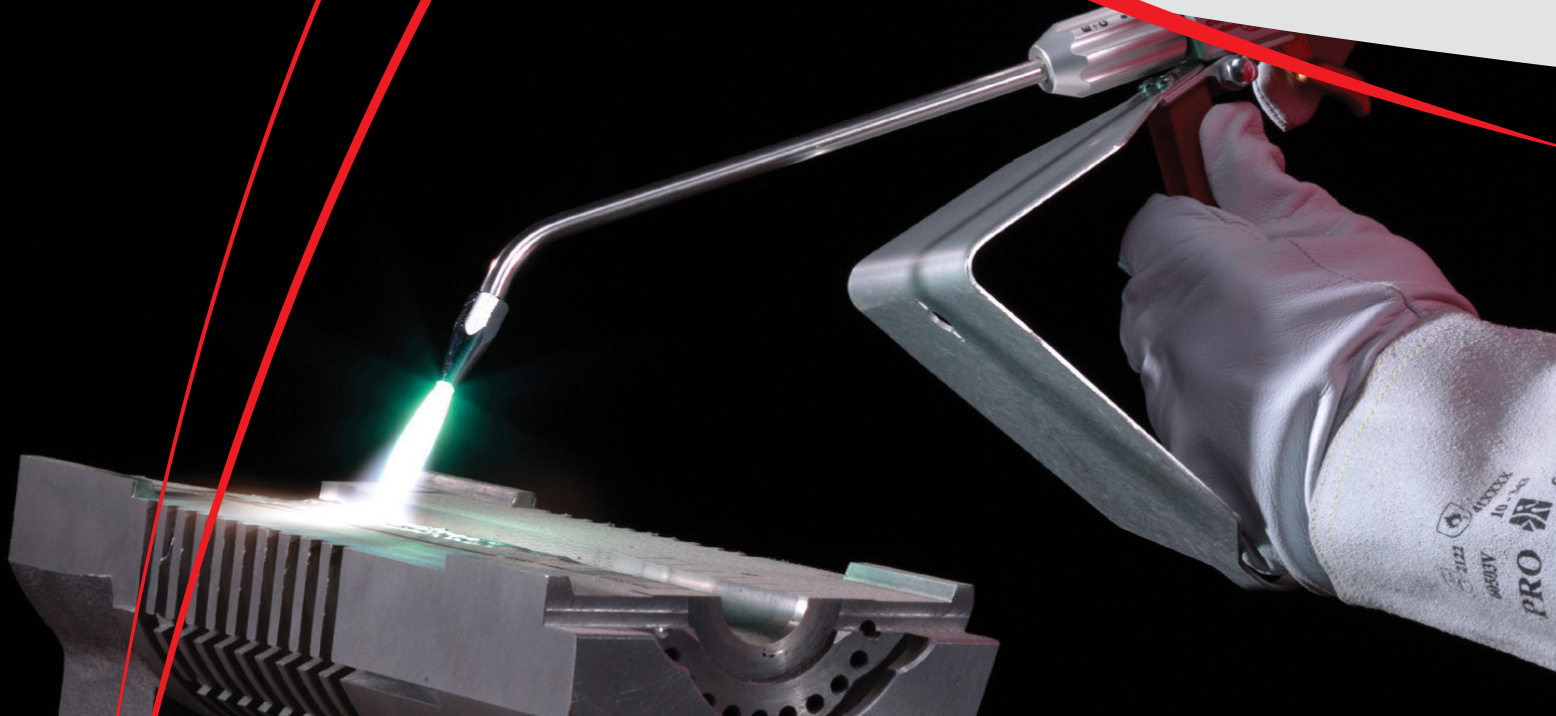




Nickel-Based Fusible Alloy  
with Tungsten Carbide

# **Eutectic®**

## **4540**



- 45% cast and crushed tungsten carbide particles
- Excellent resistance to abrasion and erosion
- Coating can be finished by grinding

# Eutectic® 4540

Eutectic 4540 is a nickel-based fusible alloy with 45% cast and crushed tungsten carbide particles. Coatings of 4540 have excellent fluidity and are easier to finish when compared to Eutectic 4540. The coating offers exceptional resistance to abrasion and erosion and can be finished by wet grinding. Eutectic 4540 is manufactured by a process of atomization, designed to ensure both optimum spheroidization and controlled granulometry. This ensures trouble-free fusion of the alloy using our SuperJet S Eutalloy torch. This maintenance-engineered coating technology increases the value and reliability of treated parts and offers far superior results than conventional repair processes.

## FINISHING PROCEDURE

**Grinding Wheel Type:** Green Silicon Carbide (Roughing)  
**Grit Size:** 60 - 120  
**Grade:** I - L  
**Structure:** 5 - 6 - 7  
**Bond Type:** Vitrified  
**Wheel Speed:** 6500 ft. per minute  
**In-Feed:** 0.001 in. per pass  
**Coolant:** Flood coolant with rust inhibitors

4540 is formulated with 45% WC particles in an HRC 36 nickel-based matrix. This is done to provide a more crack free deposit for high impact applications.

**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.

**Grinding Wheel Type:** Aluminum Oxide (Finishing)  
**Grit Size:** 120 or finer  
**Grade:** I - L  
**Structure:** 7 - 8 - 9  
**Bond Type:** Vitrified  
**Wheel Speed:** 6500 ft. per minute  
**In-Feed:** 0.0005 in. per pass, or less  
**Coolant:** Flood coolant with rust inhibitors

**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.

## PROCEDURE FOR USE

**Preparation and Powder Overlay:** Clean the work piece and adjacent areas with Eutectic Rotoclean to remove all traces of grease, oil and surface contaminants.

Grit blast the surface to be coated with angular chilled iron grit (G16), or aluminum oxide grit, 16 - 24 media. Establish a surface finish of 2 - 3 mill profile and spray with Rotoclean again to remove any trace of contamination.

Pre-heat work piece to 350°F - 400°F (178°C - 204°C). Apply Eutectic 4540 Wc overlay powder to the desired thickness, allow 20% overspray at this point to accommodate coating shrinkage during the fusing process. Proceed to heat the workpiece uniformly to a "cherry red" temperature. Fuse from the leading edge of the coating advancing to complete the fusing of the sprayed area.

## TECHNICAL DATA

Typical Values	
Matrix Hardness:	HRC 59
WC Hardness:	Vickers 1900
Maximum Operating Temp.:	1000°F (550°C)
Volume Loss (G-65):	15 mm <sup>3</sup>
Matrix Chemistry:	Ni-Cr-B-Si-Fe

## TYPICAL APPLICATIONS

Coating of machine parts used in the transport, handling, and processing of minerals:

- Transport Screws
- Clay Mixers
- Wipers
- Augers
- Turbine Impellers
- Pump Screws
- Fan Impellers
- Feed Screw Segments

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 T55-85, "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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