

# Safety Data Sheet

Issue Date: 23-Jul-2015

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Version 1

## 1. IDENTIFICATION

### Product Identifier

Product Name LSM-YSZ

### Other means of identification

SDS # NT-007

Synonyms LSMYSZ; Lanthanum Strontium Manganite-Yttria Stabilized Zirconia.

### Recommended use of the chemical and restrictions on use

Recommended Use Laboratory chemicals and Manufacture of substances.

### Details of the supplier of the safety data sheet

#### Supplier Address

Nexceris, LLC  
404 Enterprise Dr.  
Lewis Center, OH 43035  
www.nexceris.com

### Emergency Telephone Number

Company Phone Number Non-emergency calls/questions: 1-614-842-6606  
Fax: 1-614-842-6607

Emergency Telephone (24 hr) INFOTRAC 1-352-323-3500 (International)  
1-800-535-5053 (North America)

## 2. HAZARDS IDENTIFICATION

Appearance Gray solid

Physical State Solid

### Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2

### Signal Word

Warning

### Hazard Statements

Causes skin irritation  
Causes serious eye irritation



### Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection

**Precautionary Statements - Response**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 If eye irritation persists: Get medical advice/attention  
 IF ON SKIN: Wash with plenty of soap and water  
 If skin irritation occurs: Get medical advice/attention  
 Take off contaminated clothing and wash it before reuse

**Unknown Acute Toxicity**

71.5% of the mixture consists of ingredient(s) of unknown toxicity

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Synonyms**

LSMYSZ; Lanthanum Strontium Manganite-Yttria Stabilized Zirconia.

Chemical Name	CAS No	Weight-%
Zirconium Oxide	1314-23-4	34-52
Lanthanum Oxide	1312-81-8	23-34
Manganese Oxide	1317-35-7	13-20
Yttrium Oxide	1314-36-9	6-8
Strontium Oxide	1314-11-0	4-6
Hafnium Oxide	12055-23-1	1-2

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

**4. FIRST-AID MEASURES****First Aid Measures**

<b>General Advice</b>	If exposed or concerned: Get medical advice/attention.
<b>Eye Contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>Skin Contact</b>	Wash with plenty of water. Remove and wash contaminated clothing before reuse. Seek medical advice / attention if symptoms develop.
<b>Inhalation</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention for further treatment.
<b>Ingestion</b>	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Seek medical attention if symptoms develop.

**Most important symptoms and effects**

**Symptoms** Causes skin irritation. Causes serious eye irritation.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable Extinguishing Media** Not determined.

**Specific Hazards Arising from the Chemical**

Not determined.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal Precautions** Use personal protective equipment as required. Avoid creating dust.

**Environmental Precautions** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS.

**Methods and material for containment and cleaning up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Clean-Up** Avoid creating dust. Sweep up dry spills and place in a container for recovery or disposal.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on Safe Handling** Handle in accordance with good industrial hygiene and safety practice. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Avoid generation of dust. Wash face, hands and any exposed skin thoroughly after handling. Wash contaminated clothing before reuse.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep container tightly closed and store in a cool, dry and well-ventilated place.

**Incompatible Materials** None known based on information supplied.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Zirconium Oxide 1314-23-4	STEL: 10 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> Zr	TWA: 5 mg/m <sup>3</sup> Zr (vacated) TWA: 5 mg/m <sup>3</sup> Zr (vacated) STEL: 10 mg/m <sup>3</sup> Zr	IDLH: 25 mg/m <sup>3</sup> Zr TWA: 5 mg/m <sup>3</sup> except Zirconium tetrachloride Zr STEL: 10 mg/m <sup>3</sup> Zr
Manganese Oxide 1317-35-7	TWA: 0.02 mg/m <sup>3</sup> Mn TWA: 0.1 mg/m <sup>3</sup> Mn	(vacated) TWA: 1 mg/m <sup>3</sup> Mn (vacated) Ceiling: 5 mg/m <sup>3</sup> Ceiling: 5 mg/m <sup>3</sup> Mn	IDLH: 500 mg/m <sup>3</sup> Mn TWA: 1 mg/m <sup>3</sup> Mn STEL: 3 mg/m <sup>3</sup> Mn
Yttrium Oxide 1314-36-9	TWA: 1 mg/m <sup>3</sup> Y	-	IDLH: 500 mg/m <sup>3</sup> Y TWA: 1 mg/m <sup>3</sup> Y
Hafnium Oxide 12055-23-1	TWA: 0.5 mg/m <sup>3</sup> Hf	-	IDLH: 50 mg/m <sup>3</sup> Hf TWA: 0.5 mg/m <sup>3</sup> Hf

**Appropriate engineering controls**

**Engineering Controls** Apply technical measures to comply with the occupational exposure limits. Eyewash stations. Showers.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** Refer to 29 CFR 1910.133 for eye and face protection regulations.

**Skin and Body Protection** Refer to 29 CFR 1910.138 for appropriate skin and body protection.

**Respiratory Protection** Ensure adequate ventilation, especially in confined areas. In case of inadequate ventilation wear respiratory protection.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Physical State</b>	Solid	<b>Odor</b>	Not determined
<b>Appearance</b>	Gray solid	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Gray		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	Not determined	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	Not determined	
Flash Point	Not determined	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Not determined	
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Specific Gravity	Not determined	
Water Solubility	Not determined	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	Not determined	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	

**10. STABILITY AND REACTIVITY**

**Reactivity**  
Not reactive under normal conditions.

**Chemical Stability**  
Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**  
None under normal processing.

**Conditions to Avoid**  
Keep out of reach of children. Avoid generation of dust. See Sec. 7 Handling & Storage.

**Incompatible Materials**

None known based on information supplied.

**Hazardous Decomposition Products**

None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure****Product Information****Eye Contact** Causes serious eye irritation.**Skin Contact** Causes skin irritation.**Inhalation** Avoid inhalation of dust.**Ingestion** Do not ingest.**Component Information**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Lanthanum Oxide 1312-81-8	> 8500 mg/kg ( Rat )	-	-

**Information on physical, chemical and toxicological effects****Symptoms** Please see section 4 of this SDS for symptoms.**Delayed and immediate effects as well as chronic effects from short and long-term exposure****Carcinogenicity** Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.**Numerical measures of toxicity**

Not determined

**Unknown Acute Toxicity** 71.5% of the mixture consists of ingredient(s) of unknown toxicity.**12. ECOLOGICAL INFORMATION****Ecotoxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence/Degradability**

Not determined.

**Bioaccumulation**

Not determined.

**Mobility**

Not determined

**Other Adverse Effects**

Not determined

### 13. DISPOSAL CONSIDERATIONS

#### Waste Treatment Methods

<b>Disposal of Wastes</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.
<b>Contaminated Packaging</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.

### 14. TRANSPORT INFORMATION

<b><u>Note</u></b>	Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.
<b><u>DOT</u></b>	Not regulated
<b><u>IATA</u></b>	Not regulated
<b><u>IMDG</u></b>	Not regulated

### 15. REGULATORY INFORMATION

#### International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Zirconium Oxide	Present	X		Present		Present	X	Present	X	X
Lanthanum Oxide	Present	X		Present		Present	X	Present	X	X
Manganese Oxide	Present	X		Present		Present	X	Present	X	X
Yttrium Oxide	Present	X		Present		Present	X	Present	X	X
Strontium Oxide	Present	X		Present		Present	X	Present		X
Hafnium Oxide	Present	X		Present		Present	X	Present		

#### **Legend:**

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*  
*DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*  
*EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*  
*ENCS - Japan Existing and New Chemical Substances*  
*IECSC - China Inventory of Existing Chemical Substances*  
*KECL - Korean Existing and Evaluated Chemical Substances*  
*PICCS - Philippines Inventory of Chemicals and Chemical Substances*  
*AICS - Australian Inventory of Chemical Substances*

#### US Federal Regulations

##### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Manganese Oxide - 1317-35-7	1317-35-7	13-20	1.0

**US State Regulations**

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Zirconium Oxide 1314-23-4		X	
Manganese Oxide 1317-35-7	X	X	X

**16. OTHER INFORMATION**

**NFPA**

**Health Hazards**

**Flammability**

**Instability**

**Special Hazards**

Not determined

Not determined

Not determined

Not determined

**HMIS**

**Health Hazards**

**Flammability**

**Physical Hazards**

**Personal Protection**

Not determined

Not determined

Not determined

Not determined

**Issue Date:** 23-Jul-2015  
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**Revision Note:** New format

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**