

Status: Currently Official on 15-Feb-2025
Official Date: Official Prior to 2013
Document Type: USP Monographs
DocId: GUID-37000F29-8639-47C1-B720-FFB30F42CD27_1_en-US
DOI: https://doi.org/10.31003/USPNF_M35880_01_01
DOI Ref: ho09y

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Green Soap

DEFINITION

Green Soap is a potassium soap made by the saponification of suitable vegetable oils, excluding coconut oil and palm kernel oil, without the removal of glycerin.

Prepare Green Soap as follows.

Vegetable Oil	380 g
Oleic Acid	20 g
Potassium Hydroxide	91.7 g
Glycerin	50 mL
Purified Water, a sufficient quantity to make	1000 g

Mix the *Vegetable Oil* and the *Oleic Acid*, and heat the mixture to about 80°. Dissolve the *Potassium Hydroxide* in a mixture of the *Glycerin* and 100 mL of *Purified Water*, and add the solution while hot to the hot oil mixture. Stir the mixture vigorously until emulsified, then heat with continuous stirring until the mixture is homogeneous and a test portion will dissolve to give a clear solution in hot water. Add hot *Purified Water* to bring the preparation to final weight. Continue stirring until the Soap is homogeneous.

SPECIFIC TESTS

• [WATER DETERMINATION, Method II\(921\)](#)

Sample: 5 g, quickly weighed, in the flask of the toluene moisture apparatus

Analysis: Place 250 mL of toluene and 10 g of anhydrous barium chloride in the flask. Proceed as directed in the chapter.

Acceptance criteria: The volume of water found corresponds to NMT 52.0% by weight of the Soap taken.

• [ALCOHOL-INSOLUBLE SUBSTANCES](#)

Sample: 5 g, rapidly and accurately weighed

Analysis: Dissolve the *Sample* in 100 mL of hot neutralized alcohol, collect the residue, if any, on a tared filter, thoroughly wash it with hot neutralized alcohol, and dry at 105° for 1 h. Retain the solution for the test for *Free Alkali Hydroxides*, and retain the residue for the test for *Alkali Carbonates*.

Acceptance criteria: The weight of the residue so obtained is NMT 3.0% of the weight of the Soap taken.

• [FREE ALKALI HYDROXIDES](#)

Sample: Combined filtrate and washings obtained in the test for *Alcohol-Insoluble Substances*

Analysis: To the *Sample* add 0.5 mL of phenolphthalein TS. If a pink color is produced, titrate the solution with 0.1 N sulfuric acid VS until the pink color is just discharged. Each mL of 0.1 N sulfuric acid is equivalent to 5.611 mg of potassium hydroxide.

Acceptance criteria: The volume of 0.1 N sulfuric acid VS consumed corresponds to NMT 0.25% of potassium hydroxide.

• [ALKALI CARBONATES](#)

Sample: Residue obtained in the test for *Alcohol-Insoluble Substances*

Analysis: Wash the filter containing the *Sample* with 50 mL of boiling water, cool, add methyl orange TS, and titrate the filtrate with 0.1 N sulfuric acid VS.

Acceptance criteria: NMT 0.5 mL of 0.10 N sulfuric acid per g of Soap taken is required (0.35% as potassium carbonate).

• [UNSAPONIFIED MATTER](#)

Sample: A solution of Soap in hot water (1 in 20)

Acceptance criteria: Solution is nearly clear.

• [FATS AND FIXED OILS, Acid Value\(401\)](#)

Sample: 30 g

Analysis: Dissolve the **Sample** in 300 mL of hot water in a beaker, add gradually 60 mL of 2 N sulfuric acid, and heat on a steam bath until the liberated acids form a transparent layer. Decant the fatty acids into a separator, and wash them with 50-mL portions of hot water until the last washing, when cool, is neutral to methyl orange TS. Transfer the fatty acids to a dry beaker, and allow them to stand in a warm oven until any water that may be present has separated. Then pass the acids through a dry filter in a warm oven. Determine the acid value of about 1 g, accurately weighed, of the fatty acids.

Acceptance criteria: NMT 205

- [FATS AND FIXED OILS, Iodine Value\(401\)](#)

Sample: 30 g

Analysis: Dissolve the **Sample** in 300 mL of hot water in a beaker, add gradually 60 mL of 2 N sulfuric acid, and heat on a steam bath until the liberated acids form a transparent layer. Decant the fatty acids into a separator, and wash them with 50-mL portions of hot water until the last washing, when cool, is neutral to methyl orange TS. Transfer the fatty acids to a dry beaker, and allow them to stand in a warm oven until any water that may be present has separated. Then pass the acids through a dry filter in a warm oven. Determine the iodine value of 150–200 mg, accurately weighed, of the fatty acids.

Acceptance criteria: NLT 85

ADDITIONAL REQUIREMENTS

- **PACKAGING AND STORAGE:** Package in well-closed containers.

Auxiliary Information - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
GREEN SOAP	Brian Serumaga Science Program Manager	CMP2020 Compounding 2020

Chromatographic Database Information: [Chromatographic Database](#)

Most Recently Appeared In:

Pharmacopeial Forum: Volume No. Information currently unavailable

Current DocID: [GUID-37000F29-8639-47C1-B720-FFB30F42CD27_1_en-US](#)

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