Typical Gel Times for DERAKANE 411 Resins Using MEKP

Temperature	10–20 minutes	20–40 minutes	40–60 minutes
Cool – 60s°F (15°-20°C)	1.25% MEKP 0.30% CoNap 0.20% DMA	1.25% MEKP 0.30% CoNap 0.05% DMA	1.25% MEKP 0.20% CoNap 0.03% DMA
Warm – 70s°F (21°-26°C)	1.50% MEKP 0.30% CoNap 0.05% DMA	1.50% MEKP 0.20% CoNap 0.05% DMA 0.05% 2, 4-P	1.25% MEKP 0.20% CoNap 0.05% DMA 0.075% 2, 4-P
Hot – 80s°F (27°-32°C)	1.25% MEKP 0.20% CoNap 0.05% DMA	1.00% MEKP 0.20% CoNap	1.25% MEKP 0.20% CoNap 0.10% 2, 4-P

Table information is not intended for use with 411-350 PA or 411-700 PAT.
Materials used with DERAKANE 411 series resins are 6% cobalt naphthenate (CoNap); 100% N, N-dimethylaniline (DMA); MEKP (9% active oxygen); and 100% 2, 4-pentanedione (2, 4-P).
Because of the reactive nature of these products, gel times can vary.
Always test gel times with a small amount of resin before formulating large quantities.

Typical Gel Times for DERAKANE 411 Resins Using BPO and DMA

Temperature	10–20 minutes	20–40 minutes	40–60 minutes
Cool – 60s°F (15°-20°C)	2.00% BPO 0.20% DMA	1.50% BPO 0.15% DMA	1.50% BPO 0.10% DMA
Warm – 70s°F (21°-26°C)	1.50% BPO 0.15% DMA	1.00% BPO 0.10% DMA	1.00% BPO 0.05% DMA
Hot – 80s°F (27°-32°C)	1.00% BPO 0.10% DMA	1.00% BPO 0.05% DMA	0.75% BPO 0.05% DMA

Table information is not intended for use with 411-350 PA and 411-700 PAT.
Formulation was based on 98% active benzoyl peroxide (BPO); consequently, 2½ times as much of a 40% paste is required.
Because of the reactive nature of these products, gel times can vary.
Always test gel times with a small amount of resin before formulating large quantities.

Typical Gel Times For DERAKANE 411 Resins Using BPO and DEA

Temperature	10–20 minutes	20–40 minutes	40–60 minutes
Cool – 60s°F (15°-20°C)	2.00% BPO 0.25% DEA	2.00% BPO 0.25% DEA 0.01% TBC	2.00% BPO 0.25% DEA 0.02% TBC
Warm – 70s°F (21°-26°C)	1.50% BPO 0.20% DEA	1.50% BPO 0.20% DEA 0.02% TBC	1.50% BPO 0.20% DEA 0.03% TBC
Hot – 80s°F (27°-32°C)	1.20% BPO 0.15% DEA	1.20% BPO 0.15% DEA 0.02% TBC	1.20% BPO 0.15% DEA 0.03% TBC

Table information is not intended for use with 411-350 PA and 411-700 PAT.
Formulation was based on 98% active benzoyl peroxide (BPO); consequently, 2½ times as much of a 40% paste is required.
Materials used with DERAKANE 411 series resins are 100% N, N-diethylaniline (DEA) and a 10% tert-butylcatechol (TBC) solution. Since formulation was based on 100% active TBC, 10 times as much of a 10% solution is required.
Because of the reactive nature of these products, gel times can vary.
Always test gel times with a small amount of resin before formulating large quantities.

Ashland is committed to the continuous evolution of technology and service solutions that promote health, safety and environmental protection around the world.

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Using Trigonox 239A or CHP-5 Compounds As a Non-Foaming MEKP Substitute

Temperature	10–20 minutes	20–40 minutes	40–60 minutes
Cool – 60s°F (15°-20°C)	2.0% Catalyst* 0.5% CoNap 0.2% DMA	2.0% Catalyst 0.3% CoNap 0.1% DMA	2.0% Catalyst 0.4% CoNap 0.2% DMA 0.05% 2, 4-P
Warm – 70s°F (21°-26°C)	2.0% Catalyst 0.6% CoNap	2.0% Catalyst 0.3% CoNap	2.0% Catalyst 0.5% CoNap 0.05% 2, 4-P
Hot – 80s°F (27°-32°C)	1.5% Catalyst 0.4% CoNap	1.5% Catalyst 0.5% CoNap 0.05% 2, 4-P	1.5% Catalyst 0.4% CoNap 0.1% 2, 4-P

Materials used with DERAKANE 411 resins are 6% cobalt naphthenate (CoNap); 100% dimethylaniline, 100% Trigonox 239A and CHP-5, and 100% 2, 4-pentanedione (2, 4-P).
Because of the reactive nature of these products, gel times can vary.
Always test gel times with a small amount of resin before formulating large quantities.
NOTE: When using 239A or CHP-5 to catalyze DERAKANE resins, peak exotherms are lowered, as compared to equivalent MEKP/CoNap catalyst systems.
DERAKANE 411-type resins may experience peak exotherm reductions up to 40° to 50°F (based on 50 g. mass).
* Trigonox 239A or CHP-5.