



Yttrium Oxide (Pieces, Evaporation Slugs, Sputter Targets)

1. Product Identification

Trade Name: Yttrium oxide (Pieces, Evaporation Slugs, Sputter Targets)
Chemical Formula: Y_2O_3
Recommended Use: Surface coating

2 Hazards Identification

Signal Word: Warning



Hazard Statements: H319 Causes serious eye irritation
H315 Causes skin irritation

Precautionary Statements: P280: Wear protective gloves/protective clothing/eye protection/face protection
P264: Wash thoroughly after handling
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P337+P313: If eye irritation persists get medical advice/attention

HMIS Ratings (0-4): Bulk
Health: 0
Flammability: 0
Physical: 0

3 Composition

Chemical Family: Ceramic
Additional Names: Yttrium(III) oxide, Ytria, diyttrium trioxide, yttrium sesquioxide

Yttrium oxide (Y_2O_3):
Percentage: 80-100wt%
CAS #: 1314-36-9
EC #: 231-177-4

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4. First Aid Procedures

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| General Treatment: | Seek medical attention if symptoms persist. |
| Special Treatment: | None |
| Important Symptoms: | None |
| Inhalation: | Remove victim to fresh air. Supply oxygen if breathing is difficult. |
| Ingestion: | Seek medical attention. |
| Skin: | Wash affected area with mild soap and water. Remove any contaminated clothing. |
| Eyes: | Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing |

5. Firefighting Measures

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| Flammability: | Non-flammable |
| Extinguishing Media: | No special restrictions – use suitable extinguishing agent for surrounding material and type of fire. |
| Spec. Fire Fighting Procedure: | Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products. |

6. Accidental Release Measures

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| If Material Is Released/Spilled: | Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust. |
| Environmental Precautions: | Isolate runoff to prevent environmental pollution. |

7. Handling and Storage

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| Handling Conditions: | Handle under dry protective gas. Wash thoroughly after handling. |
| Storage Conditions: | Store in a cool dry place in a tightly sealed container. Store on chemical storage cabinets. Store apart from materials and conditions listed in section 10. |
| Work/Hygienic Maintenance: | Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air. |
| Ventilation: | Provide sufficient ventilation to maintain concentration at or below threshold limit. |

8. Exposure Controls and Personal Protection

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| Permissible Exposure Limits: | 1 mg/m ³ as Y, long-term value |
| Threshold Limit Value: | 1 mg/m ³ as Y, long-term value |
| Special Equipment: | None |

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| Respiratory Protection: | Use a respirator with type N95 (USA) or PE (EN143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards. |
| Protective Gloves: | Nitrile rubber, NBR. |
| Penetration time of glove material: | N/A |
| Eye Protection: | Safety glasses or goggles |
| Body Protection: | Protective work clothing. Wear close-toed shoes and long sleeves/pants. |

9. Physical and Chemical Characteristics

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| Color | White |
| Form: | Granules, Pellets, Evaporation Slugs, Sputtering target, Custom parts |
| Odor: | Odorless |
| Water Solubility: | Powder: 0.0018 g/l at 29 °C, Bulk: Insoluble |
| Boiling Point: | N/A |
| Melting Point: | 2410 °C |
| Flash Point: | N/A |
| Autoignition Temperature: | N/A |
| Density: | 5.01 g/cc |
| Molecular weight: | 225.81 g/mol |

10. Reactivity

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| Stability: | Stable under recommended storage conditions |
| Reacts With: | Oxidizing agents |
| Incompatible Conditions: | None |
| Hazardous Decomposition Products: | Metal oxide fume |

11. Toxicological Information

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| Potential Health Effects: | |
| Eyes: | Causes serious eye damage |
| Skin: | May cause irritation |
| Ingestion: | May cause irritation |
| Inhalation: | May cause irritation |
| Chronic: | Yttrium is similar to the lanthanons and may have an anticoagulant effect on blood. Exposure to lanthanons may also lead to sensitivity to heat, itching, increased awareness of odor and taste, and liver damage |
| Signs & Symptoms: | N/A |
| Aggravated Medical Conditions: | N/A |
| Median Lethal Dose: | N/A |
| Carcinogen: | N/A |

12. Ecological Information

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| Aquatic Toxicity: | Low |
| Persistent Bioaccumulation Toxicity: | No |

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Very Persistent, Very Bio-accumulative: No
Notes: N/A

13. Transportation Data

Hazardous: Not hazardous for transportation.
The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DoT)

Hazard Class: N/A
Packing Group: N/A
UN Number: N/A
Proper Shipping Name: N/A

14. Disposal Considerations

Dispose of in accordance with local, state, national, and international regulations.

15. Regulatory Information

Sec 302 Extremely Hazardous: No
Sec 304 Reportable Quantities: N/A
Sec 313 Toxic Chemicals: No

16. Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. **No warranty, guarantee or representation is made to its accuracy, reliability or completeness.** These materials should only be handled by, or under the direct supervision of a “technically qualified individual”, as defined in TSCA regulations 40 CFR 710.3(ee). The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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