

# Technical Data Sheet: Pyrolusite Powder (Natural MnO<sub>2</sub>)

**Company Name:** BTLnewmaterial **Email:** lixifirm@outlook.com **Phone:** +8618273793022 **Website:** manganesesupply.com

## 1. Product Description

Natural pyrolusite powder (natural MnO<sub>2</sub>) is a high-grade manganese dioxide mineral product designed for coloring clay bricks. With typical MnO<sub>2</sub> content  $\geq 85\%$  and consistent particle size distribution, this pyrolusite powder ensures stable grey to black coloration in fired clay bodies and enhances ceramic performance. Ideal for refractory and construction ceramics, this natural MnO<sub>2</sub> pyrolusite powder for clay brick coloring meets industrial quality requirements.

## 2. Technical Specifications

Property	Typical Value	Industrial Range
MnO <sub>2</sub> Content (as MnO <sub>2</sub> )	$\geq 85\%$	80–90%
Fe <sub>2</sub> O <sub>3</sub>	$\leq 3.0\%$	1.5–4.0%
SiO <sub>2</sub>	$\leq 5.0\%$	3.0–7.0%
Loss on Ignition (LOI)	7–12%	6–14%
Particle Size (D90)	~75–150 $\mu\text{m}$	50–200 $\mu\text{m}$
Bulk Density	1.5–2.0 g/cm <sup>3</sup>	1.4–2.2 g/cm <sup>3</sup>
pH (10% slurry)	6–8	5.5–8.5

### 3. Key Features

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- High manganese dioxide ( $\text{MnO}_2$ ) content for reliable performance and consistent hue development.
- Uniform particle size improves dispersion in clay mixes and minimizes segregation during handling.
- Low impurities ( $\text{Fe}_2\text{O}_3$ ,  $\text{SiO}_2$ ) reduce adverse effects on brick texture and mechanical properties.
- Good thermal stability supports high-temperature firing without excessive volatilization.
- Inorganic and non-toxic composition suitable for standard ceramic processing lines.
- Bulk and customizable size grades support automated feed and blending systems.

### 4. Applications

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- **Clay Brick Coloring:** Provides grey to black coloration in clay brick bodies at firing temperatures (900–1200°C).
- **Ceramic Tile Bodies:** Used to modify shade and visual texture in floor and wall tiles.
- **Refractory Products:** Acts as a functional additive in low-iron refractory bricks where controlled reduction potential is needed.
- **Construction Ceramics:** Incorporation in architectural clay products for aesthetic finish and uniform color outcome.

### 5. Packaging & Supply

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Supplied in 25 kg multiwall kraft bags with inner PE liners, suitable for bulk palletization and container export. Available in 1 MT, 2 MT, and tailored packaging configurations to match logistics requirements. Export-ready documentation and packaging meet international freight standards for safe long-distance transport.

## 6. Customization & Technical Support

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Particle size distribution, bulk density, and impurity profiles can be adjusted within technical limits to meet specific process needs. Technical support available for formulation advice, trial blending parameters, and integration into existing clay brick production lines. Contact our engineering team for specification optimization and material performance consultation.