

1974 No. 1356 (S.120)

FOOD AND DRUGS
MILK AND DAIRIES, SCOTLAND

The Milk and Dairies (Semi-skimmed and Skimmed Milk) (Heat Treatment and Labelling) (Scotland) Regulations 1974

<i>Made</i>	- - -	<i>1st August 1974</i>
<i>Laid before Parliament</i>		<i>15th August 1974</i>
<i>Coming into Operation</i>		<i>5th September 1974</i>

In exercise of the powers conferred on me by sections 4, 7, 26 and 56 of the Food and Drugs (Scotland) Act 1956(a) and of all other powers enabling me in that behalf, and after consultation with such organisations as appear to me to be representative of interests substantially affected by these regulations, I hereby make the following regulations:—

Citation and commencement

1. These regulations may be cited as the Milk and Dairies (Semi-skimmed and Skimmed Milk) (Heat Treatment and Labelling) (Scotland) Regulations 1974, and shall come into operation on 5th September 1974.

Interpretation

2.—(1) In these regulations, unless the context otherwise requires—

“the Act” means the Food and Drugs (Scotland) Act 1956;

“approved bactericidal agent” means a chemical agent approved by the Secretary of State;

“bulk container” means any container, other than a retail container, which is of a type approved by the Secretary of State;

“consumer” means any person to whom milk is supplied and who neither sells it nor uses it in the manufacture of milk products for sale;

“local authority” means the council of a county or of a large burgh within the meaning of the Local Government (Scotland) Act 1947(b); and any small burgh within the meaning of that Act shall, for the purposes of these regulations, be included in the county in which it is situated;

“milk” means cows’ milk intended for sale or sold for human consumption, but does not include such milk intended for manufacture into products for sale for human consumption;

“milk processor” means any person who pasteurises, sterilises or treats milk by the ultra high temperature method;

“milk purveyor” includes any person who sells milk, whether wholesale or by retail;

 (a) 1956 c. 30.

(b) 1947 c. 43.

“retail container” means a bottle or other container, which has a capacity of not more than 1 gallon and is of a type approved by the local authority;

“sample” means a sample procured by a person duly authorised in that behalf by a local authority;

“sell” includes offer or agree to sell or expose for sale; and “sold” shall be construed accordingly;

“semi-skimmed milk” means milk the fat content of which has been brought to at least 1·50 per cent. and at the most 1·80 per cent. calculated by weight;

“skimmed milk” means milk the fat content of which has been brought to not more than 0·30 per cent. calculated by weight.

(2) The Interpretation Act 1889(a) shall apply for the interpretation of these regulations as it applies for the interpretation of an Act of Parliament and as if these regulations and the order hereby partially revoked were Acts of Parliament.

Heat treatment of semi-skimmed and skimmed milk

3.—(1) No person shall sell any semi-skimmed milk or skimmed milk unless the requirements specified in the following paragraph are satisfied:

Provided that this paragraph shall not apply where any such milk is sold to a milk processor for heat treatment in accordance with these regulations.

(2) The requirements to be satisfied are the general requirements of Schedule 1 to these regulations in connection with the heat treatment of semi-skimmed milk and skimmed milk and the special requirements of Part I, II or III of Schedule 2 to these regulations in relation to and in connection with such heat treatment by pasteurisation, sterilisation or the ultra high temperature method respectively.

Provided that where semi-skimmed milk or skimmed milk is brought from England or Wales into Scotland, the requirements of Schedules 1 and 2 to these regulations in relation to that milk shall, so far as they would relate to anything to be done before the milk enters Scotland, be deemed to be satisfied if the corresponding requirements of any regulations made under the Food and Drugs Act 1955(b) providing for the heat treatment of semi-skimmed or skimmed milk are satisfied.

Sampling and testing of samples

4.—(1) A sample of semi-skimmed milk or skimmed milk procured for the purpose of ascertaining whether the provisions of these regulations have been complied with shall be procured and dealt with in accordance with the provisions of Schedule 3 to these regulations.

(2) Where a sample of semi-skimmed milk or skimmed milk is tested in accordance with the provisions of these regulations, the test shall be carried out in the manner specified for that test in Schedule 4 to these regulations.

Labelling of semi-skimmed and skimmed milk containers

5. No person shall sell any semi-skimmed milk or skimmed milk, which has been subjected to heat treatment by pasteurisation, sterilisation or treatment by the ultra high temperature method, in a container unless that container is labelled in accordance with the requirements of Part I, II or III respectively of Schedule 5 to these regulations.

(a) 1889 c. 63.

(b) 4 & 5 Eliz. 2. c. 16.

Enforcement

6.—(1) The local authority of any area shall enforce and execute the provisions of these regulations within their area.

(2) Every local authority shall give such assistance and information to any other local authority as that other local authority may reasonably require for the purpose of carrying out their duties under these regulations.

Penalties

7.—(1) If any person contravenes or fails to comply with any of the provisions of regulation 3 or regulation 5 of these regulations he shall be guilty of an offence under these regulations.

(2) Any person who is guilty of an offence under these regulations shall be liable—

(a) on summary conviction to—

(i) a fine not exceeding £100 or to imprisonment for a term not exceeding 6 months, or to both such fine and imprisonment; and

(ii) in the case of a continuing offence, to a further fine not exceeding £10 for every day during which the offence is continued; or

(b) on conviction on indictment to—

(i) a fine not exceeding £500 or to imprisonment for a term not exceeding one year or to such fine and imprisonment; and

(ii) in the case of a continuing offence, to a further fine not exceeding £50 for every day during which the offence is continued.

Application of various sections of the Act

8.—(1) Without prejudice to the provisions of the Act which specifically apply in respect of regulations made thereunder sections 41(2) (which relates to proceedings) and 42(1), (2) and (3) (which relate to evidence of sampling and certificates of analysis) of the Act shall apply for the purposes of these regulations as if references therein to proceedings under or taken under the Act included references to proceedings for an offence under these regulations.

(2) Section 31(6) of the Act shall apply for the purposes of these regulations as if the reference therein to an offence against the Act included reference to an offence under these regulations.

(3) Section 42(2) of the Act shall apply for the purposes of these regulations as if the reference therein to a document stating that the provisions of the Act with respect to the manner in which samples are to be dealt with were complied with included a reference to a document stating that such provisions of these regulations were complied with.

Revocation

9. Article 14 of the Milk and Dairies (Scotland) Order 1934(a) as amended (b), is hereby revoked.

William Ross,

One of Her Majesty's Principal
Secretaries of State.

St. Andrew's House,
Edinburgh.
1st August 1974.

(a) S.R. & O. 1934/675 (Rev. VIII, p. 23: 1934, I p. 1256).

(b) The amendment does not relate expressly to the subject matter of these regulations.

Regulation 3(2)

SCHEDULE 1

General requirements in connection with the heat treatment of semi-skimmed milk and skimmed milk

1. Every milk processor shall take such measures as are adequate to ensure that any semi-skimmed milk or skimmed milk which has been heat treated by pasteurisation, sterilisation or the ultra high temperature method shall be kept apart from all other milk at all times except when in separate sealed containers.

2. Every milk processor and every milk purveyor shall keep accurate records of the quantities of the semi-skimmed milk and skimmed milk purchased and sold, as the case may be, and of the names and addresses of the persons from whom that milk was purchased and to whom it was sold otherwise than by retail, and shall retain such records for a period of twelve months from the date of any transaction to which the records relate.

3. Without prejudice to any provisions as to inspection contained in any enactment relating to milk and dairies or any order or regulations or byelaws made thereunder any person duly authorised by the local authority may—

(a) inspect the processes of handling and treatment and the arrangements for the storage and distribution of semi-skimmed milk and skimmed milk; and

(b) inspect any records which the milk processor or the milk purveyor, as the case may be, is required to keep by these regulations.

4. Any container into which the semi-skimmed milk or skimmed milk is put shall be sterilised by steam or by a solution containing an approved bactericidal agent on the premises in which the milk is put into the container on each occasion before the container is used for the milk:

Provided that this paragraph shall not apply to non-returnable containers which the local authority are satisfied are sterile, or to bottles cleansed in bottle washing machines on the premises in which they are to be filled with milk.

5. Such parts of any plant or apparatus as come into contact with the semi-skimmed milk or skimmed milk shall be sterilised either by steam or by water at a temperature of not less than 180°F. (82.2°C.) or by a solution containing an approved bactericidal agent on each occasion before the plant or apparatus is used for the milk.

Regulation 3(2)

SCHEDULE 2

Special requirements in relation to and in connection with the heat treatment of semi-skimmed milk and skimmed milk.

PART I—PASTEURISATION

1. The milk shall be pasteurised, that is to say—

(a) it shall be heated to and maintained for a period of at least 30 minutes at a temperature of not less than 145°F. (62.8°C.) and not more than 150°F. (65.6°C.) and immediately after the termination of the said period shall be cooled to a temperature of not more than 45°F. (7.2°C.); or

(b) it shall be heated to and maintained for a period of at least 15 seconds at a temperature of not less than 161°F. (71.7°C.) and not more than 173°F. (78.3°C.) and immediately after the termination of the said period shall be cooled to a temperature of not more than 45°F. (7.2°C.);

and the apparatus in which the milk is pasteurised shall be approved by the local authority and shall provide for the milk being pasteurised to be filtered.

2. (1) Where the milk is pasteurised in accordance with the provisions of subparagraph (b) of paragraph 1 of this Part of this Schedule, the apparatus shall

be provided with a device which shall automatically prevent any milk which has not been raised to a temperature of 161°F. (71.7°C.) from flowing into the cooling section of the apparatus.

(2) Such indicating and recording thermometers as the local authority shall consider necessary shall be installed in suitable places in the apparatus so as respectively to indicate and record the period of time for and the temperature to which the milk is heated when pasteurised in accordance with sub-paragraph (a) of paragraph 1 of this Part of this Schedule or the temperature to which milk is heated when pasteurised in accordance with sub-paragraph (b) of the said paragraph 1.

(3) The temperature to which the milk is cooled shall be indicated by a thermometer installed in the apparatus or by a thermometer inserted in the apparatus from time to time during the pasteurising process.

3. The records of recording thermometers shall be marked with graduations adequately spaced to give clear readings and they shall be dated and shall be preserved for a period of not less than 3 months.

4. Milk shall not except with the permission of the Secretary of State be pasteurised more than once before retail sale.

5. Immediately after the milk is cooled the milk processor shall, on the premises where it was pasteurised, either put it into retail containers or into unventilated bulk containers.

6. Every retail container shall, immediately after the milk has been put into it, be securely closed and where such a container is a bottle it shall be closed with a cap overlapping the lip of the bottle.

7. Where the milk has been put into retail containers, it shall not be removed from these containers or the caps or fastenings broken before delivery to the consumer.

8. Any sample of the milk procured after it has been pasteurised but before delivery to the consumer, on being tested in accordance with the provisions of Parts I and II of Schedule 4 to these regulations, shall—

- (a) on submission to a phosphatase test give a reading not exceeding 10µg. of p-nitrophenol/ml. of milk, and
- (b) be found to contain no coliform bacteria in one-hundredth of a millilitre.

PART II—STERILISATION

1. The milk, having been filtered or clarified, and (except in the case of skimmed milk) homogenised, shall be sterilised in the following manner, that is to say, it shall be heated to and maintained at such a temperature, not less than 212°F. (100°C.), for such a period as to ensure that it will comply with the turbidity test prescribed in Part III of Schedule 4 to these regulations.

2. The milk shall be treated by heat as aforesaid in capped bottles so that on completion of the treatment the bottles are hermetically sealed.

3. The apparatus in which the milk is sterilised shall be approved by the local authority.

4.—(1) Thermometers and pressure gauges shall be inserted in suitable places in the apparatus so as to indicate the temperature to which the milk is raised.

(2) The records of recording thermometers shall be marked with graduations adequately spaced to give clear readings, and they shall be dated and shall be preserved for a period of not less than 3 months.

5. The bottles shall remain sealed until delivery to the consumer.

6. Any sample of the milk procured after it has been sterilised but before

delivery to the consumer on being tested in accordance with the provisions of Part III of Schedule 4 to these regulations shall satisfy the turbidity test.

PART III—TREATMENT BY ULTRA HIGH TEMPERATURE METHOD

1. The milk shall be treated by the ultra high temperature method, that is to say retained at a temperature of not less than 270°F. (132.2°C.) for not less than one second.

2. The apparatus in which the milk is treated by the ultra high temperature method shall be approved by the local authority and shall provide for the milk undergoing such treatment to be filtered.

3. Any apparatus in which the milk is to be heated to and maintained at a temperature of not less than 270°F. (132.2°C.) shall be provided with a device which shall automatically divert the flow of any milk which is not raised to the authorised temperature.

4.—(1) Such indicating and recording thermometers as the local authority shall consider necessary shall be installed in suitable places in the apparatus in which the milk is treated by the ultra high temperature method so as to indicate the temperatures to which the milk is heated.

(2) The records of recording thermometers shall be marked with graduations adequately spaced to give clear readings, and they shall be dated and shall be preserved for a period of not less than 3 months.

5. Milk shall not, except with the permission of the Secretary of State, be treated by the ultra high temperature method more than once before retail sale.

6. Milk previously subjected to heat treatment shall not, except with the permission of the Secretary of State, be treated by the ultra high temperature method.

7.—(1) Milk which is treated by the ultra high temperature method shall immediately after such treatment be put into the sterile containers in which it is to be supplied to the consumer. Such containers shall be filled and sealed at the premises at which the treatment has been carried out with such aseptic precautions as will ensure the protection of the milk from risk of contamination and shall remain sealed until delivery to the consumer.

(2) Every container in which milk treated by the ultra high temperature method is transported, exposed or offered for sale shall be so closed and securely fastened, either with a cap overlapping the lip of the container or in some other suitable manner approved by the local authority, that the container is airtight.

8. Any sample of milk procured after it has been treated by the ultra high temperature method but before delivery to the consumer shall, on being tested in accordance with the provisions of Part IV of Schedule 4 to these regulations, be found to contain not more than 1,000 bacteria per millilitre.

Regulation 4(1)

SCHEDULE 3

Provisions as to the procuring, identification and transportation of samples of semi-skimmed milk and skimmed milk

1. Sampling shall be carried out in the following manner—

- (a) where the milk is in retail containers, by procuring one of the containers;
- (b) where the milk is in bulk containers, by taking the sample from well below the surface of the milk after the milk has been thoroughly stirred, the instruments used for stirring and sampling the milk having been sterilised before use;
- (c) where milk from each bulk container of a consignment is sampled the volume of the sample taken from each such container shall be proportionate to the volume of milk in that container and the samples so taken shall then be mixed so as to constitute a sample of the consignment; and

(d) where milk is in dispensing apparatus the sample may be procured from the outlet.

2. The person procuring the sample shall, immediately the sample has been procured, divide it into two parts each of which shall be put into a bottle which shall immediately be stoppered, the bottle and its stopper being sterilised before use, and which shall be sealed and marked or labelled with a distinctive mark, and he shall—

(a) forward one part to the person who caused the milk to be placed in the container from which the sample was taken together with a notice informing him that he intends to have part of the sample tested in accordance with the provisions of Schedule 4 to these regulations; and

(b) forward one part to the testing laboratory in accordance with the provisions of paragraph 3 of this Schedule.

3.—(1) Immediately after it has been marked or labelled the vessel containing the part of the sample which is to be tested shall be transferred to a box or case having a tightly fitting lid and lined throughout to a thickness of at least one inch with expanded rubber, balsa wood, compressed cork or other material with similar insulating properties, which box or case shall be despatched to the testing laboratory as soon as practicable: Provided that where there is delay in despatch to the laboratory such additional measures as are practicable shall be taken to prevent the temperature of the part of the sample from rising.

(2) With the vessel containing the part of the sample there shall be sent to the testing laboratory a note bearing the distinctive mark with which the vessel is marked or labelled, and the time at and date on which the sample was procured.

Regulation 4(2)

SCHEDULE 4

PART I

Provisions as to the testing of samples of semi-skimmed milk and skimmed milk for coliform bacteria

Examination of sample

1. The sample of milk (being one part of a sample procured in accordance with Schedule 3 to these regulations) shall be examined as soon as possible after arrival at the Testing Laboratory. If it is not examined immediately on arrival at the Testing Laboratory it shall be kept at a temperature not higher than 5°C. until examined, provided that no sample shall be so kept for a period exceeding 24 hours.

2. In testing samples of milk for the presence of coliform bacteria the following paragraphs of this Part of this Schedule shall be complied with.

Culture medium

3. The medium to be used shall be bile salt lactose broth, either compounded in the laboratory or prepared in accordance with the manufacturer's directions from a granular desiccated medium and shall have the following composition:—

Peptone	..	..	..	..	..	..	20.0 grams
Bile Salts	..	..	..	..	..	..	5.0 grams
Sodium chloride (A.R.)	..	..	..	..	..	..	5.0 grams
Lactose (A.R.)	..	..	..	..	..	..	10.0 grams
Distilled water	..	..	..	..	..	..	to 1 litre
Brom-cresol purple (1.6%)	..	..	..	..	..	..	2.5 ml.

The medium shall be tubed in 5 ml. quantities in 6" x $\frac{5}{8}$ " tubes provided with a rimless Durham tube ($1\frac{3}{8}$ " x $\frac{5}{16}$ ") and sterilised either by autoclaving at 15 lb. pressure for 20 minutes or in a steamer for 30 minutes on three successive days.

The final reaction of the medium at room temperature shall be pH7.2.

Dilutions

4. Quarter strength Ringer's solution shall be used. The composition of full strength Ringer's solution shall be

Sodium chloride	..	..	..	..	..	9.00 grams
Potassium chloride	..	..	..	..	..	0.42 grams
Anhydrous calcium chloride	..	..	..	..	..	0.24 grams
Sodium bicarbonate	..	..	..	..	..	0.20 grams
Distilled water	..	..	..	..	..	1,000 ml.

Add 1 part of the above solution to 3 parts of distilled water. Fill into test tubes or bottles and sterilise by autoclaving at 15 lb. pressure for 15 minutes. The quantity to be filled into the containers before sterilisation must be predetermined to allow for evaporation losses during sterilisation. Alternatively, sterile tubes and bottles may be filled aseptically with measured quantities of sterile quarter-strength Ringer's solution.

Temperature and time of incubation of the cultures

5. The coliform cultures shall be incubated at 30°C. \pm 0.5°C. for 72 hours.

Technique of test

6. In testing the milk 1 ml. of 1 in 100 dilution shall be used and for each sample being tested three tubes shall be prepared.

Examination of cultures

7. The culture tubes shall be examined for the production of acid and gas after the required period of incubation. Those tubes showing acid with gas production in the Durham tube shall be considered to be positive.

Interpretation of the coliform test

8. If acid and gas production are absent from two of the three tubes the portion of the sample which has been tested shall be presumed to contain no coliform bacteria.

General precautions

9.—(1) The sterility of the media and apparatus shall be tested by carrying out a blank test using sterile water in place of milk when each batch of samples is examined.

(2) Before the dilutions are prepared, the milk shall be thoroughly mixed by inverting the bottle 25 times.

(3) Each dilution shall be thoroughly mixed without vigorous shaking.

(4) In the preparation of the dilutions a separate sterile pipette shall be used for each dilution and for transferring the dilution to the bile salt broth.

(5) The pipettes shall be straight-sided, of the "blow-out" type and plugged with cotton wool.

(6) Not more than 15 minutes shall elapse between the dilution of the milk and its admixture with the bile salt broth.

(7) The temperature of the incubator shall be frequently checked by means of a thermometer conforming to the British Standards Institution's specification and adjusted if necessary.

(8) Bile salt broth tubes showing any air in the Durham tube shall not be used to carry out the test.

(9) Distilled water: water prepared with a glass still or water of equal quality shall be used.

PART II

*Provisions as to the testing of samples of semi-skimmed milk and skimmed milk by means of the phosphatase test**Examination of sample*

1. The sample of milk (being one part of a sample procured in accordance with Schedule 3 to these regulations) shall be examined as soon as possible after arrival at the Testing Laboratory. If it is not examined immediately on arrival at the Testing Laboratory, it shall be kept at a temperature not higher than 5°C. until examined. The sample shall be raised to room temperature immediately before being tested.

Precautions

2. The following precautions shall be taken:—
- A sample which shows evidence of taint or souring shall not be tested.
 - The test shall not be carried out in direct sunlight.
 - All glassware shall be clean immediately before use.
 - A fresh pipette shall be used for each sample. Pipettes shall not be contaminated with saliva.
 - Distilled water shall be used throughout.

Reagents

- 3.—(1) Reagents of analytical quality shall be used.
- (2) The buffer-substrate solution shall be prepared as follows:—
- Buffer solution: 3·5g. of anhydrous sodium carbonate and 1·5g. of sodium bicarbonate shall be dissolved in distilled water, and made up to one litre.
 - Substrate: Disodium p-nitrophenyl phosphate. The solid substrate shall be kept in a refrigerator.
 - Buffer-substrate solution: 0·15g. of the substrate shall be placed in a 100 ml. measuring cylinder or graduated flask, and made up to 100 ml. with the buffer solution. The solution shall be stored in a refrigerator and protected from light. It shall give a reading of less than the standard marked 10 on the comparator disc A.P.T.W. or A.P.T.W.T. when viewed in transmitted light through a 25 mm. cell in the "all purposes" comparator, distilled water being used for comparison. The solution shall not be used for more than one week.

Apparatus

4. The following apparatus shall be used:—
- A Lovibond "all purposes" comparator complete with stand for work in reflected light.
 - A Lovibond comparator disc A.P.T.W. or A.P.T.W.T.
 - Two fused glass cells, 25 mm. depth.
 - A water bath or incubator capable of being maintained at 37·5°C. ± 0·5°C.
 - A pipette to deliver 5·0 ml.
 - A supply of 1·0 ml. straight-sided pipettes of an accuracy equal to N.P.L. Grade B.
 - A 1,000 ml. graduated flask.
 - A 100 ml. measuring cylinder or 100 ml. graduated flask.
 - A supply of 6" × $\frac{3}{8}$ " test tubes conforming to B.S.625, 150/16, with rubber stoppers to fit.

Care of apparatus

5.—(1) After use, each test tube shall be emptied, rinsed in water, well washed in hot water containing soda, rinsed in warm water, rinsed in distilled water and finally dried.

(2) If after treatment in accordance with sub-paragraph (1) hereof a test tube does not appear to be clean, the treatment shall be repeated with the addition that after being rinsed in warm water it shall be soaked in 50 per cent. commercial hydrochloric acid and then rinsed again in warm water before being rinsed in distilled water and finally dried.

(3) New glassware shall be cleaned by soaking in chromic acid solution prepared as follows:—

5 volumes of 8 per cent. W/V potassium dichromate.

4 volumes of concentrated sulphuric acid. This should be added slowly and carefully to the mixture of dichromate and water.

The solution shall be kept covered and shall be discarded when it becomes green. After cleaning in chromic acid solution, new glassware shall be rinsed in warm water, rinsed in distilled water and finally dried.

(4) Pipettes shall be well rinsed in cold water and then cleaned by soaking for 24 hours in chromic acid solution in a 250 ml. glass cylinder or other suitable container. The pipettes shall then be well rinsed in warm water, rinsed in distilled water and finally dried.

(5) Glassware used for the test shall not be used for any other purpose and shall be kept apart from all other apparatus in the laboratory.

Method of carrying out the test

6. 5 ml. of the buffer-substrate solution shall be transferred to a test tube using a pipette and the test tube shall be stoppered and brought to a temperature of $37^{\circ}\text{C.} \pm 0.5^{\circ}\text{C.}$ 1 ml. of the milk to be tested shall be added, the test tube stopper replaced and the contents well mixed by shaking. The test tube shall then be incubated for exactly 2 hours at $37^{\circ}\text{C.} \pm 0.5^{\circ}\text{C.}$ One blank prepared from boiled milk of the same type as those undergoing the test shall be incubated with each series of samples. (Where the sample consists of highly coloured milk, such as homogenised milk or milk from Channel Island cows, a separate blank of such milk shall be prepared). After incubation the test tube shall be removed from the water bath and its contents shall be well mixed. The blank shall be placed on the left hand ramp of the stand and the test sample on the right. Readings shall be taken in reflected light by looking down on to the two apertures with the comparator facing a good source of daylight (preferably north light). If artificial light is needed for matching a "daylight" type of illumination must be used. The disc shall be revolved until the test sample is matched. Readings falling between two standards shall be recorded by affixing a plus or minus sign to the figure for the nearest standard.

Interpretation

7. The test shall be deemed to be satisfied by milk which gives a reading of 10 $\mu\text{g.}$ or less of p-nitrophenol/ml. of milk.

PART III*Provisions as to the testing of samples of semi-skimmed milk and skimmed milk by means of the turbidity test**Reagent*

1. Ammonium sulphate A.R. shall be used.

Apparatus

2. The following apparatus shall be provided:—
 - (a) A supply of conical flasks, 50 ml. capacity.
 - (b) A supply of graduated cylinders, 25 ml. capacity.

- (c) A supply of 6" × $\frac{3}{8}$ " test tubes conforming to B.S.625, 150/16.
- (d) A supply of filter funnels, 6 cm. diameter.
- (e) Two beakers, 400 ml. capacity.
- (f) A supply of Whatman filter papers, 12.5 cm No. 12.

Method of carrying out the test

3. The test shall be carried out in the following manner:—

- (a) Weigh 4 ± 0.1 g. of ammonium sulphate A.R. into a 50 ml. conical flask. Measure out 20 ± 0.5 ml. of the milk sample, and pour into the conical flask. Ensure that the ammonium sulphate dissolves by shaking for three minutes. Leave for not less than 5 minutes and then filter through a folded paper (Whatman 12.5 cm. No. 12) into a test tube. When not less than 5 ml. of a clear filtrate have collected, place the tube in a beaker of water, which is kept boiling, and keep it therein for 5 minutes. Transfer the test tube to a beaker of cold water.
- (b) When the tube is cool, examine the contents for turbidity by moving the tube in front of an electric light shaded from the eyes of the observer, and comparing each tube with a control tube prepared as directed in the next succeeding paragraph.

Control tubes

4. A sample of laboratory-sterilised milk shall be prepared by heating milk for at least 20 minutes after it has reached boiling point in a vessel placed in a boiling water bath. Control tubes shall be prepared by taking a sample of laboratory-sterilised milk and subjecting it to the test procedure detailed in sub-paragraph (a) of the last foregoing paragraph.

Interpretation

5. Milk which shows no signs of turbidity shall be deemed to satisfy the test.

PART IV

Provisions as to the testing of samples of semi-skimmed milk and skimmed milk treated by the ultra high temperature method by means of the petri plate count test

1. In testing samples (being parts of samples procured in accordance with Schedule 3 to these regulations) of milk treated by the ultra high temperature method for bacterial count the following paragraphs shall be complied with.

Culture medium

2. Bacterial count. The medium to be used shall be yeastrel milk agar either compounded in the laboratory or prepared in accordance with the manufacturer's directions from a granular desiccated medium and shall have the following composition:—

Yeastrel	...	...	...	...	...	...	...	...	3.0 grams
Peptone	...	...	...	...	...	...	...	...	5.0 grams
Agar	...	...	...	...	...	...	...	...	15.0 grams
Milk (fresh or spray dried, skim or whole milk)	...	...	...	...	...	...	...	...	10.0 ml.
Distilled water	...	...	...	...	...	...	...	...	to 1 litre

Where the medium is compounded in the laboratory it shall be filtered through a pulp-paper filter.

The medium shall be sterilised either by autoclaving at 15lb. pressure for 20 minutes or in a steamer for 30 minutes on 3 successive days. The final reaction of the medium at room temperature shall be pH7.2.

Dilutions

3. Quarter-strength Ringer's solution shall be used. The composition of full strength Ringer's solution shall be—

Sodium chloride	...	...	...	...	...	...	9.00 grams
Potassium chloride	...	...	...	...	...	...	0.42 grams
Anhydrous calcium chloride...	...	...	...	...	...	...	0.24 grams
Sodium bicarbonate	...	...	...	...	...	...	0.20 grams
Distilled water	...	...	...	...	...	...	1,000 ml.

Add 1 part of the above solution to 3 parts of distilled water. Fill into test tubes or bottles and sterilise by auto claving at 15lb. pressure for 15 minutes. The quantity to be filled into the container before sterilisation must be predetermined to allow for evaporation losses during sterilisation.

Alternatively, sterile tubes and bottles may be filled aseptically with measured quantities of sterile quarter-strength Ringer's solution.

Incubation of sample

4. On arrival at the laboratory the sample shall be placed unopened in an incubator at a temperature of 30°C. \pm 0.5°C. and be retained at that temperature for 24 hours.

Technique of tests

5. (a) At the end of the 24 hours incubation period the sample shall be removed from the incubator, mixed thoroughly and the container opened with aseptic precautions. Immediately after opening the sample container approximately 10 ml. of the sample shall be transferred by means of a sterile pipette into a sterile McCartney bottle or other suitable container which shall then be closed and placed in a refrigerator capable of maintaining a temperature between 3°C. and 5°C.

(b) From the remainder of the sample 1 ml. of 1 in 10 dilution shall be plated. For each sample being tested not less than 2 plates shall be prepared.

(c) The Petri plate cultures prepared shall be incubated at 30°C. \pm 0.5°C. for 48 hours.

Examination of cultures

6. All colonies (including "pin-point" colonies) on each plate shall be counted and the arithmetic mean count obtained. To facilitate counting it is desirable to use a counting chamber, a suitable lens and a tally counter. The result of the count shall be recorded as the number of bacteria per millilitre. If there is any doubt about the result, the test should be repeated using the sample in the McCartney bottle placed in the refrigerator.

General precautions

7.—(1) The sterility of the media and apparatus shall be tested by carrying out a blank test using sterile water in place of milk when each batch of samples is examined.

(2) Before the dilutions are prepared, the milk shall be thoroughly mixed by inverting the sample container 25 times.

(3) Each dilution shall be thoroughly mixed without vigorous shaking.

(4) In the preparation of the dilutions a separate sterile pipette shall be used for each dilution and for transferring the dilution to the Petri plate.

(5) The pipettes shall be straight-sided, of the "blow-out" type and plugged with cotton wool.

(6) Not more than 15 minutes shall elapse between the dilution of the milk and its admixture with the agar medium.

- (7) The melted agar shall be cooled to 45°C. before it is poured into the Petri plates.
- (8) If Petri plates are stacked in the incubator, so far as possible no stack shall consist of more than 6 Petri plates.
- (9) The temperature of the incubator shall be frequently checked by means of a thermometer conforming to the British Standards Institution's specification and adjusted if necessary.
- (10) Distilled Water: water prepared with a glass still or water of equal quality shall be used.

Regulation 5.

SCHEDULE 5

Requirements as to labelling of containers of heat treated semi-skimmed and skimmed milk

PART I—PASTEURISED

Every container in which semi-skimmed milk or skimmed milk which has been pasteurised is sold shall bear in some prominent position the name of the premises where the milk was put into the container and the words "Pasteurised Semi-skimmed Milk" or "Pasteurised Skimmed Milk" as appropriate; provided that where the container is a bottle these particulars shall be borne on the cap and may also be borne on the bottle.

PART II—STERILISED

Every container in which semi-skimmed milk or skimmed milk which has been sterilised is sold shall bear the name of the premises where the milk was sterilised and the words "Sterilised Semi-skimmed Milk" or "Sterilised Skimmed Milk" as appropriate.

PART III—ULTRA HEAT TREATED

Every cap closing a container of milk treated by the ultra high temperature method shall be conspicuously and legibly labelled or marked with the words "Ultra Heat Treated Semi-skimmed Milk" (or "U.H.T. Semi-skimmed Milk") or "Ultra Heat Treated Skimmed Milk" (or "U.H.T. Skimmed Milk") as appropriate and shall also bear the address of the premises at which the milk was put into the container. Such cap may bear also the name of the milk processor who has treated the milk. If there is no cap on which the wording can suitably be placed, it shall be placed within a surrounding line in a prominent position elsewhere upon the container, and the foregoing provisions shall apply to the words within the surrounding line in the same way as they apply to words on the cap.

EXPLANATORY NOTE

(This Note is not part of the Regulations.)

These Regulations apply to Scotland only and come into operation on 5th September 1974.

The Regulations—

- (a) require that semi-skimmed milk or skimmed milk sold for human consumption (other than milk intended for manufacture into products for sale for human consumption or sold to a processor for heat treatment under the regulations) shall have been heat treated by pasteurisation, sterilisation or the ultra high temperature method in accordance with the prescribed requirements (regulation 3 and Schedules 1 and 2);
- (b) specify sampling provisions for heat treated semi-skimmed milk and skimmed milk and tests which it must satisfy after pasteurisation, sterilisation or treatment by the ultra high temperature method (regulation 4 and Schedules 3 and 4);
- (c) require that containers in which pasteurised, sterilised or ultra heat treated semi-skimmed milk or skimmed milk is sold for human consumption shall be labelled in the prescribed manner (regulation 5 and Schedule 5).

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