Third Commission Directive of 27 September 1983 on the approximation of the laws of the Member States relating to methods of analysis necessary for checking the composition of cosmetic products (83/514/EEC)

ANNEX

DETERMINATION OF DICHLOROMETHANE AND 1,1,1-TRICHLOROETHANE IDENTIFICATION AND DETERMINATION OF MERCAPTOACETIC ACID IN HAIR-WAVING, HAIR-STRAIGHTENING AND DEPILATORY PRODUCTS

5. DETERMINATION (see NB)

5.1. ***Iodometry***

5.1.1. *Principle*

The determination is performed by oxidation of the '-SH' group with iodine in an acid medium according to the equation:

$2\ HOOC\text{-}CH_2SH + I_2 \rightarrow (HOOC\text{-}CH_2\text{-}S)_2 + 2\ I + 2\ H^+$

5.1.2. *Reagents*

Iodine, 0,05 M standard solution.

NB: The determination of mercaptoacetic acid must be carried out on unused product from freshly opened containers in order to prevent oxidation.

5.1.3. *Apparatus*

Usual laboratory equipment.

5.1.4. *Procedure*

Accurately weigh out a quantity of between 0,5 and 1 g of the sample into a 150 ml stoppered conical flask containing 50 ml of distilled water. Add 5 ml of hydrochloric acid (4.1.1.2) (pH of solution about 0) and titrate with iodine solution (5.1.2) until a yellow colour appears. Use an indicator (e.g. starch solution or carbon tetrachloride) if desired.

5.1.5. *Calculation*

The mercaptoaceric acid content is calculated according to the formula:

$$\%\ (m/m) = \frac{92 \times n \times 100}{1000 \times 10 \times m} = \frac{0{,}92\ n}{m}$$

where:

m = the mass (in grams) of the test portion,
n = the volume of iodine solution (5.1.2) used.

5.1.6. *Remarks*

If the result, calculated as mercaptoacetic acid, is 0,1 % or more below the authorized maximum concentration, there is no point in carrying out further determinations. If the result is equal to or above the permitted maximum concentration, and the identification has revealed the presence of several reducing agents, it is necessary to carry out a gas chromatographic determination.