SAFETY DATA SHEET
Lanthanum Copper Oxide (pieces)

1. Identification

Product identifier
Product name: Lanthanum Copper Oxide (pieces)
Internal identification: Replaces M-3000-120

Recommended use of the chemical and restrictions on use
Application: Physical vapor deposition of thin films
Uses advised against: No specific uses advised against are identified.

Details of the supplier of the safety data sheet
Supplier: Kurt J Lesker Company
Manufacturer: Kurt J Lesker Company
1925 Route 51
Jefferson Hills, PA 15025
+1 412-387-9200

Kurt J Lesker Company LTD
United Kingdom
15-16 Burgess Road
Hastings, East Sussex, TN35 4NR
England
Customer Service: +44 (0) 1424 458100
msds@lesker.com

Emergency telephone number
Emergency telephone: North America [USA, Canada, Mexico]: 1-866-519-4752
Mainland China: (+86) 4001 2001 74
Europe: (int'l call prefix)-1-760-476-3961
Asia Pacific: (int'l call prefix)-1-760-476-3960
Middle East & Africa: (int'l call prefix)-1-760-476-3959

2. Hazard(s) Identification

Classification of the substance or mixture
Physical hazards: Not Classified
Health hazards: Acute Tox. 4 - H302
Environmental hazards: Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

Label elements
Lanthanum Copper Oxide (pieces)

Pictogram

Signal word Warning

Hazard statements H302 Harmful if swallowed.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements P264 Wash contaminated skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P301+P312 If swallowed: Call a poison center/ doctor if you feel unwell.
P330 Rinse mouth.
P391 Collect spillage.
P501 Dispose of contents/ container in accordance with national regulations.

Contains Copper Oxide (pieces)

Other hazards

This product does not contain any substances classified as PBT or vPvB.

3. Composition/information on ingredients

Mixtures

Copper Oxide (pieces) 0 - 100%
CAS number: 1317-38-0
M factor (Acute) = 1  M factor (Chronic) = 1

Classification
Acute Tox. 4 - H302
Aquatic Acute 1 - H400
Aquatic Chronic 1 - H410

Lanthanum Oxide (pieces) 0 - 100%
CAS number: 1312-81-8

Classification
Not Classified

The Full Text for all Hazard Statements are Displayed in Section 16.

Composition comments The exact percentage is withheld as a trade secret in accordance with 29 CFR 1910.1200.

4. First-aid measures

Description of first aid measures

General information If in doubt, get medical attention promptly. Show this Safety Data Sheet to the medical personnel.

Inhalation Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.
## Lanthanum Copper Oxide (pieces)

### Ingestion
Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Stop if the affected person feels sick as vomiting may be dangerous. Never give anything by mouth to an unconscious person. Place unconscious person on their side in the recovery position and ensure breathing can take place. Keep affected person under observation. Get medical attention.

### Skin Contact
Rinse with water.

### Eye contact
Rinse with water. Get medical attention if any discomfort continues.

### Protection of first aiders
First aid personnel should wear appropriate protective equipment during any rescue.

### Most important symptoms and effects, both acute and delayed

#### General information
The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

#### Inhalation
No specific symptoms known.

#### Ingestion
May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.

#### Skin contact
Prolonged contact may cause dryness of the skin.

#### Eye contact
No specific symptoms known. May be slightly irritating to eyes.

### Indication of immediate medical attention and special treatment needed
Notes for the doctor: Treat symptomatically.

### 5. Fire-fighting measures

#### Extinguishing media
The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

#### Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

#### Special hazards arising from the substance or mixture

#### Specific hazards
This product is toxic.

#### Hazardous combustion products
Thermal decomposition or combustion products may include the following substances: Toxic gases or vapors.

#### Advice for firefighters
Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. Avoid discharge to the aquatic environment. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

#### Special protective equipment for firefighters
Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

### 6. Accidental release measures

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

#### Personal precautions
Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk.
**Lanthanum Copper Oxide (pieces)**

**Environmental precautions**
Avoid discharge into drains or watercourses or onto the ground. Avoid discharge to the aquatic environment.

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

**Methods for cleaning up**
Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Provide adequate ventilation. Collect spillage with a shovel and broom, or similar and reuse, if possible. Collect and place in suitable waste disposal containers and seal securely. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. Dangerous for the environment. Do not empty into drains. For waste disposal, see Section 13.

**Reference to other sections**
For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

7. Handling and storage

**Precautions for safe handling**

**Usage precautions**
Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Keep container tightly sealed when not in use. Avoid discharge to the aquatic environment. Do not handle until all safety precautions have been read and understood. Do not handle broken packages without protective equipment. Do not reuse empty containers.

**Advice on general occupational hygiene**
Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

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

**Storage precautions**
Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage.

**Storage class**
Toxic storage.

**Specific end uses(s)**
The identified uses for this product are detailed in Section 1.2.

8. Exposure Controls/personal protection

**Copper Oxide (pieces) (CAS: 1317-38-0)**

**Immediate danger to life and health**
100 mg/m³

**Exposure controls**

**Protective equipment**

**Appropriate engineering controls**
Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

**Eye/face protection**
Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

**Hand protection**
No specific hand protection recommended. Avoid contact with skin.
Lanthanum Copper Oxide (pieces)

**Other skin and body protection**
Wear appropriate clothing to prevent repeated or prolonged skin contact.

**Hygiene measures**
Wash hands thoroughly after handling. Wash at the end of each work shift and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

**Respiratory protection**
Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134.

**Environmental exposure controls**
Keep container tightly sealed when not in use. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

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10. Stability and reactivity
Lanthanum Copper Oxide (pieces)

Reactivity
There are no known reactivity hazards associated with this product.

Stability
Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.

Possibility of hazardous reactions
No potentially hazardous reactions known.

Conditions to avoid
There are no known conditions that are likely to result in a hazardous situation.

Materials to avoid
No specific material or group of materials is likely to react with the product to produce a hazardous situation.

Hazardous decomposition products
Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapors.

11. Toxicological information

Information on toxicological effects

Acute toxicity - oral
Notes (oral LD₅₀)  Acute Tox. 4 - H302 Harmful if swallowed.
ATE oral (mg/kg)  1,000.0

Acute toxicity - dermal
Notes (dermal LD₅₀)  Based on available data the classification criteria are not met.

Acute toxicity - inhalation
Notes (inhalation LC₅₀)  Based on available data the classification criteria are not met.

Skin corrosion/irritation
Animal data  Based on available data the classification criteria are not met.

Serious eye damage/irritation
Based on available data the classification criteria are not met.

Respiratory sensitization
Respiratory sensitization  Based on available data the classification criteria are not met.

Skin sensitization
Skin sensitization  Based on available data the classification criteria are not met.

Germ cell mutagenicity
Genotoxicity - in vitro  Based on available data the classification criteria are not met.

Carcinogenicity
Carcinogenicity  Based on available data the classification criteria are not met.

IARC carcinogenicity
None of the ingredients are listed or exempt.

Reproductive toxicity
Reproductive toxicity - fertility  Based on available data the classification criteria are not met.
Reproductive toxicity - development  Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure
STOT - single exposure  Not classified as a specific target organ toxicant after a single exposure.
Lanthanum Copper Oxide (pieces)

**Specific target organ toxicity - repeated exposure**

STOT - repeated exposure  Not classified as a specific target organ toxicant after repeated exposure.

**Aspiration hazard**

Aspiration hazard  Not relevant. Solid.

**General information**

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

**Inhalation**

No specific symptoms known.

**Ingestion**

May cause discomfort if swallowed. Stomach pain. Nausea, vomiting.

**Skin Contact**

Prolonged contact may cause dryness of the skin.

**Eye contact**

No specific symptoms known.

**Route of entry**

Ingestion Inhalation Skin and/or eye contact

**Target Organs**

No specific target organs known.

12. Ecological Information

**Toxicity**

Aquatic Acute 1 - H400 Very toxic to aquatic life. Aquatic Chronic 1 - H410 Very toxic to aquatic life with long lasting effects.

**Persistence and degradability**

The degradability of the product is not known.

**Bioaccumulative potential**

No data available on bioaccumulation.

**Partition coefficient**

Not applicable.

**Mobility in soil**

No data available.

**Other adverse effects**

None known.

13. Disposal considerations

**Waste treatment methods**

The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

**Disposal methods**

Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents. Incineration or landfill should only be considered when recycling is not feasible.

14. Transport information
Lanthanum Copper Oxide (pieces)

**General**
The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, DoT).

**UN Number**
Not applicable.

**UN No. (DOT)**
Not applicable.

**UN proper shipping name**
Not applicable.

**Proper shipping name (DOT)**
Not applicable.

**Transport hazard class(es)**
No transport warning sign required.

**DOT transport labels**
No transport warning sign required.

**Packing group**
Not applicable.

**DOT packing group**
Not applicable.

**Environmental hazards**
Environmentally Hazardous Substance No.

**Special precautions for user**
Based on available knowledge of this material, it has been determined to be non-hazardous and will not pose a risk to persons or the environment in its provided form. However, any cutting, welding, melting, grinding, or use for deposition will produce dust, fume, or particulates containing component elements of this material. Exposure to these components may present significant health hazards. Note: Fine particulate may be a combustible dust which, when dispersed in air, may present an explosion hazard.

**DOT reportable quantity**
Not applicable.

**DOT TIH Zone**
Not applicable.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**
Not applicable.

15. **Regulatory information**

**US Federal Regulations**

**SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities**
None of the ingredients are listed or exempt.

**CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)**
None of the ingredients are listed or exempt.

**SARA Extremely Hazardous Substances EPCRA Reportable Quantities**
None of the ingredients are listed or exempt.

**SARA 313 Emission Reporting**
None of the ingredients are listed or exempt.
Lanthanum Copper Oxide (pieces)

**CAA Accidental Release Prevention**
None of the ingredients are listed or exempt.

**FDA - Essential Chemical**
None of the ingredients are listed or exempt.

**FDA - Precursor Chemical**
None of the ingredients are listed or exempt.

**SARA (311/312) Hazard Categories**
None of the ingredients are listed or exempt.

**OSHA Highly Hazardous Chemicals**
None of the ingredients are listed or exempt.

**US State Regulations**

- **California Proposition 65 Carcinogens and Reproductive Toxins**
  None of the ingredients are listed or exempt.

- **California Air Toxics "Hot Spots" (A-I)**
  None of the ingredients are listed or exempt.

- **California Air Toxics "Hot Spots" (A-II)**
  None of the ingredients are listed or exempt.

- **California Directors List of Hazardous Substances**
  None of the ingredients are listed or exempt.

- **Massachusetts "Right To Know" List**
  None of the ingredients are listed or exempt.

- **Rhode Island "Right To Know" List**
  None of the ingredients are listed or exempt.

- **Minnesota "Right To Know" List**
  None of the ingredients are listed or exempt.

- **New Jersey "Right To Know" List**
  None of the ingredients are listed or exempt.

- **Pennsylvania "Right To Know" List**
  None of the ingredients are listed or exempt.

**Inventories**

- **US - TSCA**
  None of the ingredients are listed or exempt.

- **US - TSCA 12(b) Export Notification**
  None of the ingredients are listed or exempt.

- **Philippines - PICCS**
  All the ingredients are listed or exempt.

- **New Zealand - NZIOC**
  All the ingredients are listed or exempt.

16. Other information
Lanthanum Copper Oxide (pieces)

Training advice
Only trained personnel should use this material.

Revision date
12/27/2016

Revision
1

SDS No.
5209

Hazard statements in full
H302 Harmful if swallowed.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

End of SDS

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.