

Inco Type 123 PM Nickel Powder for Powder Metallurgy

Inco Type 123 PM Powder:

Type 123 PM nickel powder is a fine, high purity, discrete particle, developed and produced by Inco carbonyl technology. The powder is uniform in size, with a typical variation of less than one micron (FSSS) in diameter. Its surface is uniquely textured, consisting of spiky, needle-like structures that make it ideal for P/M applications.

Applications

Press and Sinter P/M parts:

- Type 123 PM is recognized by the P/M industry as the worldwide standard for admixed nickel powder used in iron-nickel and low alloy steel parts.

Hard Metals and Diamond Tooling:

- Type 123 PM is used as a binder in tungsten carbide applications and in the production of diamond tools.

Heavy Metals:

- Type 123 PM is used as a binder metal in tungsten parts ranging in size from dart heads to aircraft counter weights.

Advantages of Type 123 PM Nickel Powder:

- Provides improved strength and hardenability when used as an alloying element in P/M parts.
- Promotes shrinkage in P/M steels leading to higher density parts.
- Controls dimensional change during sintering of Fe/Cu alloys.
- Increases ductility and maximizes toughness by diffusing in the steel matrix to form nickel-rich phases.
- Improves the fatigue strength of P/M parts.
- Maximizes the green strength of pressed parts due to the relatively high surface area of the spiky powder.
- Enhances the ductility and corrosion resistance in heavy metal, diamond and hard metal binder applications.
- Type 123 PM is used as an additive to 400 series stainless steel P/M parts to improve strength, ductility and corrosion resistance.

Visit our webpage:
www.incosp.com



TYPICAL ANALYSIS

Physical Properties:

Particle Size (Fisher Sub-Sieve Sizer)	3.5 - 4.5 μm
Particle Size (Malvern Laser Diffraction)	11 - 14 d_{50}
Bulk Density (Scott Volumeter)	1.6 - 2.6 g/cm^3

Chemistry:

Carbon	600 to 1000 ppm
Oxygen	600 to 1000 ppm
Iron	< 20 ppm
Sulfur	1 ppm

Inco Special Products

- We are a business unit of Inco Limited, the world's leading nickel company.
- Special nickel products are produced with nickel from our own mines.
- We operate on a world wide basis with a strong record of supply and quality reliability.
- Nickel powder is produced at two ISO certified refineries. Each batch is traceable from refinery to customer delivery.
- We have over 30 years experience supplying the P/M and battery industries.
- We maintain a full service laboratory to support new product development and customer service.
- We are eager to discuss new products and new applications with potential customers.

This product is a part of a complete range of Inco Special Nickel Products. The range includes: fine and extra fine nickel powders of many different morphologies, nickel coated graphite particles, INCOFOAM™ high porosity nickel foam, nickel oxides and nickel

Inco special products

Call any office for complete information:

CANADA

2101 Hadwin Road
Mississauga, Ontario, Canada L5K 2L3
TEL 1.905.403.3336 FAX 1.905.403.8132

USA

681 Lawlins Road
Wyckoff, New Jersey 07481, USA
TEL 1.201.848.1012 FAX 1.201.848.1022

EUROPE

Gordon House
10 Greencoat Place, London, SW1P 1PH, England
TEL 44.20.7932.1508 FAX 44.20.7931.7799

JAPAN

TT-2 Building
3-8-1, Nihonbashi-Ningyochi, Chuo-ku
Tokyo 105-0013, Japan
TEL 81.3.5652.1831 FAX 81.3.5652.1841

ASIA (Shanghai)

Shanghai Dynasty Business Centre, Rm. 411
No. 457 Wu Lu Mu Qi North Road
Shanghai 200040, P. R. China
TEL 86.21.6249.2100 FAX 86.21.6249.1700

ASIA (Hong Kong)

15th Floor, Wilson House
19-27 Wyndham Street Central, Hong Kong
TEL 852.2521.2333 FAX 852.2810.1965

ASIA (Taiwan)

40, Hsing Yeh Road
Ta-Fa Industrial District
Kaohsiung Hsien, Taiwan
TEL 886.7.787.0320 FAX 886.7.787.7421