

Cobalt Oxide Nanoparticles COON 1601

Description:

Co_3O_4 has a cubic spinel crystal structure in which the Co^{2+} ions occupy the tetrahedral sites and the Co^{3+} ions the octahedral sites. The Co^{3+} ions at the octahedral sites are diamagnetic in the octahedral crystal field. The Co^{2+} ions at the tetrahedral sites form an antiferromagnetic sublattice with a diamond structure. Co_3O_4 spinel, have been intensively studied in photocatalytic systems because of their superior properties, good stability, and high abundance. Co_3O_4 nanoparticles exhibit weak ferromagnetic behavior and CoO nanocrystals display super paramagnetism or weak ferromagnetism, whereas bulk CoO is antiferromagnetic. Co_3O_4 is a magnetic p-type semiconductor

Characterization	
CAS	1308-06-7
Stock No.	COON 1601
Molecular formula	Co_3O_4
Molecular weight (g/mol)	240.80
Form	Powder
Color	Black
Morphology	
Crystal structure	FCC
Size range (nm)	
Melting Point	895°C
Boiling Point	900°C
Density (g/cm ³)	6.11
Solubility	Insoluble



Image of Cobalt oxide nanopowder (COON 1601)

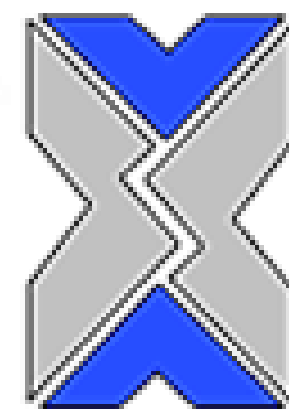
Note: product specifications are subject to amendment and may change over time.

Applications (but not limited to the following):

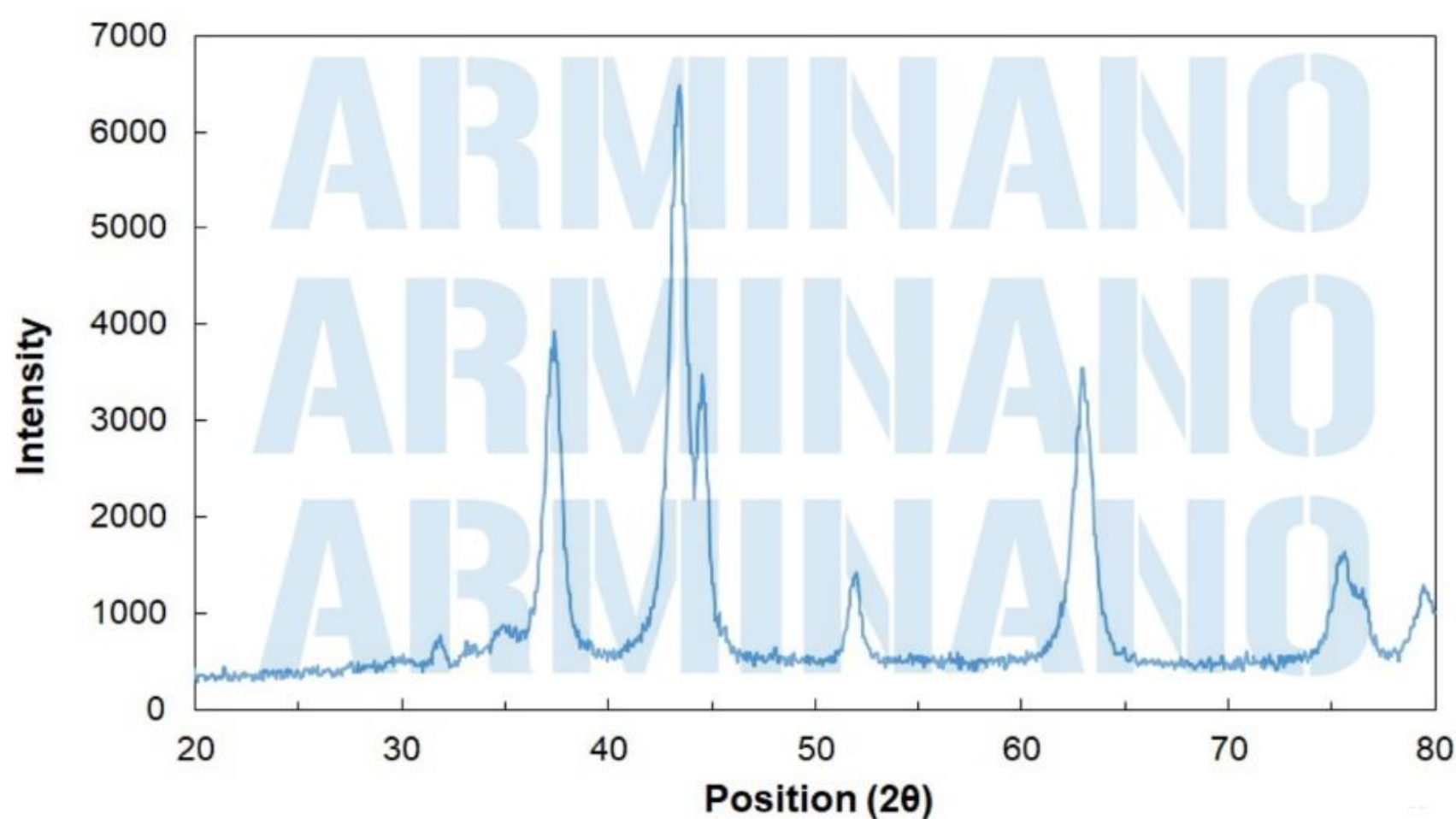
The cobalt spinel compounds can act as efficient catalysts in a lot of heterogeneous chemical processes. Nanoparticles of Co_3O_4 are promising materials for electronic devices, gas sensors, magnetic materials, electrochromic devices, electrochemical systems, and high-temperature solar selective absorbers. CoO also shows interesting properties and has applications as gas sensors and as anodes of lithium-ion batteries

Safety:

Avoid breathing dust.
Always use protective gloves and safety glasses.
Wash with soap and water after exposure.
Refer to MSDS prior to handling this material.



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XRD pattern of NOP1201

Storage:

- Keep it in cool dry place and tightly closed container.
- Ensure good ventilation at the workplace.
- The product is not flammable.
- Avoid direct sunlight.
- Store away oxidizing agents.
- To disperse nanoparticles sonication could be used.

Shelf life:

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