



Aluminium Oxide Nanoparticles (Al_2O_3)

Product Catalogue

Call Us: +91-8007799090 | +91-9765849656

Website: www.techinstro.com | E-Mail: info@techinstro.com

Working

Aluminium Oxide Nanoparticles often called Aluminium Oxide Nanopowder and abbreviated as Al_2O_3 Nanoparticles, are spherical nanosized particles of alumina. Aluminium is available abundantly on earth. It has wide applications in different consumer products and applications due to its novel characteristics. Al_2O_3 nanoparticles have a rod-like shape with a width of around 10 nm and a length between 20–50 nm. Aluminium oxide consists of two aluminium atoms and three oxygen atoms. They are bonded collectively in a hexagonal close-packed (HCP) crystal structure. It is manufactured by Sol-gel Method in bulk quantity with multiple quality checkpoints to get accurate Aluminium Oxide Nanoparticles.

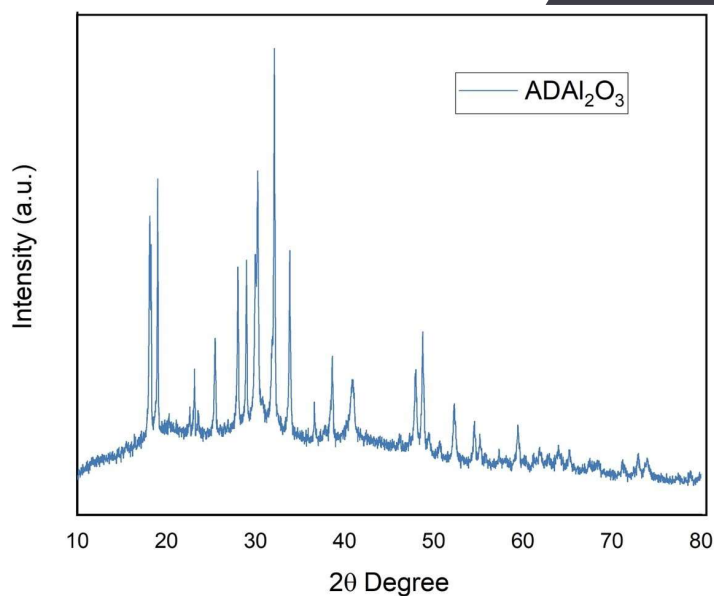
Product Code: Al2O3-Nano

Technical Properties:

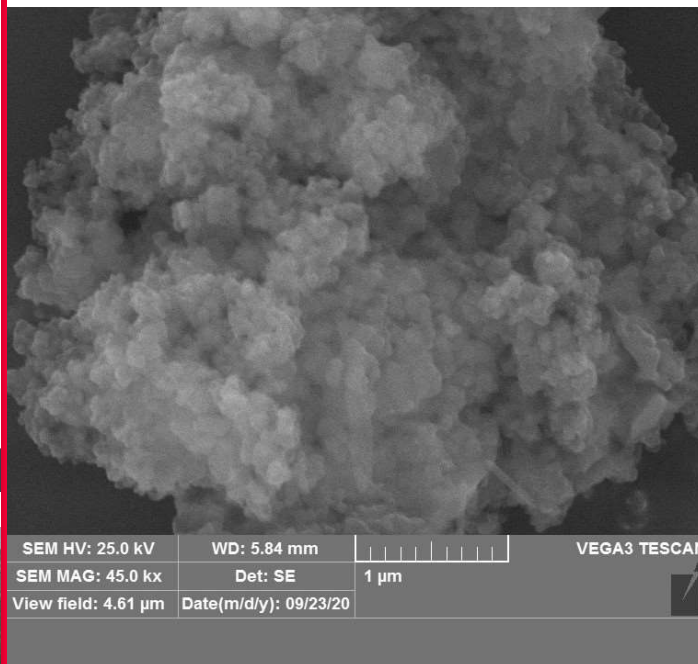
<i>SPECIFICATIONS</i>	<i>VALUES</i>
Molecular Formula	Al_2O_3
CAS Number	1334-28-1
Bulk Density	0.5 g/cm ³
Average Particle Size	20 - 50 nm
Molecular Weight	101.96 g/mol
Melting Point	2055 °C
Purity	>99.9%
Form Factor	Powder
Morphology	Near Spherical
Surface Area	110 m ² /g

Characterization Analysis

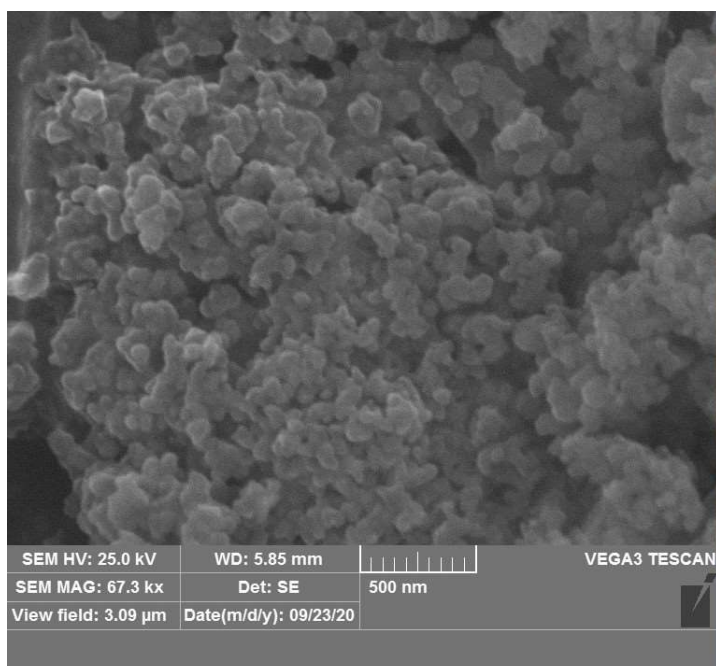
EDX



SEM-1



SEM-2



Characterization Analysis

Size Distribution Report by Intensity v2.2



Sample Details

Sample Name: A1

SOP Name: mansettings.nano

General Notes:

File Name: Metal.dts	Dispersant Name: Water
Record Number: 88	Dispersant RI: 1.330
Material RI: 1.37	Viscosity (cP): 16.1118
Material Absorbtion: 0.100	Measurement Date and Time: 17 April 2021 15:19:45

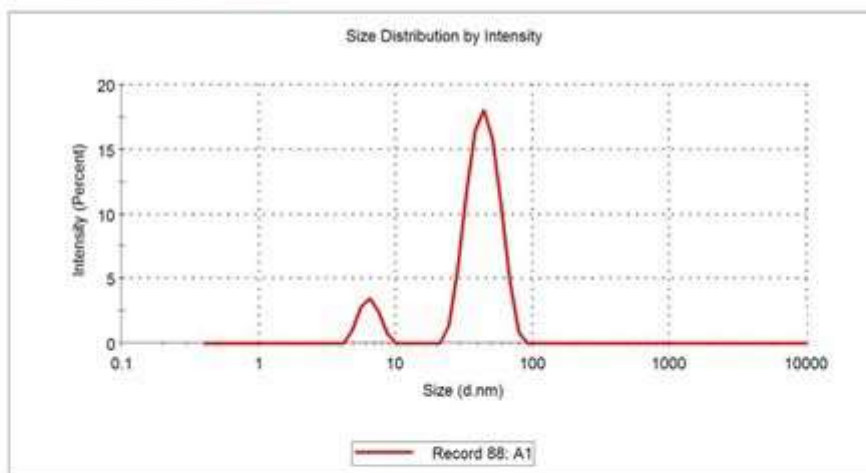
System

Temperature (°C): 25.0	Duration Used (s): 80
Count Rate (kcps): 154.1	Measurement Position (mm): 4.65
Cell Description: Disposable sizing cuvette	Attenuator: 7

Results

	Size (d.n...	% Intensity:	St Dev (d.n...
Z-Average (d.nm): 33.89	Peak 1: 44.65	84.0	11.28
Pdl: 0.561	Peak 2: 6.491	16.0	1.034
Intercept: 0.949	Peak 3: 0.000	0.0	0.000

Result quality Good



Applications

- Automotive, Filtration, Military, Energy, Cosmetics, Coating, Oil and Gas, and Electronics
- Anti-wear coating in Oil & Gas pipeline
- Fillers in Polymer and Tyres
- Window Flooring and Advance Waterproof material
- Magnetic Tape Additives and Polishing Abrasive of Metals
- Transparent Optical Conductive Coating
- Sintering and Cosmetics Additives
- Packaging material, cutting tool & grinding belt
- High Purity Crucible, Winding Axle, and Furnace Tube
- Semiconductor Material, Composite material, and Resins
- Paint, Rubber, and Plastic wear-resistant reinforcement
- Catalyst, Catalyst Carrier, and Analytical Reagent
- Aerospace, Vapour deposition material, Special glass, fluorescent Material
- Infrared Emission Control

Features

- Superhydrophobic and High Thermal Barrier Properties
- Durability, Fire retardancy, Stiffness, Thermal Fatigue Resistance
- Fracture toughness, Creep Resistance and Wear Resistance
- Chemically Stable and Anticorrosive
- Mechanical Strength Enhancement
- Electrical Insulating

Safety Instructions

- Protective gloves should be worn at the time of operation.
- Safety goggle is 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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