GM WORLDWIDE ENGINEERING STANDARDS	Test Procedure	GMW15574

Foam Testing in Waterborne Purge Solvent

1 Introduction

Note: Nothing in this standard supercedes applicable laws and regulations.

Note: In the event of conflict between the English and domestic language, the English language shall take precedence.

1.1 Purpose. This standard describes a test procedure to determine the foam potential of a waterborne purge by itself and in conjunction with typical waterborne paints.

1.2 Applicability. This standard is one of the testing requirements of waterborne purge under the specification 9984482.

2 References

Note: Only the latest approved standards are applicable unless otherwise specified.

2.1 External Standards/Specifications.

None

2.2 GM Standards/Specifications.

9984482

2.3 Additional References. None.

3 Resources

3.1 Facilities. Not applicable.

3.1.1 Calibration. The test facilities and equipment shall be in good working order and shall have a valid calibration label.

3.1.2 Alternatives. Alternative test facilities and equipment may also be used. However, all measuring variables as specified in this standard shall be determined correctly with respect to their physical definition.

3.2 Equipment.

3.2.1 Pump head, American Controls Part No. 81115.

3.2.2 Motor, American Controls Part No. 83430.

3.2.3 Variable Auto Transformer, Fisher Scientific Part 09-521-122.

3.2.4 Beaded Pipe 76 mm (3 in) ID X 0.6 mm (24 in) L, Ace Glass, Part 8828-513.

3.2.5 Ten millimeter (10 mm) (⅜ in) ID 316 Stainless Steel Tubing.

3.2.6 Reostat, Staco Energy Products Co. PN1010B, 12 A 140 V and 120 V, Input 120 V 50/60 Hz, Output 0 to120/140 V.

Note: In countries with other supply voltages, the devices are to be adapted or other devices, with the same performance data, are to be used.

3.2.7 Ruler.

3.2.8 One (1) Hole Rubber Stopper, Fisher Scientific Part 14-135T.

3.2.9 Stopwatch.

3.2.10 Control Basecoat Material. Production samples of waterborne basecoats from the current GM basecoat suppliers shall be used as the control material for the foam testing. Basecoat technology requirements and

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control material(s) shall be designated by the GM responsible engineer based on current production or target plants.

3.2.11 Buffer. Sodium carbonate will be used as a buffer (solution pH control).

3.2.12 Deionized water.

3.2.13 Control Purge Solution. The control purge solvent shall be a solution of 98% to 99% butyl cellosolve and 1% to 2% amine.

If specified by the responsible engineer, a control purge solution consisting of a current-production blend shall be used in addition to or in place of the butyl cellosolve solution.

3.3 Test Vehicle/Test Piece.

3.3.1 Test Material. The test material is a low Volatile Organic Compound (VOC) Hazardous Air Pollutant (HAP) purge solvent for waterborne basecoat per 9984482.

3.4 Test Time. Not applicable.

3.5 Test Required Information. Not applicable.

3.6 Personnel/Skills. Not applicable.

4 Procedure

4.1 Preparation.

4.1.1 Assemble equipment as shown in Figure 1.

4.1.2 Preparation of solution that represents the booth water. In a beaker, pour 1400 mL of deionized water, 0.3 g of sodium carbonate (pH 8.0 to 8.5), 7 mL waterborne basecoat, and 3.5 mL of the purge. In this case, two solutions will be prepared: one with the control purge (98% to 99% butyl cellosolve and 1% to 2% amine), and the other one with the new proposed purge.

4.1.3 Equipment Setting:

- Staco Rheostat settings. 120 V and 60%. (See **Note** in 3.2.6).
- Flow rate of 200 mL/s.

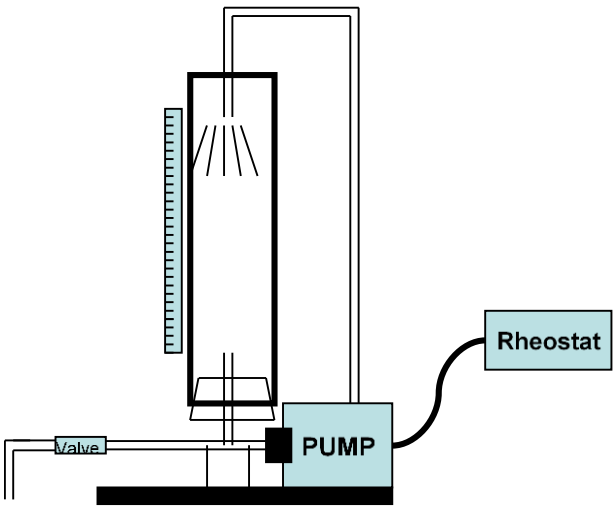

Figure 1: Foam Equipment

4.2 Conditions.

4.2.1 Environmental Conditions. Not applicable.

4.2.2 Test Conditions. Deviations from the requirements of this standard shall have been agreed upon. Such requirements shall be specified on component drawings, test certificates, reports, etc.

4.3 Instructions.

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