



Designation: ~~D 3809 – 79 (Reapproved 1993)~~ **3809 – 01**

Standard Test Methods of Testing for Synthetic Dielectric Fluids For Capacitors¹

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1. Scope

1.1 These test methods cover testing synthetic dielectric fluids currently in use for capacitors. The methods are generally suitable for specification acceptance, factory control, referee testing, and research. Their applicability to future fluids has not been determined.

1.2 The scope of some of the test methods listed here apply to petroleum oils, but have been found suitable for synthetic fluids.

1.3 For methods relating to polybutene fluids refer to Specification D 2296.

1.4 For methods relating to silicone fluids refer to Test Methods D 2225.

1.5 A list of properties and standards are as follows:

Property Measured	Section	ASTM Test Method
<i>Physical:</i>		
Coefficient of thermal expansion	6	D 1903
Flash point	7	D 92
Pour point	8	D 97
Refractive index	9	D 1218
~~Specific gravity~~	~~10~~	~~D 1298~~
Relative Density/Specific gravity	10	D 1298
Viscosity	11	D 445
<i>Chemical:</i>		
Acid number	12	D 664
Water content	13	D 1533
<i>Electrical:</i>		
Relative permittivity	14	D 924
Dielectric strength	15	D 877
		D 1816
~~Dissipation factor~~	16	D 924

1.6 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

¹ These methods are under the jurisdiction of ASTM Committee D-27 on Electrical Insulating Liquids and Gases and are the direct responsibility of Subcommittee D27.02 on Gases and Synthetic Liquids.

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