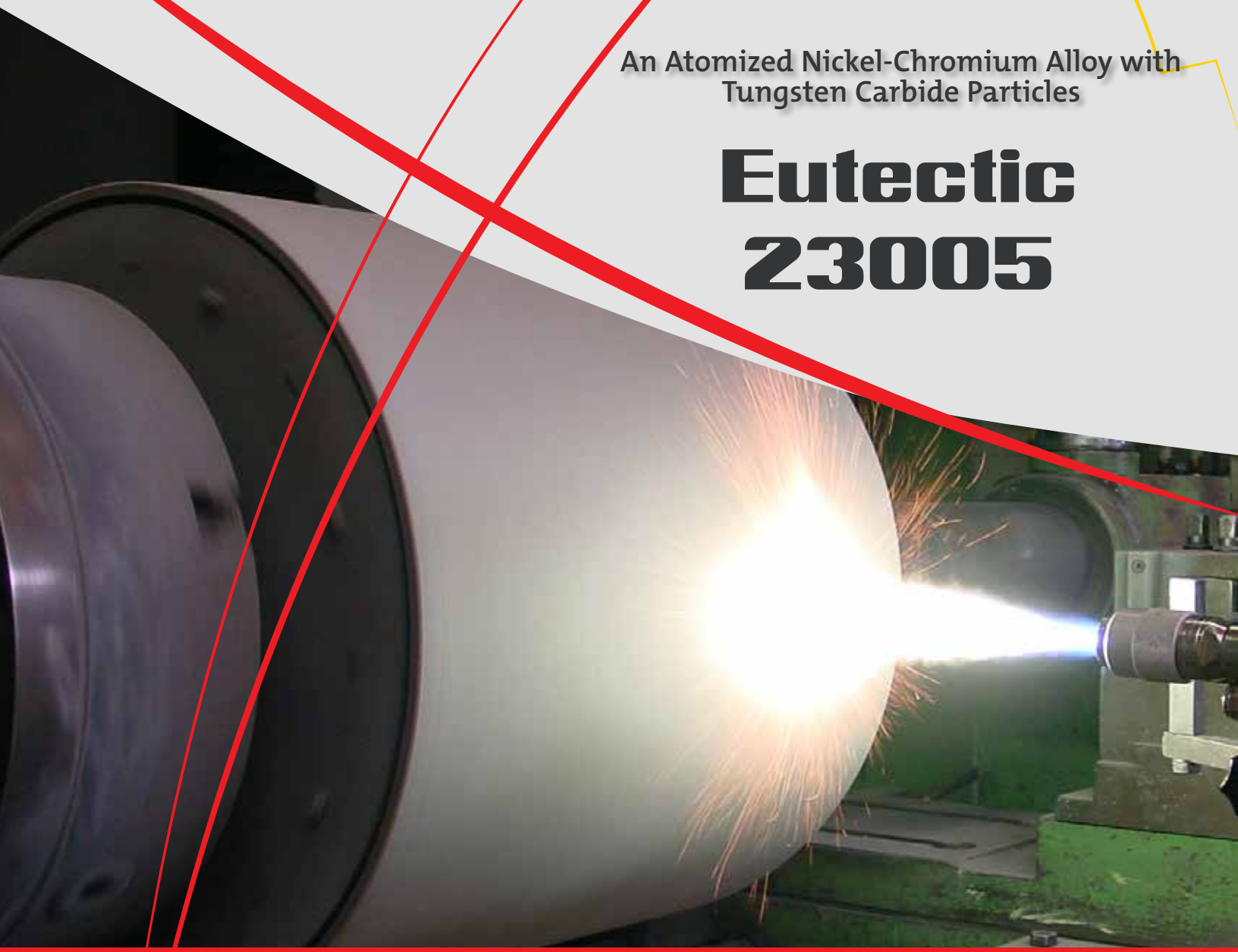
Castolin Eutectic®
Eutectic Castolin

An Atomized Nickel-Chromium Alloy with Tungsten Carbide Particles

Eutectic 23005



- Hot process spray and fuse alloy
- May be used over a bond coating
- Excellent resistance to abrasion
- May be used with Plasma Transferred Arc Process

Eutectic 23005

Eutectic 23005 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 best resists abrasion or erosion where the abrasive particulate is larger 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 1 mil for applications which require good gripping action.

Eutectic 23005 can also be applied by the Plasma Transferred Arc Welding Process (PTA) for high productivity hardfacing.

TECHNICAL DATA

Typical Values*	
Macro-Hardness:	60 HRC
Micro-Hardness of Carbide:	75 HRC
Density:	8.4 g/cc
Shrinkage on Fusing:	17 - 20 %
ASTM G-65 Schedule A Volume Loss:	14 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:	0.051 lb/ ft^2 @ 0.001”

Nominal Composition:
Nickel, Chromium, Boron, Silicon, Iron, Carbon, Cobalt, Tunsten

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:	RPA 3@ 20 psi air
Module Adaptor:	Yellow/Red
Oxygen:	50 psi / 35 flow (FM-1 flowmeter)
Acetylene:	12 psi / 60 flow (FM-1 flowmeter)
T-Valve Setting:	14-18 clicks
Coating Rate:	18 lb/hr
Spray Distance:	7 to 9 inches

TD 3000

Nozzle:	RL 200
Oxygen:	50 psi / 32 flow (3310 flowmeter)
Acetylene:	12 psi / 48 flow (3310 flowmeter)
Carrier Gas:	Ni @ 55 psi / 37 flow
Terometer:	120
Coating Rate:	20 lb/hr
Spray Distance:	7 to 9 inches

CDS 8000

Flame Setting:	SSM 20 - Neutral
Oxygen Pressure:	60 psi
Acetylene Pressure:	10 psi
Air Pressure:	15 psi w/extension
Spray Distance:	8 inches
Vc Rotation:	65 sfpm
Advance in Rev.:	0.1 in/rev

TYPICAL APPLICATIONS

- Bucket Teeth
- High Pressure Coal Slurry Pump Parts
- Slurry Pipes
- Coring Rods
- Thrust Collars

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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