

# DuPont™ Kalrez® V-Rings for Oil Production Six-Year Service Record

Technical Information — Rev. 2, July 2010

The outstanding service record for DuPont™ Kalrez® parts in oil production applications is best shown by the results of testing V-rings recovered after six years' service in a producing well. As shown in Table 1 and Figures 1–3, except for slight drop in hardness, the aged V-rings were indistinguishable in physical properties and appearance from the un-aged control.

We know of no other product that performs as well in service conditions this severe.

**Figure 1. This Kalrez® V-ring was essentially unaffected by six years downhole.**



**Table 1. Kalrez® V-Rings: Six-Year Service Record**

Conditions	Production	
Depth, 4,602 m (15,100 ft)	3,000 BBL/Day Oil	
Temperature, 149 °C (300 °F)	125 BBL/Day Water	
Pressure, 46.2 MPa (6,700 psi)	Gas/Oil Ratio—1.3	

Physical Property Comparisons (Kalrez® 3065)		
	New V-Rings	Six-Year Downhole V-Rings
Tensile at Break <sup>1</sup> , MPa (psi)	24.10 (3,495)	21.50 (3,120)
Elongation <sup>1</sup> , %	30	30
Hardness <sup>2</sup> , Shore A	90	85

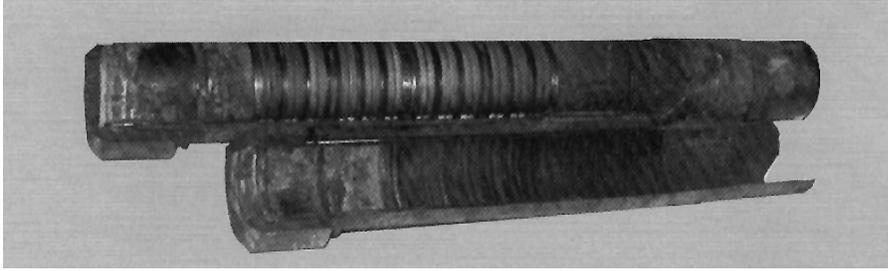
<sup>1</sup> ASTM D412, 500 mm/min (20 µm/min)

<sup>2</sup> ASTM D2240

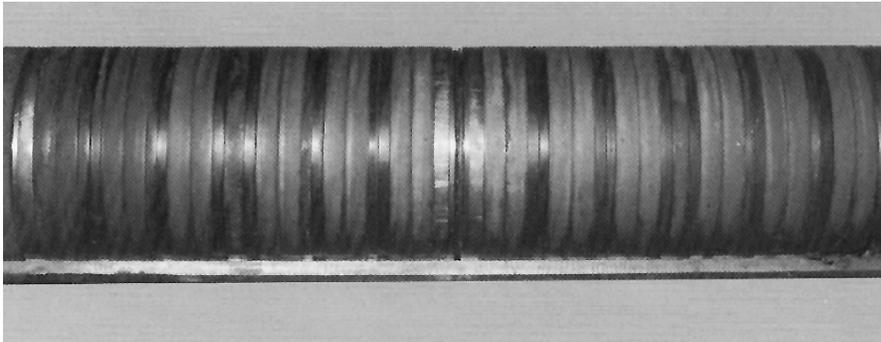


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**Figure 2. Tubing-to-packer seal after six years downhole.**



**Figure 3. Close-up of Figure 2.**



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