

A Hard Nickel-Chromium Coating for Resistance to Abrasion

Eutectic 19910

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- Excellent grind finish capability
- Low coefficient of friction
- High compressive strength
- Excellent resistance to mild abrasion
- Best suited for shaft repair applications

Eutectic 19910

Eutectic 19910 is a uniquely formulated Nickel Chromium composite powder designed for use through the TeroDyn 2000, 3000 or the CDS 8000 combustion systems. It is essentially a NiCrBSi powder with aluminum to enhance bonding. The coatings produced are moderately hard, resistant to a broad range of corrosive environments and have excellent grind finish capability.

Use Eutectic 19910 coatings for shaft repair applications where resistance to abrasion is required.

Coatings of 19910 should be applied over a bond coating of 50000.

TECHNICAL DATA

Typical Values*	
Typical Hardness:	32-35 HRC
Coating Density:	8.67 g/cc (0.313 lb/in³)
Max. Service Temperature:	1000°F (≈538°C)
Typical Grind Finish:	< 32 microinches aa
Thickness Limitation:	0.100 inches (shaft repair)
Bonding:	Bond coat of 50000, 21021 or 21031
Coating Weight:	0.045 lb/ft ² - 0.001 in.
Porosity:	5%
Hall Flow Rate:	17 sec/50 g
Melting Point:	2025°F (≈1110°C)

Note – Aluminum constituent melts at 1220°F (660°C)

Typical Composition:

Nickel, Chromium, Boron, Silicon, Iron with Aluminum

PROCEDURE

FOR USE

Grind finish only (do not use coolant unless coating is sealed) Coatings of 19910 are best finished by grinding. Optimal results are achieved using nominal 60 -100 grit aluminum oxide or silicon carbide wheels. Super finishes are possible using silicon carbide or diamond cloth with a mineral base hydraulic oil or kerosene. Polishing the ground coating with successively finer grit papers (240 - 1200) will also produce super fine finishes.

Recommended Spray Parameters

TD 2000

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0-15 psi

8 inches

65 sfpm

15 psi

125

0.1

Nozzle RotoJet: Module Adaptor: Oxygen: Acetylene: T-Valve Setting: Coating Rate: Spray Distance:

TD 3000

Nozzle: Oxygen: Acetylene: Carrier Gas: Terometer: Coating Rate: Deposit Efficiency: 85% Spray Distance:

CDS 8000

Flame Setting: **Container Setting:** Air/Torch: Air Extension: Terometer: Spray Distance: Vc Rotation: Advance in Rev:

RI 200 RPA 3@ 20 psi air Yellow/Red 50 psi / 35 flow (FM-1 flowmeter) 12 psi / 75 flow (FM-1 flowmeter) 14-16 clicks 18 lb/hr 7 to 9 inches

RL 210W RPA-3@20 psi air 50 psi / 38 flow (3310 flowmeter) 12 psi / 60 flow (3310 flowmeter) (Ar or N2) 55 psi / 37 flow Adjust to achieve spray rate 15 lb/hr 8 to 10 inches

TYPICAL APPLICATIONS

- Impeller Shafts
- Fan Shafts
- Spindles
- Machine Element Repair



Observe normal spraying practices, respiratory protection and proper air flow pattern advised. For general spray practices, see AWS Publications AWS C2. 1-73, "Recommended Safe Practices for Thermal Spraying and AWS TSS-85, "Thermal Spraying, Practice, Theory and Application." Thermal spraying is a completely safe process when performed in accordance with proper safety measures. Become familiar with local safety regulations before starting spray operations. DO NOT operate your spraying equipment or use the spray material supplied, before you have thoroughly read the equipment instruction manual. Refer to the Eutectic website for Material Safety Data Sheet (MSDS) information. DISREGARDING THESE INSTRUCTIONS MAY BE HAZARDOUS TO YOUR HEALTH.



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