

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Lanthanum Nickel Oxide

Product Number: All applicable American Elements product codes, e.g. LA-NIO-01

CAS #: 12031-18-4

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements 10884 Weyburn Ave. Los Angeles, CA 90024 Tel: +1 310-208-0551 Fax: +1 310-208-0351

Emergency telephone number: +1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS) GHS07 Skin Sens. 1 H317 May cause an allergic skin reaction. Hazards not otherwise classified No data available GHS label elements GHS label elements, including precautionary statements Hazard pictograms

GHS07 Signal word Warning Hazard statements H317 May cause an allergic skin reaction. Precautionary statements P261 Avoid breathing dust/fume/gas/mist/vapors/spray. P280 Wear protective gloves/protective clothing/eye protection/face protection. P363 Wash contaminated clothing before reuse.

P321 Specific treatment (see on this label). P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P501 Dispose of contents/container in accordance with local/regional/national/international regulations. WHMIS classification D2A - Very toxic material causing other toxic effects Classification system HMIS ratings (scale 0-4) (Hazardous Materials Identification System) Health (acute effects) = 1Flammability = 1Physical Hazard = 0Other hazards Results of PBT and vPvB assessment PBT: N/A vPvB: N/A

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances CAS No. / Substance Name: 21679-46-9 Cobalt (III) 2,4-pentanedionate Identification number(s): EC number: 244-527-6

SECTION 4. FIRST AID MEASURES

Description of first aid measures If inhaled: Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm. Seek immediate medical advice. In case of skin contact: Immediately wash with soap and water; rinse thoroughly. Seek immediate medical advice. In case of eve contact: Rinse opened eye for several minutes under running water. Consult a physician. If swallowed: Seek medical treatment. Information for doctor Most important symptoms and effects, both acute and delayed No data available Indication of any immediate medical attention and special treatment needed No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released: Carbon monoxide (CO) Toxic metal oxide fume Advice for firefighters Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Use personal protective equipment. Keep unprotected persons away. Ensure adequate ventilation Environmental precautions: Do not allow material to be released to the environment without official permits. Methods and materials for containment and cleanup: Pick up mechanically. Prevention of secondary hazards: No special measures required. Reference to other sections 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 Precautions 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 data available Conditions for safe storage, including any incompatibilities 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. Specific end use(s) No data available

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. Control parameters

Components with limit values that require monitoring at the workplace: Not required. Additional information: No data Exposure controls Personal protective equipment Follow typical protective and hygienic practices for handling chemicals. Keep away from foodstuffs, beverages and feed. Remove all soiled and contaminated clothing immediately. Wash hands before breaks and at the end of work. Maintain an ergonomically appropriate working environment. Breathing equipment: Use suitable respirator when high concentrations are present. Protection of hands: Impervious gloves Inspect gloves prior to use. Suitability of gloves should be determined both by material and guality, the latter of which may vary by manufacturer. Penetration time of glove material (in minutes) No data available Eye protection: Safety glasses Body protection: Protective work clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties Appearance: Form: Crystalline Color: Dark green Odor: Light Odor threshold: No data available. pH: N/A Melting point/Melting range: 240 °C (464 °F) ((subl)) Boiling point/Boiling range: No data available Sublimation temperature / start: No data available Flash point: N/A Flammability (solid, gas): No data available. Ignition temperature: No data available Decomposition temperature: No data available Autoignition: No data available. Danger of explosion: Product does not present an explosion hazard. **Explosion limits:** Lower: No data available Upper: No data available Vapor pressure: N/A Density at 20 °C (68 °F): 1.43 g/cm³ (11.933 lbs/gal) Relative density: No data available. Vapor density: N/A Evaporation rate: N/A Solubility in / Miscibility with Water at 30 °C (86 °F): 3 g/l Partition coefficient (n-octanol/water): No data available. Viscosity: Dynamic: N/A

SECTION 10. STABILITY AND REACTIVITY

Reactivity No data available Chemical stability Stable under recommended storage conditions. Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications. Possibility of hazardous reactions No dangerous reactions known Conditions to avoid No data available Incompatible materials: Oxidizing agents Hazardous decomposition products: Carbon monoxide and carbon dioxide Toxic metal oxide fume

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects Acute toxicity: No effects known. LD/LC50 values that are relevant for classification: No data Skin irritation or corrosion: Irritant to skin and mucous membranes. Eye irritation or corrosion: Irritating effect. Sensitization: May cause an allergic skin reaction. Germ cell mutagenicity: No effects known. Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. Reproductive toxicity: No effects known. Specific target organ system toxicity - repeated exposure: No effects known. Specific target organ system toxicity - single exposure: No effects known. Aspiration hazard: No effects known. Subacute to chronic toxicity: No effects known. Subacute to chronic toxicity: 2,4-Pentanedione (acetylacetone), if present or released, is harmful if swallowed, and may irritate the eyes. 2,4-Pentanedione has caused reproductive effects in laboratory animals and is also flammable. Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity Aquatic toxicity: No data available Persistence and degradability No data available **Bioaccumulative potential** No data available Mobility in soil No data available Additional ecological information: Do not allow material to be released to the environment without official permits. Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems. Avoid transfer into the environment. Results of PBT and vPvB assessment PBT: N/A vPvB: N/A Other adverse effects No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods Recommendation Consult official 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. UN-Number DOT, IMDG, IATA None UN proper shipping name DOT, IMDG, IATA None Transport hazard class(es) DOT, ADR, IMDG, IATA Class None Packing group DOT, IMDG, IATA None Environmental hazards: N/A Special precautions for user N/A Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code N/A Transport/Additional information: Not dangerous according to the above specifications. DOT Marine Pollutant (DOT): No

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture GHS GHS label elements, including precautionary statements Hazard pictograms GHS07 Signal word Warning Hazard statements H317 May cause an allergic skin reaction. Precautionary statements P261 Avoid breathing dust/fume/gas/mist/vapors/spray. P280 Wear protective gloves/protective clothing/eye protection/face protection. P363 Wash contaminated clothing before reuse. P321 Specific treatment (see on this label). P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P501 Dispose of contents/container in accordance with local/regional/national/international regulations. National regulations All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory. SARA Section 313 (specific toxic chemical listings) 21679-46-9 Cobalt (III) 2,4-pentanedionate California Proposition 65 Prop 65 - Chemicals known to cause cancer Substance is not listed. Prop 65 - Developmental toxicity Substance is not listed. Prop 65 - Developmental toxicity, female Substance is not listed. Prop 65 - Developmental toxicity, male Substance is not listed. Information about limitation of use: For use only by technically qualified individuals. Other regulations, limitations and prohibitive regulations Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No

1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed. Substance is not listed. Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). 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. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.