

هيئة التقييس لدول مجلس التعاون لدول الخليج العربية GCC STANDARDIZATION ORGANIZATION (GSO)

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**دهن الحليب القابل للفرد
Dairy fat spreads**

ICS :07.100.99 ; 71.100.70

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هذه الوثيقة مشروع مواصفة قياسية خليجية تم توزيعها لإبداء الرأي والملاحظات بشأنها ، لذلك فإنها عرضة للتغيير والتبديل ، ولا يجوز الرجوع إليها كمواصفة قياسية خليجية إلا بعد اعتمادها من مجلس إدارة الهيئة.

Foreword

GCC Standardization Organization (GSO) is a regional Organization which consists of the National Standards Bodies of GCC member States. One of GSO main functions is to issue Gulf Standards /Technical regulations through specialized technical committees (TCs).

GSO through the technical program of committee TC No (5) "Technical committee for standards of food and agriculture products" has prepared this Standard. The Draft Standard has been prepared by State of Qatar .

The draft Standard has been prepared based on relevant ADMO, International and National foreign Standards and references.

This standard has been approved as a Gulf Technical regulation by GSO Board of Directors in its meeting No. (11), held on 5/12/1430h (22/11/2009) .

Dairy fat spreads

1 Scope and field of application

This Gulf standard is concerned with dairy fat spreads intended for direct human consumption, or for any further processing.

2 Complementary standards

- 2.1 GSO 9 "Labelling of prepackaged food stuffs."
- 2.2 GSO 21 "Hygienic regulations for food plants and their personnel."
- 2.3 GSO 150 "Expiration dates for food products."
- 2.4 GSO 168 "Requirements for storage facilities for dry and canned Foodstuffs"
- 2.5 GSO 569 "Milk and dairy products – Methods of sampling."
- 2.6 GSO 570 "Methods of physical and chemical analysis of milk."
- 2.7 GSO 571 "Methods of microbiological examination of liquid milk."
- 2.8 GSO 707 "Flavorings permitted for use in foodstuffs."
- 2.9 GSO 839 "Food packages – Part 1: General requirements."
- 2.10 GSO 841 "Maximum limits of mycotoxins permitted in foods and animal feeds - Aflatoxins."
- 2.11 GSO 988 "Limits of radioactivity levels permitted in food stuffs – Part 1."
- 2.12 GSO 998 "Methods of detection of permissible radionuclide limits in foods – Part 1: Gamma spectrometry analysis A, Cs 134, Cs 137."
- 2.13 GSO 1016 "Microbiological criteria for foodstuffs – Part 1."
- 2.14 GSO 1694 "General rules for food hygiene".
- 2.15 GSO/CAC 193 "General Standard for contaminants and toxins in food and feed"
- 2.16 GSO 2481 "Maximum residue limits (MRLs) of veterinary drugs in food".
- 2.17 GSO 383, 383" Maximum limits for pesticide residues in agricultural and food products- Parts 1, 2".
- 2.18 GSO/CAC 229" Analysis of pesticide residues: Recommended methods".
- 2.19 GSO/CAC/RCP 57" Code of hygienic practice for milk and milk products".
- 2.20 GSO 2539 "Vitamins and Minerals permitted for use in foodstuff".
- 2.21 GSO/CAC 206 "General Standard for the use of dairy terms".

3 Definitions

Dairy fat spreads milk products relatively rich in fat content in the form of spreadable emulsion principally of the type of water-in-milk fat that remains in solid phase at a temperature of 7°C.

4 Requirements

- 4.1 The product shall be free from pig products and its derivatives and all the contradicts Islamic law.
- 4.2 The product shall be produced under hygienic conditions mentioned in GSO standard stated in item (2.2, 2.14, 2.19).
- 4.3 Raw material used in the processing shall be comply with Gulf standards specific to each.
- 4.4 Milk and / or milk products including milk fat as raw material, may have been subjected to any appropriate processing (e.g. physical modifications including fractionation).

- ε,Ϟ The product shall be free from any fats or oils other than milk fat.
 ε,ϟ The product shall be free from impurities, foreign materials and rancidity.
 ε,Ϡ The milk fat content shall be no less than 10% and less than 80% (m/m) and shall represent at least 2/3 of the dry matter.

Compositional modifications of Dairy Fat Spreads are restricted by the requirements of Gulf standard stated in item (2.21).

- ε,ϡ The veterinary drugs residues content shall be comply with what mentioned in Gulf Standard stated in item (2.16).
 ε,Ϣ Pesticide residues content shall be comply to what mentioned in Gulf standard stated in item (2.17).
 ε,ϣ Limits of mycotoxins shall be comply with what mentioned in Gulf standard stated in item (2.10).
 ε,ϣ Limits of microbiological of the product shall be comply with what has been mentioned in Gulf standard stated in item (2.13).
 ε,ϣ Limits of radioactivity limits of the product shall be comply with Gulf standard stated in item (2.11).
 ε,ϣ The following substances may be added to the product:
 ε,ϣ,ϛ Flavours: According to Gulf standard stated in item (2.8)
 ε,ϣ,Ϝ Safe and suitable processing aids.
 ε,ϣ,ϝ Vitamins A, D and other nutrients according to Gulf standard stated in item (2.20).
 ε,ϣ,Ϟ Sodium chloride and potassium chloride as a salt substitute.
 ε,ϣ,ϟ Sugars (any carbohydrate sweetening matter).
 ε,ϣ,Ϡ Inulin and malt-dextrins according to GMP.
 ε,ϣ,ϡ Starter cultures of harmless lactic acid and / or flavour producing bacteria.
 ε,ϣ,Ϣ Water.
 ε,ϣ,ϣ Gelatin and starches (according to GMP), these substances can be used in the same function as thickeners, provided they are added only in amounts functionally necessary as governed by GMP taking into account any use of the thickeners according to item (4.14.4).

ε.14 Food additives

Only those additive functional classes indicated as technologically justified in the table below may be used for the product categories specified. Within each additive class, and where permitted according to the table, only those food additives listed below the table may be used and only within the functions and limits specified:

Additive functional class	Justified use in dairy fat spreads	
	< 70 % milk fat content *	≥ 70% milk fat content
Acidity regulators	X	X
Anticaking agents	-	-
Antifoaming agents	X	X
Antioxidants	X	X
Bleaching agents	-	-

Bulking agents	-	-
Carbonating agents	-	-
Colors	X	X
Color retention agents	-	-
Emulsifiers	X	-
Firming agents	-	-
Flavor enhancers	X	-
Foaming agents	-	-
Gelling agents	-	-
Humectants	-	-
preservatives	X	X
Propellants	X	X
Raising agents	-	-
Sequestrants	-	-
Stabilizers	X	-
Thickeners	X	-

- The application of GMP in the use of emulsifiers, stabilizer, thickeners and flavor enhancer, includes consideration of the fact that the amount required to obtain the technological function in the product decreases with increasing fat content, fading out at fat content about 70.%

INS No.	Name of additive	Maximum level
4.14.1 Colors		
100 (i)	Curcumin	5 mg / kg
160a (i)	(Beta-carotene (synthetic	35 mg / kg, singly or in combination
160a (ii)	(Beta-carotene (Blakeslea triaspora)	
160e	Beta- apo- Carotenal	
160f	Beta -apo 8-carotenoic acid ,methyl or ethyl ester	
160b (i)	Annatto extracts– bixin based	20 mg / kg
4.14.2 Emulsifiers		
432	Polyoxyethelene(20) sorbitan monolaurate	10000 mg / kg, singly or in combination (Dairy fat spreads for baking purposes only)
433	Polyoxyethelene(20) sorbitan monooleate	
434	Polyoxyethelene(20) sorbitan monopalmitate	
435	Polyoxyethelene(20) sorbitan monostearate	
436	Polyoxyethylene (20) sorbitan tristearate	
471	Mono and diglycerides of fatty acid	Limited by GMP
472a	Acetic and fatty acid esters of glycerol	Limited by GMP
472b	Lactic and fatty acid esters of glycerol	Limited by GMP
472c	Citric and fatty acid esters of glycerol	Limited by GMP
472e	Diacetyl tartaric and fatty acid esters of glycerol	10000 mg / kg
473	Sucrose esters of fatty acids	10000 mg / kg, (dairy fat

INS No.	Name of additive	Maximum level
		spreads for baking purposes only)
474	Sucroglycerides	10000 mg / kg, (dairy fat spreads for baking purposes only)
475	Poly glycerol esters of fatty acids	5000 mg / kg
476	Poly glycerol esters of interesterified ricinoleic acid	4000 mg / kg
481(i)	Sodium stearoyl lactylate	10000 mg / kg, singly or in combination
482(i)	Calcium stearoyl lactylate	
491	Sorbitan monostearate	10000 mg / kg, singly or in combination
492	Sorbitan tristearate	
493	Sorbitan monolaurate	
494	Sorbitan monooleate	
495	Sorbitan monopalmitate	
14.4.3 Preservatives		
200	Sorbic acid	2000 mg / kg, singly or in combination (as sorbic acid) for fat contents < 59% and 1000 mg / kg singly or in combination (as sorbic acid) for fat contents > 59 %
202	Potassium Sorbate	
203	Calcium Sorbate	
4.14.4 Stabilizers / thickeners		
340(i)	Potassium dihydrogen phosphate	880 mg / kg, singly or in combination as phosphorus
340(ii)	Dipotassium hydrogen phosphate	
340(iii)	Tripotassium phosphate	
341(i)	Calcium dihydrogen sphosphate	880 mg / kg, singly or in combination as phosphorus
341(ii)	Calcium hydrogen phosphate	
341(iii)	Tricalcium phosphate	
450(i)	Disodium diphosphate	phosphorus
400	Alginic acid	Limited by GMP
401	Sodium alginate	Limited by GMP
402	Potassium alginate	Limited by GMP
403	Ammonium alginate	Limited by GMP
404	Calcium alginate	Limited by GMP
406	Agar	Limited by GMP
405	Propylene glycol alginate	3000 mg / kg
407	Carrageenan	Limited by GMP
407a	Processed eucheama seaweed (PES)	Limited by GMP
410	Carob bean gum	Limited by GMP
412	Guar gum	Limited by GMP
413	Tragacanth gum	Limited by GMP
414	Gum arabic (acacia gum)	Limited by GMP
415	Xanthan gum	Limited by GMP
418	Gellan gum	Limited by GMP
422	Glycerol	Limited by GMP
440	Pectin	Limited by GMP
460(i)	Microcrystalline cellulose (Cellulose gel)	Limited by GMP

INS No.	Name of additive	Maximum level
460(ii)	Powdered cellulose	Limited by GMP
461	Methyl cellulose	Limited by GMP
463	Hydroxypropyl cellulose	Limited by GMP
464	Hydroxypropyl methyl cellulose	Limited by GMP
465	Methyl ethyl cellulose	Limited by GMP
466	Sodium carboxymethyl cellulose (Cellulose gum)	Limited by GMP
500(i)	Sodium carbonate	Limited by GMP
500(ii)	Sodium hydrogen carbonate	Limited by GMP
500(iii)	Sodium sesquicarbonate	Limited by GMP
1400	Dextrin, roasted starch	Limited by GMP
1401	Acid - treated starch	Limited by GMP
1402	Alkaline - treated starch	Limited by GMP
1403	Bleached starch	Limited by GMP
1404	Oxidized starch	Limited by GMP
1405	Starches, enzyme treated	Limited by GMP
1410	Monostarch phosphate	Limited by GMP
1412	Distarch phosphate	Limited by GMP
1413	Phosphated distarch phosphate	Limited by GMP
1414	Acetylated distarch phosphate	Limited by GMP
1420	Starch acetate esterified with acetic anhydride	Limited by GMP
1422	Acetylated distarch adipate	Limited by GMP
1440	Hydroxypropyl starch	Limited by GMP
1442	Hydroxypropyl distarch phosphate	Limited by GMP
4.14.5 Acidity regulators		
325	Sodium lactate	Limited by GMP
326	Potassium lactate	Limited by GMP
327	Calcium lactate	Limited by GMP
329	Magnesium lactate, DL-	Limited by GMP
331(i)	Sodium dihydrogen citrate	Limited by GMP
331(ii)	Disodium monohydrogen citrate	Limited by GMP
334	Tartaric acid, L(+)-	5000 mg / kg, singly or in combination as tartaric acid
335(ii)	Disodium tartarate	
337	Potassium sodium tartarate	
339(i)	Sodium dihydrogen phosphate	880 mg / kg, singly or in combination as phosphorous
339(ii)	Sodium hydrogen phosphate	
339(iii)	Trisodium phosphate	
338	Phosphoric acid	
524	Sodium hydroxide	Limited by GMP
526	Calcium hydroxide	Limited by GMP
4.14.6 Antioxidants		
304	Ascorbyl palmitate	500 mg / kg, as ascorbyl stearate
305	Ascorbyl stearate	
307	Tocopherols	500 mg / kg
310	Propyl gallate	200 mg / kg, singly or in combination: Butylated Hydroxyanisole (BHA, INS

INS No.	Name of additive	Maximum level
		320), Butylated Hydroxytoluene(BHT, INS 321), and Propyl Gallate (INS 310) as a combined maximum level of 200 mg/ kg on a fat or oil basis. May be used only in dairy fat spreads intended for cooking purposes.
320	Butylated hydroxyanisol (BHA)	200 mg / kg, singly or in combination: Butylated Hydroxyanisole (BHA, INS 320), Butylated Hydroxytoluene(BHT, INS 321), and Propyl Gallate (INS 310) as a combined maximum level of 200 mg/ kg on a fat or oil basis. May be used only in dairy fat spreads intended for cooking purposes.
321	Butylated hydroxytoluene (BHT)	75 mg / kg, singly or in combination: Butylated Hydroxyanisole (BHA, INS 320), Butylated Hydroxytoluene(BHT, INS 321), and Propyl Gallate (INS 310) as a combined maximum level of 200 mg/ kg on a fat or oil basis. May be used only in dairy fat spreads intended for cooking purposes.
4.14.7 Anti-foaming agents		
900 a	Polydimethylsiloxane	10 mg /kg in dairy fat spreads for frying purposes, only.
4.14.8 Flavor enhancers		
627	Disodium 5'-guanylate	Limited by GMP
628	Dipotassium 5'-guanylate	Limited by GMP

- **Sampling**

Samples shall be taken according to Gulf standard stated in item (2.5).

- ٦ **Methods of examination and test**

The tests mentioned in Gulf standards stated in the following items: (2.6), (2.7), (2.12), (2.18) shall be carried out on the representative sample taken according item (5).

√ **Packaging, transportation and storage**

√, 1 Packaging:

√, 1, 1 The product shall be packed in a suitable hermetically sealed container to keep its characteristics.

√, 1, 2 Containers used in packaging shall comply with the requirements mentioned in Gulf standard stated in item (2.9).

√, 2 Transportation:

Transportation means shall be clean, dry and its temperature shall not exceed 20⁰ C, and not used before in transport any poisoning or harmful materials.

√, 3 Storage:

√, 3, 1 Product storage shall be carried out in well ventilated stores far from sun and high heat sources and from moisture and insects.

√, 3, 2 Stores shall be far from objectionable odor, and shall comply with what has been mentioned in Gulf standard stated in item (2.4).

∧ **Labeling**

Without prejudice to what has been mentioned in Gulf standard stated in item (2.1, 2.3) the following shall be declared on the product:

∧, 1 Product name (dairy fat spreads) or (reduced dairy fat spreads).

∧, 2 Product type (Salted or unsalted).

8.3 Dairy fat spreads that have been sweetened shall be labelled to indicate that they have been sweetened

8.4 Milk fat content percentage.