

# SermAlcote™ Diffused Slurry Aluminide Coating

## Alternative to Pack and Vapor-Phase Aluminizing Processes

SermAlcote™ slurry aluminizing process produces extremely uniform diffused aluminide coatings. SermAlcote coating offers an alternative to many industrial pack and vapor-phase aluminizing processes used for producing protective coatings.

### Advantages

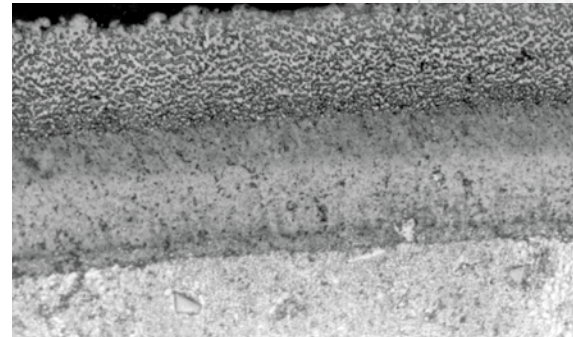
- Extremely uniform coating thickness around edges and in fillets
- Improved cooling hole and narrow passage coating capabilities
- Coating structures can mirror pack or diffusion aluminides
- Outstanding oxidation and hot corrosion protection
- Potential for lean manufacturing one piece flow

SermAlcote slurry coatings overcome initial application thickness control issues because the formation of the coating is determined by only processing time and temperature, not applied slurry amount.

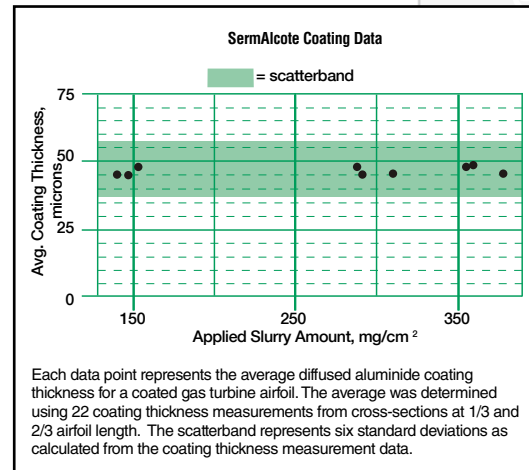
In addition, leading and trailing edges are not preferentially aluminized as in pack processes. SermAlcote coating also makes possible a greater degree of process repeatability.

### Applications

SermAlcote coating offers significant improvements in cost, quality, and turntime over competitive aluminizing processes for gas turbine hot section components. SermAlcote-based processes have been developed to meet common commercial aluminide process specifications for aluminide coatings, platinum-modified aluminide coatings, and overalluminized MCrAlY coatings.



Platinum aluminide coating formed with SermAlcote coating. (500X)



### SermAlcote Diffusion Processes

Coating System	Description	Typical Composition*	Typical Thickness*
Aluminide	Provides oxidation protection for nickel, cobalt, and iron-based alloys.	22-30 wt.% Al	20-80 µm
Platinum Aluminide	Utilizes a platinum electroplate prior to aluminization for superior oxidation and hot corrosion protection.	40-55 wt.% Pt 24-28 wt.% Al	35-95 µm
Overalluminized MCrAlY	Provides aluminum-enriched surface layer to metallic overlay coatings for improved oxidation protection.	22-32 wt.% Al	25-75 µm

\* Exact composition and thickness will depend on processing time and temperature.

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