Technical Datasheet (TDS)

Calcined Manganese Oxide for Power Transformer Cores

1. Company Information

- **Company Name:** BTLnewmaterial
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2. Product Description

Calcined Manganese Oxide is a specialized raw material designed for high-performance soft magnetic ferrite systems, particularly for power transformer cores. The calcination process ensures a stable phase composition and controlled manganese content, which are critical for achieving consistent magnetic permeability and low core losses in electronic applications.

3. Key Features

- **Stable Stoichiometry:** High manganese concentration ensures precise chemical balance in Mn-Zn ferrite formulations.
- **Low Impurity Interference:** Minimized levels of heavy metals (Pb, Cd, As) reduce defects in the crystal structure, optimizing magnetic performance.
- **Controlled Particle Size:** Optimized distribution (80–200 mesh) improves mixing uniformity and blending efficiency during ceramic processing.

- **Enhanced Sintering Stability:** The calcined structure offers superior reactivity and phase uniformity, supporting uniform grain growth during production.
- **Repeatable Performance:** Stable raw material quality guarantees reproducible magnetic properties across different production batches.

4. Technical Specifications

Parameter	Specification / Typical Value
MnO Purity	$\geq$ 90.0% – 95.0%
Manganese (Mn) Content	$\geq$ 60.0%
Particle Size	80 – 200 mesh
Moisture (H_2O)	$\leq$ 1.5%
Bulk Density	1.0 – 1.5 g/cm^3
Solubility (2% Citric Acid)	$\geq$ 85.0% – 90.0%
Arsenic (As)	$\leq$ 5 ppm
Lead (Pb)	$\leq$ 10 ppm
Cadmium (Cd)	$\leq$ 5 ppm

5. Physical Properties

- **Appearance:** Fine greenish-brown calcined powder.
- **Odor:** Odorless.
- **Solubility:** Insoluble in water; soluble in mineral acids and citric acid.

6. Applications

- **Power Transformer Cores:** Used in Mn-Zn ferrite systems to optimize magnetic permeability and minimize energy loss.
- **Soft Magnetic Ferrites:** Provides a high-quality manganese source for high-frequency electronic components.

- **Inductor Core Materials:** Supports stable inductance and excellent thermal performance.
- **Magnetic Ceramic Manufacturing:** Ensures chemical consistency during powder blending and high-temperature sintering.
- **Electronic Material Processing:** Reliable input for high-end magnetic-grade ceramics.

7. Packaging & Supply

- **Standard Packaging:** 25 kg kraft paper bags with an inner PE moisture-proof liner.
- **Export Packaging:** Palletized for safe international container shipment.
- **Supply Ability:** Bulk container shipments available for large-scale manufacturers.
- **Samples:** Available for ferrite formulation validation and testing.
