Section 1: Product and Company Identification:

1.1 Product Identifier

Product Form:	Mixture
Identification of Substance:	Lanthanum oxide
Product Name:	NYACOL® LanSol
Synonym:	Colloidal lanthanum oxide
CAS Number:	1312-81-8
Index Number:	Not available.
EINECS Number:	215-200-5
REACH Registration Number:	Not Registered by NNT
Formula:	La2O3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use:	Catalysts
Restrictions on Use:	For industrial use only, not for food, drug or home use.

1.3 Details of the supplier of the safety data sheet

Company Identification:	Nyacol Nano Technologies, Incorporated Megunko Road, P.O. Box 349, Ashland, MA 01721 U.S.A. 508-881-2220
Email Contact:	info@nyacol.com
Internet:	www.nyacol.com

1.4 Emergency telephone number

In Case of Emergency:	CHEMTREC: 1-800-424-9300 International CHEMTREC: +1 (703) 527-3887 24 Hours/Day: 7 Days/Week

Section 2: Hazard(s) Identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Not classified.

Classification according to Regulation (EC) No. 1272/2008 (CLP)

Not classified.

Classification according to Directive 67/548/EEC and 1999/45/EC (including amendments)

Not classified.

2.2 Label Elements

Not labelled.

Signal Word: Not applicable.

Hazard Pictogram: Not applicable.

Hazard Statement(s): Not applicable.

Precautionary Statement(s): Not applicable.

2.3 Other Hazards

Components do not meet the criteria for a PBT or vPvB substance.

2.4 Unknown acute toxicity (GHS US)

No information available.

Section 3: Composition / Information on Ingredients

Description: Mixture consisting of the following components.

Component Name:	Product Identifier	GHS Classification	Percent By Weight
Lanthanum oxide: REACH: Not registered by NNT.	CAS: 1312-81-8 EINECS: 215-200-5 Index: Not available	Not classified.	20
Water:	CAS: 7732-18-5 EINECS: 231-791-2 Index: Not available	Not classified.	80

Impurities: Present at a level below that to be taken into account for classification.

Stabilizing Additives: Present at a level that does not impact product classification.

The supplier currently has no knowledge on additional ingredients that are classified and that contribute to the classification of this substance.

See Section 16 for a list of hazards if identified above.

Section 4: First-Aid Measures

4.1 Description of first aid measures

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of the eye and lids with water. Get medical attention.

Skin Contact: Wash skin with plenty of soap and water for several minutes. Get medical attention if skin irritation develops or persists.

Inhalation: If inhaled, remove to fresh air; remove person from exposure source. Consult medical professional.

Ingestion: Rinse mouth with water. Drink some water. If large quantities ingested, obtain medical attention.

First Aid Facilities: Eye wash station.

Advice to Physicians: Mechanical irritation. Treat symptomatically.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed.

No further relevant information available.

Section 5: Fire-Fighting Measures

5.1 Extinguishing Media

Suitable Extinguishing Media: Use fire fighting measures that suit the environment. All are acceptable, cool containers with water spray.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

Flammability of the product: Not flammable or combustible. Containers can build pressure if exposed to heat or fire.

Special Hazard Arising from the Chemical: No further relevant information available.

Fire Hazard: No further relevant information available.

Explosion Hazard No further relevant information available.

Reactivity:	No further relevant information available.

5.3 Advice for firefighters

Special Protective Equipment for Fire-fighters:	Wear standard full firefighter turn-out gear (full bunker gear) and respiratory protection (SCBA). Appropriate to primary source of fire.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Eye protection and impervious gloves. An approved air-purifying respirator should be worn if dust or mist is present.

6.1.1 For non-emergency personnel

Wear protective equipment. Keep unprotected persons away.

6.2 Environmental precautions

Prevent entry into sewers and waterways or onto the ground.

6.3 Methods and material for containment and cleaning up

Ventilate area. Avoid breathing vapor or mist. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill or leak with sand, clay or absorbents. Recover liquid for recycle or disposal. Put in appropriate container. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.

6.4 Reference to other sections

For more information on exposure controls and personal protection or disposal considerations, check section 8 and 13 of this SDS.

Section 7: Handling and Storage

7.1 Precautions for safe handling

Minimum feasible handling, and temperatures should be maintained. Avoid generating mist or dust during use. Use only in well ventilated area.

7.1.1 Protective measures

Use only in well ventilated areas. As a precautionary measure, the wearing of standard work gear is suggested. Keep ignition sources away. Do not smoke. Protect from heat. Protect against electrostatic charges.

7.1.2 Advice on general occupational hygiene

Avoid inhalation or ingestion. General occupational hygiene measures are required to ensure a safe handling of the substance. These measures involve good personal and housekeeping practices (i.e. regular cleaning with suitable cleaning devices), no eating, drinking and smoking at the workplace and wearing standard working clothes and shoes unless otherwise stated. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas. Shower and change clothes at end of work shift. Do not wear contaminated clothing at home.

7.2 Conditions for safe storage, including any incompatibilities

Keep from freezing. Periods of exposure to high temperatures should be minimized. Provide sufficient ventilation in storage and workrooms. Store in a cool dry area. Keep containers tightly sealed.

7.3 Specific end use(s)

No additional information available. Refer to Section 1.2 of this SDS.

Section 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Magnesium Hydroxide, CAS 1309-48-4

No occupational exposure limit values available.

8.2 Exposure Controls

Engineering Controls:	Exhaust ventilation to limit vapor and mist exposure.
Hygiene Measures:	Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.
Respiratory:	Airborne concentrations should be kept to lowest levels possible. When respiratory protection is required or concentrations are unknown, use an approved air-purifying respirator with organic vapor cartridge.
Hands:	Wear impervious gloves such as neoprene.
Eyes:	Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.
Skin:	Wear clean body-covering clothing; impervious gloves such as neoprene. Workers should wash exposed skin several times daily with soap and water. Soiled work clothing should be laundered or dry-cleaned.
Environmental Exposure Controls:	Adverse effects of this material on the environment have not been evaluated. Proper disposal techniques to isolate and recover material should be implemented.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance (Physical State, Color):	Opaque white liquid. The product is a water-based material.
Upper/lower flammability or explosive limits:	Not determined.
Volatile by Volume:	50 - 70%
Odor:	Odorless
Vapor Pressure:	2260 kPs (17 mm Hg) at 20°C
Odor Threshold:	None.
Vapor Density:	Not applicable.
pH:	10-11
Relative Density:	Not determined.
Melting point/freezing point:	Not determined.
Solubility in Water:	Negligible.
Initial boiling point and boiling range:	100°C
Flashpoint:	Not applicable.
Evaporation Rate:	Not applicable.
Partition Coefficient:	Not applicable.
Auto-ignition temperature:	Not determined.
Decomposition temperature:	Not determined.

Viscosity:	<30 cP
Specific Gravity:	1.3
Freezing Point:	Not determined.
Explosion Limits:	Not determined.
Oxidizing Properties:	Not determined.

9.2 Other information

No further relevant information available.

Section 10: Stability and Reactivity

10.1 Reactivity

Not determined.

10.2 Chemical Stability

Stable under normal ambient and anticipated storage and handling conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4 Conditions to avoid

No recommendation.

10.5 Incompatible materials

Strong acids. Interhalogens. Phosphorous. Maleic anhydride.

10.6 Hazardous decomposition products

No further relevant information available.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity:

LD50, Rat, Oral Values for classification:

Lanthanum hydroxide:	Not available.
Skin corrosion/irritation:	Avoid contact with skin. Prolonged/repeated contact may cause irritation and/or dermatitis.
Eye damage/irritation:	Avoid contact with eyes. Slightly irritating to eyes.
Inhalation:	Not determined. Use breathing protection when aerosol or mist is formed.
Sensitization:	No sensitizing effects known.
Chronic Effects:	No further relevant information available.
Carcinogenicity	No ingredients listed by NTP, IARC, or OSHA as carcinogen.

Section 12: Ecological Information

12.1 Toxicity

Aquatic toxicity:

No further relevant information available.

12.2 Persistence and degradability

No further relevant information available.

12.3 Bioaccumulative potential

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

12.5 Results of PBT and vPvB Assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

No further relevant information available.

Section 13: Disposal Considerations

This information presented only applies to the materials as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Disposal Considerations:	Dispose in accordance with all federal, state and local environmental regulations.
United States:	Not a RCRA hazardous waste.

Section 14: Transport Information

The product is not restricted for transportation.

Sections 14.1 - 14.4

Regulations

U.S. D.O.T.:	Not regulated.
ICAO/IATA:	Not regulated.
IMO/IMDG:	Not regulated.
ADR:	Not regulated.

14.5 Environmental hazards:

Not an environmental hazard for transport.

14.6 Special precautions for users:

None.

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

Not applicable.

Section 15: Regulatory Information

Worldwide Chemical Inventories

EINECS (EU):	All ingredients listed
TSCA (USA):	All ingredients listed
DSL (Canada):	All ingredients listed
AICS (Australia):	All ingredients listed
ENCS (Japan):	All ingredients listed
ECL (Korea):	All ingredients listed
PICCS (Philippines):	All ingredients listed
IECSC (China):	All ingredients listed
State Right-to-Know Laws:	Section 3 of this SDS lists all components of the product.
California Proposition 65:	No ingredients listed.
SARA Section 311/312 (29 CFR 1910.1200) Hazards:	Product is not classified as hazardous.
SARA 313, 304 and CERCLA 102 (A):	No ingredients listed.

WHMIS:	Not controlled.

15. 2 Chemical safety assessment

A Chemical Safety Assessment has been carried out.

Section 16: Other Information

National Fire Protection Association (U.S.A.) 704 Hazard Rating:	Health-0, Flammability-0, Reactivity-0, Special-None
HMIS® Hazard Rating:	Health-0, Flammability-0, Reactivity-0, Protective Equipment - B; safety glasses, gloves.
Recommended Use:	The product is recommended for use as a non-hazardous alkali; as a fire retardant-smoke suppressant in coatings, plastics and roofing. Other uses have not been investigated and may have other hazards. For industrial use only, not for food, drug or home use.
Work Alert:	Workers using the product should read and understand this SDS and be trained in the proper use
Other Special Considerations:	None known.
SDS Prepared By:	Andrew Guzelian Nyacol Nano Technologies, Incorporated Telephone: 508-881-2220 U.S.A.
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Supersedes:	July 9, 2013

This SDS has been prepared with data from Nyacol Nano Technologies, Inc.'s laboratories, raw material suppliers, and government publications. Information herein is accurate to the best of our knowledge. Suggestions are made without warranty or guarantee of results. Before using, the user should determine the suitability of the products for the intended use, and the user assumes the risk and liability in connection therewith. We do not suggest violation of any existing patents or give permission to practice any patented invention without license.