UltrAloy 10611

Atomised Metal powder for anti-wear coatings

Description:

Eutalloy 10611 (UltrAloy) is a micro-pulverised cobalt-nickel-chromium alloy with a high concentration of Diamax particles. It has been developed for protective coating of parts which must provide exceptionally high resistance to abrasion and erosion. Thanks to a special matrix composition Eutalloy 10611 makes it possible to protectively coat steel, stainless steel and cast iron parts working in temperatures of up to 7000C, providing at the same time excellent corrosion resistance.

Anti-wear composition

There are two essential components to this alloy, the matrix and the hard-phase Diamax particles, both micro-pulverised.

The Co-Ni-Cr matrix of Eutalloy 10611 is dense with special tungsten carbide hard particles, providing extra wear resistance.

The matrix has a hardness of 55 HRC. The polygonal-shaped, tungsten carbide Diamax particles have a hardness of approx. 1900μHV.

Excellent resistance to low/medium-pressure abrasion, fine-particle erosion and also against impact.

The special matrix composition ensures wear resistance up to 7000C, providing at the same time excellent corrosion resistance.

Base metals

For stainless, cast and other steels, and cast iron.

Cost-effective process

Used with a Eutalloy system torch, the Eutalloy 10611 alloy ensures coatings of smooth and uniform quality. The result is far superior to those obtained with conventional processes, saving the user on finish machining and other labour costs.

Technical Data:

	Minimum	*Typical*
Fusion range (°C):	1000	1100
Application temperature (°C):		~ 1500
Matrix (HV):		~725
Matrix (HRC):	54	59
Diamax (μHV:		~1900
Max. Service temperature (°C):		~700

Applications:

Protective coatings for extrusion screws, mould orifices, scraper blades, mixer blades, fan blades.

Procedure for use:

Preparation: Oxides, dirt, grease and all other contaminants must be carefully removed from the surfaces to be coated.

Preheating: No preheating is required for thin metal parts or when coating edges. Large, and especially thick parts must be preheated to about 300°C (blue hot).

Coating procedure: To prevent any oxidation of the base metal, we recommend an initial thin coat (0.2-0.3 mm) of Eutalloy 10611, with subsequent local heating to fuse. On cast irons: first spray a buttering layer of Eutalloy 10185. For large steel surfaces of medium hardness: a buttering layer of Eutalloy 10112 will improve wetting. No intermediate layer is usually necessary for low-alloy and stainless steels. The correct fusion temperature has been reached when the weld pool becomes bright (indicator function). For the first coat, use a carburising flame (i.e. with a flame "envelope" 2-3 times longer than the central "cone"). Similarly with further coats, use a carburising flame which enables a prolonged heat input to be maintained (without oxidising the molten alloy). This promotes an increased dissolution of hard Diamax constituents in the alloy matrix, thus improving resistance to fine-particle abrasion.

Distance between the flame cone tip and molten pool: 6 mm.

Recommended coating thickness: 0.52-2.0 mm

Leave component to cool slowly, avoid draughts. Where possible place it in vermiculite or kieselgur.

Machinability: By grinding.

Application Processes: Eutalloy torches A, B, KoolTip and SuperJet Eutalloy.

Packaging:

Eutalloy 10611 is available in 500 gram modules and 5kg Bulk MegaPaks for extra convenience.

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