

CuO target approval in PLD 1

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Objective

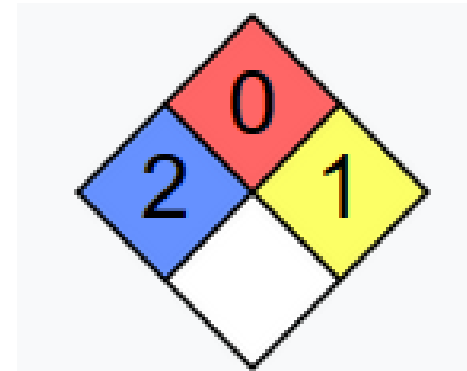
CuO will be used for target in PLD 1 to deposit Cu_2O thin films on LSAT substrate

Experimental Procedure

- Deposition Temperature: 400 – 700 °C
- Deposition will be performed in the presence of O₂ (P = 10⁻³ – 10⁻⁵ mbar)
- Substrate: Commercially available LSAT substrates

Material Information

- Generic Name: Cupric Oxide
- Chemical Formula: CuO
- **PHYSICAL AND CHEMICAL PROPERTIES**
 - PHYSICAL STATE: Solid
 - ODOR: None
 - COLOR: Black
 - pH: NA
 - VAPOR PRESSURE: Not Available
 - BOILING POINT: 2000 °C
 - MELTING POINT: 1326°C
 - FLASH POINT AND METHOD: NA
 - SOLUBILITY IN WATER: Insoluble
 - DENSITY: 6.315 gm/cm³ at 25°C



FIRST AID MEASURES

- General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
- If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- In case of skin contact: Wash off with soap and plenty of water. Consult a physician.
- In case of eye contact: Flush eyes with water as a precaution.
- If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

STABILITY AND REACTIVITY

- Chemical stability: Stable under recommended storage conditions.
- Materials to avoid: Reducing agents, Hydrogen sulfide gas, Aluminum, Alkali metals, Powdered metals
- Hazardous decomposition products: Hazardous decomposition products formed under fire conditions (Copper oxides – non-hazardous material)

POTENTIAL HEALTH EFFECTS

- EYES: Contact may cause eye irritation [Response: eyewash with water]
- SKIN: May cause skin irritation. [Response: wash with soap and plenty of water]
- INGESTION: May be harmful if swallowed. [Response: Rinse mouth with water. Consult a physician]
- INHALATION: May be harmful if inhaled. May cause respiratory irritation. [Response: If breathed in, move person into fresh air. If not breathing, give artificial respiration]

- Equipment where chemical is used: PLD 1
- User: garima.aggarwal@iitb.ac.in (Ph: 9967341740)

Reference

SAFETY DATA SHEET, Sigma Aldrich

<https://www.nwmissouri.edu/naturalsciences/sds/c/Copper%20II%20oxide.pdf>