

SAE AMS 1428 Type IV Fluids

Minimum Initial Qualification Test Requirements

Anti-Icing Performance- Aerodynamic Acceptance Tests

Number of tests and description								Volume ⁵ of fluid required (L)
WSET ¹		HHET ² High Viscosity Sample*	FPET ³ High Speed Ramp			Physical ⁴ Properties	Determination of the Highest Viscosity Dilution	
High Viscosity Sample*	Low Viscosity Sample*		High Viscosity Sample*	Low Viscosity Sample**	Highest Viscosity Dilution(s)			
6	6	6	30	3	3 minimum (if required)	4	8 maximum	60* 40**

⁽¹⁾WSET : Water Spray Endurance Test, (2 tests per dilution)

⁽²⁾HHET : High Humidity Endurance Test, (2 tests per dilution)

⁽³⁾FPET : Flat Plate Elimination Test, (High Speed Ramp)

⁽⁴⁾Physical Properties : Viscosity, surface tension, refractive index and pH

⁽⁵⁾Volume of fluid required, (if FPET Low Speed Ramp is required, 20 additional litres should be provided)

* High viscosity sample, Neat, 75/25 and 50/50 dilutions

**Low viscosity sample, for anti-icing performance: Neat, 75/25 and 50/50 dilutions and for aerodynamic acceptance: Neat dilution at lowest temperature which the high viscosity sample met the aerodynamic performance requirements

Fluid Stability

Test description and volume of fluid required (L)								Total Volume (L)
Exposure to dry air ¹	Thin Film Thermal Stability ²	Exposure to Cold dry air ³	Successive Dry Out and Rehydration ⁴	Thermal Stability ⁵	Hard Water Stability ⁶	Cold Storage Stability ⁷	Storage Stability ⁸	
4	1	1	5	3	2	6	6	28

⁽¹⁾Exposure to dry air : AMS 1428 paragraph 3.2.2.2

⁽²⁾Thin film thermal stability : AMS 1428 paragraph 3.2.2.5

⁽³⁾Dry-out by exposure to cold dry air : AMS 1428 paragraph 3.2.2.3

⁽⁴⁾Successive dry-out and rehydration : AMS 1428 paragraph 3.2.2.4

⁽⁵⁾Thermal stability : AMS 1428 paragraph 3.2.2.1

⁽⁶⁾Hard water stability : AMS 1428 paragraph 3.2.2.8

⁽⁷⁾Cold storage stability : AMS 1428 paragraph 3.2.2.10

⁽⁸⁾Storage stability : AMS 1428 paragraph 3.2.2.6