First Commission Directive of 13 November 1979 laying down Community methods of analysis for testing certain partly or wholly dehydrated preserved milk for human consumption (79/1067/EEC)

ANNEX II

METHODS OF ANALYSIS RELATING TO THE COMPOSITION OF CERTAIN PARTLY OR WHOLLY DEHYDRATED PRESERVED MILK PRODUCTS INTENDED FOR HUMAN CONSUMPTION

METHOD 2: DETERMINATION OF MOISTURE(oven 102 ^{o}C) .

1. SCOPE AND FIELD OF APPLICATION

This method determines the loss of mass on drying of:

— dried high fat milk or high fat milk powder,
— dried whole milk or whole milk powder,
— dried partly skimmed milk or partly skimmed-milk powder,
— dried skimmed milk or skimmed-milk powder.

2. DEFINITION

Moisture content: the loss of mass on drying as determined by the method specified.

3. PRINCIPLE

The residual mass of a test portion is determined after drying at atmospheric pressure in an oven at 102 ^{o}C ± 1 ^{o}C to constant mass. The loss of mass is calculated as a percentage by mass of the sample.

4. APPARATUS

4.1. Analytical balance.

4.2. Dishes, preferably of nickel, aluminium, stainless steel or glass. The dishes must have lids which fit very well but which can readily be removed. Suitable dimensions are: diameter 60 to 80 mm and depth about 25 mm.

4.3. Atmospheric-pressure drying oven, well ventilated, thermostatically controlled with temperature regulation (at 102 ^{o}C ± 1 ^{o}C). The temperature should be uniform throughout the oven.

4.4. Desiccator, containing freshly activated silica gel with a water content indicator or an equivalent desiccant.

5. PROCEDURE

5.1. Uncover the dish (4.2) and place it and its lid in the oven (4.3) and heat for about one hour.

5.2. Place the lid on the dish and transfer the covered dish to the desiccator (4.4). Allow it to cool to room temperature and accurately weigh to the nearest 0,1 mg (Mo).

5.3. Introduce approximately 2 g of dried milk sample into the dish, cover the dish with the lid and accurately weigh to the nearest 0,1 mg the covered dish as quickly as possible (M1).

5.4. Uncover the dish and put it with its lid in the oven for two hours.

5.5. Replace the lid, transfer the covered dish to the desiccator, allow it to cool to room temperature and accurately weigh to the nearest 0,1 mg as quickly as possible.

5.6. Uncover the dish and heat it and its lid for one hour in the oven.

5.7. Repeat process 5.5.

5.8. Repeat processes 5.6 and 5.5 until the decrease in mass between the successive weighings does not exceed 0,5 mg or until the mass increases. If an increase in mass occurs use the lowest mass obtained in the calculation (6.1). Let the final weight recorded be M2 g.

6. EXPRESSION OF RESULTS

6.1. Method of calculation

Calculate the loss of mass on drying of the sample, expressed as a percentage by mass, by the formula:

$$\frac{M1 - M2}{M1 - M0} \times 100$$

where:

M0 = mass, in g of the dish and its lid after process 5.2;
M1 = mass, in g of the dish, its lid and sample after process 5.3;
M2 = mass, in g of the dish, its lid and final sample after process 5.5.

6.2. Repeatability

The difference in results between two determinations carried out simultaneously or in rapid succession on the same sample, by the same analyst, under the same conditions, shall not exceed 0,1 g of moisture per 100 g of product.