HOWEVER, ABRASIVE PROCEDURES WILL RELEASE THE SOLID THORIUM COATINGS AS DUST THAT PRESENTS AN INTERNAL AND EXTERNAL RADIATION HAZARD THAT MAY CAUSE SEVERE LOCALIZED DAMAGE TO CELLS.

Explanation of Carcinogenicity: NOT A CARCINOGEN.

Effects of Overexposure: THERE ARE NO RADIATION HAZARDS TO THE OPERATOR DURING NORMAL HANDLING.

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

Extinguishing Media: USE MEDIA APPROPRIATE FOR SURROUNDING FIRE.

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

Spill Release Procedures: THORIUM ALLOY COMPONENTS WITH DAMAGED SURFACES SHOULD BE WRAPPED AND SEALED IN PLASTIC BAGS OR OTHER WRAPPING MATERIALS. DAMAGED COMPONENTS SHOULD BE TREATED WITH CAUTION AND TURNED IN AS RADIOLOGICAL WASTE.

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

Handling and Storage Precautions: WHERE PROLONGED BODY CONTACT IS POSSIBLE OR ABRASIVE OPERATIONS ARE LIKELY, THE THORIUM SHOULD BE REMOVED TO A SECURE AREA. MATERIALS USED IN HANDLING CORRODED THORIUM ALLOYS SHOULD BE PLACED IN A RADIOACTIVE WASTE CONTAINER FOR DISPOSAL IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

Other Precautions: SKIN CONTACT SHOULD BE AVOIDED. NO DRILLING, FILING, MACHINING, SANDING OR OTHER ABRASIVE PROCEDURES ARE PERMITTED.

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

Respiratory Protection: RESPIRATORY PROTECTION SHOULD BE WORN WHEN REMOVING OR HANDLING DAMAGED OR CORRODED THORIUM ALLOYS.

Protective Gloves: HEAVY GLOVES SHOULD BE WORN.

Eye Protection: INDUSTRIAL EYE PROTECTION SHOULD BE WORN.

Work Hygienic Practices: PERSONNEL HANDLING THORIUM ALLOYS SHOULD

WASH

HANDS THOROUGHLY WITH SOAP AND WATER IMMEDIATELY AFTER REMOVAL OF GLOVES, BEFORE EATING, SMOKING, DRINKING AND AT THE END OF WORK TASK.

Supplemental Safety and Health

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

HCC:A2

Boiling Pt:=4000.C, 7232.F

Melt/Freeze Pt:=1700.C, #####F

Solubility in Water:INSOLUBLE

Appearance and Odor:EIGHT LENSES, EACH WITH A SOLID THORIUM FLUORIDE COATING.

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

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Stability Indicator/Materials to Avoid:YES

Hazardous Decomposition Products:FIRE CONDITIONS MAY RELEASE RADIOACTIVE THORIUM.

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

Waste Disposal Methods:THORIUM WASTE MUST BE DISPOSED OF AND SHIPPED IN ACCORDANCE WITH WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.

===== MSDS Transport Information =====

Transport Information:TRANSPORTATION PSN= RADIOACTIVE MATERIAL, EXCEPT ED PACKAGE, ARTICLE .

===== Regulatory Information =====

Federal Regulatory Information:NUCLEAR REGULATORY COMMISSION.

===== Other Information =====

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