



## Ni base self-fluxing alloy powders for spray/fuse

### For better wear and corrosion resistance

A family of -150+325 mesh (40 to 120 µm) nickel alloy metal powders with controlled deposition hardness designed to be applied with different types of flame spray equipment. Series 70 powders are standard grades with hardness of HRC 33 to 65. Which give

a good balance of abrasion and impact resistance combined with good heat resistance. Grades 80 to 84 have copper and molybdenum added to stiffen the molten alloy and are intended for heavier coatings and improved impact and corrosion resistance.

Grades	Cr %	Si %	Fe %	B %	Cu %	Mo %	Ni %	Typical deposit hardness (HRC)
72 W (M) 40	9.9	3.1	3.2	1.7	-	-	Bal.	33 to 40
76 W (M) 50	13.3	3.7	4.1	2.4	-	-	Bal.	47 to 53
74 W (M) 60	13.6	4.1	4.4	2.9	-	-	Bal.	55 to 60
75 W (M) 62	14.0	4.5	4.5	3.2	-	-	Bal.	60 to 65
80 W (M) 60	14.0	4.2	4.6	2.9	2.4	2.5	Bal.	55 to 60
84 W (M) 60	16.9	4.7	4.0	3.3	1.9	3.5	Bal.	55 to 60

W = 36-106 µm    M = 45-125 µm

Grades	Solidus °C	Liquidus °C	Hardness HV5				
			200 °C	300 °C	400 °C	500 °C	600 °C
72 W (M) 40	1010	1040	378	376	355	317	299
76 W (M) 50	990	1100	576	559	527	460	392
74 W (M) 60	970	1050	672	666	656	532	420
75 W (M) 62	970	1040	871	822	747	636	482
80 W (M) 60	955	1050	720	701	623	620	476
84 W (M) 60	960	1070	829	802	742	637	496

### Procedures for use

To prepare parts for surfacing, they must first be cleaned of any dirt, rust, scale, oil, or paint and roughened by grit blasting with #16 chilled iron grit or equivalent.

These powders are then applied with one of the commercial flame spray guns at recommended spray parameters. The guns should be held 8 to 12" from the work depending on work size, spray tip and the gun

manufacturer's recommendations. Deposits should be built up to about 20% oversize to allow for shrinkage in fusing. The 70 series grades can be sprayed to thicknesses up to 0.075" (1.9 mm) while the 80 and 84 will be applicable to 0.100" (2.5 mm).

Fusing should be done with a rose-bud torch holding the temperature between the liquidus and solidus until a smooth slick-up is observed. These grades can also be induction fused. The softer grades can be finished with silicon carbide or aluminum oxide wheels, while the harder grades may require use of diamond tools.

Recommended settings							
	Oxygen		Acetylene		Powder	Air	
	psi	Flow	psi	Flow	psi	psi	Flow
Metco 5P	25	34	14	34	-	-	-
Metco 6P	25	45	14	55	-	-	-
Colmonoy J-3	16	41	13	30	14	20-25	44
	17	43	15	34	26	20-25	56

### Applications

These nickel-base self-fluxing alloy powders are designed for two step spray/fuse metal surfacing of ferrous components where improved corrosion resistance and/or wear resistance is required. They can be applied to carbon steel, alloy and stainless steels, cast iron, Monel, nickel and cobalt-base alloy parts and components.

They cannot be applied to brass, bronze, or aluminum and may require special precautions if used on some other alloys. Coating hardness values of HRC 33 to 65 will be obtained depending upon the grade selected.

Typical uses			
Ball joints	Guide rolls	Plug gauges	Sleeves
Bed knives	Mandrels	Polished rod liners	Sucker rod coupling
Cams	Mill hammers	Pump plungers	Tappets
Conveyor screws	Mill guides	Pump wear rings	Valve plugs
Diesel valves	Mixer paddles	Rocker arms	Valve gates
Glass moulds	Pistons	Shafts	Valve stems

### Ordering information

- a. Standard package size: 15 kg/jug, 2 jugs/box.
- b. Available globally, based on order.

### Handling and safety recommendation

Follow Höganäs' common powder handling and safety guidelines. Contact nearest sales office to get the documents.