Status: Currently Official on 17-Feb-2025
Official Date: Official as of 01-Aug-2024
Document Type: NF Monographs
DocId: GUID-9BE3567F-7DB1-4CD4-879B-F94131372CDF_3_en-US
DOI: https://doi.org/10.31003/USPNF_M89000_03_01
DOI Ref: p6ulh

White Wax

White beeswax

CAS RN®: 8012-89-3.

DEFINITION

White Wax is the product of bleaching and purifying Yellow Wax that is obtained from the honeycomb of the bee [*Apis mellifera* L. (Fam. Apidae)]. It consists primarily of a mixture of esters of fatty acids and fatty alcohols, hydrocarbons, and free fatty acids; minor amounts of free fatty alcohols are also present.

IDENTIFICATION

• **A. Spectroscopic Identification Tests ⟨197⟩, *Infrared Spectroscopy*:** 197A or 197F. Use melted White Wax when performing 197F.

SPECIFIC TESTS

• **Ceresin, Paraffins,** and **Certain Other Waxes**

Sample: 3.00 g

Alcoholic potassium hydroxide: Dissolve 40 g of potassium hydroxide in about 900 mL of aldehyde-free alcohol maintained at a temperature not exceeding 15°, and then when solution is complete, warm to room temperature, and add aldehyde-free alcohol to make 1000 mL.

Analysis: Place the *Sample* in a 100-mL round-bottom boiling flask fitted with a ground-glass joint. Add 30 mL of *Alcoholic potassium hydroxide*. Reflux the mixture gently for 2 h. At the end of this period, open the flask, insert a thermometer into the solution, and place the flask in a container of water at a temperature of 80°. [Note—A 400-mL beaker filled with about 180 mL of water at 80° may be used.] Rotate the flask in the bath and observe changes of appearance while both the bath and the solution cool.

Acceptance criteria: Upon cooling, no precipitate is formed until 65°, although the solution may be slightly opalescent. Beginning at 65°, the solution may become cloudy and precipitates may be formed. At 59°, the solution is cloudy.

• **Melting Range or Temperature ⟨741⟩, *Procedures, Procedure for Class II*:** 62°–66°

• **Fats or Fatty Acids, Japan Wax, Rosin,** and **Soap**

Sample: 1 g

Analysis 1: Boil the *Sample* for 30 min with 35 mL of 3.5 N sodium hydroxide contained in a 100-mL beaker, maintaining the volume of solution by the occasional addition of water, and allow the mixture to cool at room temperature for about 2 h.

Acceptance criteria 1: The wax separates, leaving the liquid clear, turbid, or translucent, but not opaque.

Analysis 2: Filter the cool mixture obtained in *Analysis 1*, and acidify the clear filtrate with hydrochloric acid.

Acceptance criteria 2: The liquid remains clear or shows NMT a slight amount of turbidity or precipitate.

• **Fats and Fixed Oils ⟨401⟩, *Procedures, Acid Value***

Sample: 3 g

Analysis: Warm the *Sample* in a 200-mL flask with 25 mL of neutralized dehydrated alcohol until melted, then shake the mixture. Add 1 mL of phenolphthalein TS, and titrate the warm liquid with 0.5 N alcoholic potassium hydroxide VS to produce a permanent, faint pink color. Calculate the *Acid Value* as directed in the chapter.

Acceptance criteria: 17–24

Change to read:

• **Fats and Fixed Oils ⟨401⟩, *Procedures, Ester Value***

Sample solution: The solution resulting from the determination of *Acid Value*

Analysis: To the *Sample solution* add 25.0 mL of 0.5 N alcoholic potassium hydroxide VS and 50 mL of aldehyde-free alcohol, and reflux the mixture for 4 h. Titrate the excess alkali with 0.5 N hydrochloric acid VS. Perform a blank determination (see ▲*Titrimetry ⟨541⟩, Types of Titrations, Blank Corrections*▲ (CN 1-Aug-2024)). Calculate the *Ester Value* as directed in the chapter.

Acceptance criteria: 68–80

ADDITIONAL REQUIREMENTS

- **Packaging and Storage:** Preserve in well-closed containers.
- **USP Reference Standards** ⟨11⟩
  USP White Wax RS

Auxiliary Information - Please check for your question in the FAQs before contacting USP.

Topic/Question	Contact	Expert Committee
WHITE WAX	Documentary Standards Support	CE2020 Complex Excipients
REFERENCE STANDARD SUPPORT	RS Technical Services RSTECH@usp.org	CE2020 Complex Excipients

Chromatographic Database Information: Chromatographic Database

Most Recently Appeared In:
Pharmacopeial Forum: Volume No. 50(4)

Current DocID: GUID-9BE3567F-7DB1-4CD4-879B-F94131372CDF_3_en-US
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