

CHAPTER 13

HUMAN FAT STEARIN

§ 1. COMPOSITION

551. It is most similar to mutton tallow stearin but its main distinction is that on saponification, it yields palmitic acid without stearic acid¹.

§ 2. PHYSICAL PROPERTIES

552. It is white and not very glossy. A thermometer immersed in the cooling fat shows that the temperature drops to 41°C and then rises to 49°C. The fat crystallizes in very small needles, most of which end in a flat plane.

§ 3. CHEMICAL PROPERTIES THAT ARE OBSERVED WITHOUT THE STEARIN BEING ALTERED

553. 100 parts of boiling alcohol with a density of 0.795 (g/mL) dissolve 21.5 parts of stearin. On cooling a large quantity of stearin is deposited in the form of small needles.

§ 4. CHEMICAL PROPERTIES THAT ARE OBSERVED WHEN THE STEARIN IS ALTERED

554. It behaves like mutton tallow stearin when distilled or heated in contact with air.

555. Potassium hydroxide converts it into glycerin and a mixture of palmitic and oleic acids that melts at 51°C and leaves small needle-shaped crystals in the funnel.

§ 5. OCCURRENCE

556. It occurs in human adipose tissue.

¹ In this context, we must take into account that the palmitic acid described by the author in Chapter 2 may still have contained some stearic acid. According to Boekenooogen (*Scheikunde der Oliën en Vetten*, § 164 Humane vetten, page 250-251, 1948), human

fat contains 24.0-25.7 % palmitic acid and 5.2-8.4 % stearic acid but this range may be too narrow since, as with pig fat (lard), it depends rather strongly on what the pig/person concerned consumed in the way of fats. Quite interestingly, neither the 2nd nor the 3rd edition of *The Lipid Handbook* provides any data on human body fat but only on human milk, but according to Boekenoogen, (*loc cit.*) they tend to be quite similar.