EMULSIFIABILITY AND FOAMING TEST FOR COOLANTS

Application

This procedure is used to test the emulsification and foaming properties of cutting fluids, coolants and radiator water soluble anti-rust.

Apparatus Required

Mechanical Mixer

A laboratory mixer, preferably motor driven with a beater similar to one commonly used in most food mixers except that only one beater is used.

Conditioning and Test Conditions

All test values indicated herein are based on material conditioned in a controlled atmosphere of 23 +/- 2 C and 50 +/- 5 % relative humidity for not less than 24 h prior to testing and tested under the same conditions unless otherwise specified.

Procedure

Emulsifiability Test

1. In the 1000 mL tall form Griffin beaker place 500 mL of water (having the same hardness as that used for making emulsions in the shop) at a temperature of 72 +/- 5 F.

2. Stir the water with a mixer having a single beater and operating at a medium speed (1300 rpm).

3. Slowly add 25 mL of the test sample and continue stirring for two minutes.

4. Cover the beaker and allow to stand for 24 h at 72 +/- 5 F.

5. A slight separation of oil globules is permissible but if sufficient oil separates to cover the surface of the emulsion, this is cause for rejection.

Foaming Test

1. In an 800 mL Griffin beaker, heat 500 mL of water (having the same hardness as that used for making emulsions in the shop) to a temperature of 160 +/- 5 F.

2. Stir the water with a mixer having a single beater and operating at a medium speed (1300 rpm).

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3. Slowly add 25 mL of the test sample and continue stirring for five minutes.

   Note: Material which foams out of the beaker is considered too foamy.

4. Measure and report the height of the foam in inches after five minutes stirring and after ten minutes standing.

Chemicals, materials, parts, and equipment referenced in this document must be used and handled properly. Each party is responsible for determining proper use and handling in its facilities.

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