# Wool fat (Adeps lanae)

**Adeps lanae cum aqua**

**Hydrous wool fat**

Hydrous wool fat is a mixture of 75% *m/m* of wool fat and 25% *m/m* of water.

**Chemical name**. Lanolin; CAS Reg. No. 8020-84-6.

**Other name**. Anhydrous lanolin, lanolin. (In certain countries the name lanolin is used to describe a formulation containing wool fat, water, and liquid paraffin.)

**Description**. Wool fat is a brown-yellow, unctuous mass. Hydrous wool fat is a yellowish white, unctuous mass. Odour, characteristic.

**Solubility**. Practically insoluble in water; soluble in ether R; slightly soluble in boiling ethanol (~750 g/l) TS.

**Category**. Ointment base.

**Storage**. Wool fat should be kept in a well-closed container.

**Additional information**. Melted Wool fat is a yellow, clear or almost clear liquid. On heating, Hydrous wool fat first separates into two layers, water is then driven off, and a transparent residue is formed; after cooling, a yellowish, tenacious, soft mass is produced. Melting point for Wool fat and Hydrous wool fat after drying (use the residue from the "Wool fat content"), 36-44 °C.

**Requirements**

**Definition.** Wool fat is a purified wax-like material obtained from the raw wool of sheep (*Ovis aries* L).

**Identity tests**

A. Dissolve 0.5 g in 5 mL of chloroform R and add 1 mL of acetic anhydride R and 0.1 mL of sulfuric acid (~1760 g/l) TS; a green colour is produced.

B. Dissolve 0.5 g in 5 mL of chloroform R and carefully superimpose 5 mL of sulfuric acid (~1760 g/l) TS; a bright, brown-red ring is gradually formed at the interface of the two liquids.

**Acid value**. Wool fat, not more than 1.0; Hydrous wool fat, not more than 0.8.

**Saponification value**. Reflux for 4 hours; Wool fat, 90-105; Hydrous wool fat, 67-79.

**Sulfated ash**. Wool fat, not more than 1.5 mg/g; Hydrous wool fat, not more than 1.0 mg/g.

**Loss on drying**. Dry at 105 °C for 1 hour; Wool fat loses not more than 5.0 mg/g; Hydrous wool fat loses not more than 0.32 g/g.

**Wool fat content**. Heat 30 g of Hydrous wool fat to constant mass on a water-bath, stirring continuously, and weigh; the residue weighs between 21.8 g and 23.3 g (72.5-77.5% *m/m*). (Keep the residue for "Water-absorption capacity", "Paraffins", and the melting point in "Additional information".)

**Water-absorption capacity**. Place 10 g of Wool fat or Hydrous wool fat after drying (use the residue from "Wool fat content") in a mortar. Using a burette, add water in portions of 0.2-0.5 mL, stirring vigorously after each addition to incorporate the water, until visible droplets separate and cannot be absorbed; not less than 20 mL of water is absorbed.

**Water-soluble acid and alkaline substances**. Melt 5 g of Wool fat or 6.7 g of Hydrous wool fat on a water-bath, add 75 mL of water heated to 90-95 °C, and shake vigorously for 2 minutes. Cool and filter through a filter-paper previously moistened with water. To 60 mL of the filtrate, which may show some cloudiness (keep the remaining filtrate for "Water-soluble oxidizable substances" and "Ammonia"), add 0.25 mL of bromothymol blue/ethanol TS; not more than 0.2 mL of hydrochloric acid (0.02 mol/l) VS or 0.15 mL of sodium hydroxide (0.02 mol/l) VS is required to change the colour of the indicator (blue-yellow).

**Water-soluble oxidizable substances**. To 10 mL of the filtrate retained in the above test add 1 mL of sulfuric acid (~100 g/l) TS and 0.1 mL of potassium permanganate (0.02 mol/l) VS, and allow to stand for 10 minutes; the colour is not completely discharged.

**Paraffins**. To 40 mL of dehydrated ethanol R add 0.5 g of Wool fat or Hydrous wool fat after drying (use the residue from "Wool fat content") and boil; the solution is clear or not more than opalescent.

**Ammonia**. To 5 mL of the filtrate from "Water-soluble acid and alkaline substances" add 0.5 mL of sodium hydroxide (1 mol/l) VS and boil; the vapours do not turn red litmus paper R to blue.