Antifoam Testing

Crystal Clear Results

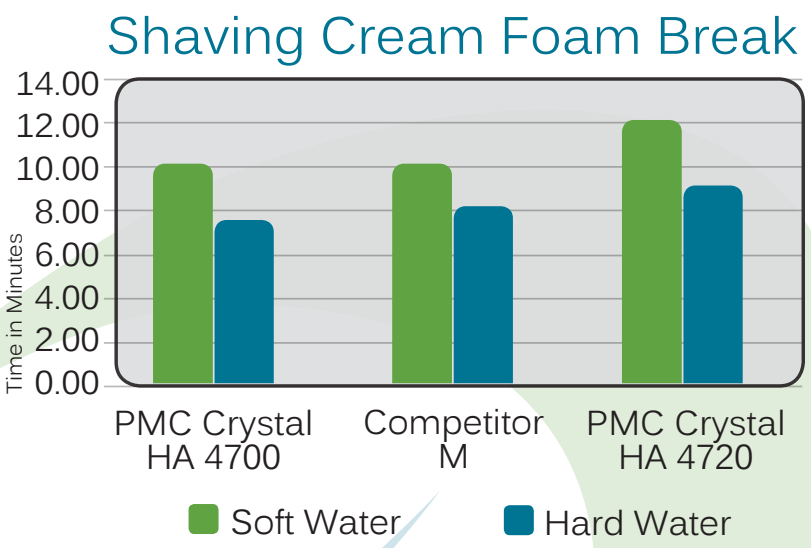
PMC Crystal antifoams were tested against an antifoam containing a three-dimensional silicone polymer, which has a tendency to agglomerate on the surface of the metalworking fluid. PMC Crystal antifoams do not form these sticky, cold-flowing, self-agglomerating deposits that look like Silly Putty® and adhere in all the wrong places. PMC Crystal antifoams keep foam volumes low — and those that do form break quickly.

The Shaving Cream Foam Test

Antifoam testing involves creating foam and then measuring foam volume and/or timing the foam break.

A "blender" test patterned after ASTM D 3519 yielded results that line up well with field experience with high oil semi-synthetic metalworking fluids used in high-pressure coolant systems.

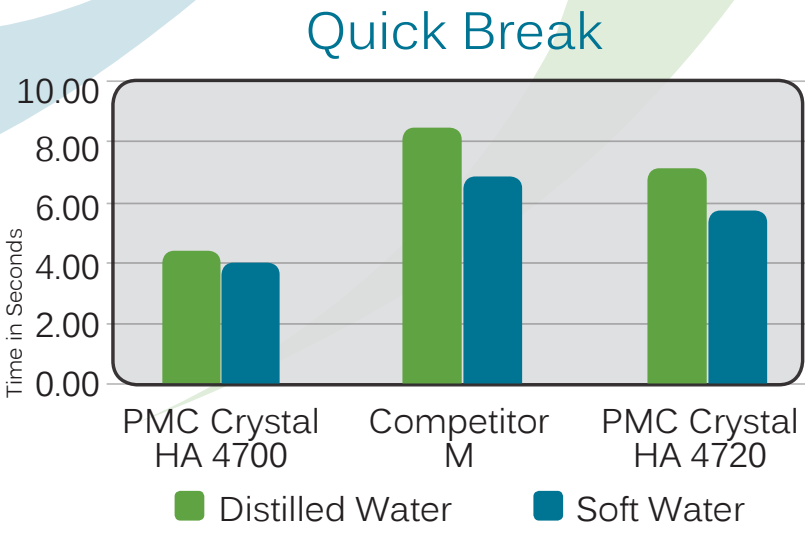
Solutions were intensively mixed in a 700-watt Black & Decker® blender on setting eight for 30 seconds. The volume of fluid was 14 ounces at a refractometer reading of 7% in both soft and hard water. The initial foam break was ignored, and the time for all the "shaving cream" foam to break was noted. Very often in a machine running at 1100 psi coolant pressure, the total volume of the coolant increases due to the large amount of this small bubble-type foam.



The Quick Break Foam Test

Again, the blender was used at 7% solids concentration of high oil semi-synthetic, mixed for 30 seconds at speed setting eight at an antifoam level of 333 ppm at the end-use dilution. A 100 ml graduated cylinder was filled with the test solution, and the cylinder was given 40 shakes. Seconds were recorded until the large bubble foam was broken. For this series of testing, both distilled and soft water were used:

It is useful to note that a blender test favors antifoams that use three-dimensional silicone polymers because the blender disperses the sticky cold-flowing self-agglomerating deposits back into the test fluid. Even with this advantage, PMC Crystal antifoams still provide more than a level playing field.



About PMC Group

PMC Group is a growth oriented, diversified, global chemicals and plastics company dedicated to innovative solutions to everyday needs in a broad range of end markets including plastics, consumer products, electronics, paints, packaging, personal care, food, automotive and pharmaceuticals. The Company was built on a sustainable model of growth through innovation while promoting social good. PMC operates from a global manufacturing, innovation and marketing platform with facilities in the Americas, Europe and Asia. More information about PMC and its activities around the world can be found at www.pmc-group.com.

pmc crystal™

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