

- DESCRIPTION** FRITZ PCR-2 is an acrylic polymer used to control the thickening time of a cement slurry.
- ADVANTAGES**
- PCR-2 is a free flowing powder that may be dry blended with cement before mixing.
 - It may be used to control the setting of a slurry for bottom hole circulating temperatures up to 250°F. (121 C).
 - In saturated salt slurries, it may be used up to 350°F. (177 C)
 - It has a retarding and dispersing effect on the cement slurry during placement.
- APPLICATION**
- PCR-2 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 Powder
 - Specific Gravity – 1.47
 - Bulk Density – 35 lb./gal.
 - pH – 6-7
 - Water requirements – none
 - Packaged in 50 lb. bags
 - Loading Rate – 0.1 to 1.0% 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-2

POLYMER CEMENT RETARDER TESTING

FLUID LOSS ADDITIVE COMPATIBILITY

Atmospheric Consistometer – 180°F
Viscometer Readings - 180°F
High Temperature Stirring Fluid Loss - 245°F

Freshwater:

Joppa Class H Cement
35% bwc 100 Mesh Silica
38% bwc Water
0.7% bwc PCR-2
0.5% bwc FL-17

Atmospheric Consistometer		RHEOLOGY (rpm)				Fluid loss
u_i	u_f	$\frac{600}{275}$	$\frac{300}{159}$	$\frac{200}{113}$	$\frac{100}{61}$	$\frac{cc}{44}$
11	10					

Saturated Saltwater:

Joppa Class H Cement
35% bwc 100 Mesh Silica
38% bwc Water
37% bww Salt
0.3% bwc PCR-2
0.8% bwc FL-17

Atmospheric Consistometer		RHEOLOGY (rpm)				Fluid loss
u_i	u_f	$\frac{600}{262}$	$\frac{300}{127}$	$\frac{200}{91}$	$\frac{100}{48}$	$\frac{cc}{50}$
12	9					

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POLYMER CEMENT RETARDER TESTING

THICKENING TIME AND COMPRESSIVE STRENGTH DATA

TXI CLASS H CEMENT

4.3 GAL./SK, 16.4 LB./GAL., 1.06 CU.FT./SK

<u>PCR-2, % BWC</u>	<u>API SCHEDULE</u>	<u>BHCT, °F</u>	<u>THICKENING TIME,</u> <u>H:MM</u>
0.4	6G	174	3:04
0.4	6G	174	2:52
0.2	6G	200	1:46
0.3	6G	200	2:38
0.4	6G	200	4:45
0.4	6G	200	4:12
0.8	7G	250	3:10
0.9	7G	250	4:48

LAFARGE CLASS G CEMENT

5.0 GAL./SK, 15.8 LB./GAL., 1.15 CU.FT./SK

<u>PCR-2 %, BWC</u>	<u>API SCHEDULE</u>	<u>BHCT, °F</u>	<u>THICKENING TIME,</u> <u>H:MM</u>	<u>COMP. STR. 12 HR.</u> <u>@ 174°F, PSI</u>
0.4	6G	174	3:11	1977
0.5	6G	174	4:07	646
0.4	6G	200	3:38	
0.5	6G	200	4:24	
0.8	7G	250	3:54	
0.9	7G	250	5:15	

JOPPA CLASS H CEMENT

100 Mesh

<u>PCR-2 %, bwc</u>	<u>% SALT, bww</u>	<u>% Water, bwc</u>	<u>Silica, bwc</u>	<u>API</u> <u>SCHEDULE</u>	<u>BHCT, °F</u>	<u>TIME TO 70</u> <u>Bc, H:MM</u>
0.2	0	35	0	7G	200	3:23
0.225	0	35	0	7G	200	4:27
0.2	37	38	0	7G	200	3:42
0.7	0	35	35	7G	250	4:17
0.3	37	38	35	7G	250	3:58
0.7	37	35	35	9G	308	4:27
1.0	37	35	35	9G	308	7:31

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