Castolin Eutectic®
Eutectic Castolin

An Atomized Nickel-Alloy Powder
Designed Primarily for use in the
Spray and Fuse Process

Eutectic 23075

- Excellent abrasion resistance
- May be applied using the cold spray process to produce a “gripping” coating
- Very good erosion resistance

Eutectic 23075

Eutectic 23075 is a high performance atomized nickel alloy powder blended with carbide particles (sintered tungsten carbide cobalt powder) designed to produce hard coatings which offer excellent abrasion resistance.

This blend is primarily used to produce a hot process spray and fuse coating which resists abrasion or erosion where the abrasive particulate is finer than about 200 mesh (0.0029 inch diameter).

This powder can also be applied as a cold process coating over a bond coat to produce a gripping coating with a surface roughness of about 350 micro-inch RMS for applications which require moderate gripping action.

TECHNICAL DATA

Typical Values*	
Macro-Hardness:	58 HRC
Micro-Hardness of Carbide:	75 HRC
Density:	8.4 g/cc
Shrinkage on Fusing:	17 - 20 %
ASTM G-65 Schedule A Volume Loss:	13 mm^3
Approximate Thermal Expansion:	200-1000°F: 7.4 x 10^{-6}/°F 1000-1400°F: 7.2 x 10^{-6}/°F 1400-1800°F: 8.0 x 10^{-6}/°F
Hall Flow Rate:	15 seconds
Bulk Density:	4.5 g/cc
Powder Coverage:	0.057 lb/ ft^2 @ 0.001"

Nominal Composition:
NiCrBSi + 40% WC/Co

PROCEDURE FOR USE

Grinding Wheel Type: Green Silicon Carbide
Grit Size: 60 - 80 Grade: H (soft) Structure: 5
Bond Type: Vitrified
Wheel Speed: Use Manufacturer's Recommendation
Work Speed: 50 -65 surface feet per minute
Traverse Speed Roughing: 5-15 inches per minute
Finishing: 3-8 inches per minute
In-Feed Roughing: 0.001 inches per pass
Finishing: 0.0005 inches per pass or less
Coolant: Flood coolant with rust inhibitors in 2-5% concentration

Notes: *1. Before grinding, all edges and ends of coating must be chamfer ground.*
2. Frequently dress the grinding wheel face to reduce friction and heat.

Recommended Parameters

TD 2000

Nozzle:	RL 200
RotoJet:	RSF-1 @ 10 psi air
Module Adaptor:	Yellow/Red
Oxygen:	50 psi / 30 flow (FM-1 flowmeter)
Acetylene:	12 psi / 60 flow (FM-1 flowmeter)
T-Valve Setting:	10-12 clicks
Spray Rate:	16 lb/hr
Spray Distance:	7 to 9 inches
Deposit Efficiency:	90%

TD 3000

Nozzle:	RL 200
Oxygen:	50 psi / 32 flow
Acetylene:	12 psi / 48 flow
Carrier Gas:	Ni @ 50 psi
Terometer:	90
Spray Rate:	15 lb/hr
Spray Distance:	7 to 9 inches
Deposit Efficency:	90%

CDS 8000

Flame Setting:	SSM 20 - Neutral
Oxygen Pressure:	60 psi
Acetylene Pressure:	10 psi
Air Pressure:	45 psi w/extension
Spray Distance:	8 inches
Vc Rotation:	65 SFPM
Advance in Rev.:	0.1 in/rev
Container Mounting setting:	4

TYPICAL APPLICATIONS

- Fan blades
- Mud pumps
- Pump cylinders
- Harrows
- Fly-ash separators
- Slurry Pumps
- Pump pistons
- Mixing auger blades

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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05-2021