



# Product Bulletin

## FAST QUENCH 70

**BRAD PENN® Fast Quench 70** is a fast-speed quenching oil formulated to optimize heat resistance using paraffinic base oils and unique *PENN GRADE™* resins. Sludge-forming tendencies are reduced to a minimum and the quench oil's ability to continuously produce bright finish parts is enhanced. **BRAD PENN® Fast Quench 70** provides outstanding stability in its resistance to the oxidation effects of quenching operations. It exhibits excellent thermal stability, retaining its original viscosity in normal service. Additionally, this product minimizes cracking and distortion through controlled cooling of parts, requires no additive replacement, and its high flash point helps minimize fire hazards.

**BRAD PENN® Fast Quench 70** is recommended for use when deeper and more uniform hardening is required in steels having small grain size or wide variation in grain size, in steels lean in alloy content, when minimum distortion is required in high hardenability steels, or in parts having odd shapes or variable sections. It is also ideally suited for use when parts must retain a bright finish. Such parts are usually heat treated under a protective atmosphere. Conventional quenching oils do not “wet” the smooth, shiny surface. However, this product is formulated to adhere to the surface, thus preserving the bright finish and resulting in more even cooling.

### BRAD PENN® Fast Quench 70 – Typical Properties

<b>ISO Viscosity Grade</b>		<b>15</b>
Quench Oil Stain Test	<b>Test Method</b>	Pass
GM Magnetic Quenchometer, sec	ASTM D-3520	10.4
API Gravity, 60°F	ASTM D-1298	34.6
Density, lbs/gal (g/L)	Calculated	7.11 (852)
Viscosity, cSt @ 40°C	ASTM D-445	14.5
Viscosity, SUS @ 100°F	ASTM D-2161	75.5
Pour Point, °F (°C)	ASTM D-5949	-10 (-24)
Flash Point, COC, °F (°C)	ASTM D-92	375 (190)
Color	ASTM D-1500	opaque
Conradson Carbon Residue, mass %	ASTM D-189	0.54
<b>Product Code</b>		<b>4670</b>

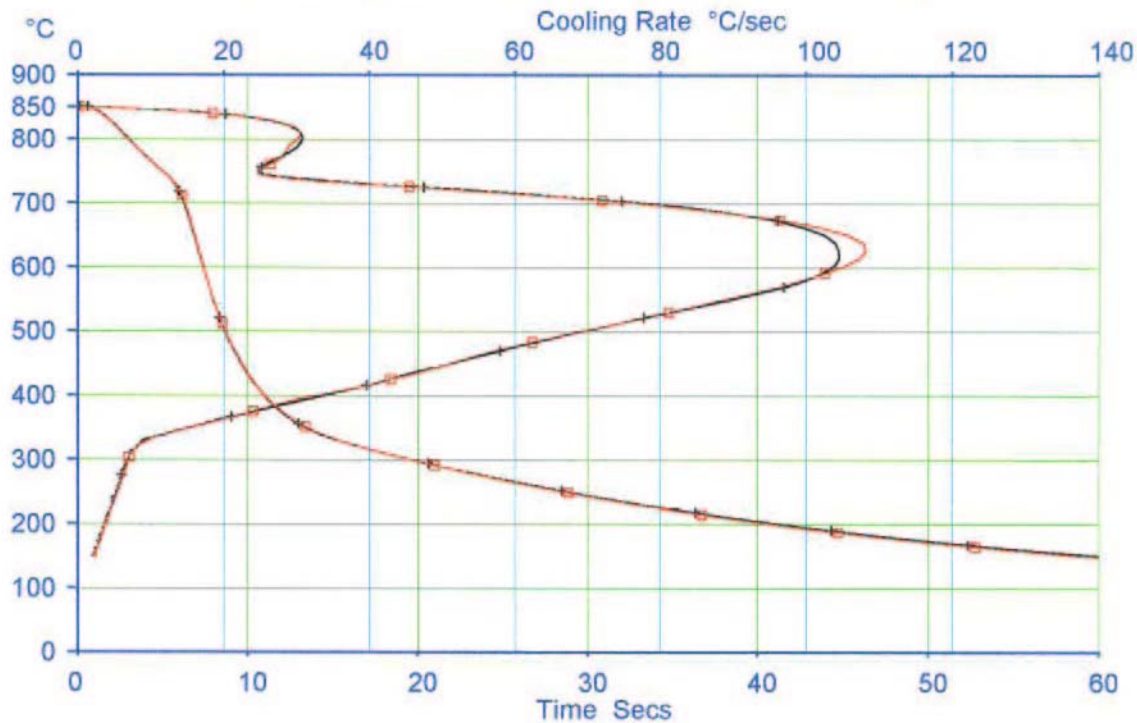


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## BRAD PENN<sup>®</sup> Fast Quench 70 – Quenchalyzer Data



The cooling curve and cooling rate curve shown above were generated in accordance with ASTM D-6200. The data presented below are the average values obtained from the duplicate testing for **BRAD PENN<sup>®</sup> Fast Quench 70**.

## BRAD PENN<sup>®</sup> Fast Quench 70 – Cooling Characteristics

Maximum Cooling Rate, °C/sec	ASTM D-6200	106.4
Temperature at Maximum Cooling Rate, °C	ASTM D-6200	620
Cooling Rate at 300°C, °C/sec	ASTM D-6200	6.90
Time to reach 600°C, sec	ASTM D-6200	7.4
Time to reach 400°C, sec	ASTM D-6200	10.9
Time to reach 200°C, sec	ASTM D-6200	40.8