

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](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).

- **UNSAAPONIFIED 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	<a href="#">Brian Serumaga</a> 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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