

# IPC 1660 (HKH12QF)

PRODUCT SPECIFICATIONS



**IPC-1660** is a 100% solid Novalac-modified epoxy powder based on Cresol-Novolac chemistry with excellent temperature and corrosion protection characteristics.

**IPC 1660** is used at elevated temperatures and pressures in drill pipe, production tubing, CO<sup>2</sup> injection tubing as well as valves and fittings. The product displayed no swelling, no blistering, no cracking, no detachment from the substrate, and nearly no color change when the coated substrate was exposed to controlled tests at temperatures of up to 300 °F

### Additional Information:

#### Recommended Services:

- Salt water disposal (SWD)
- H<sub>2</sub>O injection
- CO<sub>2</sub> injection (WAG)
- High H<sub>2</sub>S environments
- High temperatures

#### Benefits:

- Excellent corrosion resistance
- High abrasion resistance
- Hydraulic improvement
- Excellent acid / caustic resistance

#### Characteristics:

- Color: light green
- Generic type: Cresol Novolac
- Primer: phenolic
- Operating temperatures: 300°F (149°C)
- Thickness: 10-20 dry mils

#### Abrasion Resistance (Taber Abrasion Test | ASTM D4060):

- CS-17 wheel at 1,000g load at 1,000 cycles
- Average weight loss: 140 mg



### Successful Autoclave Results\*:

Temperature	Pressure	Test Conditions	Time Period	Result
350°F	5,500 psi	3% CO <sub>2</sub> / 97% CH <sub>4</sub> / 0.2% H <sub>2</sub> S Gas : Formation Water Sodium Chloride, Calcium Chloride Magnesium Sulphate, Hydrogen carbonate	7 Days	No swelling, blistering or detachment from substrate Discoloration in gas phase
300°F	6,500 psi	5% H <sub>2</sub> S/ 3 % CO <sub>2</sub> / 92% CH <sub>4</sub> / Gas : Formation Water Sodium Chloride, Calcium Chloride Magnesium Sulphate, Hydrogen carbonate	7 Days	No swelling, blistering or detachment from substrate No discoloration
150°F	285 psi	100% CO <sub>2</sub> / Wasia Water: Na = 2500 ppm, Ca = 600 ppm, Mg = 120 ppm, Cl = 4000 ppm, SO <sub>4</sub> = 1000 ppm, HCO <sub>3</sub> = 200 ppm, pH = 6.8 – 7.2	30 Days	No swelling, blistering or detachment from substrate Pass X Scribe Adhesion
300°F	10,000 psig	3% CO <sub>2</sub> / 97% N <sub>2</sub> / Instant decompression	16 Hours	Pass

\*These test results are presented as simulated conditions and should be used as guidelines only; they are not intended for warranty serviceability.