



# Product Data Sheet

## Iron Nickel Aluminum Thermal Spray Powders

PWD01118, PWD01118M

### Introduction

PWD01118 and PWD01118M are self bonding iron-nickel aluminum composite powders. The self-bonding characteristic relies on an exothermic reaction of the aluminum during spraying that results in micro-welding of the coating to the surface. This phenomenon improves the bond strength and allows thick, low shrink coatings. In addition, the aluminum component improves the overall oxidation resistance of the coating.

The presence of nickel promotes high temperature hot corrosion and oxidation resistance. Iron increases the hardness and wear resistance of these ferrous-based coatings. The addition of molybdenum in PWD01118M improves coating finishing capabilities and toughness.

### General Information:

Classification	Composite, iron-based
Chemical formula	FeNiAl[Mo]
Manufacture	Mechanically clad
Purpose	Salvage and bond coats
Morphology	Irregular
Melting point	815 °C (1500 °F)
Process	Plasma Spray or Combustion Powder

### Typical Uses and Applications

- A cost-effective means of salvage and restoration of carbon steels, corrosion resistant steels and cast iron components.
- Good for bond coats for ceramic, nickel chromium and stainless steel thermal spray top coats.
- Typical components where these coatings are used are machine bedways, wear rings, press fits bearing seats, exhaust valve seats, exhaust mufflers, heat treating fixtures, diesel components such as firedecks, connecting rods, saddle areas and caps, engine blocks, exhaust manifolds, mounting surfaces and cylinder heads.

### Material Information

	Chemical Composition (nominal weight %)				
	Fe	Ni	Al	Mo	Others
PWD01118	Balance	35	6	–	3
PWD01118M	Balance	30	6	6	4

