# Ferrite Powder

FP-NiZn / FP-MnZn


## Features and Specifications

- Magnetically active powders
- Strong magnetic attraction (NiZn)
- High frequency flux control (MnZn)
- Particle sizes from 250nm to 150um
- Available in small tubs or bulk bags

## Example Applications

- Induction Heating
- Ferrofluids
- Magnetorheological liquids
- Magnetic Shielding & Control
- Flux Enhancers
- Transformer Cores
- Magnetic Composites
- Magnetic epoxy
- And more…

## Typical Usage

Our Ferrite Powders are great for a wide range of magnetic applications such as induction heating and flux control. The ultra-fine NiZn powder mixes readily into other substances and can be used to create hybrid materials that can be heated by magnetic induction. The MnZn powder can be combined with resins for mouldable flux control in magnetic systems.

Combined with ceramics such as clay, plaster, or glaze, the NiZn powder can be used to add magnetic properties to otherwise inert ceramics.



**Nickel Zinc** ferrite powder has a particle size range of approximately 250nm to 2um and is an ultra-fine brown powder with a consistency similar to that of fine flour. NiZn ferrite is perfect for making magnetic materials such as ferrofluids or magnetorheological liquids. This ultra-fine material is easy to combine with other powders and liquids for making your own unique magnetic materials of for biological experiments involving induction heating. NiZn ferrite powder sticks strongly to a magnet and can be quite messy if not contained.

**Manganese Zinc** ferrite powder has a particle size range from approximately 40um to 150um and is a coarse black powder with a consistency similar to very fine sand which flows easily when poured. It is ideal for making custom high frequency transformer cores, magnetic shielding, or flux enhancer for induction heating. MnZn ferrite does slightly stick to a magnet.

# Composition

These powders are made up of a variety of metal oxide compounds chosen to give them their unique properties. The information below has been obtained through a material testing technique known as XRF Analysis.

| | Iron ($Fe^2O^3$) | Manganese ($Mn^3O^4$) | Zinc (ZnO) | Nickel (NiO) | Copper (CuO) |
|---|---|---|---|---|---|
| MnZn | 69.09% | 23.76% | 7.15% | 0% | 0% |
| NiZn | 66.54% | 3.42% | 17.35% | 8.25% | 4.43% |

*Table 1: Ferrite Powder Composition by weight*

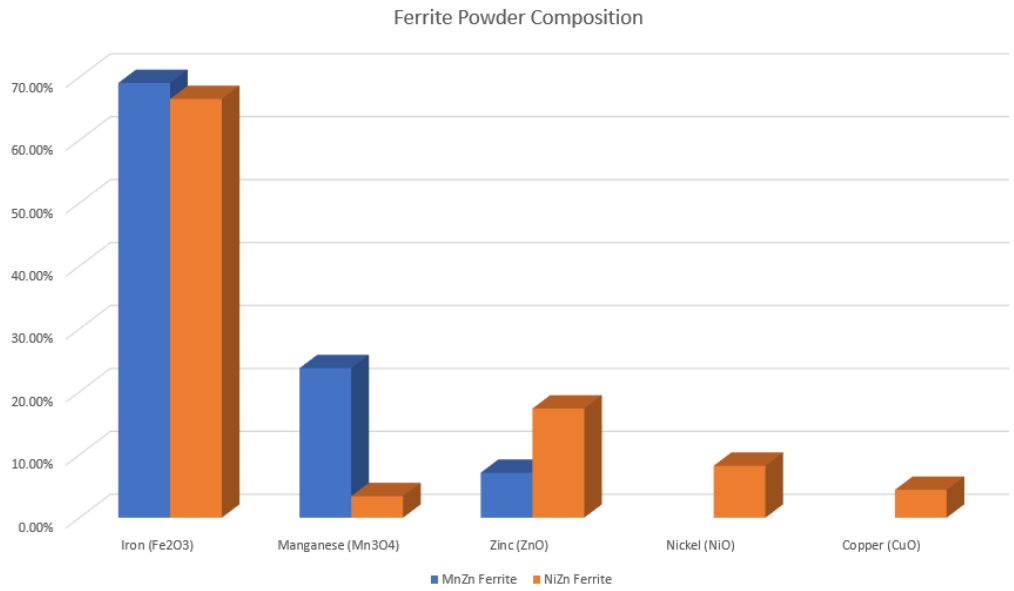


*Figure 1: Graph of ferrite powder composition by weight*

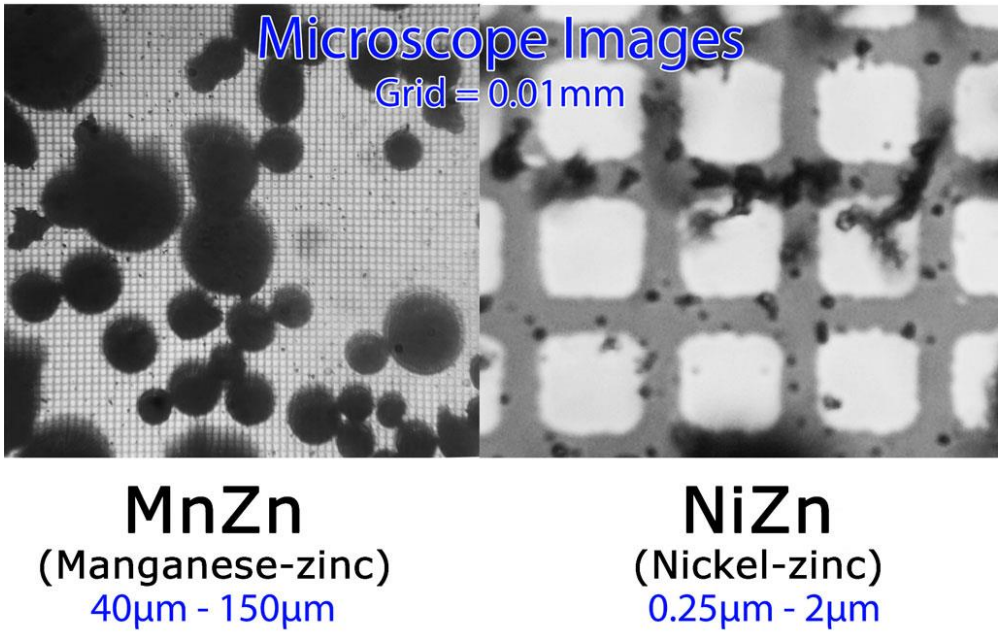


*Figure 2: Microscope Images of Ferrite Powders*

# Safety Information

Iron ($Fe^2O^3$): Iron oxide is generally regarded as safe and is commonly used in food, pharmaceuticals, and cosmetics.

Manganese ($Mn^3O^4$): Manganese oxide can be toxic if inhaled in large amounts, as it can cause lung damage. However, it is not considered to be toxic when ingested in small amounts.

Zinc (ZnO): Zinc oxide is generally regarded as safe and is commonly used in sunscreen, cosmetics, and other personal care products.

Nickel (NiO): Nickel oxide is considered to be toxic and can cause skin and respiratory irritation, as well as lung damage if inhaled in large amounts.

Copper (CuO): Copper oxide is considered to be toxic and can cause skin and respiratory irritation, as well as damage to the liver and kidneys if ingested in large amounts.

It's important to note that the toxicity of a compound can depend on the dose, the route of exposure (e.g., ingestion, inhalation, skin contact), and other factors. It's always a good idea to handle any chemical compound with care and follow appropriate safety guidelines.

For further details, please see the MSDS available on our website.