Technical Datasheet: MnO_2 Pigment for High-Heat Resistant Coatings

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

1. Product Description

MnO_2 Pigment for High-Heat Resistant Coatings is an inorganic manganese dioxide powder specifically engineered for thermal-stable coating formulations. This pigment typically boasts an MnO_2 purity of 90–98%, providing durable black to dark brown coloration. It maintains exceptional chemical stability even in high-temperature environments, making it an ideal choice for industrial coatings, refractory paints, and various high-temperature protective layers.

2. Key Features

- **High Thermal Stability:** Designed for coating systems exposed to elevated temperatures, ensuring color integrity and performance under heat.
- **Strong Chemical Resistance:** Exhibits robust resistance against oxidation and atmospheric degradation, contributing to long-lasting coating durability.
- **Uniform Particle Size Distribution:** Enables consistent dispersion within coating formulations, leading to improved mixing and coating uniformity.
- **Stable Inorganic Pigment:** Maintains consistent color integrity throughout high-temperature curing processes.
- **Reliable Dark Coloration:** Provides dependable black to dark brown hues and enhances the long-term durability of coatings.
- **Broad Compatibility:** Compatible with a wide range of coating matrices, including epoxy, silicone, ceramic, and refractory systems.

3. Technical Specifications

Parameter	Typical Value
MnO_2 Purity	90–98%
Particle Size (D50)	1–10 μm
Specific Surface Area	20–60 m^2/g
Moisture	≤1.0%
Bulk Density	0.6–1.0 g/cm^3
Crystal Phase	Predominantly γ-MnO_2
Color	Dark brown to black powder

4. Applications

- **High-temperature industrial coatings:** Improves thermal stability and maintains color in heat-resistant paint systems.
- **Refractory coatings:** Suitable for furnace linings and high-temperature equipment surfaces.
- **Protective metal coatings:** Enhances durability in coatings applied to steel structures operating at elevated temperatures.
- **Ceramic and enamel coatings:** Manganese-based pigments remain stable at firing temperatures exceeding 1200 °C.
- **Infrared control coatings:** MnO_2-based pigments can contribute to low infrared emissivity in advanced coating systems.

5. Packaging & Supply

- **Standard Packaging:** 25 kg fiber drum with PE liner.
- **Export-Ready Packaging:** Suitable for international shipping.

- **Sample Availability:** Laboratory sample quantities are available for formulation testing and evaluation.

6. Storage

Store the pigment in sealed containers in a dry environment away from moisture. Under proper storage conditions, MnO_2 pigment generally has a shelf life of at least 24 months.