



Standard Test Methods for Sampling and Chemical Analysis of Soaps and Soap Products¹

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These methods are identical in substance with the standard methods of the American Oil Chemists' Society which were developed by the Committee on Soap Analysis A-1 of that Society, and with those of the American Chemical Society.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 These test methods cover the sampling and chemical analysis of cake, powdered, flake, liquid, and paste soaps, and soap products.

1.2 The test methods appear in the following order:

SAMPLING	Section
General Requirements	4
Cake Soaps, Flake and Powdered Soap Products when Packed in Cans or Cartons	5
Flake and Powdered Soap Products when in Bulk	6
Liquid Soap	7
Paste Soap Products	8
Preparation of Samples	9
Test Methods for Chemical Analysis	10
Safety Precautions	11
Purity of Reagents	12
Duplicate Tests	13
Moisture:	
Choice of Method	14
Method A—Matter Volatile at 105°C (Oven Method)	15-18
Method B—Distillation Method	19 and 20
Total Matter Insoluble in Alcohol	21
Free Alkali or Free Acid	22
Matter Insoluble in Water	23
Total Alkalinity of Matter Insoluble in Alcohol, Alkaline Salts	24 and 25
Combined Alkali, Total Anhydrous Soap	26-29
Combined Sodium and Potassium Oxides	30-32
Free Alkali and Potassium Carbonate in Potash Paste Soaps	33-35
Unsaponified plus Unsaponifiable Matter	36-38
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Unsaponified Matter	40-43
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Preparation of Total Fatty Matter, Fatty and Rosin Acids, and Unsaponified Matter	46 and 47
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Acid Number of Fatty Acids	50-52
Iodine Number (Wijs Method)	

Chlorides	53-55
Borax	56-58
Silica Present as Alkaline Silicates	59 and 60
Carbon Dioxide (Carbonates):	
Train-Absorption Method	61-64
Evolution-Volumetric Method	65-68
Phosphates	69-76
Tetrasodium Pyrophosphate	77-79
Sulfates	80 and 81
Glycerine, Sugars, and Starch:	
Glycerine in the Absence of Sugars	82-84
Glycerine in the Presence of Sugars	85 and 86
Starch	87 and 88
Sugars	89 and 90
Volatile Hydrocarbons	91-95
Copper (Trace Amounts)	96-102
Precision and Bias	103

1.3 The values stated in inch-pound units are to be regarded as the standard. The metric equivalents of inch-pound units may be approximate.

1.4 *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.* For specific hazard statements, see Section 10. Material Safety Data Sheets are available for reagents and materials. Review them for hazards prior to usage.

2. Referenced Documents

2.1 ASTM Standards:

D 216 Method for Distillation of Natural Gasoline²

D 459 Terminology Relating to Soaps and Other Detergents³

D 1193 Specification for Reagent Water⁴

¹ These test methods are under the jurisdiction of ASTM Committee D-12 on Soaps and Other Detergents and are the direct responsibility of Subcommittee D12.12 on Analysis of Soaps and Synthetic Detergents.

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² Discontinued, see 1992 *Annual Book of ASTM Standards*, Vol 05.01.

³ *Annual Book of ASTM Standards*, Vol 15.04.

⁴ *Annual Book of ASTM Standards*, Vol 11.01.