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MATERIAL SAFETY DATA SHEET

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SECTION 1------CHEMICAL IDENTIFICATION------Product Number: Y-2EH-0188-P Product Name: Yttrium 2-Ethylhexanoate Powder SECTION 2 ------ COMPOSITION/INGREDIENT INFORMATION------CAS #: 103470-68-4 Yttrium 2-ethylhexanoate SECTION 3 ------ HAZARDS IDENTIFICATION------Hazard description: Xi Irritant Information pertaining to particular dangers for man and environment R 36/38 Irritating to eyes and skin. Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System) HEALTH FIRE REACTIVITY 1 1

1 Health (acute effects) = 1 Flammability = 1 Reactivity = 1

SECTION 4 ------ FIRST-AID ------

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice. After skin contact Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice. After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor. After swallowing Seek immediate medical advice.

SECTION 5 ------ FIRE FIGHTING MEASURES ------

Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards caused by the material, its products of combustion or resulting gases: In case of fire, the following can be released: Carbon monoxide (CO) Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.

SECTION 6------ACCIDENTAL RELEASE ------

Person-related safety precautions: Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation Measures for environmental protection: Do not allow material to be released to the environment without proper governmental permits. Measures for cleaning/collecting: Pick up mechanically. Additional information: See Section 7 for information on safe handling See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7 ------HANDLING AND STORAGE ------

Handling Information for safe handling: Keep container tightly sealed. Store in cool, dry place in tightly closed containers. Ensure good ventilation at the workplace. Information about protection against explosions and fires: No special measures required. Storage Requirements to be met by storerooms and receptacles: No special requirements. Information about storage in one common storage facility: Store away from oxidizing agents. Further information about storage conditions: Keep container tightly sealed. Store in cool, dry conditions in well sealed containers.

SECTION 8 ------ EXPOSURE CONTROLS/PERSONAL PROTECTION ------

Additional information about design of technical systems: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. Components with limit values that require monitoring at the workplace: Yttrium and compounds, as Y mg/m3 ACGIH TLV 1 Austria MAK 1 Belgium TWA 1 **Denmark TWA 1** Finland TWA 1 France VME 1 Germany TWA 5 Korea TLV 1 Netherlands MAC-TGG 1 Norway TWA 1 Poland TWA 1 Switzerland MAK-W 1 United Kingdom TWA 1; 3-STEL **OSHA PEL 1**

Additional information: No data

SECTION 9 ------ PHYSICAL AND CHEMICAL PROPERTIES------

General Information Form: Powder Color: White Odor: Odorless Change in condition Melting point/Melting range: Not determined Boiling point/Boiling range: Not determined Sublimation temperature / start: Not determined Flash point: Not applicable Ignition temperature: Not determined Decomposition temperature: Not determined Danger of explosion: Product does not present an explosion hazard. **Explosion limits:** Lower: Not determined Upper: Not determined Vapor pressure: Not determined Density: Not determined Solubility in / Miscibility with Water: Insoluble

SECTION 10 -----STABILITY/ REACTIVITY -----

Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Materials to be avoided: Oxidizing agents Dangerous reactions No dangerous reactions known Dangerous products of decomposition: Carbon monoxide and carbon dioxide

SECTION 11 ----- TOXICOLOGICAL INFORMATION -----

Acute toxicity: Primary irritant effect: on the skin: Irritant to skin and mucous membranes. on the eye: Irritating effect. Sensitization: No sensitizing effects known. Subacute to chronic toxicity: 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. Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

SECTION 12 -----ECOLOGICAL INFORMATION -----

General notes:

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

SECTION 13 -----DISPOSAL CONSIDERATIONS -----

Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.

SECTION 14 -----TRANSPORT INFORMATION -----

Not a hazardous material for transportation. DOT regulations: Hazard class: None Land transport ADR/RID (cross-border) ADR/RID class: None Maritime transport IMDG: IMDG Class: None Air transport ICAO-TI and IATA-DGR: ICAO/IATA Class: None Transport/Additional information: Not dangerous according to the above specifications.

SECTION 15 ------REGULATORY INFORMATION ------

Product related hazard informations: Hazard symbols: Xi Irritant Risk phrases: 36/38 Irritating to eyes and skin. Safety phrases: 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 37 Wear suitable gloves. National regulations This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only. Information about limitation of use: For use only by technically qualified individuals.

SECTION 16.-----OTHER INFORMATION------

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 properties of the product.

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