



Standard Test Methods for Fatty Nitrogen Products¹

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These test methods were prepared jointly by ASTM and the American Oil Chemists' Society.

1. Scope

1.1 These test methods cover the testing of fatty nitrogen products. They specify the use of other ASTM methods that are published separately. The test methods included are listed in Table 1.

1.2 The test methods cover the following compounds:

1.2.1 *Fatty Amines*—Fatty primary amines, difatty secondary amines, trifatty tertiary amines.

1.2.2 *Fatty Quaternary Ammonium Chloride*—Trimethyl fatty quaternary ammonium chloride, dimethyl difatty quaternary ammonium chloride.

1.2.3 *Fatty Amidoamines*—Reaction products of fatty acids with an excess of polyamines.

1.2.4 *Fatty Diamines*—*N*-fatty-1,3-propylene diamines.

1.3 *This standard does not purport to address all of the safety concerns, 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:*

D 56 Test Method for Flash Point by Tag Closed Tester²

D 88 Test Method for Saybolt Viscosity³

D 92 Test Method for Flash and Fire Points by Cleveland Open Cup²

D 93 Test Methods for Flash Point by Pensky-Martens Closed Tester²

D 1209 Test Method for Color of Clear Liquids (Platinum-Cobalt Scale)⁴

D 1310 Test Method for Flash Point and Fire Points of Liquids by Tag Open-Cup Apparatus⁵

D 1466 Test Method for Sampling Liquid Oils and Fatty

TABLE 1 List of Test Methods

Test Method	Sections	ASTM Designation of Test Method
Definition	4	
All Fatty Nitrogen Products:		
Sampling	5	D 1466
Color by the Gardner Method	6	D 1544
Color by the APHA Method	7	D 1209
Water by the Karl Fischer Method	8	D 2072
Fatty Amines:		
Amine values	9	D 2073
Iodine value	10	D 2074
Percent non-amine	11	D 2075
Primary, secondary, tertiary amines	12	D 2082
Fatty Quaternary Ammonium Chlorides:		
Acid value and amine value	13	D 2083
Ash	14	D 2076
Flash point	15	D 2077
Iodine value	16	D 56
Nonvolatile matter	17	D 88
Average molecular weight	18	D 92
pH	19	D 93
Fatty Amidoamines:		
Amine values	20	D 1310
Iodine value	21	D 3278
Fatty Diamines:		
Amine values	22	D 2078
Iodine values	23	D 2079
Percent non-amines	24	D 2080

Acids Commonly Used in Paints, Varnishes, and Related Materials⁶

D 1544 Test Method for Color of Transparent Liquids (Gardner Color Scale)⁵

D 2072 Test Method for Water in Fatty Nitrogen Compounds⁶

D 2073 Test Methods for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines, Amidoamines, and Diamines by Referee Potentiometric Method⁶

D 2074 Test Methods for Total, Primary, Secondary, and Tertiary Amine Values of Fatty Amines by Alternative Indicator Method⁶

¹ These test methods are under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications, and are the direct responsibility of Subcommittee D01.32 on Drying Oils.

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² *Annual Book of ASTM Standards*, Vol 05.01.

³ *Annual Book of ASTM Standards*, Vol 04.04.

⁴ *Annual Book of ASTM Standards*, Vol 06.04.

⁵ *Annual Book of ASTM Standards*, Vol 06.01.

⁶ *Annual Book of ASTM Standards*, Vol 06.03.