

**DESCRIPTION** FRITZ PCR-4 is a cement retarder and retarder intensifier used to control the thickening time of a cement slurry.

**ADVANTAGES**

- PCR-4 has a high solubility in water and may be added to the mixing water or dry blended with the cement.
- It may be used to control the setting of a slurry for bottom hole circulating temperatures from 220°F (104 C) to 430°F. (221 C)

**APPLICATION**

- Its primary application is as a retarder intensifier for use with Fritz PCR-3.
- PCR-4 may be used for retarding any API class of cement (A, C, G or H).
- It may be used with other cement additives such as fluid loss additives, silica flour, dispersants, defoamers and weighting materials.

**PROPERTIES**

- White Granular Powder
- Specific Gravity – 1.76
- Bulk Density – 45 lb./gal.
- Absolute Volume – 0.0681 gal./lb.
- Packaged in 50 lb. bags
- Loading Rate – 0.2 to 2.0% bwc
- See Thickening Time Data

The information contained herein is based on data considered accurate with representative samples. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. The above data does not imply specifications for this product. Fritz Industries, Inc. assumes no responsibility for personal injury or property damage to vendees, users or third parties, caused by the material. Such vendees or users assume all risks associated with the use of the material. Consult the Material Safety Data Sheet before using this product.

**PCR-4**

**CEMENT RETARDER INTENSIFIER TESTING**

**THICKENING TIME AND UCA DATA IN CLASS H CEMENT  
CONTAINING SATURATED SALT, 35% #1 SILICA SAND AND 0.5% FLA  
5.51 GAL./SK (20.9 L/SK); 17.0 LB./GAL. (2.0 KG/L)**

<b>PCR-4, % BWC</b>	<b>PCR-3, % BWC</b>	<b>THICKENING TIME, H:MM @ 285°F (140 C)</b>
0.3	0.65	3:15
0.3	0.55	3:30
0.2	0.55	2:24
0.3	0.55	3:36
0.4	0.55	4:29

**THICKENING TIME AND UCA DATA IN CLASS H CEMENT  
4.8 GAL./SK (18.2 L/SK); 15.9 LB./GAL. (1.9 KG/L)**

<b>PCR-4, % BWC</b>	<b>PCR-3, % BWC</b>	<b>THICKENING TIME, H:MM @ 270°F (132 C)</b>
0.0	0.7	0:40
0.2	0.7	2:59
0.4	0.7	7:19
0.6	0.7	7:56

**THICKENING TIME AND UCA DATA IN CLASS H CEMENT  
CONTAINING 35% #1 SILICA SAND AND 1.0% FLA  
5.1 GAL./SK (19.3 L/SK); 17.0 LB./GAL. (2.0 KG/L)**

<b>PCR-4, % BWC</b>	<b>PCR-3, % BWC</b>	<b>THICKENING TIME, H:MM @ 370°F (188 C)</b>
1.0	2.0	7:20
0.9	1.8	5:57
0.8	1.6	5:27
0.7	1.4	4:40
0.6	1.2	3:55

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