

**Bangladesh Standard
Specification for
Mayonnaise
(Second Revision)**

Public Comments Only, Not to be Cited as BDS

ICS: 67.220.10



BANGLADESH STANDARDS AND TESTING INSTITUTION
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BSTI

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Foreword

This Bangladesh Standard was adopted by the Bangladesh Standards and Testing Institution on, after the recommendation by the Sectional Committee for the Oilseeds and their Products had been approved by the Agricultural and Food Products Divisional Committee.

Mayonnaise is a condiment sauce obtained by emulsifying edible vegetable oil(s) in a aqueous phase consisting of vinegar, the oil-water emulsion being produced by whole egg or egg yolk. In order to ensure that the product conforms to safety and quality requirement it was necessary to prepare this standard so as to safeguard the consumer. This standard 'BDS 1503 Mayonnaise' was first published in 1996, and subsequently revised in 2011. This Bangladesh standard is the second revision of BDS 1503. Major modifications in this version are as follows:

- i) terminology for 'mayonnaise' has been included;
- ii) ingredients for mayonnaise has been modified;
- iii) clauses for 'food additives', 'hygienic requirements', 'legal requirements' and 'pesticide residues' have been included;
- iv) the limits for 'total fat' and 'total acidity' have been modified;
- v) the parameters for 'moisture', 'cholesterol', 'saturated fat', 'ether insoluble matter' have been deleted;
- vi) limits for 'trans fatty acids' has been included;
- vii) microbiological limits for 'total viable count', '*E. coli*', '*Salmonella*' and 'yeast and moulds counts' have been included;
- viii) limits for cadmium and copper have been deleted; and
- ix) requirements for labeling has been modified according to the current practice;

The Sectional Committee responsible for the preparation of this standard has taken into consideration the views of the members of this committee, local producers, consumers and technologists and has related the standard to the manufacturing and trade practices followed in the country in this field.

In the formulation of this standard, considerable assistance has been derived from the following publications, which are acknowledged with thanks:

PS 3947:2010 Specification for Mayonnaise (1st Rev.)
Pakistan Standards and Quality Control Authority and
MS 745:2022 Mayonnaise – Specification (Second Edition)
Malawi Bureau of Standards

This standard is subject to periodical reviews and amendments, if necessary, in order to keep pace with the latest industrial and technological innovations. Any suggestions for improvement will be recorded and placed before the committee in due course.

For the purpose of deciding, whether a particular requirement of this standard is complied with the final value observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with BDS 103. The number of significant places retained in the rounded off value should be the same as that of the specified value in the standard.

This standard 'BDS 1503 Mayonnaise (2nd Rev.)' cancels and replaces 'BDS 1503:2011 Mayonnaise (1st Rev.)' that has been technically revised.

Bangladesh Standard Specification for Mayonnaise (Second Revision)

1. Scope

1.1 This standard specifies the requirements, methods of sampling and test for mayonnaise for edible purpose.

2. Normative References

2.1 The relevant standards listed in Annex-A are necessary adjuncts to this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

3. Terminology

3.1 **Mayonnaise** – Mayonnaise is a condiment sauce obtained by emulsifying edible vegetable oil(s) in an aqueous phase consisting of vinegar, the oil-water emulsion being produced by whole egg or egg yolk.

3.2 **Emulsion** – mixture of two or more liquids that are normally immiscible (not forming a homogenous or unblendable). It is to be used when both phases, dispersed and continuous, are liquids. One liquid (the dispersed phase) is dispersed in the other (the continuous phase).

3.3 **Emulsifier** – substance that stabilizes an emulsion by increasing its kinetic stability. These compounds typically have a polar or hydrophilic (i.e. water-soluble) part and a non-polar or lipophilic part. Because of this, they tend to have more or less solubility either in water or in oil. The more soluble in water (and conversely, less soluble in oil) will generally form oil-in-water emulsions, while those that are more soluble in oil will form water-in-oil emulsions.

3.4 **Phase inversion** – phenomenon that occurs when agitated oil in water emulsion, reverts to a water in oil and vice versa.

4. Description

4.1 Mayonnaise is a semi-solid product consisting essentially of edible vegetable oil, vinegar and whole egg or egg yolk. It may also contain optional ingredients as specified in sections 5.3. High quality mayonnaise has a firm texture and a small droplet size. It reaches a peak in texture and a minimum in droplet size during mixing. At longer mixing times the quality decreases and the mayonnaise becomes over-sheared. When the ingredients are cold and a high amount of egg yolk is used, mayonnaise with a high quality can be made.

4.2 Mayonnaise with an increased oil content has a firmer texture but is also more sensitive to over-shear. Full-fat mayonnaise contains around 65 to 80 % oil. The oil is dispersed in a water phase to form an oil-in-water (O/W) emulsion. A low viscosity characterizes phase inverted mayonnaise, or broken mayonnaise, which is close to the viscosity of oil resulting in a water-in-oil (W/O) emulsion.

4.3 Reduced-fat mayonnaise, on the other hand, is a growing market, with continually reducing oil content while maintaining similar product taste and texture. As the oil is present in levels of at least 25 to 65 % by weight in medium or low calorie mayonnaise, substantial reformulation is necessary in order to produce a mayonnaise product with not less than 10 % by weight vegetable oil.

5 Essential composition and quality factors

5.1 General requirements

Mayonnaise shall have the following characteristics:

- 5.1.1 The texture of the product shall be semisolid, uniform, smooth and free from lumps due to poor manufacturing;
- 5.1.2 It shall be free from impurities and foreign materials, rancidity and any other foreign flavours;
- 5.1.3 It shall be free from animal fats and oils;
- 5.1.4 The taste of mayonnaise shall be characteristic of mayonnaise;
- 5.1.5 Bubbles of oil shall be small and uniform in size; and
- 5.1.6 Egg white content shall not be more than 20% and the egg yolk shall not be less than 6%.

5.2 Essential ingredients

5.2.1 The product shall be produced by using the following ingredients:

- (a) Edible vegetable oil or a mixture thereof
- (b) Whole egg
- (c) Vinegar
- (d) Potable Water (see BDS 1240)
- (e) Egg yolk
- (f) Salt

5.3. Optional Ingredients

5.3.1 The following optional ingredients may be added to influence significantly the desired fashion and the physical and organoleptic characteristics of the products complying with relevant Bangladesh standards:

- a) Lemon Juice
- b) Sugars
- c) Condiments, spices, herbs
- d) Fruits and vegetables including fruit juice and vegetable juice
- e) Mustard
- f) Milk products
- g) Natural permitted flavours
- h) Calcium disodium EDTA to protect flavour (7.5mg/100ml, Max.)
- i) Oleoresin of paprika

5.4 **Food Additives** – Mayonnaise may contain any food additives as permitted under the food category 12.6.1 in the latest available version of Codex General Standard for Food additives (CODEX STAN 192).

5.5 **Preservatives** – The product may contain only the following preservatives given in Table 1.

Table–1 Limit for preservatives

Sl.no. (1)	Preservatives (2)	Limit (3)
1.	Benzoic acid and/or its salts (as Benzoic acid)	1000 mg/kg
2.	Sorbic acid and/or its salts (as Sorbic acid)	1000 mg/kg

NOTE – Where the use of more than one preservative, the amount of each shall be such that when expressed as a percentage of the amount permitted singly, the sum of the several percentages does not exceed one hundred.

5.6 Mayonnaise shall comply with the specific requirements stipulated in Table 2 and 3.

Table–2 Requirements for Mayonnaise

Sl. No. (1)	Characteristics (2)	Limit (3)			Method of Tests (4)
i	Total fat, percent by mass, <i>Min.</i>	Real Mayonnaise > 65	Medium fat Mayonnaise <65 to >25	Low fat Mayonnaise <25 to >10	ISO 17189
ii.	Total acidity as acetic acid, %, m/m <i>Max.</i>	1.5			AOAC 950.17
iii.	Peroxide value, meq/kg, <i>Max.</i>	10			BDS ISO 3960
iv.	Trans Fatty Acids, percent by weight, <i>Max.</i>	2			ISO 12966-4

Table–3 Limit for Heavy metals and Microbiological parameters

Sl. No. (1)	Characteristics (2)	Limit (3)	Method of Tests (4)
i.	Lead (Pb), mg/kg, <i>Max.</i>	0.1	AOAC 994.02
ii.	Arsenic (As), mg/kg, <i>Max.</i>	0.1	AOAC 942.17
iii.	Mercury (Hg), mg/kg, <i>Max.</i>	0.25	AOAC 971.21
iv.	Total viable count, cfu/g, <i>Max.</i>	< 25000	BDS ISO 4833-1
v.	<i>Escherichia coli</i> , cfu/g, <i>Max.</i>	Absent	BDS ISO 16649-2
vi.	<i>Salmonella</i> spp, cfu/25 g, <i>Max.</i>	Absent	BDS ISO 6579-1
vii.	Yeast and moulds, cfu/g, <i>Max.</i>	100	BDS ISO 21527-1

5.7 **Hygiene** – During processing, handling, storage and transportation, effective measures must be taken to prevent cross contamination with chemicals, microbial or physical contaminants.

5.7.1 The product shall be processed and packed under strict hygienic conditions in premises maintained in accordance with BDS 822.

5.8 **Pesticide residues** – The product covered by this standard shall comply with the maximum residue limits for pesticide established by the Codex Alimentarius Commission.

5.9 **Legal Requirement** – The product shall in all other aspects comply with the requirements of the legislations enforced in the country.

6. Packing and Marking

6.1 Packing – Mayonnaise shall be packaged in containers made from food grade packaging material and sealed in a manner that will safeguard the hygienic, nutritional and organoleptic properties of the product throughout the shelf life of the product.

6.2 Marking – Each package shall be suitably labeled so as to give the following information:

- a) Name of the product as per fat categorized 'Mayonnaise';
- b) Name and address of the manufacturer/importer;
- c) Batch or code number;
- d) Net content in gm;
- e) Date of manufacture and expiry;
- f) Storage condition;
- g) Maximum Retail Price (MRP);
- h) Any other requirements as specified under the 'Packaged Commodities Rules, 2021' of BSTI.

6.2.1 Each package may also be marked with the BSTI Certification Mark.

NOTE – The use of BSTI Certification Mark is governed by the provisions of Bangladesh Standards and Testing Institution Act, 2018 and the Rules and Regulations made thereunder. Details of conditions, under which a license for the use of BSTI Certification Mark may be granted to manufacturers or processors, may be obtained from the Bangladesh Standards and Testing Institution.

7. Sampling

7.1 Representative samples of the material shall be drawn and conformity of the material to the requirements of the specification shall be determined according to the procedure given in BDS ISO 5555.

8. Tests

8.1 Test shall be carried out as prescribed in col. 4 of Table 2 and 3.

8.2 Quality of Reagents – Unless specified otherwise, pure chemicals shall be employed in tests and distilled water (BDS 833) shall be used where the use of water as a reagent is intended.

NOTE – 'Pure chemicals' shall mean chemicals that do not contain impurities, which may affect the result of analysis.

9. Compliance

9.1 When on testing, each of the samples is found to conform to the requirements specified in this Bangladesh Standard Specification, the lot, batch or consignment from which the samples have been drawn shall be deemed to comply with standard specification.

Annex A

(Clause 2.1)

List of Relevant Standards

BDS and ISO No.	Title
BDS 103	Methods of rounding off numerical value
BDS 822	Code of hygienic conditions for food processing units
BDS 833	Water for laboratory use
BDS ISO 3960	Animal and Vegetable fats and oils – Determination of peroxide value – Iodometric (visual) endpoint determination
BDS ISO 4833-1	Microbiology of food chain – Horizontal method for the enumeration of microorganism – Part 1: Colony count at 30°C by the pour plate technique
BDS ISO 5555	Animal and Vegetable fats and oils – Sampling
BDS ISO 6579-1	Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of Salmonella – Part 1: Detection of <i>Salmonella</i> spp
ISO 6883	Animal and Vegetable fats and oils – Determination of conventional mass per volume (litre weight in air)
ISO 12966-4	Animal and vegetable fats and oils — Gas chromatography of fatty acid methyl esters – Part 4: Determination by capillary gas chromatography
BDS ISO 16649-2	Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of β -glucuronidase- positive <i>Escherichia coli</i> — Part 2: Colony-count technique at 44°C using 5-bromo-4-chloro-3-indolyl β -D-glucuronide
ISO 17189	Butter, edible oil emulsions and spreadable fats — Determination of fat content (Reference method)
BDS ISO 21527-1	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of yeasts and moulds- Part 1: Colony count technique in products with water activity greater than 0.95.