

## Cupric Oxide Nanoparticles CON103

### Description:

Copper oxides exist in two different forms: cupric oxide (CuO) and cuprous oxide (Cu<sub>2</sub>O), depending on the valence state of copper. The CuO is a p-type semiconductor with an indirect band gap of 1.2 – 1.9 eV. The crystal structure of CuO is in the monoclinic space group. Since most transition metal monoxides such as NiO, CrO, and VO exhibit Mott insulator behavior, it is believed that CuO is also a Mott insulator. It exhibits a range of potentially useful physical properties, such as high temperature superconductivity, electron correlation effects, and spin dynamics.

Characterization	
CAS	1317-38-0
Stock No.	CON103
Molecular formula	CuO
Molecular weight (g/mol)	79.55
Form	Powder
Color	Black
Morphology	Spherical
Crystal structure	Monoclinic
Size range (nm)	30-50
Total impurity (%)	<1
Melting point (°C)	1201
Boiling point (°C)	2000
Density (g/cm <sup>3</sup> )	6.31
Solubility	Insoluble



Image of copper(II) oxide nanopowder (CON103)

**Note:** product specifications are subject to amendment and may change over time.

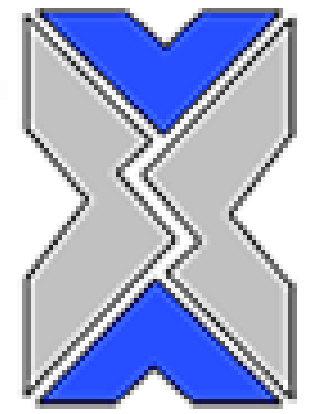
### Applications (but not limited to the following):

Fabrication of electrical, optical and photovoltaic devices, heterogeneous catalysis, magnetic storage media, gas sensing, field-emission (FE) emitters, lithium-ion electrode materials, antibacterial materials

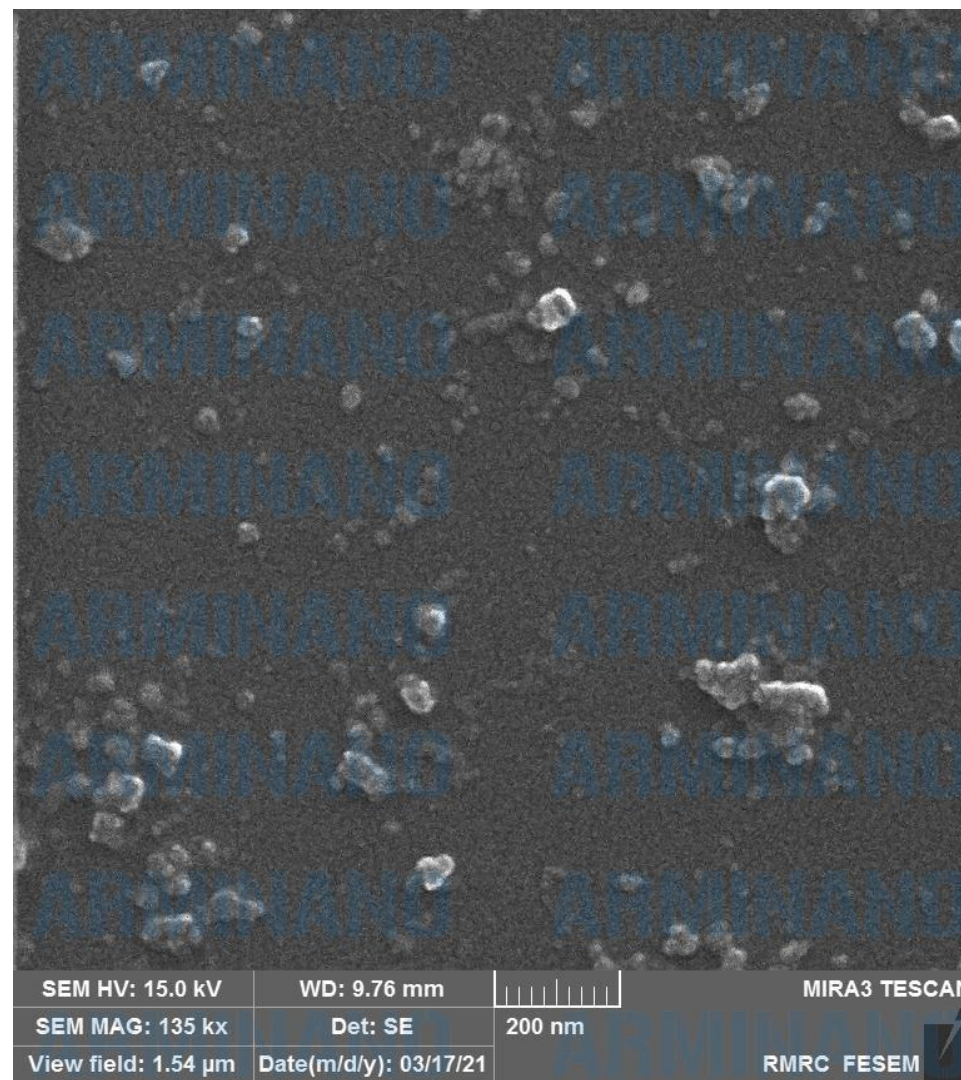
### Safety:

Avoid breathing dust.  
Always use protective gloves and safety glasses.  
Wash with soap and water after exposure.  
Do not expose to extreme heat or flame.  
Refer to MSDS prior to handling this material.

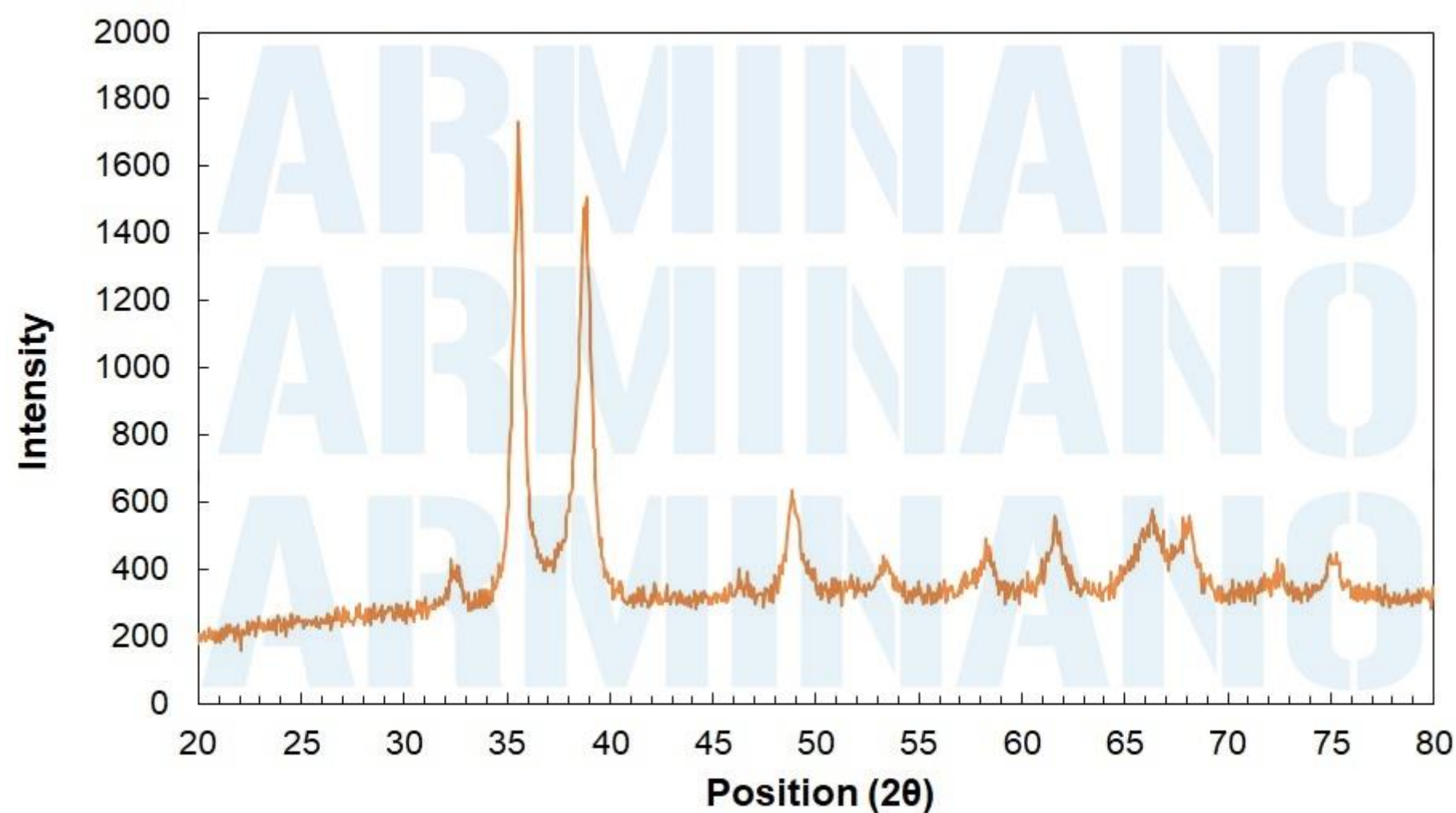




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SEM image of CON103



XRD pattern of CON103

### Storage:

- Keep it in cool dry place.
- Avoid direct sunlight.
- Do not freeze.
- To disperse nanoparticles sonication could be used.

### Shelf life:

When stored as specified the product is stable for at least 6 months.

