SECTION 1: IDENTIFICATION

1.1 Product Identifier

Product name: LenOX®
Chemical description: Leonardite

1.2 Recommended Uses

Industrial uses: Oil Drilling Fluid Additive
Restrictions on Use: None known

1.3 Responsible Party Contact

Manufacturer:

Supplier Address:
Leonardite Products, LLC
13375 Highway 1804
Williston, ND 58801

Mailing Address:
Leonardite Products, LLC
PO Box 548
Williston, ND 58802

Information Phone: +1 (701)-572-7659
Information Email: Source@leonarditeproducts.com

1.4 Emergency Contact

Emergency Phone: +1 (701)-770-5569/ +1 (406)-970-6889

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of Substance/Mixture

This SDS was prepared according to US GHS Rev. 7 as detailed under 29 CFR § 1910.1200 Hazard Communication and Regulation (EC) No 1907/2006 (REACH) as amended by Regulation (EU) 2020/878.

Health Hazards		Physical Hazards
Skin Irritation 2	H315	None known
Eye Irritation 2A	H319	
STOT SE 3	H335	

2.2 Label Elements

Hazard Pictogram(s):

Signal Word: Caution

Hazard Statements:

H315 – Causes skin irritation.
H319 – Causes serious eye irritation.
H335 – May cause respiratory irritation.

Precautionary Statements:

Prevention

P201 – Obtain special instructions before use.
P202 – Do not handle until all safety precautions have been read and understood.
P264 – Wash hands and exposed skin thoroughly after handling.
P271 – Use only outdoors or in well-ventilated area.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.

Response

P302+P352 – IF ON SKIN: Wash with plenty of water.
P332+P313 – If skin irritation occurs: Get medical advice/attention.
P362+P364 – Take off contaminated clothing and wash before reuse.
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.
P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 – Call a doctor if you feel unwell.
P308+P313 – If exposed or concerned: Get medical advice/attention.

Storage

P405 – Store locked up.
P403+P233 – Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501 – Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Hazards Not Otherwise Classified

None known.

2.4 Ingredient(s) with Unknown Acute Toxicity

None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Name	CAS No.	% (w/w)	Classification	Methodology
Humic acid	1415-93-6	55-75	Skin Irri. 2 Eye Irri. 2A STOT SE 3	ISO 19822 HPFTA approved method
Fulvic acid	479-66-3	5-10	Skin Irri. 2 Eye Irri. 2A	ISO 19822 HPFTA approved method
Quartz	14808-60-7	≥0.1 - <1.0	STOT SE 3	NOISH 7500

SECTION 4: FIRST AID MEASURES

4.1 Description of Necessary Measures

Inhalation: Remove to fresh air and ventilate suspected area. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If you feel unwell, seek medical attention.

Skin Contact: Remove contaminated clothing. Wipe or brush off as much material as possible from skin. Sponge or rinse off remainder using water. Obtain medical attention if irritation develops or persists.

Eye Contact: Do not rub. Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids open during flushing. Get medical attention if irritation develops or persists. Seek medical attention for abrasions.

Ingestion: Safe to ingest in small quantities. Do not induce vomiting. Rinse mouth. Get medical attention if symptoms occur.

General information: Treat symptomatically. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

4.2 Most Important Symptoms and Effects

Acute: Causes serious eye irritation. Causes skin irritation. May cause respiratory irritation.

4.3 Indication of Immediate Medical Attention and Special Treatment Needed

Treat symptomatically. If you feel unwell, seek medical advice (show the label where possible).

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing Media

Suitable Extinguishing Media: Water spray, fog. Use fine mist or mix water into the area on fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Do not spray water directly on material on fire. Do not use fire extinguisher directly on material.

5.2 Special Hazards Arising from the Chemical(s)

Fire Hazard: Bulk or settled material is not combustible but will smolder and result in fire IF exposed to a spark or any type of ignition.

Explosion Hazard: This product has been tested and is not a combustion hazard.

Reactivity: Stable at ambient temperature and under normal conditions of use.

5.3 Firefighting Equipment and Instructions

Firefighting Instructions: Avoid dust clouds in combination with static electricity. Stop dust cloud by covering with sand/earth. In case of major fire and large quantities: Evacuate area. Fight fire remotely with water mist or fog to reduce dust and the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Ammonia gas. Carbon oxides (CO, CO2). Irritating fumes. See "Section 7.1 Precautions for Safe Handling" for details.

SECTION 6: ACCIDENTAL RELEASE MEASURE

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

General Measures: Handle in accordance with good industrial hygiene and safety practice. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Good housekeeping is needed during storage, transfer, handling, and use of this material to avoid excessive dust accumulation.

Protective Equipment: Use appropriate personal protection equipment (PPE). For personal protection, see section 8 of the SDS.

Emergency Procedures: Evacuate unnecessary personnel. Eliminate ignition sources. Stop leak if safe to do so. Ventilate area.

6.2 Methods and Materials for Containment and Cleaning Up

Methods

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where possible. Cover with plastic sheet to prevent spreading.

Small Spills: Collect spillage. Sweep up with a broom and dispose of in any normal sold waste receptacle. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Avoid generation of dust during clean-up of spills.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Safe Handling Procedures: Any person entering either a significant spill area or an unknown concentration of dust should wear a dust mask and safety glasses. Avoid contact with skin, eyes and clothing. Use appropriate personal protection equipment (PPE).

Please be advised of the possible adverse reaction of LenOX® mixed with NPK blends utilizing ammonium sulphate and/or urea. Ammonia gas generated from a small

amount of moisture from urea (prilled or crystalline) may cause a reaction with LenOX®, causing it to cake or solidify.

Hygiene Measure: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash contaminated clothing before reuse.

7.2 Conditions for Safe Storage

Storage Conditions: Store in a cool, dry, well-ventilated place to avoid moisture damage. Keep containers tightly closed. Do not store with oxidizers and incompatible materials. Keep/store away from direct sunlight as bags may weaken or disintegrate with prolonged exposure to heat and sun. Do not store in unlabeled containers. Store and transport in accordance with all applicable laws.

Incompatible Materials: Strong oxidizers. Strong bases. Strong acids. Urea (if wet) and/or ammonium sulfate.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters

Occupational Exposure Limits: For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: US ACGIH (TLV), NIOSH (REL), OSHA (PEL).

Component	Advisory Agency	OEL
Dust	OSHA PEL (total dust)	15 mg/m^3 (TWA, 8 hr)
	OSHA PEL (respirable fraction)	5 mg/m^3 (TWA, 8 hr)
	ACGIH TLV (inhalable particles)	10 mg/m^3 (TWA)
	ACGIH TLV (respirable particles)	3 mg/m^3 (TWA)
Quartz (respirable crystalline silica) [14808-60-7]	ACGIH TLV	0.025 mg/m^3 (respirable fraction, TWA 8 hr)
	OSHA PEL	0.05 mg/m^3 (respirable fractions, TWA 8 hr)
	NIOSH REL	0.05 mg/m^3 (respirable fractions, TWA 8 hr)
	US IDLH	50 mg/m^3 (respirable dust)

8.2 Exposure Controls

Appropriate Engineering Controls: Observe all national and local regulations. Good general ventilation (typically 10 air changes per hour) should be used. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

8.3 Individual Protection Measures and Personal Protective Equipment (PPE)

Work/Hygiene Practices: Wash hands with soap and water after handling the material and before eating, drinking, and/or smoking. If in eyes, do not rub. Flush immediately.

Remove contacts if safe and able to do so. Hold eye lids open to rinse any particulate material that may get caught beneath them. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Routinely wash work clothing and protective equipment to remove contaminants.

Person Protective Equipment (PPE)

Safety Glasses should be worn. Skin contact should be minimized through use of gloves and suitable long-sleeved clothing selected with regard for use condition exposure potential. Dust masks or particulate respirators may be necessary based on conditions in workplace.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Physical State: Solid
Form: Powder
Color: Dark Brown to Black
Odor: Musty, earthy, or like coal
Odor Threshold: N/A
Melting Point: N/A
Boiling Point: N/A
Flash Point: N/A
Auto-ignition Temperature: N/A
Decomposition Temp.: N/A
Flammability: Not available
Lower Flammability Limit: N/A
Upper Flammability Limit: N/A
Caloric Value: 5006-6687 BTU/lbs
pH: 3.0-4.5
Relative Density/Spec. Gravity: 1.36
Bulk Density: 55 lbs/ft^3 (881kg/m3)
Particle Characteristics: 35% @ 200 mesh
Viscosity: N/A
Solubility: Hydrophobic; Insoluble in water
Partition coefficient n-octanol/ water (log value): N/A
Vapor Pressure: N/A
Vapor Density: N/A

SECTION 10: STABILITY AND REACTIVITY

10.1 Chemical and Hazardous Reactions

Reactivity: Stable at ambient temperatures and normal conditions of use.
Chemical Stability: Material is stable under normal conditions of use.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: Extremely high or low temperatures. Heat, hot surfaces, sparks, open flames, and other ignition sources. Use good housekeeping practices during storage, transfer, handling, to avoid excessive dust accumulation. Avoid contact with incompatible materials.
Incompatible Materials: Urea (if wet). Ammonium sulfate. Strong oxidizers. Strong bases. Strong acids.
Hazardous Decomposition Products: Ammonia gas. Carbon oxides (CO, CO2). Irritating fumes.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Likely Routes of Exposure

Inhalation: Dust may cause respiratory irritation. Symptoms may include soar throat and coughing, wheezing, shortness of breath, or tightness in the chest.

Skin Contact: Likely route. Causes skin irritation, dryness, redness, and itching.

Eye Contact: Likely route. Causes serious eye irritation, tearing, and redness. Symptoms may include pain, swelling, and blurred or hazy vision.

Ingestion: Not expected to be harmful if swallowed.

11.2 Symptoms Related to Physical, Chemical, and Toxicological Characteristics (After Exposure)

Inhalation: May cause respiratory irritation. Symptoms may include: Sore throat, cough, or burning sensation.

Skin Contact: Causes skin irritation. Symptoms may include: Severe skin irritation, redness, dermatitis.

Eye Contact: Causes serious eye irritation. Symptoms may include: Redness, pain, swelling, itching, burning, tearing, and blurred vision.

Ingestion: Not expected to be harmful is swallowed.

11.3 Immediate and Delayed Effects

Immediate Effects: Eye, skin, and respiratory tract irritation from exposure.

11.4 Information on Toxicological Effects

Skin Sensitization: Product is not expected to cause skin sensitization.

Respiratory Sensitization: Product is not expected to cause respiratory sensitization.

Aspiration Hazard: Not classified

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity – Single Exposure (STOT-SE)

STOT SE 3: Inhalation of dust may cause temporary respiratory irritation, coughing, or discomfort. Ingestion may cause temporary irritation to the abdominal tracts. Nausea, abdominal pain, or diarrhea may occur. Effects are typically reversible after exposure ends.

Specific Target Organ Toxicity – Repeated Exposure (STOT-RE)

Not classified

11.5 Numerical Measures of Toxicity

Acute Toxicity

Humic acid (1415-93-6)

Test	Species	Concentration	Result
LD_{50} (oral)	Rat	> 5,000 mg/kg	Not acutely toxic
LD_{50} (dermal)	Rat/rabbit	> 2,000 mg/kg	Not acutely toxic

Fulvic acid (479-66-3)

Test	Species	Concentration	Result
LD_{50} (oral)	Rat	> 5,000 mg/kg	Not acutely toxic
LD_{50} (dermal)	Rat/rabbit	> 2,000 mg/kg	Not acutely toxic

Quartz (14808-60-7)

Test	Species	Concentration	Result
LD_{50} (oral)	Rat	> 5,000 mg/kg	Not acutely toxic
LD_{50} (dermal)	Rat/rabbit	> 2,000 mg/kg	Not acutely toxic

SECTION 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity

No known significant ecological hazards.

Determination: The product is not classified as environmentally hazardous.

Aquatic

Humic acid (1415-93-6): Not established. Expected to have low acute toxicity to aquatic organisms.

Fulvic acid (479-66-3): Not established. Expected to have low acute toxicity to aquatic organisms.

Quartz (14808-60-7): Not established. Expected to have low acute toxicity to aquatic organisms.

12.2 Environmental Effects

Product consists of naturally occurring organic material and minerals.

Persistence and Degradability

Humic acid: Biodegradable; naturally occurring in soil and water.

Fulvic acid: Biodegradable; naturally occurring in soil and water.

Quartz: Mineral; does not biodegrade.

Bioaccumulative Potential

No data available

Mobility in Soil

Components are naturally occurring soil constituents.

Humic acid: Adsorbs strongly to soil; limited leaching.

Fulvic acid: More mobile than humic acid due to smaller molecular size; may leach in soil.

Quartz: Insoluble; settles quickly in water.

12.3 Results of PBT and vPvB Assessment

This product does not meet the criteria for PBT or vPvB according to REACH Annex XIII.

12.4 Endocrine Disrupting Properties

No known endocrine disrupting properties.

12.5 Other Adverse Effects

Other Information: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal Methods and Waste Codes

Disposal Methods: Dispose of waste material in accordance with all local, regional, and national regulations. May be disposed of with any normal solid waste, such as trash or landfill or other disposal site if contaminated. May be used as a soil amendment if not contaminated. Empty containers or liners may retain some product residues. Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Product is not classified as hazardous waste under EU regulations.

Waste Code: The waste code should be assigned in discussion between the user, the producer, and the waste disposal company.

SECTION 14: TRANSPORTATION INFORMATION

14.1 DOT

Proper Shipping Name:	Not regulated for transport
UN Number:	Not regulated
UN Proper Shipping Name:	N/A
Transport Hazard Class:	N/A
Packing Group:	N/A
Environmental Hazards:	Not classified
Transport in Bulk:	N/A
Labels:	None

14.2 Special Precautions for User

None

SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulation

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Listed (naturally occurring substance)

CERCLA Hazardous Substances List (40 CFR 302.4): Not listed

SARA 304 Emergency Release Notification: Not regulated

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not regulated

15.2 Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazardous Categories

Immediate Hazard – Yes
Delayed Hazard – Yes
Fire Hazard – No
Pressure Hazard – No
Reactivity Hazard – No

SARA 302 Extremely Hazardous Substances: No chemicals in this material are subject to reporting.

SARA 311/312 Hazardous Chemicals

Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313: Not regulated

15.3 Other Federal Regulation

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated

Safe Drinking Water Act
Not regulated

15.4 US State Regulations

California Controlled Substances: Not listed
Massachusetts RTK 0 Substance List: Quartz (14808-60-7)
New Jersey Worker and Community Right-to-Know Act: Quartz (14808-60-7)
Pennsylvania Worker and Community Right-to-Know Law: Quartz (14808-60-7)
California Proposition 65

⚠WARNING: This product can expose you to chemicals including silica, mercury, and arsenic which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

15.5 International Regulations

Canadian Classification

WHIMS Classification
Quartz (14808-60-7)
Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

EU Classification

REACH Annex V
EC No: 603-338-2 and CAS No: 129521-66-0
Hazardous components: None

This Safety Data Sheet complies with Regulation (EC) No 1907/2006 (REACH) as amended by Regulation (EU) 2020/878. Product is not subject to authorization under REACH Annex XIV and no restrictions under REACH Annex XVII apply.

15.6 International Inventories

LenOX® is a naturally occurring form of leonardite, unmodified through manufacturing processes. As such, it is exempted from most international chemical inventories.

Country	Inventory	Yes/No*
USA	Toxic Substances Control Act (TSCA)	No
Brazil	Inventário Nacional de Substâncias Químicas (IBAMA)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Chile	Inventario Nacional de Sustancias Químicas (INSQ)	No
Colombia	National Inventory of Chemical Substances for Industrial Use (INSQUI)	No
Egypt	Egyptian Environmental Affairs Agency (EEAA) Hazardous Substance List	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
India	ChemIndia - Chemicals inventory of India	No
Japan	Existing and New Chemical Substances (ENCS) Inventory	No
Japan	Chemical Substances Control Law (CSCL)	No
Mexico	Inventory of Chemical Substances (INSQ)	No
Morrocco	Does maintain a national chemical inventory	N/A
Peru	National Chemical Substances Inventory (RENASQ)	No
Tunisia	Does maintain a centralized chemical inventory	N/A
United Kingdom	Refer to the European Community (EC) Inventory	No

* "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s).
"No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

SECTION 16: OTHER INFORMATION

16.1 HMIS (Hazardous Materials Identification System)

Health	1
Flammability	1
Reactivity	1
PPE	E

16.2 NFPA (National Fire Protection Association)

Health	1
Flammability	1
Instability	0
Special	

16.3 Disclaimer

The information provided in this Safety Data Sheet is correct to the best of the Manufacturer's knowledge, information, and belief as of the date of its publication. However, it is intended only as guidance for the safe handling, use, processing, storage, transportation, disposal, and release of the Product. No warranties, either express or implied—including warranties of merchantability or fitness for a particular purpose—are made with respect to the Product or the information provided herein. Furthermore, no guarantee is made that the Product or information herein can be used without infringing on the intellectual property rights of others. This Safety Data Sheet pertains only to the specific Product identified and may not be valid if the Product is used in combination with other materials or in any other process unless specified. The user assumes all risk and liability for any loss, injury, damage, or expense arising out of the Product's use, handling, storage, or disposal. Manufacturer recommends that users conduct their own testing to determine the Product's suitability for their particular application.

16.4 Version and Revision Date

Version: 4
Revision Date: 04/15/26