



Copper Oxide Nanoparticles (CuO)

Product Catalogue

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Working

Copper Oxide Nanoparticles (CuO Nanoparticles) are ultrafine particles of copper. It is one of the popular materials as it has antimicrobial and biocide properties. CuO Nanoparticles (Copper Oxide Nanopowder) are superfine copper particles with sizes from 1 to 100 nm. Its research garners interest due to its characteristics of exploring the material's potency, such as increased electrical conductivity and enhanced hardness, the increased strength of metals and alloys, toughness, and the luminous efficiency of semiconductors. The product is a monoclinic structure. Copper Oxide Nanopowder is a brownish-black color powder. Its exposure to hydrogen or carbon monoxide under high temperatures can cause modification in the metallic copper. Copper oxide is a semiconductor with optical, electrical, and magnetic properties. We manufacture Copper oxide (CuO) nanoparticles by chemical precipitation method in bulk quantity

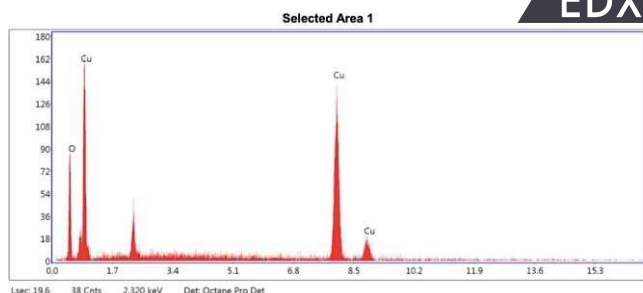
Product Code: CUO-Nano

Technical Properties:

<i>SPECIFICATIONS</i>	<i>VALUES</i>
Molecular Formula	CuO
CAS Number	1317-38-1
Bulk Density	0.66 g/cm ³
Average Particle Size	30 - 70 nm
Molecular Weight	79.545 g/mol
Purity	>99.9%
Form Factor	Powder
Morphology	Spherical
Surface Area	60-80 m ² /g
Colour	Brownish Black

Characterization Analysis

EDX

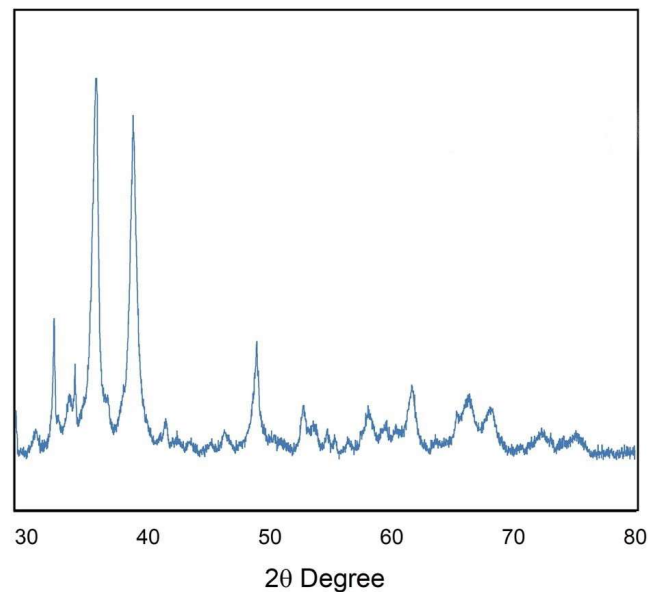


eZAF Smart Quant Results

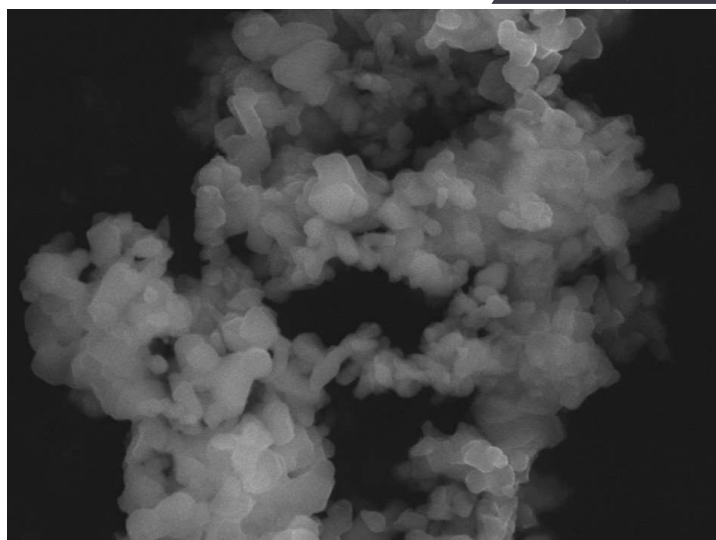
Element	Weight %	Atomic %
O K	23.36	54.77
CuK	76.64	45.23

XRD

Intensity(a.u.)

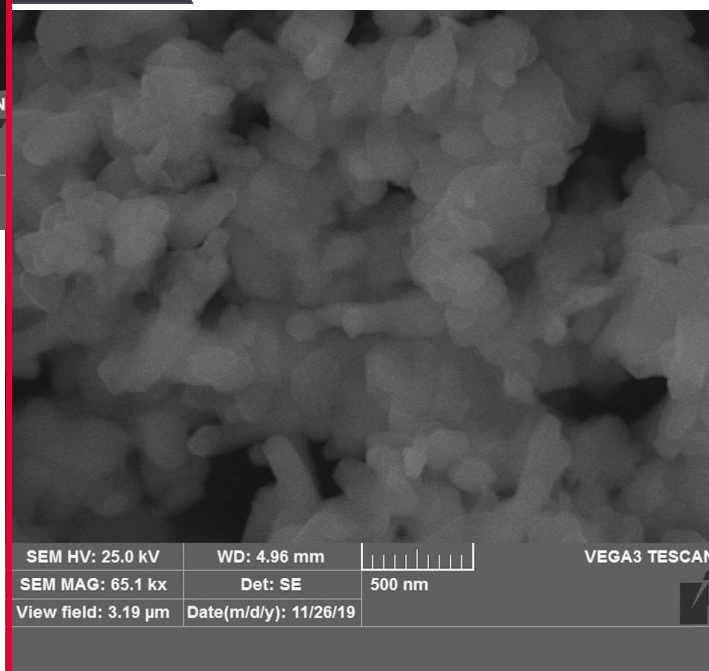


SEM-1



SEM HV: 25.0 kV	WD: 4.96 mm	1 μm	VEGA3 TESCAN
SEM MAG: 40.0 kx	Det: SE		
View field: 5.19 μm	Date(m/d/y): 11/26/19		

SEM-2



SEM HV: 25.0 kV	WD: 4.96 mm	500 nm	VEGA3 TESCAN
SEM MAG: 65.1 kx	Det: SE		
View field: 3.19 μm	Date(m/d/y): 11/26/19		

Characterization Analysis

Size Distribution Report by Intensity v2.2



Sample Details

Sample Name: C1

SOP Name: mansettings.nano

General Notes:

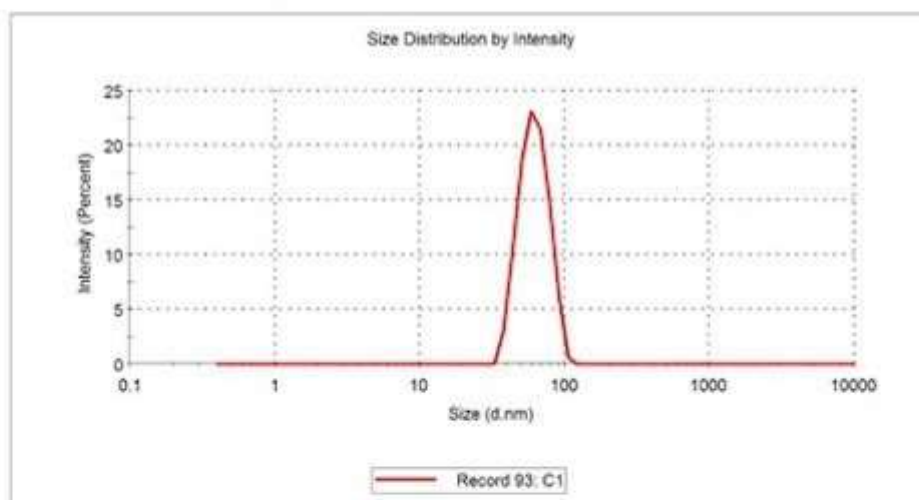
File Name: Metal.dts	Dispersant Name: Water
Record Number: 93	Dispersant RI: 1.330
Material RI: 1.90	Viscosity (cP): 16.1118
Material Absorbtion: 0.100	Measurement Date and Time: 17 April 2021 15:46:17

System

Temperature (°C): 25.0	Duration Used (s): 70
Count Rate (kcps): 186.0	Measurement Position (mm): 4.65
Cell Description: Disposable sizing cuvette	Attenuator: 9

Results

	Size (d.n...	% Intensity:	St Dev (d.n...
Z-Average (d.nm): 61.38	Peak 1: 62.32	100.0	13.98
Pdl: 0.279	Peak 2: 0.000	0.0	0.000
Intercept: 0.884	Peak 3: 0.000	0.0	0.000
Result quality Good			



Applications

- Used for PN junction diodes, humidity sensing, lithium ion batteries
- Organic synthesis, antimicrobial activity, and in the biomedical field
- Used in the complete conversion of hydrocarbons into carbon dioxide
- Enhancement of thermal conductivity of nanofluid, nanoenergetic materials
- Super-hydrophobic surfaces or anode materials for lithium ion batteries
- Perform better as a catalyst for the composite propellant
- Applied to the catalyst, superconducting and thermoelectric materials, glass, sensing materials, ceramics
- As ceramic resistors, magnetic storage media, gas sensors, near-or filters, photoconductive, and photothermal applications
- As semiconductors, solar energy transformation, and high-tech superconductors

Features

- Having a narrow bandgap of 1.2 eV
- Energy conversion, Optoelectronic devices, and catalysts.
- Super thermal conductivity, Photovoltaic properties, High stability, and antimicrobial activity.
- Have other unique magnetic and super-hydrophobic properties.
- Have Semiconducting Property
- Useful in batteries, catalysis, solar energy conversion, and high-temperature superconductors.

Safety Instructions

- Protective gloves should be worn at the time of operation.
- Safety goggles are a must during handling.
- Do not touch any part of the skin or eyes while using.
- Store in a moisture-proof dry place.

Packaging

It is supplied in a highly-protective moisture-proof bottle with a seal. It is finally packed in a shockproof sheet with a corrugated box.

Handling

When handling, the researcher should use powder-free non-latex gloves, which should be held carefully. While experimenting, if the operator uses a nanopowder with bare hands, the chances of contamination due to finger oil are very high. Therefore, it is advised to use nylon or polyester gloves.



Feel Free to Reach Us

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