

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** (5N) 99.999% Ultra Thin Holmium Nanofilm

**Product Code:** HO-M-05-FN

**CAS Number:** 7440-60-0

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

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## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

The substance is not classified according to the Globally Harmonized System (GHS).

Hazards not otherwise classified

No data available

GHS label elements

N/A

Hazard pictograms

N/A

Signal word

N/A

Hazard statements

N/A

WHMIS classification

Not controlled

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 0

Flammability = 0

Physical Hazard = 0

Other hazards  
Results of PBT and vPvB assessment  
PBT:  
N/A  
vPvB:  
N/A

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substances  
CAS No. / Substance Name:  
7440-60-0 Holmium  
Identification number(s):  
EC number:  
231-169-0

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### **SECTION 4. FIRST AID MEASURES**

Description of first aid measures  
If inhaled:  
Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm.  
Seek immediate medical advice.  
In case of skin contact:  
Immediately wash with soap and water; rinse thoroughly.  
Seek immediate medical advice.  
In case of eye contact:  
Rinse opened eye for several minutes under running water. Consult a physician.  
If swallowed:  
Seek medical treatment.  
Information for doctor  
Most important symptoms and effects, both acute and delayed  
No data available  
Indication of any immediate medical attention and special treatment needed  
No data available

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### **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media  
Suitable extinguishing agents  
Special powder for metal fires. Do not use water.  
For safety reasons unsuitable extinguishing agents  
Water  
Special hazards arising from the substance or mixture  
If this product is involved in a fire, the following can be released:  
Metal oxide fume  
Advice for firefighters  
Protective equipment:  
No special measures required.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Not required.

Environmental precautions:

Do not allow material to be released to the environment without official permits.

Methods and materials for containment and cleanup:

Pick up mechanically.

Prevention of secondary hazards:

No special measures required.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## **SECTION 7. HANDLING AND STORAGE**

Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Information about protection against explosions and fires:

No special measures required.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Not required.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Specific end use(s)

No data available

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Additional information about design of technical systems:

No further data; see section 7.

Control parameters

Components with limit values that require monitoring at the workplace:

Not required.

Additional information:

No data

Exposure controls

Personal protective equipment

Follow typical protective and hygienic practices for handling chemicals.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Not required.

Protection of hands:

Not required.  
Penetration time of glove material (in minutes)  
No data available  
Eye protection:  
Safety glasses  
Body protection:  
Protective work clothing.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form: Solid in various forms

Color: No data available

Odor: No data available

Odor threshold: No data available.

pH: N/A

Melting point/Melting range: 1474 °C (2685 °F)

Boiling point/Boiling range: 2295 °C (4163 °F)

Sublimation temperature / start: No data available

Flammability (solid, gas)

No data available.

Ignition temperature: No data available

Decomposition temperature: No data available

Autoignition: No data available.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: No data available

Upper: No data available

Vapor pressure at 20 °C (68 °F): 0 hPa

Density at 20 °C (68 °F): 8.795 g/cm<sup>3</sup> (73.394 lbs/gal)

Relative density

No data available.

Vapor density

N/A

Evaporation rate

N/A

Solubility in Water (H<sub>2</sub>O): No data available

Partition coefficient (n-octanol/water): No data available.

Viscosity:

Dynamic: N/A

Kinematic: N/A

Other information

No data available

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions

No dangerous reactions known

Conditions to avoid

No data available

Incompatible materials:

No data available

Hazardous decomposition products:

Metal oxide fume

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects

Acute toxicity:

No effects known.

LD/LC50 values that are relevant for classification:

No data

Skin irritation or corrosion:

Powder: irritant effect

Eye irritation or corrosion:

Powder: irritant effect

Sensitization:

No sensitizing effects known.

Germ cell mutagenicity:

No effects known.

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:

No effects known.

Specific target organ system toxicity - repeated exposure:

No effects known

Specific target organ system toxicity - single exposure:

No effects known.

Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

Lanthanons can cause delayed blood clotting leading to hemorrhages.

Exposure may also lead to sensitivity to heat, itching, increased awareness of odor and taste, and liver damage.

Subacute to chronic toxicity:

No effects known.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

Aquatic toxicity:

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Additional ecological information:

Do not allow material to be released to the environment without official permits.

Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems.

Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

Other adverse effects

No data available

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

Waste treatment methods

Recommendation

Consult official regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

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## **SECTION 14. TRANSPORT INFORMATION**

Not a hazardous material for transportation.

UN-Number

DOT, IMDG, IATA

None

UN proper shipping name

DOT, IMDG, IATA

None

Transport hazard class(es)

DOT, ADR, IMDG, IATA

Class

None

Packing group

DOT, IMDG, IATA

None

Environmental hazards:

N/A

Special precautions for user

N/A

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N/A

Transport/Additional information:

Not dangerous according to the above specifications.

DOT

Marine Pollutant (DOT):

No

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## **SECTION 15. REGULATORY INFORMATION**

Safety, health and environmental regulations/legislation specific for the substance or mixture

GHS label elements

N/A

Hazard pictograms

N/A

Signal word

N/A

Hazard statements

N/A

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

SARA Section 313 (specific toxic chemical listings)

Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer

Substance is not listed.

Prop 65 - Developmental toxicity

Substance is not listed.

Prop 65 - Developmental toxicity, female

Substance is not listed.

Prop 65 - Developmental toxicity, male

Substance is not listed.

Information about limitation of use:

For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use)

Substance is not listed.

Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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## **16. OTHER INFORMATION**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the

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