AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 3006

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ALCOHOL-WATER MIXTURES

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for injection in aircraft power plants where freezing point lower than that of water is required.

3. TECHNICAL REQUIREMENTS:

3.1 Product: Mixtures shall be composed of materials conforming to 3.1.1, 3.1.2 and 3.1.3 below, as applicable, and shall conform to the following requirements:

Mixture Type	Composition Parts by Volume, before mixing	Specific Gravity at 15/4 C.	Initial Freezing Point deg Fahr. max (see Note 1)
1	Methyl Alcohol 48-52 Water 48-52	0.9255 - 0.9340	-45
2	Methyl Alcohol 24-26 Ethyl Alcohol 24-26 Water 48-52	0.9255 - 0.9380	-32
3	Methyl Alcohol 38-42 Water 58-62	0.9425 - 0.9500	-22

Note 1. Procedure for Determining Freezing Points:

(a) Place 50-75 ml of the alcohol-water mixture to be tested in a 1 x 8 in. test tube and close with a 2-hole rubber stopper. Insert an ASTM low cloud and pour point thermometer through one hole of the stopper so that the bulb is at approximately the mid-depth of the liquid. Insert through the second hole a 1/8-in. diameter wire agitator having two horizontal loops about 2 in. apart and surrounding the thermometer. Place a small amount of anhydrous calcium chloride in a second test tube 1-½ x 8 in. Stopper this test tube with a stopper having a hole large enough to receive the test tube containing the mixture. Place the first tube within the second so that an air jacket is formed.

(b) Prepare a bath of acetone and dry ice. The bath shall be insulated and shall be agitated by a motor driven stirrer. Adjust the temperature of the bath to approximately 20 F below the anticipated freezing point of the alcohol-water mixture.

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