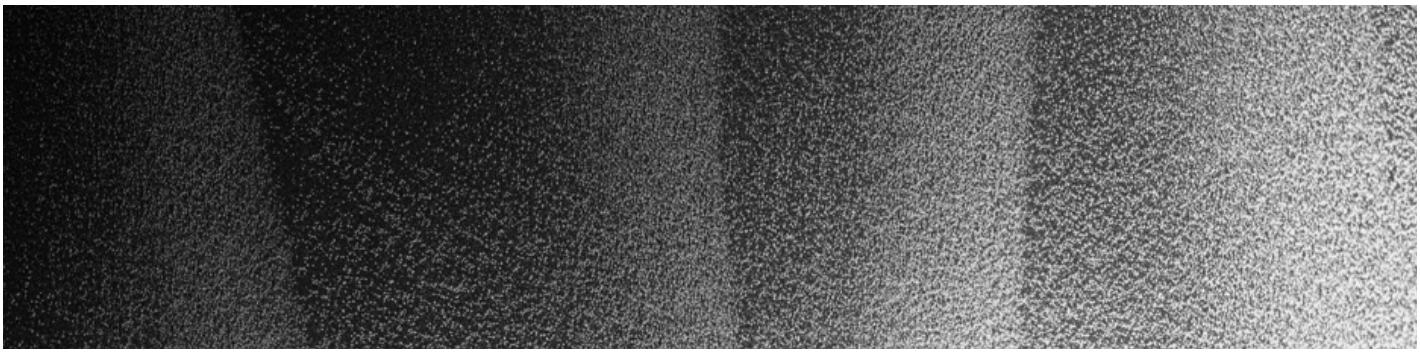
Polvos
Powders



Welding powder

Powder welding is traditionally applied using oxi-acetylene torch (simple to use and low cost). The most suitable materials to employ are **NiBSi self-fluxing alloys**. The presence of B and Si gives good fluidity, reduces the melting point and allows the use at low temperatures (1000°C), obtaining a coating compact, well diluted and strongly bonded to the base material.
NiBSi self-fluxing alloys have good oxidation and wear resistance. The addition of Cr and Mo increases corrosion and hot oxidation resistance. The microstructure of the coating consists of a ductile Nickel matrix and hard particles, constituted by several elements. The alloying elements and their proportional quantity give a wide range of hardness to the **NiBSi self-fluxing alloys**, 18 – 60 HRC.
The coating obtained has a smooth and bright surface which allows minimal or no machining (hardness coating below 25 HRC).

PTA powder

The welding process by plasma transferred arc (PTA) employs plasma, originated by an electric arc, as a vector gas The transferred arc also melts the base material on which the molten powder is applied, giving a typical dilution of - 5 % . The coating obtained has full density, chemical anchorage and so a high wear resistance.
The temperatures achieved in PTA process are elevated and allow to use Cobalt base powder and Nickel and Iron super-alloys. PTA machine is completely automated, suitable for a wide range of high volume production, such as petrochemical and automotive sectors, plastic and glass industry.

Este producto es ideal para las siguientes industrias
This product is ideal for the following industries

Automotriz Automotive
Aeroespacial Aerospace
Petrolera Oil & Gas
Química Chemical

Thermal spray

In thermal spray process powder is molten and accelerated toward the device to be metalized.
The coating obtained has high mechanical anchorage and good density up to 99.5%, according to the metal spraying method applied.
The thermal source, used to melt the particles, classifies thermal spraying processes.

• **Combustion Spray**, exploits combustion energy. Main deposition techniques are:

Flame-Powder, Detonation Gun and **HVOF** where high spraying speed is achieved (1000 m/s) obtaining well anchored coating with good density.

• **Plasma Spray**, exploits plasmogen gas (Ar, N2, H2) generated by an electric arc inside the torch. Temperatures reached are high, ~ 15000 °C, as well as the speed of particles ~100–300 m/s, at room pressure, until 400 m/s, at low pressure.

Special chemical analysis or grain distribution are available upon request

Cobalt base super-alloys

COGNE Grade	C	Si	Cr	W	Ni	Mo	Co	Properties
CO01	2.5	1.2	30	12.5	-	-	bal.	600 HV
CO06	1.1	1.2	28	4.5	-	-	bal.	400 HV
CO12	1.5	1.2	29	8.0	-	-	bal.	450 HV
CO21	0.2	1.0	27	-	2.5	5.5	bal.	350 HV
CO25	0.1	1.0	20	15	-	-	bal.	280 HV
CO1F	1.7	1.2	26	12.5	22.5	-	bal.	400 HV

All Co base alloys retain the mechanical properties at elevated temperature. High resistance to hot corrosion and hot oxidation. Good erosion and wear resistance

Iron base alloys

COGNE Grade	C	Si	Cr	Ni	Mo	Mn	Others	Fe	Commercial grade	Properties	
304L	< 0.03	0.5	18	11	-	1.3		bal.	1.4306	< 200 HV	Austenitic stainless steel
316L	< 0.03	0.5	17	12	12	1.5		bal.	1.4404		
630	0.05	0.4	17	4.0	-	-	Cu: 4.0 Nb: 0.4	bal.	1.4542 - 17-4 PH	< 380 HV	Precipitation hardening steel
410	0.12	0.3	13	-	-	-		bal.	1.4006	According to HT	Martensitic stainless steel
420	0.20	0.5	13	-	-	0.5		bal.	1.4021		
FE12V	2.8	1.0	7.0	-	1.5	-	V: 12	bal.		800 HV According to HT	High abrasive and wear resistance
WD54	1.2	-	4.0	-	5.0	-	W : 5.5 V : 3.0	bal.	HSS : AISI M 3		
WD91	1.0	-	3.8	-	8.5	-	W : 2.0 V : 2.0	bal.	HSS : 1.3348 - AISI M 7		
FE23C	2.0	1.5	26	10	5.0	-		bal.	SAE S 68000	350 HV	High corrosion and oxidation resistance

Nickel base super-alloys

COGNE Grade	C	Si	Cr	Fe	Mo	Nb	Others	Ni	Commercial grade	Properties	
IN600	< 0.1	-	16	8.0	-	-		bal.	Inconel 600 – 2.4816	170 HV	Good resistance to oxidation and corrosion at high temperatures
IN625	< 0.1	1.0	22	< 5.0	9.0	3.5	Ti : < 0.4 Al : < 0.4	bal.	Inconel 625 – 2.4856	200 HV	
IN825	< 0.03	< 0.5	21	30	3.0	-	Ti : 1.0	bal.	Incoloy 825 – 2.4858	155 HV	High resistance to both reducing and oxidizing acids
C22	< 0.02	< 0.08	22	4.0	13	W : 3.0	V : < 0.35 Co : < 2.5	bal.	Hastelloy C22** – 2.4602	180 HV	High resistance to oxidation and corrosion (pitting and stresscorrosion cracking)
C276	< 0.01	< 0.08	15	5.0	16	W : 4.0	V : < 0.35 Co : < . 2.5	bal.	Hastelloy C276** – 2.4819	180 HV	

Nickel base alloys

COGNE Grade	C	Si	B	Cr	Fe	Ni		Properties
NP20	< 0.2	2.5	1.5	-	< 1.0	bal.	240 HV	Self fluxing alloys with low hardness and easy to machine; suitable to build up moulds
NP25	< 0.5	2.5	1.7	-	< 1.0	bal.	280 HV	
NI35	0.3	3.5	1.3	6.0	2.0	bal.	350 HV	Self fluxing alloys with good wear and corrosion resistance. Excellent fluidity, suitable to build up moulds
NI40	0.25	3.5	1.6	7.5	2.5	bal.	420 HV	
NI50	0.45	3.8	2.3	11	2.5	bal.	600 HV	High hardness alloys with very good wear and corrosion resistance even at elevated operating temperatures
NI60	1.0	4.0	3.2	15	4.0	bal.	700 HV	

Copper base alloys

COGNE Grade	C	Si	Al	Ni	Fe	Cu	Properties
CU85	< 0.01	< 0.1	10	5.0	1.0	bal	High frictional and wear resistance
CU90	< 0.01	< 0.1	10	5.0	1.0	bal	