

# Lanthanum Trifluoride Nanoparticles (LaF3)

US Research Nanomaterials, Inc.

## Material Safety Data Sheet

acc. to OSHA and ANSI

### • 1 Identification of substance:

- **Product details:**
- **Product name:** Lanthanum Trifluoride
- **Stock number:** US2150
- **Manufacturer/Supplier:**

US Research Nanomaterials, Inc.  
3302 Twig Leaf Lane  
Houston, Texas 77084, USA  
[www.us-nano.com](http://www.us-nano.com)

### • 2 Composition/Data on components:

- **Chemical characterization:**

**Description: (CAS#)**

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Lanthanum Trifluoride (CAS# 13709-38-1): 90%;

- **Identification number(s):**
- **EINECS Number:**

### • 3 Hazards identification

- **Hazard description:** Xi Irritant
- **Information pertaining to particular dangers for man and environment**  
R 36/37 Irritating to eyes and respiratory system.
- **Classification system**
- **HMIS ratings (scale 0-4)**

**(Hazardous Materials Identification System)**

Health (acute effects) = 1

Flammability = 0

Reactivity = 0

- **4 First aid measures**

- **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.

- **5 Fire fighting measures**

- **Suitable extinguishing agents**

Product is not ignitable. Use fire fighting measures that suit the surrounding fire.

- **Special hazards caused by the material, its products of combustion or resulting gases:**

May evolve toxic fumes in a fire.

- **Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

- **6 Accidental release measures**

- **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:** Ensure adequate ventilation.

- **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.

- **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:**  
The product is not flammable
- **Storage:** Keep away from foodstuffs. Store at 15° to 25°C. Keep away from sunlight & moisture.
- **Requirements to be met by storerooms and receptacles:**  
No special requirements.
- **Information about storage in one common storage facility:**  
Store away from water/moisture.  
Store away from oxidizing agents.
- **Further information about storage conditions:**  
This product is hygroscopic.  
Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
Protect from humidity and water.

- **8 Exposure controls and 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:**

Not required.

- **Additional information:** No data
- **Personal protective equipment**
- **General protective and hygienic measures**  
The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Remove all soiled and contaminated clothing immediately.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
Use suitable respirator when high concentrations are present.
- **Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

- **Material of gloves**

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

- **9 Physical and chemical properties:**

- **General Information**

- **Form:** Powder
- **Color:** White
- **Odor:** Odorless

- **Change in condition**

- **Melting point/Melting range:** 1493 ° C
- **Boiling point/Boiling range:** 2400 ° C
- **Sublimation temperature / start:** Not determined

- **Flash point:** Not applicable

- **Ignition temperature:** Not determined

- **Decomposition temperature:** Not determined

- **Danger of explosion:** Not Applicable

- **Explosion limits:**

- **Lower:** Not determined
- **Upper:** Not determined

- **Vapor pressure:** Not determined

- **Density:** at 20 ° C 5.94 g/cm<sup>3</sup>

- **Solubility in / Miscibility with**

- **Water:** Insoluble

- **10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:**

Stable under normal conditions of storage and use.

- **Materials to be avoided:**  
Hot sulphuric acid. Oxidisers
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:**  
Liberates toxic hydrogen fluoride gas in contact with mineral acid.

- **11 Toxicological information**

- **Acute toxicity:**  
**LD/LC50 values that are relevant for classification:**

Oral: No data.

Dermal: No data.

**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:**

If swallowed causes nausea, vomiting, stomach pains and diarrhoea. Also harmful in contact with skin. Particular care must be exercised when machining and creating dust or particles.

**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.

- **12 Ecological information:**

The following applies to inorganic fluorides in general: biological effects: fish: *L. idus* LC50 660mg/l; bacteria: *Ps. putida* toxic from 231 mg/l up; algae: *Sc. quadricauda* toxic from 249mg/l up; protozoa: *E. sulcatum* toxic from 101mg/l up; *U. parduczi* toxic from 71mg/l up (all values as NaF). Hazard to drinking water.

- **General notes:**

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

- **13 Disposal considerations**

- **Product:**
- **Recommendation**

Consult state, local or national regulations to ensure proper disposal.

- **Uncleaned packagings:**

- **Recommendation:**

Disposal must be made according to official regulations.

- **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.

- **15 Regulations**

- **Product related hazard informations:**

- **Hazard symbols:** Xi Irritant

- **Risk phrases:** None.

- **Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36 Wear suitable protective clothing.

- **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 Domestic Substances List (DSL).

- **Information about limitation of use:**

For use only by technically qualified individuals.

• **16 Other information:**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.