

Identification, Foam on Dispersion

Applicable Products: Pemulen™* Polymeric Emulsifiers

Scope:

This procedure describes a means of identifying Pemulen™ polymeric emulsifiers. A dispersion of the powder forms a foam layer that persists for a minimum of one hour.

Abstract:

A 1.0% dispersion of the product is prepared. With aggressive mixing a foam layer is produced that does not easily break.

Safety Precautions:

1. Wear safety goggles and gloves and follow good laboratory practices.
2. Polymer dust is irritating to the respiratory passages and inhalation should be avoided.
3. See Material Safety Data Sheet (MSDS) for additional safety and handling information.

Interferences:

No known interferences have been recognized.

Apparatus:

1. Laboratory balance capable of ± 0.01 gram accuracy.
2. Laboratory mixer with 3-blade marine impeller. (See Appendix 1).
3. Beaker, 800 ml.
4. Graduated cylinder, 500 ml.
5. Weighing dish.
6. Spatula or rubber policeman.

Reagents:

1. Deionized water.

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Procedure:

1. With the mixer in the off position set the shaft angle at 60° and the mixer speed at 1000 rpm.
2. Measure 500 mL deionized water in a graduated cylinder and transfer to an 800 mL beaker.
3. Place the beaker under the mixer with the impeller to one side of the beaker. The impeller should be as near the bottom of the beaker as possible. (See Note 1.)
4. Weigh 5.00 g \pm 0.01 g of the product to be identified onto a weighing dish. This will yield a 1% dispersion in 500 mL water.
5. Turn on the mixer and carefully add the polymer. Tilt the weighing dish and tap the side, causing the polymer to slowly sift into the water. Total addition time should be 45-90 seconds. CAUTION: If addition is too rapid the polymer can agglomerate on the surface of the water.
6. Continue mixing for 15 minutes at 1000 RPM. Scrape any polymer from the sides of the beaker and stirrer shaft with a spatula or rubber policeman.
7. When mixing is complete, remove the stirrer from the dispersion.
8. Allow the dispersion to stand at room temperature. After one hour, a pass is recorded if the foam layer persists. If the foam layer does not persist, fail is recorded.

Calculations:

The results of the test are recorded as pass or fail.

Notes:

1. The angle of 60 degrees and placement of the stirrer to one side of the beaker creates a vigorous agitation with a minimum of vortexing.

References:

- *Current edition of the United States Pharmacopoeia/National Formulary (USP/NF)*

Appendix I
(Actual Size)

Three-Blade Marine Impeller

