

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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ALCOHOL-WATER MIXTURES

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter 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 (See Note 1)	Specific Gravity at 15/4 C	Initial Freezing Point deg. Fahr., max (See Note 2)
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
4	Methyl Alcohol 58 - 62 Water 38 - 42	0.9050 - 0.9150	-65

Note 1: Procedure for Mixing Alcohol and Water: Water and alcohol shall both be at a temperature within the range of 50-90 F and within 10 F of each other before mixing.

Note 2: 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 1-1/2 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.

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