

Bulletin

Praxair Surface Technologies
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Indianapolis, IN 46224

Praxair Surface Technologies
TAFE Incorporated
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Powder Characteristics

TAFE 1275H *Nickel-Chromium Self-Fluxing Alloy*

Nominal Composition: **% Weight**

Chromium	16
Silicon	4
Iron	4
Boron	3.5
Carbon	0.8
Nickel	Balance

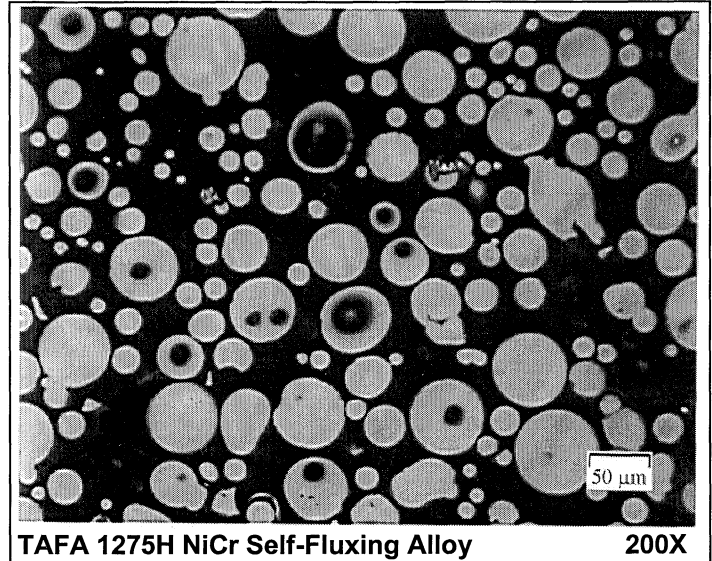
Powder Type: Gas Atomized

Particle Shape: Mainly Spherical

Particle Size: -230 mesh (-62µ)/D

AD (g/cm³) (ASTM B-212) typical: 4.24

Hall Flow (sec/50g) (ASTM B-213) typical: 13.56



This powder has been made exclusively for high velocity thermal spraying. Spraying with TAFE 1275H results in dense, smooth coatings that are hard (R_c 52). Good finishes can be achieved with little stock removal. TAFE 1275H is a self-fluxing alloy that can be “fused” after spraying to produce an even denser coating that is essentially pore-free. Though in many cases, the as-sprayed coating is good enough to be used as is to replace spray and fused coatings. Coatings of TAFE 1275H have excellent corrosion resistance. The coatings are well suited for wear resistance by abrasion and hard surfaces, fretting, particle erosion and cavitation. TAFE 1275H coatings are suitable for chrome replacement for corrosion resistance but have a slightly lower hardness. TAFE 1275H coatings can be used in temperatures up to 1500°F (815°C). Coatings of TAFE 1275H can be finished using conventional grinding wheels made of aluminum oxide or silicon oxide. TAFE 1275H can be used in the JP-5000 and the JP-5000\leftrightarrowST HP/HVOF.

Typical Applications:

- **Wear:** Fretting wear, Pump sleeves, Glass mold plungers, Piston Rings, Hot forming dies, Forging tools, Steel mill rolls, Low temperature sliding wear
- **Cavitation:** Pump cavitation, Wear rings on hydraulic turbines
- **Particle Erosion at temperatures up to 1500°F (815°C):** Exhaust fans, Cyclone dust collectors, Pump valve plugs and seats, Power generation “soot blower” erosion
- **Chrome plate replacement for corrosion**

Consult your TAFE coatings application engineer for help in solving your specific coating requirements.

Typical High Velocity Applied Coating Properties:

Finish	As Sprayed Ground	260 - 280 $\mu\text{in } R_a$ Less than 10 $\mu\text{in } R_a$
Bond Strength		6,500 psi
Hardness -	Superficial Macro Micro	87 R_{15N} 52 R_C 770 - 875 DPH_{300}
Microstructure -	Porosity Oxides	1 - 2% Less than 1%

The information provided herein is believed to be accurate and reliable; however, results may vary with workpiece preparation and operator technique. TAFE warrants only that the powders are free of defects in material and workmanship. No other warranty is expressed or implied.

Hazards:

Observe normal spraying practices. Respiratory and hearing protection is advised. For general guidelines see AWS Publication C2.1-73, and AWS TSS-85. Thermal spraying is a safe process when performed in accordance with proper safety measures.

TAFE Delivers Your “Operating Advantage”

TAFE's primary objective is to ensure you consistently get the coating quality you require...with greatest application ease...at the lowest coating costs. TAFE accomplishes this by engineering the most advanced thermal spray materials and equipment available.

***Coating Performance + Ease-of-Use + Low Costs =
“Operating Advantage”***

For further information on HVOF coatings, equipment and supplies, as well as other thermal spray processes and custom automated systems, contact: