

**COMMISSION REGULATION (EC) No 2771/1999  
of 16 December 1999**

**laying down detailed rules for the application of Council Regulation (EC) No 1255/1999 as regards  
intervention on the market in butter and cream**

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Council Regulation (EC) No 1255/1999 of 17 May 1999 on the common organisation of the market in milk and milk products <sup>(1)</sup>, and in particular Articles 10 and 40 thereof,

Whereas:

(1) Regulation (EC) No 1255/1999 replaced Council Regulation (EEC) No 804/68 <sup>(2)</sup>, as last amended by Regulation (EC) No 1587/96 <sup>(3)</sup>, and also *inter alia*, Council Regulation (EEC) No 777/87 <sup>(4)</sup>, as last amended by Regulation (EEC) No 1634/91 <sup>(5)</sup>, concerning the intervention arrangements for butter and skimmed-milk powder. In view of those new arrangements and in the light of the experience gained, it is appropriate to amend and, where necessary simplify the detailed rules governing intervention on the market in butter and cream. In the interests of clarity, therefore, the recasting of the specific Regulations governing the various aspects of intervention, namely Commission Regulations (EEC) No 2315/76 <sup>(6)</sup>, as last amended by Regulation (EC) No 1824/97 <sup>(7)</sup>, (EEC) No 1547/87 <sup>(8)</sup>, as last amended by Regulation (EC) No 1802/95 <sup>(9)</sup>, (EEC) No 1589/87 <sup>(10)</sup>, as last amended by Regulation (EC) No 124/1999 <sup>(11)</sup>, and (EC) No 454/95 <sup>(12)</sup>, as last amended by Regulation (EC) No 390/1999 <sup>(13)</sup>, should be undertaken.

(2) Article 6(1) of Regulation (EC) No 1255/1999 lays down criteria under which the intervention agencies buy in butter through invitation to tender and under which buying-in is to be suspended. It is necessary, firstly, to specify the cases in which buying-in is to be opened or suspended in the Member State concerned and, secondly, to fix the representative period during which the level of market prices for butter in relation to the intervention price must be recorded. To that end, the 'market price for butter' should be defined and arrangements set up for recording those prices at national level. For practical reasons, the Belgo-Luxembourg Economic Union should be considered a single Member State.

(3) The intervention agencies may only buy in butter which meets the requirements laid down in Article 6 of Regulation (EC) No 1255/1999 as well as the conditions of quality and presentation, which need to be defined. The methods of analysis and detailed rules governing quality control should also be specified and, if the situation so requires, provision should be made for checks of the radioactivity in butter, the maximum levels of which need to be established, where appropriate, by Community legislation. However, it should be possible for Member States to authorise a system of self checking, subject to certain conditions. For practical reasons, the period during which butter offered for intervention is produced should be extensible when the interval between two invitations to tender is longer than 21 days.

(4) To ensure that the intervention arrangements function smoothly, it is necessary to specify the conditions for the approval of manufacturing undertakings and verification of compliance therewith. To ensure that the arrangements are effective, provision should be made for action to be taken if these conditions are not complied with. Since butter may be bought in by an intervention agency belonging to a Member State other than that on whose territory it was produced, the intervention agency which does the buying-in should in such cases be able to verify that the conditions relating to quality and presentation are complied with.

(5) Regulation (EC) No 1255/1999 stipulates that buying-in is to be carried out by tendering procedure. To ensure that all interested parties in the Community are treated equally, invitations to tender should be advertised in the *Official Journal of the European Communities*. The details of the tender, particularly the minimum quantity, deadlines for submission and the maximum buying-in price should be defined. To ensure compliance with the requirements as to the quality and presentation of the butter at the time when the tender is submitted, and after its entry into storage, tenderers should be required to submit a written undertaking to that effect together with their tender. Tenders should also be accompanied by a security, in order to guarantee that the tender will be maintained after the closing date for submission of tenders and that the butter will be delivered within time limits to be laid down.

(6) It should be possible to guarantee the quality of the butter, and the terms of buying-in by means of checks at different stages during storage. Failure to comply with

<sup>(1)</sup> OJ L 160, 26.6.1999, p. 48.

<sup>(2)</sup> OJ L 148, 28.6.1968, p. 13.

<sup>(3)</sup> OJ L 206, 16.8.1996, p. 21.

<sup>(4)</sup> OJ L 78, 20.3.1987, p. 10.

<sup>(5)</sup> OJ L 150, 15.6.1991, p. 26.

<sup>(6)</sup> OJ L 261, 25.9.1976, p. 12.

<sup>(7)</sup> OJ L 260, 23.9.1997, p. 8.

<sup>(8)</sup> OJ L 144, 4.6.1987, p. 12.

<sup>(9)</sup> OJ L 174, 26.7.1995, p. 27.

<sup>(10)</sup> OJ L 146, 6.6.1987, p. 27.

<sup>(11)</sup> OJ L 16, 21.1.1999, p. 19.

<sup>(12)</sup> OJ L 46, 1.3.1995, p. 1.

<sup>(13)</sup> OJ L 48, 24.2.1999, p. 3.

the requirements should not impose an additional burden on the Community budget. Provision should therefore be made for sub-standard butter to be taken back by the operator, who should be obliged to bear the storage costs incurred.

- (7) The Member States' obligations should be specified with a view to the proper management of stocks in storage, by stipulating a maximum distance for the place of storage and the costs to be borne when that distance is exceeded, and requiring, in particular, that stocks be accessible, that batches be identified and that butter in storage be insured against risks. In order to ensure a uniform frequency and level of checks, it is necessary to specify the nature and number of inspections of storage premises to be performed by the national authorities.
- (8) Proper management of intervention stock requires the butter to be resold as soon as outlets become available. To ensure equal access to butter for sale, all interested parties should be able to buy. In order not to destabilise the market, the selling price should be fixed having regard to the market situation. Conditions for sale, entailing the lodging of a performance bond should be laid down, particularly as regards the taking-over of the butter and the time limits for payment. In order to monitor the situation of stocks, Member States should inform the Commission of the quantities of butter sold.
- (9) Article 6(3) of Regulation (EC) No 1255/1999 provides for aid to be granted for the private storage of butter and cream. To ensure that the arrangements can be monitored properly, provision should be made for a contract and a set of specifications regarding storage conditions. For the same reason, detailed rules should also be laid down regarding documentation, accounting and the frequency of checks and inspection procedures, particularly in respect of the requirements laid down in Article 6(3). To facilitate checks on the presence of products stored under private storage contracts, there should be provision for them to be removed from storage in lots unless the Member State authorises removal of a smaller quantity.
- (10) To ensure that the private storage scheme is properly managed, it is appropriate to fix annually, on the basis of the storage period, the amount of the aid, the dates of entry into storage and the dates on which storers may remove from storage all or part of the quantities comprised in the contracts. Such dates, storage periods and aid amounts may be changed to take account of the market situation.
- (11) In the case of aid for cream, in order to take account of the value of the product and for practical reasons, the amount of aid should be fixed in butter equivalent and according to fat content. It is also justified to require that fat content be checked systematically. To that end, storers should be required to undertake to comply with a minimum fat content, fixed in advance, for the entire

storage period. Experience has shown that in some cases it is desirable to ease the administrative burden by providing for checks by sampling. However, since it is impossible to verify exactly the fat content of cream after freezing, where the abovementioned undertaking is not complied with no aid should be paid for any of the lots placed in storage after the most recent satisfactory check.

- (12) The third subparagraph of Article 6(3) of Regulation (EC) No 1255/1999 provides that the amount of the aid may be increased if changes on the market so warrants. The conditions determining this adjustment, and its scope, should therefore be defined.
- (13) Since Regulation (EC) No 1255/1999 fixes the intervention price from 1 July 2000, in the interests of clarity the intervention price applicable from the date of entry into force of this Regulation until 30 June 2000 should be specified.
- (14) The measures provided for in this Regulation are in accordance with the opinion of the Management Committee for milk and milk products,

HAS ADOPTED THIS REGULATION:

## CHAPTER I

### Scope

#### Article 1

1. This Regulation lays down the detailed rules for applying intervention measures in the milk and milk products sector as provided for in Article 6 of Regulation (EC) No 1255/1999.
2. For the purposes of this Regulation, the Belgo-Luxembourg Economic Union shall be considered a single Member State.

## CHAPTER II

### Public storage

#### SECTION 1

#### Conditions for buying in butter

#### Article 2

1. Once it is observed in a Member State that, for two weeks in succession, the market price is lower than 92 % of the intervention price, the Commission shall commence buying in under a tendering procedure, as provided for in Article 6(1) of Regulation (EC) No 1255/1999 in the Member State concerned, in accordance with the procedure laid down in Article 42 of that Regulation.

2. Once it is observed in a Member State that, for two weeks in succession, the market price is equal to or higher than 92 % of the intervention price, the Commission shall suspend buying in under a tendering procedure, as provided for in Article 6(1) of Regulation (EC) No 1255/1999 in the Member State concerned, in accordance with the procedure laid down in Article 42 of that Regulation.

#### Article 3

The intervention agencies shall buy in only butter which meets the provisions contained in the first subparagraph of Article 6(2) of Regulation (EC) No 1255/1999 and in Article 4 of this Regulation.

#### Article 4

1. The competent authorities shall check the quality of butter using the analytical methods set out in Annexes I, II and III and on the basis of samples taken in accordance with the rules set out in Annex IV. However, Member States may, if the Commission agrees, set up a system of self checking under their own supervision in respect of certain quality requirements and in the case of certain approved undertakings.

2. Levels of radioactivity in the butter may not exceed the maximum levels permitted, where applicable, under Community rules.

The level of radioactive contamination of the product shall be monitored only if the situation so requires, and during the requisite period. Where necessary, the duration and scope of checks shall be determined in accordance with the procedure laid down in Article 42 of Regulation (EC) No 1255/1999.

3. The butter shall have been made during the 23 days preceding the closing date for submission of tenders as referred to in Article 10. Where the interval between two consecutive invitations to tender is longer than 21 days, the butter may have been made during that period.

4. The minimum quantity of butter offered shall be 10 tonnes. Member States may require butter to be offered by the full tonne only.

5. The butter shall be packaged and delivered in blocks of at least 25 kilograms net.

6. The butter shall be packed in new, strong material in such a way as to ensure it is protected throughout transportation, storage and removal from storage. The packaging shall show at least the following particulars, where appropriate in code:

- (a) the approval number identifying the factory and the Member State of production;

- (b) the date of production;
- (c) the date of entry into storage;
- (d) the production batch number and the package number; the package number may be replaced by a pallet number marked on the pallet;
- (e) the words 'sweet cream' if the aqueous phase of the butter has the corresponding pH;
- (f) the national quality class referred to in Annex V, where this is required by the Member State of production.

Member States may waive the obligation to show the date of entry into storage on the packaging, provided that the store manager undertakes to keep a register in which the particulars referred to in the second subparagraph are recorded on the date of entry into storage.

#### Article 5

1. Undertakings as referred to in Article 6(2) of Regulation (EC) No 1255/1999 shall be approved only if they:

- (a) are approved in accordance with Article 10 of Council Directive 92/46/EEC <sup>(1)</sup>, and have the appropriate technical equipment;
- (b) undertake to keep permanent records in the form determined by the competent agency of each Member State, listing the origin of the raw materials, the quantities of butter obtained and the packaging, identification and exit date of each production batch intended for public intervention;
- (c) agree to submit their production of butter to a specific official inspection and, where applicable, to meet the requirements for the national quality class referred to in Annex V;
- (d) undertake to inform the competent agency responsible for inspection, at least two working days in advance, of their intention to produce butter for public intervention. However, the Member State may set a shorter time limit.

2. To ensure compliance with this Regulation, the competent agencies shall carry out unannounced on-the-spot inspections, on the basis of the intervention butter production schedule of the undertakings concerned.

They shall carry out at least:

- (a) one inspection per period of 28 days of production for intervention with at least one inspection every six months, to examine the records referred to in paragraph 1(b);
- (b) one inspection every six months, to verify compliance with the other conditions for approval referred to in paragraph 1.

3. Approval shall be withdrawn if the preconditions laid down in paragraph 1(a) are no longer satisfied. Approval may be regranted at the request of the enterprise concerned after a period of at least six months, following a thorough inspection.

<sup>(1)</sup> OJ L 268, 14.9.1992, p. 1.

Except in cases of *force majeure*, where an enterprise is found not to have complied with one of its undertakings as referred to in paragraph 1(b), (c) and (d), approval shall be suspended for a period of between one and 12 months depending on the seriousness of the irregularity.

The Member State shall not impose the said suspension where it is found that the irregularity was not committed deliberately or as a result of serious negligence and it is of minor importance with regard to the effectiveness of the inspections provided for in paragraph 2.

4. A report shall be drawn up on the inspections carried out pursuant to paragraphs 2 and 3, specifying:

- (a) the date of the inspection;
- (b) its duration;
- (c) the operations carried out.

The report shall be signed by the inspector responsible.

5. Member States shall inform the Commission of the measures taken with regard to the inspections provided for in paragraphs 2 and 3 within one month of their adoption.

#### Article 6

1. Where the butter is offered to intervention in a Member State other than that in which it was produced, buying-in shall be subject to the presentation of a certificate supplied not later than 45 days after the closing date for submission of tenders by the competent agency of the Member State of production.

The certificate shall contain the information referred to in Article 4(6)(a), (b), (d) and, where applicable, (f), and a confirmation that the butter has been produced directly and exclusively from pasteurised cream, within the meaning of the second indent of Article 6(6) of Regulation (EC) No 1255/1999, in an approved undertaking in the Community.

2. Where the Member State of production has performed the checks referred to in Article 4(1), the certificate shall also contain the results of those checks and confirm that the product concerned is butter within the meaning of the first subparagraph of Article 6(2) of Regulation (EC) No 1255/1999. In that case, the packaging referred to in Article 4(6) must be sealed by means of a numbered label issued by the competent agency of the Member State of production. The number must be entered on the certificate referred to in paragraph 1.

#### SECTION 2

##### Price recording

#### Article 7

The market prices of butter as referred to in Article 6(1) of Regulation (EC) No 1255/1999 shall be the prices ex-factory with payment within 21 days, exclusive of national taxes and

charges, of fresh butter meeting the conditions set out in the first subparagraph of Article 6(2) of Regulation (EC) No 1255/1999, packaged in blocks of at least 25 kilograms net.

The ex-factory prices shall be raised by a flat-rate amount of EUR 2,5 per 100 kilograms to take account of the transport costs necessary to deliver the butter to a cold storage plant.

#### Article 8

1. Market prices at national level shall be recorded each week, either by prices boards or on the representative markets.

The weekly recording of prices shall relate to prices as provided for in Article 7, recorded during the preceding week.

Prices shall be expressed in euro, rounded to two decimal places, per 100 kilograms.

2. Member States shall determine:

- (a) the membership of prices boards, in such a way as to ensure that buyers and sellers engaged in transactions involving a large quantity of butter are equally represented or, as the case may be, the system for recording prices on the representative markets;
- (b) the provisions needed to check the data on which the price recording is based;
- (c) in cases where transactions relating to butter of the quality referred to in the first paragraph of Article 7 are insufficient in volume to be deemed representative, the criteria for establishing the ratio between the prices for butter for which there have been enough transactions and those for butter as referred to in Article 7.

The Member States shall provide the Commission with a description of the arrangements set up in accordance with the first subparagraph.

3. Not later than 12 noon (Brussels time) of each Wednesday, Member States shall inform the Commission of the prices recorded in accordance with paragraph 1.

4. On each Thursday the Commission shall record the level of market prices in each Member State in comparison with the intervention price.

#### SECTION 3

##### Tendering procedure

#### Article 9

Once the Commission has noted that the condition referred to in Article 2(1) is fulfilled in a Member State, the intervention agency concerned shall buy in butter in accordance with this Section.

A notice of invitation to tender shall be published in the *Official Journal of the European Communities*.

#### Article 10

The closing date for submission of tenders for each individual invitation to tender shall fall on every second and fourth Tuesday of the month at noon (Brussels time), except the second Tuesday in August and the fourth Tuesday in December. If the Tuesday is a public holiday, the closing date shall be the last preceding working day at noon (Brussels time).

#### Article 11

1. Interested parties shall participate in the tendering procedure announced by the intervention agency of a Member State either by submitting a written tender against issuance of a receipt, or by any written means of telecommunication with proof of receipt.

2. Tenders shall contain:

- (a) the name and address of the tenderer;
- (b) the quantity offered, the minimum fat content;
- (c) the proposed price per 100 kilograms of butter, exclusive of national taxes and charges, delivered to the loading bay of the cold store, expressed in euro to no more than two decimal places;
- (d) the place where the butter is held.

3. Tenders shall be valid only if:

- (a) they relate to a quantity of butter meeting the requirements of Article 4(4);
- (b) they are accompanied by a written undertaking by the tenderer to comply with Articles 4(3) and 17(2);
- (c) proof is furnished that the tenderer has lodged a security of EUR 5 per 100 kg for the invitation to tender concerned, in the Member State in which the tender was submitted, before the closing date for submission of tenders.

4. The undertaking provided for in paragraph 3(b), if forwarded initially to the intervention agency, shall be deemed to be tacitly renewed for subsequent tenders until explicitly cancelled by the tenderer or the intervention agency, provided that:

- (a) the original tender stipulates that the tenderer intends to avail himself of this provision,
- (b) subsequent tenders refer to this provision (Article 11 (4)) and to the date of the original tender.

5. The intervention agency shall record the day on which the tender was received, the quantities involved and their respective dates of manufacture and the place where the butter offered is stored.

6. Tenders may not be withdrawn after the closing date referred to in Article 10 for the submission of tenders relating to the invitation to tender concerned.

#### Article 12

Maintenance of the tender after the closing date for submission of tenders, and delivery of the butter to the depot designated by the intervention agency within the time limit laid down in Article 15(3), shall constitute primary requirements within the meaning of Article 20 of Commission Regulation (EEC) No 2220/85<sup>(1)</sup>.

#### Article 13

1. The Member States shall inform the Commission of the quantities and prices offered by tenderers, no later than 9.00 a.m. (Brussels time) on the day after the closing date referred to in Article 10.

2. In the light of the tenders received for each invitation to tender, the Commission shall fix a maximum buying-in price, by reference to the intervention prices applicable, in accordance with the procedure laid down in Article 42 of Regulation (EC) No 1255/1999.

3. A decision may be taken not to proceed with the invitation to tender.

#### Article 14

1. Tenders shall be refused if the price proposes higher than the maximum price referred to in Article 13(2), applying to the tendering procedure concerned.

2. The rights and obligations resulting from the tendering procedure shall not be transferable.

#### Article 15

1. Tenderers shall be informed immediately by the intervention agency of the outcome of their participation in the tendering procedure.

Where tenders have been unsuccessful, the securities referred to in Article 11(3)(c) shall be released immediately.

2. The intervention agency shall immediately issue to the successful tenderer a dated and numbered delivery order indicating:

- (a) the quantity to be delivered;
- (b) the final date for delivery of the butter;
- (c) the cold storage depot to which it must be delivered.

3. Within 21 days of the closing date for submission of tenders, the successful tenderer shall deliver the butter to the loading bay of the cold store. Delivery may be in several consignments.

Any costs incurred in unloading the butter at the loading bay of the cold store shall be borne by the successful tenderer.

<sup>(1)</sup> OJ L 205, 3.8.1985, p. 5.

4. The security shall be released as soon as the successful tenderer has delivered the quantity indicated on the delivery order within the time limit laid down.

5. Except in cases of *force majeure*, where the successful tenderer fails to deliver the butter within the time limit laid down, not only shall the security provided for in Article 11(3)(c) be forfeit in proportion to the quantities not delivered, but buying-in shall also be cancelled in respect of the remaining quantities.

#### Article 16

1. The intervention agency shall pay the successful tenderer the price indicated in the tender for each quantity of butter taken over, between the 45th and 65th day after taking over, provided that compliance with the provisions of Articles 3 and 4 has been confirmed.

2. The day of the taking-over shall mean the day on which the butter enters the cold store designated by the intervention agency, but no earlier than the day following that on which the delivery order referred to in Article 15(2) was issued.

#### Article 17

1. The butter shall be put through a trial storage period. This period shall be fixed at 30 days starting from the day of taking over.

2. By their tenders, sellers shall undertake that, where the inspection on entry into the store designated by the intervention agency shows that the butter does not meet the provisions of Articles 3 and 4, or where, at the end of the trial storage-period, the minimum organoleptic quality of the butter proves to be below that set in Annex I:

- (a) they will take back the butter in question; and
- (b) they will pay the storage costs of the butter concerned from the day on which it was taken over until the date of its removal from storage.

The storage costs to be paid shall be the costs to be reimbursed by the intervention agency to the account of the Guarantee Section of the European Agricultural Guidance and Guarantee Fund (EAGGF) in accordance with Article 7(2)(a) and (b) of Commission Regulation (EEC) No 3597/90 <sup>(1)</sup>.

The amounts shall be credited to the account of the European Agricultural Guidance and Guarantee Fund (EAGGF), Guarantee Section.

<sup>(1)</sup> OJ L 350, 14.12.1990, p. 43.

## SECTION 4

### Entry into and removal from storage

#### Article 18

1. The Member States shall lay down technical standards, providing in particular for a storage temperature of not lower than  $-15^{\circ}\text{C}$ , for the cold stores referred to in the third subparagraph of Article 6(2) of Regulation (EC) No 1255/1999 and shall take any other measures needed to ensure that the butter is properly conserved. The relevant risks shall be covered by insurance in the form of either a contractual obligation on storers or a comprehensive coverage of the liability borne by the intervention agency; the Member States may also act as their own insurers.

2. The intervention agencies shall require that butter be delivered to the loading bay of the cold store, and be taken into storage and kept there, on pallets, in such a way as to create easily identifiable and readily accessible lots.

3. The competent agency responsible for checks shall perform unannounced checks on the presence of the butter in store, in accordance with Article 4 of Commission Regulation (EC) No 2148/96 <sup>(2)</sup>.

#### Article 19

1. The intervention agency shall choose the available cold store nearest to the place where the butter is stored.

However, provided that the choice of another cold store does not result in additional storage costs, it may choose another store situated within the distance referred to in paragraph 2.

It may choose a cold store situated beyond that distance if the resulting expenditure, inclusive of storage and transport costs, is lower. In this case the intervention agency shall notify the Commission of its choice forthwith.

2. The maximum distance referred to in the third subparagraph of Article 6(2) of Regulation (EC) No 1255/1999 shall be 350 kilometres. Beyond that distance, the additional transport costs borne by the intervention agency shall be EUR 0,065 per tonne and per kilometre.

However, where the intervention agency buying in the butter is in a Member State other than the one in whose territory the offered butter is stored, no account shall be taken, in calculating the maximum distance referred to in the first subparagraph, of the distance between the store of the vendor and the border of the Member State of the purchasing intervention agency.

3. The additional charges referred to in paragraph 2 shall be borne by the intervention agency only if the temperature of the butter does not exceed  $6^{\circ}\text{C}$  on arrival at the cold store.

<sup>(2)</sup> OJ L 288, 9.11.1996, p. 6.

*Article 20*

At the time of removal from store the intervention agency shall, in the case of delivery ex-cold store, make the butter available on pallets at the store's loadingbay, loaded, where appropriate, onto the means of transport where this is a lorry or a railway wagon. The costs involved shall be borne by the intervention agency and any stowage and depalletising costs shall be borne by the purchaser of the butter.

## SECTION 5

## Sale of butter

*Article 21*

Intervention agencies in the Member States shall sell to any interested party butter which they hold and which entered storage before 1 July 1996.

*Article 22*

1. Butter shall be sold ex-storage depot at a price equal to the intervention price fixed in Article 4(1)(a) of Regulation (EC) No 1255/1999 and applying on the day on which the sale contract is concluded, plus EUR 1 per 100 kg.

It shall be sold in quantities of not less than five tonnes. However, where the quantity remaining in a storage depot is less than five tonnes, the sale shall relate to that smaller quantity.

2. The intervention agency shall sell the butter only if a security equal to EUR 10 per 100 kg is lodged, no later than the conclusion of the contract of sale, in order to ensure that the primary requirements within the meaning of Article 20 of Regulation (EEC) No 2220/85 are fulfilled as regards the taking-over of the butter within the time limit laid down in the first subparagraph of Article 23(1) of this Regulation.

3. The intervention agency shall sell the butter according to the date when it was placed in storage, starting with the oldest of the total available quantity or, as the case may be, the quantity available in the store or stores designated by the purchaser.

*Article 23*

1. The purchaser shall take delivery of the butter within one month from the date on which the sale contract was concluded.

Delivery may be taken in instalments of not less than five tonnes each. However, where the quantity remaining in a storage depot is less than five tonnes, that smaller quantity may be delivered.

2. Before taking delivery of each quantity of butter, the purchaser shall pay the intervention agency the price corresponding to the quantity being delivered.

3. Except in the event of *force majeure*, the sales contract shall be terminated in respect of any quantities of which the purchaser has not taken delivery within the period specified in paragraph 1.

4. The security provided for in Article 22(2) shall be forfeit in respect of any quantities for which the contract of sale is terminated in accordance with paragraph 3. It shall be released immediately in respect of quantities of which delivery is taken within the prescribed period.

5. In the event of *force majeure*, the intervention agency shall take such action as it considers necessary having regard to the circumstances invoked.

*Article 24*

Member States shall inform the Commission not later than Tuesday of each week of the quantities of butter which, during the preceding week:

- (a) have been the subject of a sale contract;
- (b) have been taken over.

## CHAPTER III

**Private storage of butter or cream**

## SECTION 1

## Contract and storage conditions

*Article 25*

For the purposes of this Chapter:

- 'storage lot' means a quantity weighing at least one tonne and of homogeneous composition and quality, originating in a single factory, taken into storage in a single warehouse on a single day;
- 'day of commencement of contractual storage' means the day following that of entry into store;
- 'last day of contractual storage' means the day preceding that of removal from storage.

*Article 26*

Contracts relating to the private storage of butter or cream as referred to in the fourth subparagraph of Article 6(3) of Regulation (EC) No 1255/1999 shall be concluded between the intervention agency of the Member State on whose territory the butter and cream are stored and natural or legal persons, hereinafter called 'contractors'.

*Article 27*

1. A private storage contract may be concluded only for butter or cream as referred to in the first subparagraph of Article 6(3) of Regulation (EC) No 1255/1999.

Butter must have been produced in an undertaking approved in accordance with Article 5(1)(a), (b) and (c) of this Regulation during the 28 days preceding the day of commencement of contractual storage. It shall correspond to the national quality class of the Member State of production referred to in Annex V and its radioactivity level shall not exceed the maximum permitted levels referred to in Article 4(2).

2. A storage contract may not be concluded for butter or cream:

- (a) in respect of which an application for direct consumption aid has been made under other Community provisions;
- (b) which has been placed under the arrangements referred to in Article 5(1) of Council Regulation (EEC) No 565/80<sup>(1)</sup>; subsequent placing under those arrangements shall be regarded as ending the contractual storage period.

#### Article 28

1. Storage contracts shall be concluded in writing for one or more storage lots and shall include, in particular, provisions concerning:

- (a) the quantity of butter or cream to which the contract applies;
- (b) the amount of the aid, without prejudice to Article 38;
- (c) the dates relating to the execution of the contract, without prejudice to the fifth subparagraph of Article 6(3) of Regulation (EC) No 1255/1999;
- (d) the identity of the cold stores.

2. The control measures, particularly those referred to in Article 33, and the information referred to in paragraph 3 of this Article shall be the subject of specifications drawn up by the intervention agency of the Member State of storage. The storage contract shall refer to these specifications.

3. The specifications shall provide that the packaging of the butter is to show at least the following particulars, which may be encoded, where appropriate:

- (a) the number identifying the factory and the Member State of production;
- (b) the date of production;
- (c) the date of entry into storage;
- (d) the number of the manufacturing batch;
- (e) the word 'salted' in the case of butter as referred to in the third indent of the first subparagraph of Article 6(3) of Regulation (EC) No 1255/1999;
- (f) the national quality class referred to in Annex V;
- (g) the net weight.

Member States may waive the obligation to indicate the date of entry into store on the packaging provided the store manager undertakes to keep a register in which the particulars referred

to in the first subparagraph are entered on the date of entry into store.

#### Article 29

1. Entry into store may take place only between 15 March and 15 August of the same year. Removal from store may take place only as from 16 August of the year of storage.

2. Removal from store shall be in whole storage lots or, if the competent agency so authorises, in smaller quantities. However, in the circumstances referred to in Article 33(2)(a) only a sealed quantity may be removed from store.

#### Article 30

1. Applications to conclude a contract with the intervention agency may relate only to lots of butter or cream which have been fully taken into storage.

Applications must reach intervention agencies within no more than 30 days of the date of entry into store. Intervention agencies shall register their date of receipt.

If the application reaches the intervention agency within 10 working days following the deadline, the storage contract may still be concluded but the aid shall be reduced by 30 %.

2. Storage contracts shall be concluded within no more than 30 days of the date of registration of the application.

#### Article 31

Where the butter is stored in a Member State other than the Member State of production, conclusion of the storage contract referred to in Article 30 shall be subject to presentation of a certificate supplied by the competent agency of the Member State of production within 50 days of the date of the butter's entry into storage.

The certificate shall contain the information specified in Article 28(3)(a), (b) and (d) and confirm that the product concerned is butter within the meaning of the first subparagraph of Article 6(3) of Regulation (EC) No 1255/1999.

In the case referred to in the first paragraph, storage contracts shall be concluded within no more than 60 days of the date of registration of the application.

### SECTION 2

#### Checks

#### Article 32

1. The Member State shall ensure that all the conditions for entitlement to payment of the aid are fulfilled.

<sup>(1)</sup> OJ L 62, 7.3.1980, p. 5.



2. The contractor or, at the request of the Member State or with its authorisation, the person responsible for the storage depot shall make available to the competent agency responsible for inspection any documentation permitting verification of the following particulars of products placed in private storage:

- (a) the approval number identifying the factory and the Member State of production,
- (b) the date of production;
- (c) the date of entry into storage;
- (d) the storage lot number;
- (e) presence in the store and the address of the store;
- (f) the date of removal from storage.

3. The contractor or, where applicable, the person responsible for the store shall keep stock records available at the store for each contract, covering:

- (a) the storage lot number of the products placed in private storage;
- (b) the dates of entry into and removal from storage;
- (c) the quantity of butter or cream, indicated per storage lot;
- (d) the location of the products in the store.

4. Products stored must be easily identifiable, easily accessible and identified individually by contract.

#### Article 33

1. On entry into storage the competent agency shall conduct checks within the period beginning on the date of entry into the store and ending 28 days after the date of registration of the application for conclusion of a contract referred to in Article 30.

To ensure that the products stored are eligible for aid, the checks shall be made on a representative sample of at least 5 % of the quantities placed in storage to ensure that, as regards sufficiently *inter alia*, the weight, identification and nature of the products, the storage lots in their entirety physically conform to the application for conclusion of a contract.

2. The competent agency shall:

- (a) either seal the products by contract, storage lot or smaller quantity at the time of the check provided for in paragraph 1;
- (b) or make an unannounced check, by sampling, to ensure that the products are present in the store. The sample concerned must be representative and must correspond to at least 10 % of the total quantity under contract for a private storage aid measure.

3. At the end of the contractual storage period, the competent agency shall, by sampling, verify weight and identification. To that end, the contractor shall inform the competent

agency at least five working days before the end of the maximum contractual storage period of 210 days or, where appropriate and where products are removed during the 210-day period, before the start of the removal operations, indicating the storage lots involved.

Where the butter is still in storage after expiry of the maximum contractual storage period, the check referred to in the first subparagraph may be made when the butter is removed from storage. To that end, the contractor shall inform the competent agency at least five working days before the start of removal operations.

In the cases provided for in the first and second subparagraphs, the Member State may accept a shorter timelimit than five working days.

4. A report shall be drawn up on the checks carried out pursuant to paragraphs 1, 2 and 3, specifying:

- (a) the date of the check;
- (b) its duration;
- (c) the operations carried out.

The report must be signed by the inspector responsible and countersigned by the contractor or, as the case may be, the person responsible for the store, and must be included in the payment dossier.

5. In the event of irregularities affecting at least 5 % of the quantities of products checked, the check shall be extended to a larger sample to be determined by the competent agency.

The Member States shall notify such cases to the Commission within four weeks.

### SECTION 3

#### Storage aid

#### Article 34

1. Aid for private storage as provided for in the first subparagraph of Article 6(3) of Regulation (EC) No 1255/1999 may be granted only where the contractual storage period is between 90 and 210 days.

Where the contractor fails to comply with the time limit referred to in Article 33(3), the aid shall be reduced by 15 % and shall be paid only in respect of the period for which the contractor supplies satisfactory proof to the competent agency that the butter or cream has remained in contractual storage.

2. Without prejudice to Article 38, the Commission shall determine each year in accordance with the procedure laid down in Article 42 of Regulation (EC) No 1255/1999, the amount of the aid referred to in the third subparagraph of Article 6(3) of that Regulation for private storage contracts commencing during the year in question.

3. The aid shall be paid on application by the contractor, at the end of the contractual storage period, within 120 days of receipt of the application, provided that the checks referred to in Article 33(3) have been carried out and that the conditions for entitlement to the aid have been met.

However, if an administrative enquiry into entitlement to the aid is under way, payment shall not be made until entitlement has been recognised.

4. After 60 days of contractual storage a single advance payment of the aid may be made at the contractor's request, provided he lodges a security equal to the advance payment plus 10 %. This advance shall be calculated on the basis of a storage period of 90 days. The security shall be released as soon as the balance of the aid referred to in paragraph 3 has been paid.

#### Article 35

1. Where, at the end of the first 60 days of contractual storage, the deterioration in the quality of the butter or cream is greater than is normal in store, contractors may be authorised, once per storage lot, to replace the defective quantity, at their own expense, with an equal quantity of butter or cream as specified in the first subparagraph of Article 6(3) of Regulation (EC) No 1255/1999.

If checks during storage or on removal reveal defective quantities, no aid may be paid for those quantities. In addition, the remainder of the storage lot which is still eligible for aid may not be less than one tonne. The same rule shall apply where part of a lot is removed before 16 August or before expiry of the minimum storage period.

2. For the purpose of calculating the aid in the case referred to in the first subparagraph of paragraph 1, the first day of contractual storage shall be the day of commencement of contractual storage.

#### Article 36

1. Aid for the storage of cream may be granted only for pasteurised cream with a fat content of not less than 35 % and not more than 80 %.

2. For the purpose of calculating the aid, the quantities of cream shall be converted into butter equivalent by reference to butter with a fat content of 82 % by multiplying the fat content of the cream by 1,20.

3. The fat content specified in paragraph 1 shall be checked by a laboratory approved by the competent agency before the cream is frozen.

#### Article 37

1. Member States may permit contractors to undertake voluntarily, for all storage lots under all contracts concluded during the current year, to observe a single minimum fat

content fixed in advance within the limits specified in Article 36(1).

2. Where paragraph 1 is applied, the aid shall be granted on the basis of the minimum fat content fixed in advance.

In such cases Member States shall check the fat content in accordance with Article 36(3) by random sampling in the course of frequent unannounced visits.

If such checks reveal that the fat content is lower than the minimum content fixed in advance, no aid shall be paid for the storage lots taken into store since the last satisfactory check, and paragraph 1 shall no longer apply to the contractor concerned for the rest of the contractual storage period.

However, if the fat content is found to be less than 2 % lower than the minimum content fixed in advance, the aid shall be paid on the basis of the fat content found, minus 10 %.

#### Article 38

1. If the market situation so requires, the amount of the aid, the periods of entry into and removal from storage and the maximum length of storage may be altered during the year in respect of contracts yet to be concluded.

2. Where the maximum buying-in price fixed by invitation to tender in accordance with Article 13(2), expressed in euro or, for the countries not participating in the single currency, in national currency, and applying on the day of commencement of contractual storage, is higher than that applying on the last day of contractual storage, the aid determined in accordance with Article 34(2) shall be increased by an amount equal to any reduction in the maximum buying-in price in excess of 2 % of the price applying on the day of commencement of contractual storage.

Should that price be lower than the price applying on the last day of contractual storage, the aid determined in accordance with Article 34(2) shall be reduced by an amount equal to any increase in the maximum buying-in price in excess of 2 % of the price applying on the day of commencement of contractual storage. However, the reduction in the aid may not exceed the total amount of the aid.

3. The aid adjustment referred to in paragraph 2 shall apply only if, during the contractual storage period, a maximum buying-in price has been fixed in accordance with Article 13(2) and if, on the last day of contractual storage, buying-in has commenced in more than eight Member States.

If a maximum buying-in price has not been fixed in the 21 days immediately preceding the start of the contractual storage period, the maximum buying-in price deemed to apply on the first day of contractual storage shall be equal to 90 % of the intervention price in force.

**CHAPTER IV****Transitional and final provision***Article 39*

Regulations (EEC) Nos 2315/76, 1547/87, 1589/87 and (EC) No 454/95 are hereby repealed.

Regulation (EC) No 454/95 shall continue to apply to private storage contracts concluded before 1 January 2000.

References to the repealed Regulations shall be construed as references to this Regulation.

*Article 40*

The intervention price for butter applying from 1 January 2000 to 30 June 2000 shall be that fixed in Council Regulation (EC) No 1400/1999 <sup>(1)</sup>.

*Article 41*

This Regulation shall enter into force on 1 January 2000.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 16 December 1999.

*For the Commission*  
Franz FISCHLER  
*Member of the Commission*

---

<sup>(1)</sup> OJ L 164, 30.6.1999, p. 10.

## ANNEX I

**COMPOSITIONAL REQUIREMENTS, QUALITY CHARACTERISTICS AND ANALYTICAL METHODS**

Butter is a solid emulsion, mainly of the water-in-oil type, with the following compositional and quality characteristics.

Parameters	Content and quality characteristics	Reference method
Fat	Minimum 82 %	( <sup>2</sup> )
Water	Maximum 16 %	( <sup>2</sup> )
Non-fat solids	Maximum 2 %	( <sup>2</sup> )
Free fatty acids ( <sup>1</sup> )	Maximum 1,2 mmole/100 g fat	( <sup>2</sup> )
Peroxide value	Maximum 0,3 meq oxygen/1 000 g fat	( <sup>2</sup> )
Coliformes	Not detectable in 1 g	( <sup>2</sup> )
Non-milk fat	Not detectable by triglyceride analysis	( <sup>2</sup> )
Tracers ( <sup>1</sup> ) — sterols ( <sup>2</sup> ) — vanillin ( <sup>2</sup> ) — ethyl ester of carotenic acid ( <sup>2</sup> ) — triglycerides of enanthic acid ( <sup>2</sup> )	Not detectable	( <sup>2</sup> )
Other tracers ( <sup>1</sup> )	Not detectable	Methods approved by competent authority
Sensory characteristics	At least four out of five points for appearance, flavour and consistency	( <sup>2</sup> )
Water dispersion	At least four points	( <sup>2</sup> )

(<sup>1</sup>) Tracers approved under Regulations (EEC) No 3143/85 (OJ L 298, 12.11.1985, p. 9) and No 429/90 (OJ L 45, 21.2.1990, p. 8) and (EC) No 2571/97 (OJ L 350, 20.12.1997, p. 3).

(<sup>2</sup>) See Commission Regulation (EC) No 1854/96 (OJ L 246, 27.9.1996, p. 5), as last amended by Regulation (EC) No 881/1999 (OJ L 111, 29.4.1999, p. 24), establishing a list of reference methods to be applied for the analysis and quality evaluation of milk and milk products under the common market organisation.

## ANNEX II

**REFERENCE METHOD FOR THE DETECTION OF FOREIGN FATS IN MILK FAT BY GAS CHROMATOGRAPHIC ANALYSIS OF TRIGLYCERIDES — REVISION 1****1. Scope and field of application**

This standard lays down a method for the detection of foreign fats, of both vegetable fats and animal fats such as beef tallow and lard in milk fat of milk products using gas chromatographic analysis of triglycerides.

Using defined triglyceride formulae vegetable and animal fats are qualitatively and quantitatively detected in pure milk fat irrespective of feeding or lactation conditions.

*Note 1:* Although butyric acid (C4) occurring exclusively in milk fats enables quantitative estimations of low to mean amounts of milk fat in vegetable fats to be made, qualitative and quantitative information can hardly be provided in the range of an addition of up to at least 20 % (weight %) foreign fat to pure milk fat because of the large variation of C4 ranging approximately between 3,5 to 4,5 % (weight %).

*Note 2:* Quantitative results can practically only be obtained by triglyceride analyses, because the sterol content of the vegetable fats is different as a function of production and treatment conditions.

**2. Definition**

Foreign fats in milk fat: foreign fats as defined in this standard are all vegetable and animal fats except milk fat.

**3. Principle of the method**

After extraction of the milk fat a stock solution is prepared.

From this solution the triglycerides (total carbon numbers) are determined gas chromatographically on packed columns. By inserting the weight % of the fat molecules of different size (C24 — C54 — only even numbers) in the triglyceride formula the foreign fats are either qualitatively detected or quantitatively determined.

*Note:* Observing the evaluation described here capillary gas chromatography can be used, if it is guaranteed that comparable results are achieved <sup>(1)</sup>.

**4. Reagents**

Analysis-grade chemicals must be used.

- 4.1. Carrier gas: nitrogen, purity degree  $\geq 99,996$  %.
- 4.2. Standard triglycerides <sup>(2)</sup>, saturated as well as cholesterol for standardizing a standard milk fat according to section 6.5.4.
- 4.3. Methanol, water-free.
- 4.4. n-Hexane
- 4.5. n-Heptane
- 4.6. Toluene
- 4.7. Dimethylchlorosilane solution: 50 ml dimethylchlorosilane are dissolved in 283 ml toluene.
- 4.8. Combustible gas: hydrogen and synthetic air
- 4.9. Stationary phase, 3-% OV-1 on 125/150  $\mu\text{m}$  (100/120 mesh) Gas ChromQ. <sup>(3)</sup>
- 4.10. 10 % cocoa butter solution

<sup>(1)</sup> Suited methods have already been described, see D. Precht and J. Molkentin: Quantitative triglyceride analysis using short capillary columns, Chrompack News 4, 16-17 (1993).

<sup>(2)</sup> Suitable products are commercially available.

<sup>(3)</sup> Trade names such as, e.g. Extrelut, Gas ChromQ, Chrompack are examples for suited products available in the specialised trade. This information shall serve the purpose of easy handling of the standard by the user and does not represent a request of the product. The indication of grain was transferred to the SI-unit  $\mu\text{m}$  according to BS 410:1988 'British Standard Specification for test sieves'.

## 5. Instruments

Normal laboratory apparatus and particularly the following:

- 5.1. High temperature gas chromatograph suited for temperatures of at least 400 — 450 °C, equipped with a flame ionization detector (FID) and constant mass flow controller for the carrier gas. Combustion gas: 30 ml/min H<sub>2</sub>, 270 ml/min synthetic air.

*Note:* Because of the high temperatures occurring during triglyceride analyses the glass inserts in the FID or in the injector system must be frequently cleaned.

The gas chromatograph must be equipped with septa, withstanding high temperatures, which can be frequently used and exhibit generally a very low degree of 'bleeding'.

*Note:* Suited are Chromblue (tm) septa (Chrompack).

The septa must be exchanged at regular intervals, e.g. after roughly 100 injections or as soon as the resolution deteriorates (see figure 4).

- 5.2. Chromatography column

U-shaped glass column (inside diameter 2 mm, 500 mm in length), which is first silanized according to section 6.1 with dimethylchlorosilane in order to deactivate the glass surface.

*Note:* Suited are also somewhat longer (80 — 200 mm in length) packed columns. With them a slightly better reproducibility of the results can be achieved. On the other hand, the stationary phase exhibits occasionally fractures after operation, which may lead, in turn, to worse quantitative results. Further, the FID flame is easily extinguished as a result of the required extremely high carrier gas flow of 75 to 85 ml/min.

- 5.3. Arrangement for filling the column (see figure 1)

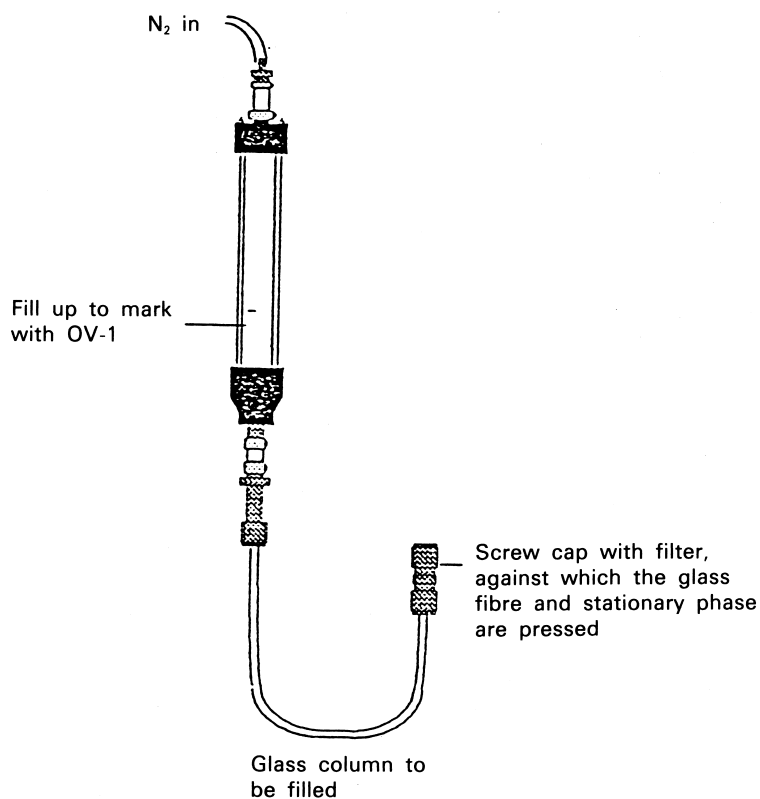


Figure 1: Filling of the column

- 5.3.1. Plastic column with screwed-on end caps, provided with a mark up to which the required quantity of stationary phase can be filled
- 5.3.2. Fine sieve (mesh size approximately 100 μm) with screw cap, suited for sealing the glass column according to figure 1.

- 5.3.3. Deactivated, silanized glass wool
- 5.3.4. Vibrator for uniform distribution of the stationary phase during filling
- 5.4. 1 to 3 ml Extrelut column<sup>(1)</sup> with silica gel. This column can alternatively be used for the extraction for obtaining milk fat.
- 5.5. Graphite seal 6,4 mm (1/4") with 6 mm bore
- 5.6. Devices for silanizing the glass surface of the column according to section 6.1.
  - 5.6.1. Woulff bottle
  - 5.6.2. Water suction pump
- 5.7. Water bath, adjustable to  $(50 \pm 2) ^\circ\text{C}$
- 5.8. Drying cabinet, adjustable to  $(50 \pm 2) ^\circ\text{C}$  and  $(100 \pm 2) ^\circ\text{C}$
- 5.9. Microlitre pipette
- 5.10. 5 ml graduated pipette for dosing 1,5 ml methanol
- 5.11. 50 ml round-bottomed flask
- 5.12. Erlenmeyer flask, nominal volume 50 ml
- 5.13. Funnel
- 5.14. Fine-pored filter
- 5.15. Rotary evaporator
- 5.16. Ampoules, nominal volume 1 ml, sealable with an aluminium cap, with a septum in the interior
- 5.17. Injection syringe, the plunger of the syringe used must not reach into the tip of the needle.

Note: Such syringes allow a better reproducibility of the results to be obtained.

In order to avoid deterioration of the septum, the tip of the needle should be checked at regular intervals (e.g. with a stereomicroscope).

## 6. Procedure

### 6.1. Preparation of the column (silanization)

After connecting the Woulff bottle, as shown in figure 2, with the water suction pump tube 2 is dipped into the solution according to section 4.7. By closing the stopcock the column is filled; subsequently the two tubes are removed.

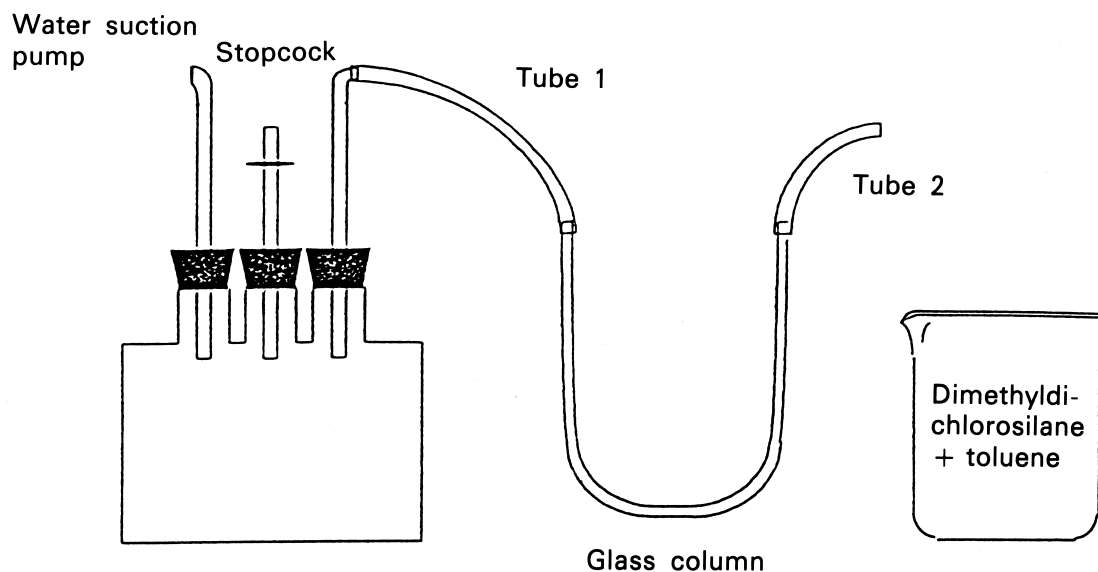


Figure 2: Arrangement for silanisation

<sup>(1)</sup> See footnote 3 on page 23.

The column is fixed on a stand and completely filled with the dimethyldichlorosilane solution by means of a pipette.

After 20-30 min the Wouff bottle is replaced by a filter flask and the column emptied by connecting it with the water suction pump (see figure 3).

#### 6.2. Filling of the column

This is followed by successive rinsing using 75 ml toluene and 50 ml methanol; then the emptied column is dried in the drying cabinet at 100 °C for approximately 30 minutes.

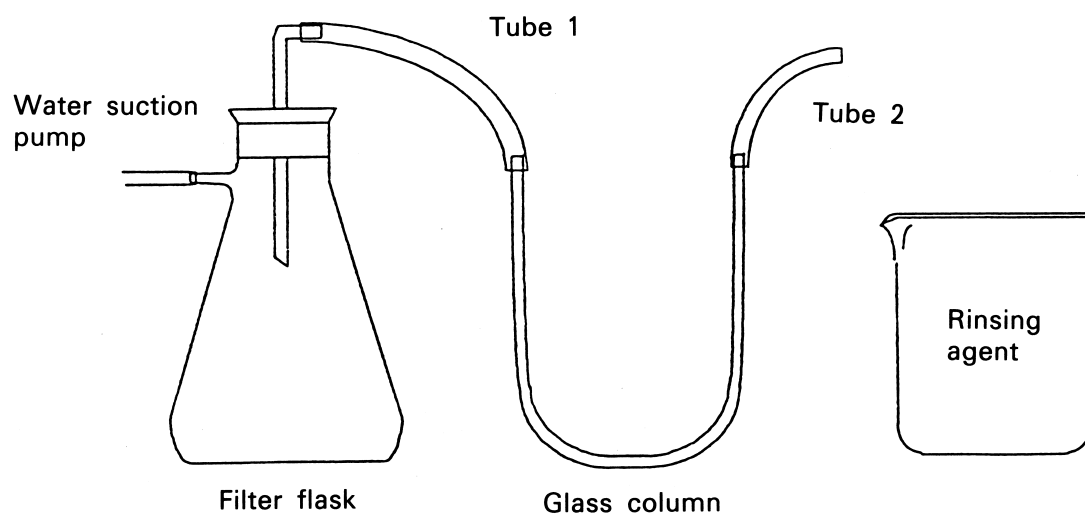


Figure 3: Arrangement for rinsing

For filling of the column the arrangement as represented in figure 1 is used. The stationary phase according to 4.9 is filled into the plastic column up to the mark. The lower end of the glass column to be filled is sealed with an approximately 1 cm long plug of glass wool, which had been silanized before, and which is pressed in using a steel rod. Then the end of the column is closed with the sieve according to section 5.3.2.

The column is filled under pressure (3 bar, with N<sub>2</sub>) with the stationary phase. To obtain a uniform, continuous and firm packing, a vibrator is moved up and down the glass column during filling.

After filling a solid plug of silanized glass wool is pressed into the other end of the packed column, the protruding ends are cut off and the plug pressed into the column a few millimetres with a spatula.

#### 6.3. Preparation of the samples

For sample preparation one of the three following methods is used:

##### 6.3.1. Isolation of the milk fat from butter

5 to 10 g of butter is melted in a suitable vessel in a water bath according to section 5.7 at 50 °C.

A 50 ml Erlenmeyer flask and a funnel with inserted filter according to section 5.14 are heated in the drying cabinet to 50 °C. The fat layer of the molten butter sample is filtered using the preheated device.

Such a milk fat is almost phospholipid-free.



#### 6.3.2. Extraction of the fat fraction according to the Röse-Gottlieb method

Extraction is done either according to IDF Standard 1 C: 1987, 16C: 1987, 116A: 1987 or 22B: 1987.

With such a milk fat phospholipids allow a cholesterol peak to be obtained which is increased by approximately 0,1 %.

The triglyceride spectrum standardized to 100 with the cholesterol is thereby influenced only to a negligible extent.

#### 6.3.3. Extraction from milk using silica gel columns

0,7 ml of a milk sample tempered to 20 °C are applied to a 1 to 3 ml Extrelut column with a microlitre pipette according to section 5.4 and allowed to distribute uniformly on the silica gel for approximately five minutes.

For denaturing the protein-lipid complexes 1,5 ml of methanol is added by pipette. Subsequently the sample is extracted with 20 ml n-hexane. The n-hexane is slowly added in small amounts and the solvent draining off collected in a 50 ml round-bottomed flask that had been dried to a constant, known weight.

After extraction led the column drain until empty.

From the eluate the solvents are distilled off on a rotatory evaporator at a water bath temperature of 40 to 50 °C.

The flask is dried and the fat yield determined by weighing.

*Note:* Fat extractions according to Gerber, Weibull-Berntrop, Schmid-Bondzynski-Ratzlaff or isolation of milk fat using detergents (BDI method) are not suited for triglyceride analysis, because with these methods more or less large quantities of partial glycerides or phospholipids can pass into the fat phase.

#### 6.4. Preparation of the sample solution

For gas chromatography a 5 % solution of the fat in n-heptane obtained according to section 6.3 is used. For preparing this sample solution corresponding amounts of the sample material obtained according to the sections 6.3.1 and 6.3.2 are weighed and dissolved in corresponding amounts of n-heptane.

With sample preparation according to section 6.3.3 the amount of n-heptane to be added to the sample material in the flask is calculated on the basis of weighing and the remainder dissolved in it.

Approximately 1 ml of the sample solution is filled into an ampule according to section 5.16.

#### 6.5. Chromatographic triglyceride determination

With the high temperatures of up to 350 °C for eluting the long-chain triglycerides C52-C56 an increase in baseline occurs easily, particularly if the columns have not been adequately conditioned in the beginning. This rise in baseline at high temperatures can be avoided completely by either combining two columns or baseline subtraction.

With the compensating mode or operation with single columns, as well as for the glass inserts in the injector and in the detector the graphite seals according to section 5.5 have to be used.

##### 6.5.1. Baseline correction

To avoid baseline rising one of the four methods is used:

###### 6.5.1.1. Combination of columns

Two packed columns are used in compensating mode.

###### 6.5.1.2. Baseline correction by the gas chromatograph

By application of a run by the gas chromatograph without injection of a fat solution and subsequent subtraction of the stored baseline rising of the baseline can be avoided.

###### 6.5.1.3. Baseline correction by integration software

By application of a run by the integration system without injection of a fat solution and subsequent subtraction of the stored baseline rising of the baseline can be avoided.

#### 6.5.1.4. Baseline correction by adequate conditioning

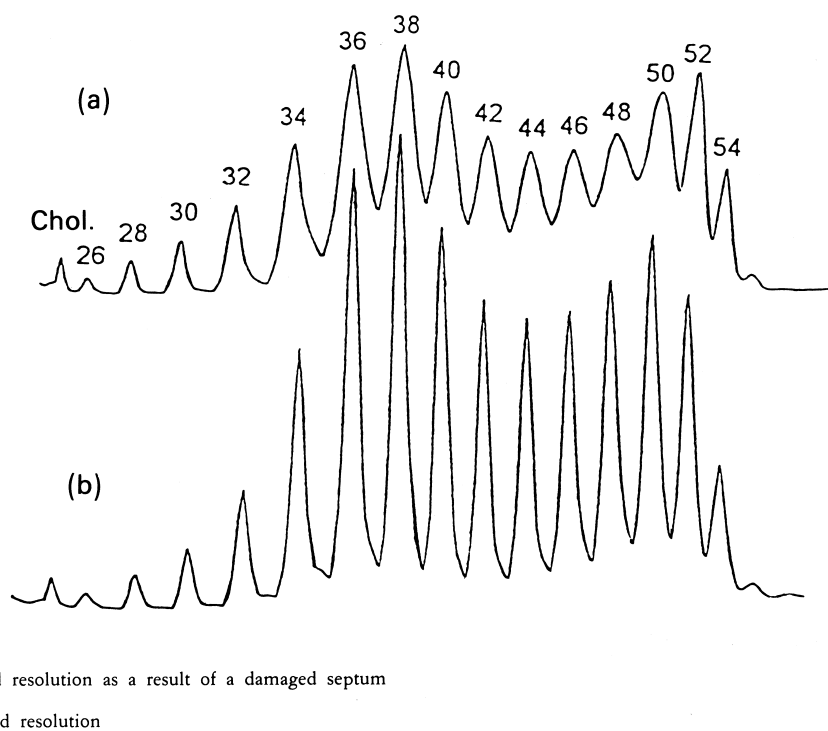
With adequate initial conditioning of the column and approximately 20 injections with milk fat solutions baseline rising at high temperatures is frequently so low that baseline corrections are not necessary.

#### 6.5.2. Injection technique

To avoid discrimination effects the 'hot injection' technique is applied to achieve better quantitative results with the high-boiling triglyceride components. Here, the fat solution is drawn up in the syringe and the cold needle of the syringe warmed up prior to injection for approximately three seconds in the injector head. Then, the syringe content is rapidly injected.

*Note:* With this injection technique the risk of fractionation phenomena inside the syringe or the injection block is reduced. 'On-column' direct injection in the upper, extended heated part of the column is not applied, because the fragments of the septum, which accumulate here, as well as contaminations can be easily eliminated with the used technique by regularly changing an injector insert without dismounting the column.

Bending of the tip of the needle caused by touching the bottom of the sample beaker (even if it is hardly visible to the eye) must be absolutely avoided in order not to damage the septum.



**Figure 4: Triglyceride chromatogram of a milk fat sample**

#### 6.5.3. Conditioning of a packed column

During steps (a) to (c) the top of the column is not connected to the detector to avoid contamination.

The columns filled according to section 6.2 are conditioned as follows:

- (a) 15 min 40 ml/min  $N_2$ -flow at 50 °C;
- (b) Heating with 1 K/min up to 355 °C at 10 ml  $N_2$ /min;
- (c) Holding for 12 to 15 h at 355 °C;
- (d) two injections of 1  $\mu$ l of the cocoa butter solution according to section 4.10 and respective temperature program;
- (e) 20 injections of 0,5  $\mu$ m of a milk fat solution for two to three days according to section 6.4.

*Note:* Cocoa butter consists almost exclusively of high-boiling C50 — to C56 triglycerides. Injection with cocoa butter serves the purpose of special conditioning in this long-chain range. With the high-boiling triglycerides C50 to C54 partly response factors of up to approximately 1,20 may occur. Normally, with repeated injection of a milk fat solution a reduction of the initially high response factors for C50 to C54 has to be expected. With triglycerides with low acyl-c number the factors approximate 1. Three pairs, respectively, of the columns filled according to section 6.2 are prepared. The conditioned pairs are checked, respectively, with a milk fat analysis for routine testing.

The pair with the best quantitative results (response factors almost 1) is used in the following. With response factors > 1,20 the column is not used.

#### 6.5.4. Calibration

For calibration the response factors of the corresponding triglycerides, as well as of cholesterol of a milk fat (standardized fat) should be determined using the standardized triglycerides (at least the saturated triglycerides C24, C30, C36, C42, C48 and C54, as well as cholesterol; better still additionally C50 and C52). Intermediate response factors can be found by mathematical interpolation.

Using the standardized fat two to three calibrations have to be performed every day. If almost identical results are obtained, well reproducible quantitative results are achieved with triglyceride analysis of the samples.

The standardized milk fat has a stock life of several months at a storage temperature of maximally  $-18^{\circ}\text{C}$  and can, thus, be used as a standard.

#### 6.5.5. Temperature programme, carrier gas and other conditions for triglyceride analysis

Temperature programme: initial column temperature  $210^{\circ}\text{C}$ , hold for one minute, then program at  $6^{\circ}\text{C}/\text{min}$  to  $350^{\circ}\text{C}$  and hold at final temperature for five minutes.

Detector- and injector temperature:  $370^{\circ}\text{C}$ , respectively.

*Note:* Detector, injector, and oven temperatures (initial temperature) should be maintained at a constant level (also overnight, during weekends and holidays).

Carrier gas: nitrogen, flow rate  $40\text{ ml}/\text{min}$ .

*Note:* If  $80\text{ cm}$  columns are used, the flow must be at least  $75\text{ ml}/\text{min N}_2$ . The carrier gas flow must be constantly maintained (also overnight, as well as during weekends and holidays). The exact carrier gas flow should be adjusted in a manner that independent of column length C54 is eluted at  $341^{\circ}\text{C}$ .

Duration of analysis : 29,3 minutes.

Injection volume :  $0,5\ \mu\text{l}$ .

*Note:* The syringe has to be rinsed several times with pure heptane after each injection.

FID conditions: according to section 5.1

*Note:* The flame ionization detector is ignited, respectively, at the beginning of each working day.

### 7. Integration, evaluation and control of the measuring conditions

Triglycerides with odd acyl-c number ( $2n + 1$ ) are combined with the preceding even-numbered triglyceride ( $2n$ ). The less reproducible low C56 contents are not taken into account. The remaining triglycerides (peak area) in the chromatogram, including cholesterol (peak near to C24) are multiplied by the respective response factors of the standard fat (last calibration) and altogether normalized to 100. Besides free cholesterol the triglycerides C24, C26, C28, C30, C32, C34, C36, C38, C40, C42, C44, C46, C48, C50, C52 and C54 are, thus, evaluated. Results are given in weight % (g/100 g).

Evaluation of the chromatogram peaks should be done with an integrator, with which the baseline can be plotted. Reintegration with optimized integration parameters should be possible.

Figures 5 and 6 demonstrate two examples of triglyceride chromatograms. Figure 5 shows a chromatogram which can be well evaluated, whilst figure 6 represents a sporadic error in the C50 to C54 range, the baseline running incorrectly compared with figure 5. Such typical errors can be detected with a high degree of certainty and avoided only by use of an integrator with which the baseline is plotted.

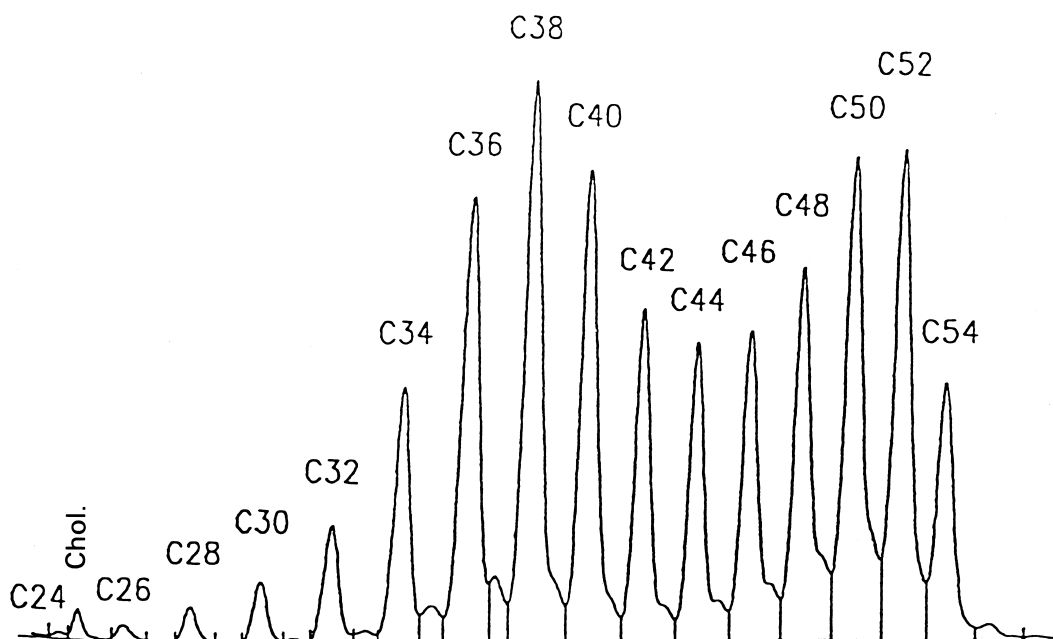


Figure 5: Easy-to-evaluate triglyceride chromatogram of a milk fat with baseline drawn in

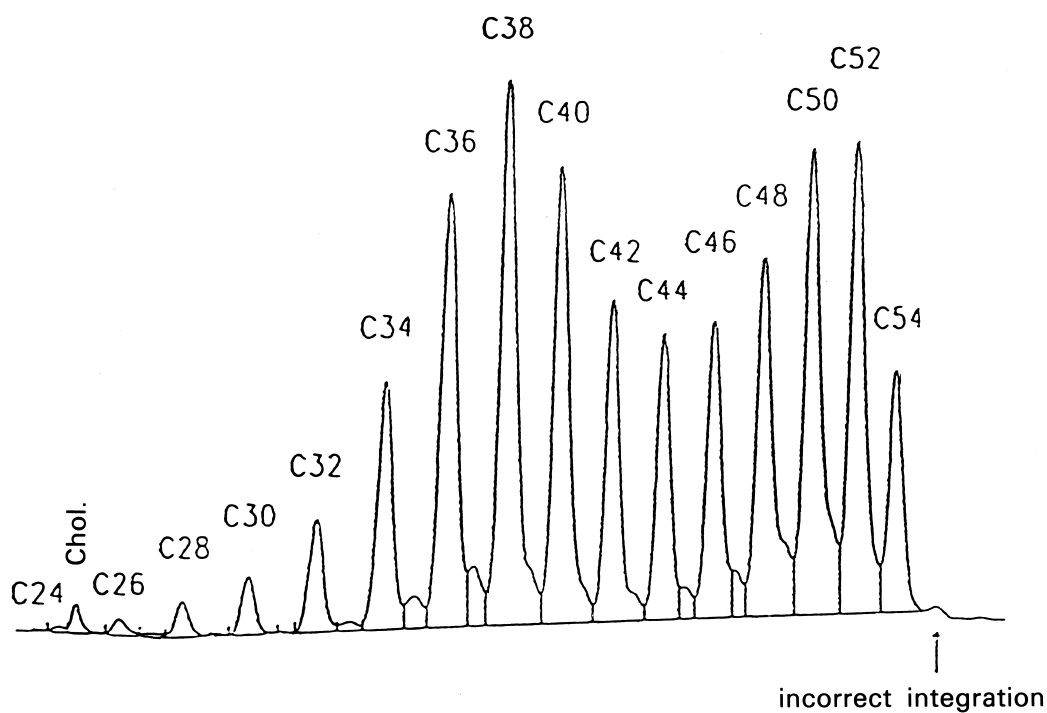


Figure 6: Wrongly integrated chromatogram of milk fat

For controlling the measuring conditions Table 1 shows the mean values and standard deviations (SD) of a typical winter milk fat for the different triglycerides from 19 analyses of the same fat:

**Table 1: Triglyceride composition of a milk fat**  
**Mean values and SD from 19 analyses**

(g/100 g)		
Triglyceride	Mean	SD
C24	0,04	0,004
C26	0,26	0,007
C28	0,66	0,020
C30	1,31	0,023
C32	2,92	0,030
C34	6,73	0,053
C36	12,12	0,030
C38	12,92	0,054
C40	9,70	0,019
C42	7,62	0,020
C44	7,35	0,025
C46	7,91	0,029
C48	9,09	0,048
C50	9,97	0,038
C52	7,76	0,042
C54	3,32	0,020

With SD deviating to a greater extent compared with the values in Table 1, the chromatograms are not tolerable any more and the septa or the gas flow should be checked. Further, small components of the septum may have formed deposits on the glass wool at the entrance of the column or the column has become unsuited for use as a result of ageing, temperature influences etc. (see figure 3).

#### 8. Qualitative foreign fat detection

For the detection of foreign fats triglyceride formulae (Table 2) with limits S (Table 3) have been developed, in which the S-values of pure milk fats can fluctuate. If these limits are transgressed, the presence of a foreign fat can be assumed.

The most sensitive formula for the detection of lard addition is, e.g.

$$6,5125 \cdot C26 + 1,2052 \cdot C32 + 1,7336 \cdot C34 + 1,7557 \cdot C36 + 2,2325 \cdot C42 + 2,8006 \cdot C46 + 2,5432 \cdot C52 + 0,9892 \cdot C54 = S \quad (1)$$

Note: Using 755 different milk fat samples a 99 % confidence range of S = 97,96 – 102,04 was established for pure milk fat samples with a standard deviation for all S-values SD = 0,39897.

Starting from the triglyceride composition of an unknown fat sample such a formula allows, without using a computer, to verify in a simple manner whether the sum of the triglyceride contents stated here with the corresponding factors falls outside the range of 97,96 – 102,04 and one has most probably to do with foreign fat addition.

For detecting different foreign fats Table 2 shows different triglyceride formulae. For the detection of the foreign fats soybean oil, sunflower oil, olive oil, rape-seed oil, linseed oil, wheat germ oil, maize germ oil, cotton seed oil, and hydrogenized fish oil, for the vegetable fats coconut- and palm kernel fat, as well as for palm oil and beef tallow a common formula can be used, respectively.

Since the triglyceride composition of the foreign fats is also subjected to fluctuations, up to four different, experimentally measured foreign fat triglyceride data of the same type were used. (With the same foreign fat types the least favourable limit has been considered, respectively (see Table 4)).

With the following 'Total formula' similarly good results can be obtained for all foreign fats:

$$- 2,7575 \cdot C26 + 6,4077 \cdot C28 + 5,5437 \cdot C30 - 15,3247 \cdot C32 + 6,2600 \cdot C34 + 8,0108 \cdot C40 - 5,0336 \cdot C42 + 0,6356 \cdot C44 + 6,0171 \cdot C46 = S$$

Calculations for the detection of any foreign fat combination in milk fat have shown that, e.g., although with the formula for lard given in Table 2 the limit for this foreign fat in low, namely 2,7 %, other fats such as coconut fat, palm oil or palm kernel fat with detection limits of 26,8, 12,5 and 19,3 %, respectively, can, with this formula, only be detected if extremely high amounts have been added to milk fat. This applies also to other formulae in Table 2.

**Table 2 : Triglyceride formulae for detecting various foreign fats in milk fat, indicating the standard deviations SD for S**

Formula for soybean, sunflower, olive, rape-seed, linseed, wheat germ, maize germ, cotton seed and fish oil	
$2,0983 \cdot C30 + 0,7288 \cdot C34 + 0,6927 \cdot C36 + 0,6353 \cdot C38 + 3,7452 \cdot C40 - 1,2929 \cdot C42 + 1,3544 \cdot C44 + 1,7013 \cdot C46 + 2,5283 \cdot C50 = S; SD = 0,38157$	
Formula for coconut and palm kernel fat	
$3,7453 \cdot C32 + 1,1134 \cdot C36 + 1,3648 \cdot C38 + 2,1544 \cdot C42 + 0,4273 \cdot C44 + 0,5809 \cdot C46 + 1,1226 \cdot C48 + 1,0306 \cdot C50 + 0,9953 \cdot C52 + 1,2396 \cdot C54 = S; SD = 0,11323$	
Formula for palm oil and beef tallow	
$3,6644 \cdot C28 + 5,2297 \cdot C30 - 12,5073 \cdot C32 + 4,4285 \cdot C34 - 0,2010 \cdot C36 + 1,2791 \cdot C38 + 6,7433 \cdot C40 - 4,2714 \cdot C42 + 6,3739 \cdot C46 = S; SD = 0,81094$	
Formula for lard	
$6,5125 \cdot C26 + 1,2052 \cdot C32 + 1,7336 \cdot C34 + 1,7557 \cdot C36 + 2,2325 \cdot C42 + 2,8006 \cdot C46 + 2,5432 \cdot C52 + 0,9892 \cdot C54 = S; SD = 0,39897$	

Therefore for checking an unknown fat sample all formulae given in Table 2 and the Total formula (2) must be used, if the sample is likely to be a mixture of milk fat and one of the 14 different foreign fats or a combination of these foreign fats. If, by inserting the triglyceride of a fat sample to be analysed an S-value is obtained, which falls outside the ranges of Table 3 of only one of the five formulae, then the sample is most likely a modified milk fat. Detection of a foreign fat in milk fat by means of one of the four formulae in Table 2 does not allow conclusions to be drawn on the type of the foreign fat admixture.

**Table 3: S-Limits for milk fats**

Formula for detection of	S-range
Soybean, sunflower, olive, rape-seed, linseed, wheat germ, maize germ, cotton, fish oil	98,05 — 101,95
Coconut and palm kernel fat	99,42 — 100,58
Palm oil and beef tallow	95,90 — 104,10
Lard	97,96 — 102,04
Total formula	95,68 — 104,32

In Table 4 the detection limits for the different foreign fats with a 99 % confidence are given. The first column shows the minimal detection limits for the best milk fat formulae in Table 2. In the second column the detection limits for the total formula are given. Although the limits are some what higher, only this formula is necessary to detect a little bit higher amounts of foreign fats. With all formulae also combinations of the different foreign fats can be detected. The ranges of variation of the triglycerides of different foreign fats of one type have no considerable influence on the detection limits.

**Table 4: 99 % limits of detection by addition of foreign fat to milk fat in %**

	Individual formula	Total formula
Soybean oil	2,1	4,4
Sunflower oil	2,3	4,8
Olive oil	2,4	4,7
Coconut fat	3,5	4,3
Palm oil	4,4	4,7
Palm kernel fat	4,6	5,9
Rape-seed oil	2,0	4,4
Linseed oil	2,0	4,0
What germ oil	2,7	6,4
Maize germ oil	2,2	4,5
Cotton seed oil	3,3	4,4
Lard	2,7	4,7
Beef tallow	5,2	5,4
Hydrogenised fish oil	5,4	6,1

Note: The S-ranges are calculated in that way, that a foreign fat is only assumed, if the limits of the individual formula are exceeded (see Table 4).

#### 9. Quantitative foreign fat determination

In order to obtain quantitative information on the foreign fat concentration in a milk fat sample, the following formula is used

$$X (\%) = 100 \cdot | (100 - S)/(100 - S_F) |, \quad (3)$$

X being the quantity of an unknown foreign fat or foreign fat mixture in an unknown milk fat. S results from addition of an unknown foreign fat by inserting the triglycerides of the foreign fat/milk fat mixture in the above total triglyceride formula. If an unknown foreign fat is added to milk fat, the mean S-value of the different foreign fats for the Total formula is chosen for  $S_F$ ; this mean S-value is obtained by inserting the triglyceride data of the pure foreign fats in this formula and by calculating a mean value ( $S_F = 7,46$ ). Good quantitative results concerning any foreign fat additions are also obtained using the palm oil/beef tallow formula (Table 2) and a mean  $S_F$ -value of 10,57.

With known foreign fat types the following  $S_F$ -values must be inserted in the above formula and the respective foreign fat formula from Table 2 has to be chosen:

**Table 5:  $S_F$ -values of various foreign fats**

Foreign fat	$S_F$
Soybean oil	8,18
Sunflower oil	9,43
Olive oil	12,75
Coconut fat	118,13
Palm oil	7,55
Palm kernel oil	112,32
Rape-seed oil	3,30
Linseed oil	4,44
Wheat germ oil	27,45
Maize germ oil	9,29
Cotton seed oil	41,18
Lard	177,55
Beef tallow	17,56
Fish oil	64,12

#### 10. Range of application of the detection method

The described method applies to bulk milks and is based on the representativeness of the milk fat samples.

Highly specific detection would be possible, if, for a representative number of milk fats, formulae as described above were derived for different countries.

There could be particularly suited possibilities of detection obtained, if in the different countries formulae, as have been described here, were set up of a representative number of milk fats. In this case, the use of complex computer programmes is not required, if the triglyceride combinations used in Table 2 are applied and the factors redetermined by using the method of least squares.

By applying the S-ranges as shown in Table 3 the formulae are, under particular feeding conditions as, for instance, underfeeding or feeding of cows with feed yeast or Ca-soaps, generally applicable. Only in the case of extreme feeding conditions (e.g. high uptake of pure feed oils, high administration of Ca-soaps combined with feed fat etc.) the formulae partly indicate a modified milk fat.

Note: Fractionated milk fats are generally recognized as unmodified milk fat, if a modification is assumed only, when the limits are exceeded. Only with fractionated milk fats with unusual milk fat composition, as it is, e.g., the case with a hard fraction, obtained with fractionation by physical methods at high temperatures of approximately 30 °C with low yields of a few percent or with fractionation with overcritical CO<sub>2</sub>, the formulae indicate a modification.

Milk fat fractionation may, however, be detected using other procedures e.g. Differential-Scanning-Calorimetry.

#### 11. Accuracy of the method

Determined using milk fat on the basis of the formulae from Table 2 and the S-ranges in Table 3.

##### 11.1. Repeatability

As difference of the S-values of two determinations carried out within the shortest feasible time interval by one operator using the same procedure and identical sample material under the same conditions (same person, same instruments/same device, same laboratory):

**Table 6: Repeatability limits (r) for the different formulae**

Formula for detection of	r
Soyabean, sunflower, olive, rape-seed, linseed, wheat germ, maize germ, cotton, fish oil	0,67
Coconut and palm kernel fat	0,12
Palm oil and beef tallow	1,20
Lard	0,58
Total formula	1,49

##### 11.2. Reproducibility

As difference of the S-values of two determinations carried out by operators in different laboratories, according to the same procedure using identical sample material under different conditions (different person, different instruments) at different times.

**Table 7: Reproducibility limits (R) for the different formulae**

Formula for detection of	R
Soybean, sunflower, olive, rape-seed, linseed, wheat germ, maize germ, cotton, fish oil	1,08
Coconut and palm kernel fat	0,40
Palm oil and beef tallow	1,81
Lard	0,60
Total formula	2,07



## 11.3. Critical difference

With the repeatability ( $r$ ) and the reproducibility limits ( $R$ ) the critical differences for all S-ranges of Table 3 can be calculated (duplicate analyses). The respective values are given in Table 8.

**Table 8: Critical differences for all triglyceride formulae**

Formula for detection of	range
Soybean, sunflower, olive, rape-seed, linseed, wheat germ, maize germ, cotton, fish oil	97,43 — 102,57
Coconut and palm kernel fat	99,14 — 100,86
Palm oil and beef tallow	94,91 — 105,09
Lard	97,65 — 102,35
Total formula	94,58 — 105,42

## 11.4. Acceptability of results

All calibrated with two rounded decimals calculated triglyceride contents of C24, C26, C28 to C54 as well as cholesterol must be exactly normalized to 100.

The results of the duplicate analysis is used as a check on the repeatability. If the absolute difference between the two S-results for all five triglyceride formulae do not transgress the repeatability limits  $r$  in Table 6, then the repeatability requirement is met.

For control of optimal gas chromatographic conditions and especially of the quality of the column it should be guaranteed that with 10 repetition runs the difference of the maximum and minimum S-values of all five triglyceride formulae do not transgress the range  $x \cdot r$ , with  $x = 1,58$  (for 10 runs, see literature (16)), and the repeatability limits  $r$  for the different formulae in Table 6.

## 12. Quoted standards

DIN 10 336: 1994	Nachweis and Bestimmung von Fremdfetten in Milchfett anhand einer gaschromatographischen Triglyceridanalyse
IDF Standard 1 C: 1987	Milk. Determination of Fat Content — Röse Gottlieb Gravimetric Method
IDF Standard 16C: 1987	Cream. Determination of Fat Content — Röse Gottlieb Gravimetric Method
IDF Standard 116A: 1987	Milk-Based Edible Ices and Ice Mixes. Determination of Fat Content — Röse Gottlieb Gravimetric Method
IDF Standard 22B: 1987	Skimmed Milk, Whey & Buttermilk. Determination of Fat Content — Röse Gottlieb Gravimetric Method.

## 13. References

1. Commission of the European Communities: *Detection of foreign fats in milk fat by means of gas chromatographic triglyceride analysis*, Doc. No VI/5202/90-EN, VI/2645/91.
2. Commission of the European Communities: *Control of butter fat purity of 100 different samples of different feeding periods from 11 EEC countries*; Doc. No VI/4577/93.
3. Commission of the European Communities: *Consideration of results from the first, second, third, fourth, fifth and sixth EEC collaborative trial: Determination of triglycerides in milk fat*; Doc. No VI/2644/91, VI/8.11.91, VI/1919/92, VI/3842/92, VI/5317/92, VI/4604/93.
4. Timms, R. E.: *Detection and quantification of non-milk fat in mixtures of milk and non-milk fats*. Dairy Research 47 295-303 (1980).
5. Precht, D., Heine, K.: *Nachweis von modifiziertem Milchfett mit der Triglyceridanalyse. 2. Fremdfettnachweis im Milchfett mit Hilfe von Triglyceridkombinationen*, 41 406-410 (1986).
6. Luf, W., Stock, A., Brandl, E.: *Zum Nachweis von Fremdfett in Milchfett über die Triglyceridanalyse*. Österr. Milchwirtsch. Wissensch. Beilage 5, 42 29-35 (1987).

7. Precht, D.: *Bestimmung von pflanzlichen Fetten oder tierischen Depotfetten in Milchfett*. Kieler Milchwirtsch. Forschungsber. 42 143-157 (1989).
  8. Precht, D.: *Schnelle Extraktion von Milchfett*, Kieler Milchwirtsch. Forschungsber. 42 119-128 (1990).
  9. Precht, D.: *Schnelle gaschromatographische Triglyceridanalyse von Milchfett*. Kieler Milchwirtsch. Forschungsber. 42 139-154 (1990).
  10. Precht, D.: *Control of milk fat purity by gas chromatographic triglyceride analysis*. Kieler Milchwirtsch. Forschungsber. 43 (3) 219-242 (1991).
  11. Precht, D.: *Detection of adulterated milk fat by fatty acid and triglyceride analysis*. Fat Sci. Technol. 93 538-544 (1991).
  12. Precht, D.: *Detection for foreign fat in milk fat. I. Qualitative detection by triacylglycerol formulae. II. Quantitative evaluation of foreign fat mixtures*. Z. Lebensm. Unters. Forsch. 194 1-8, 107-114 (1992).
  13. Precht, D.: *Gas chromatography of triacylglycerols and other lipids on packed columns* in CRC Handbook of Chromatography: Analysis of lipids, p. 123-138, Ed. K.D. Mukherjee, N. Weber, J. Sherma, CRC Press, Boca Raton (1993).
  14. Precht, D., Molkentin, J.: *Quantitative triglyceride analysis using short capillary columns*, Chrompack News 4 16-17 (1993).
  15. Molkentin, J., Precht, D.: *Comparison of packed and capillary columns for quantitative gas chromatography of triglycerides in milk fat*. Chromatographia 39 (5/6) 265-270 (1994).
  16. Stange, K.: *Angewandte Statistik, Erster Teil, Eindimensionale Probleme*, Springer-Verlag, Berlin, P. 378 (1970).
-

## ANNEX III

## SENSORY EVALUATION OF BUTTER

**1. Scope**

The purpose of this procedure for sensory evaluation of butter is to provide a uniform method applicable in all Member States.

**2. Definitions**

*Sensory evaluation* (assessment) means the examination of the attributes of a product by the sense organs.

*Panel* means a group of selected assessors working, during the assessment, without intercommunication, and without influencing one another.

*Scoring* means sensory evaluation by a panel, using a numerical scale. A nomenclature of defects must be used.

*Grading* means a quality classification which is performed on the basis of scoring.

*Control documents*: documents used to record the individual scores for each attribute and the final grade of the product. (This document may also be used to record chemical composition.)

**3. Test room**

- 3.1. Precautions must be taken in order that the assessors in the test room are not influenced by external factors.
- 3.2. The test room must be free from foreign odours and easy to clean. The walls must be of a light colour.
- 3.3. The test room and its lighting must be such that the properties of the products to be scored are not affected. The room must be equipped with appropriate temperature control.

**4. Selection of assessors**

The assessor must be familiar with butter products and be competent to carry out sensory grading. His competence should be assessed on a regular basis (at least once a year) by the competent authority.

**5. Requirements for the panel**

The number of assessors in the panel should be uneven, the minimum number being three. The majority must be employees of the competent authority or authorized persons not employed by the dairy industry.

**6. Assessment of the value of each attribute**

- 6.1. The sensory evaluation is to be carried out in relation to the following three attributes: appearance, consistency and flavour.

*Appearance* involves the following features: colour, visible purity, mould growth and water dispersion. Water dispersion is tested according to IDF-Standard 112A/1989.

*Consistency* involves the following features: firmness and spreadability.

Physicall methods may be applied for the evaluation of butter consistency. The Commission envisages the future harmonization of these methods.

*Flavour* involves the following features: taste and odour.

A significant deviation from the recommended temperature prevents a reliable evaluation of consistency and flavour. The temperature is of paramount importance.

- 6.2. Each attribute has to be sensory evaluated separately. The scoring has to be done according to table 1.
- 6.3. It may be desirable for the assessors to score together, before starting the assessment, one or more reference samples for appearance, consistency and flavour, in order to achieve uniformity.
- 6.4. Scoring for acceptance is as follows:

	Maximum	Required
Appearance	5	4
Consistency	5	4
Flavour	5	4

Where the required score is not obtained, a description of the defect has to be given. The score given by each assessor for each attribute must be recorded in the control document. The product is accepted or rejected on the basis of a majority decision. Cases where differences between the individual scoring for each attribute are wider than adjacent points should not occur frequently (not more than once per 20 samples). Otherwise the competence of the panel should be checked by the panel leader.

#### 7. **Supervision**

A panel leader who must be an official employee of the competent authority and may be a member of the panel must be generally responsible for the entire procedure. He must record the individual scores for each attribute in the control document and certify whether the product is accepted or rejected.

#### 8. **Sampling and preparation of the sample**

- 8.1. — It is desirable that the identity of the samples are concealed during the assessment so that any possible bias is avoided.
- This should be organized by the panel leader prior to the evaluation without the presence of the other panel members.
- 8.2. When the sensory evaluation is carried out at the cold store, the sample is taken using a butter trier. If the sensory evaluation is carried out at another location other than the cold store, then at least a 500 g sample should be taken.
- 8.3. During the evaluation, the butter should have the temperature 10 to 12 °C. Large deviations should be avoided at all cost.

#### 9. **Nomenclature**

Refer to the appended table 2.

Table 1: Butter scoring

Appearance			Consistency			Flavour + aroma		
Points	No (1)	Remarks	Points (quality class)	No (1)	Remarks	Points (quality class)	No (1)	Remarks
5		<i>Very good</i> ideal type highest quality (equal dry)	5		<i>Very good</i> ideal type highest quality (well spreadable)	5		<i>Very good</i> ideal type highest quality (absolutely pure finest aroma)
4		<i>Good</i> (2) No evident defects	4	17 18	<i>Good</i> (2) hard soft	4		<i>Good</i> (2) No evident defects
3	1 2 3 4 5 6 7 8	<i>Fair (slight defects)</i> loose (free), moisture not uniform, two coloured streaky mottled, marbled speckled oil separation overcoloured weak, open texture	3	14 15 16 17 18	<i>Fair (slight defects)</i> short, brittle, crumbly pasty, doughy, greasy sticky hard soft	3	21 22 25 27 33 34 35	<i>Fair (sligh defects)</i> unclear foreign flavour acid cooked flavour, scorched flavour feed flavour coarse, bitter oversalted
2	1 3 4 5 6 10 11 12	<i>Poor (evident defects)</i> loose (free) moisture streaky mottled, marbled speckled oil separation foreign matter mouldy undissolved salt	2	14 15 16 17 18	<i>Poor (evident defects)</i> short, brittle, crumbly pasty, doughy, greasy sticky hard soft	2	21 22 23 25 32 33 34 35 36 38	<i>Poor (evident defects)</i> unclean foreign flavour stale acid oxidized flavour, metallic flavour feed flavour coarse, bitter oversalted musty-flat, putrid chemical flavour
1	1 3 4 5 6 7 9 10 11 12	<i>Very poor (strong defects)</i> loose (free) moisture streaky mottled, marbled, speckled oil separation overcoloured granular foreign matter mouldy undissolved salt	1	14 15 16 17 18	<i>Very poor (strong defects)</i> short, brittle, crumbly pasty, doughy, greasy sticky hard soft	1	22 24 25 26 28 29 30 31 32 34 36 37 38	<i>Very poor (strong defects)</i> foreign flavour cheesy, lactic cheese flavour acid yeasty mouldy flavour rancid oily, fishy tallowy oxidized flavour, metallic flavour coarse, bitter musty-flat, putrid malty chemical flavour

(1) Table 2.

(2) The defects mentioned under 'good' are only very small deviations from the ideal type.

**Table 2: Table of butter defects**

- I. *Appearance*
  1. loose (free), moisture
  2. not uniform, two coloured
  3. streaky
  4. mottled, marbled
  5. speckled
  6. oil separation
  7. overcoloured
  8. weak (open texture)
  9. granular
  10. foreign matter
  11. mouldy
  12. undissolved salt
- II. *Consistency*
  14. short, brittle, crumbly
  15. pasty, doughy, greasy
  16. sticky
  17. hard
  18. soft
- III. *Flavour & Aroma*
  20. without flavour
  21. unclean <sup>(1)</sup>
  22. foreign flavour
  23. stale
  24. cheesy, lactic cheese flavour
  25. acid
  26. yeasty
  27. a) cooked flavour  
b) scorched flavour
  28. mouldy flavour
  29. rancid
  30. oily, fishy
  31. tallowy
  32. a) oxidized flavour  
b) metallic flavour
  33. feed flavour
  34. coarse, bitter
  35. oversalted
  36. musty-flat, putrid
  37. malty
  38. chemical flavour

---

<sup>(1)</sup> This designation should be used as seldom as possible and only when the defect cannot be described more accurately.

## ANNEX IV

## SAMPLING FOR CHEMICAL AND MICROBIOLOGICAL ANALYSIS AND SENSORY EVALUATION

## 1. Chemical and microbiological analysis

Quantity of butter (kg)	Minimum number of samples (> 100 g)
≤ 1 000	2
> 1 000 ≤ 5 000	3
> 5 000 ≤ 10 000	4
> 10 000 ≤ 15 000	5
> 15 000 ≤ 20 000	6
> 20 000 ≤ 25 000	7
> 25 000	7 + 1 per 25 000 kg or part thereof

Sampling for microbiological analysis must be carried out aseptically.

Up to five samples of 100 g may be combined into one sample for analysis after thorough mixing.

The samples must be taken randomly from different parts of the offered quantity and tested before or at the time of entry into the cold store designated by the intervention agency.

Preparation of composite butter sample (chemical analysis):

- (a) using a clean, dry butter trier or similar suitable instrument, extract a core of butter of at least 30 g and place in a sample container. The composite sample must then be sealed and forwarded to the laboratory for analysis;
- (b) at the laboratory the composite sample is to be warmed in the original unopened container to 30 °C and shaken frequently until a homogeneous fluid emulsion free of unsoftened pieces is obtained. The container should be one half to two thirds full.

Two samples per year per producer offering butter for intervention must be analysed for non-milk fat and one sample for tracers.

## 2. Sensory evaluation

Quantity of butter (kg)	Minimum number of samples
1 000 ≤ 5 000	2
> 5 000 ≤ 25 000	3
> 25 000	3 + 1 per 25 000 kg or part thereof

The samples are to be taken randomly from different parts of the offered quantity between the 30th and the 45th day following take-over of the butter and graded.

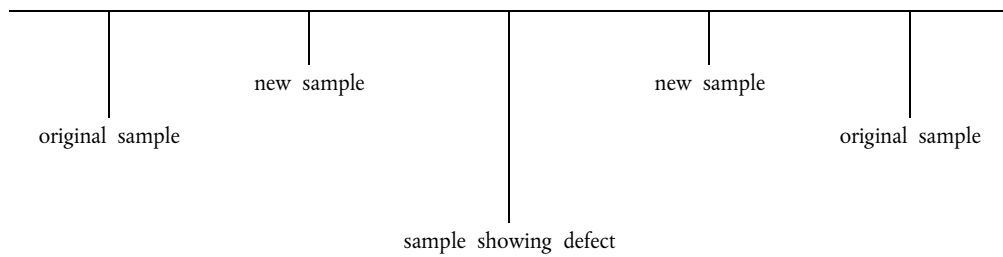
Each sample must be assessed individually in accordance with Annex III. No resampling or re-evaluation is allowed.

## 3. Guidelines to be followed where samples show defects:

(a) chemical and microbiological analysis:

- where individual samples are analysed, one sample showing a single defect out of five to 10 samples or two samples each showing a single defect out of 11 to 15 samples may be allowed. Where a sample shows a defect, two new samples must be taken from either side of the sample showing the defect and checked for the parameter in question. Where neither sample meets the specification, the quantity of butter between the original two samples on either side of the sample showing the defect must be rejected from the quantity offered.

Quantity to be rejected where the new sample shows a defect:



— where composite samples are analysed and found to show defects in respect of one parameter, the quantity represented by the composite sample concerned is to be rejected from the quantity offered. The quantity represented by one composite sample may be determined by subdividing the quantity offered before samples are taken randomly from each part thereof;

(b) sensory evaluation:

where a sample fails the sensory evaluation, the quantity of butter between two neighbouring samples on either side of the sample failing is to be rejected from the quantity offered;

(c) where samples show a sensory defect and either a chemical or a microbiological defect, the whole quantity is to be rejected.

—



## ANNEX V

## NATIONAL QUALITY CLASS

- 'beurre marque de contrôle' as regards Belgian butter,
  - 'smør of første kvalitet' as regards Danish butter,
  - 'Markenbutter' as regards German butter,
  - 'pasteurisé A' as regards French butter,
  - 'Irish creamery butter' as regards Irish butter,
  - 'produced exclusively from cream which has been subjected to centrifugal and pasteurizing treatment' as regards Italian butter,
  - 'Marque Rose' or 'Beurre de première qualité' as regards Luxembourg butter,
  - 'Extra kwaliteit' as regards Dutch butter,
  - 'Extra selected' as regards Great Britain butter and 'premium' as regards Northern Ireland butter,
  - 'produced exclusively from cream which has been subjected to centrifugal and pasteurizing treatment' as regards Greek butter,
  - 'produced exclusively from pasteurized cow's milk or cream' as regards Spanish butter,
  - 'produced exclusively from pasteurized cow's milk or cream' as regards Portuguese butter,
  - 'Teebutter' as regards Austrian butter,
  - 'perinteinen meijerivoi/traditionellt mejerismör' as regards Finnish butter,
  - 'svenkst smör' as regards Swedish butter.
-