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“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 12575 (2010): Fried Potato Chips [FAD 16: Foodgrains, Starches and Ready to Eat Foods]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartrhari—Nitisatakam
“Knowledge is such a treasure which cannot be stolen”
Indian Standard
FRIED POTATO CHIPS — SPECIFICATION
( First Revision )

ICS 67.080.20
FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Foodgrains, Starches and Ready-to-Eat Foods Sectional Committee had been approved by the Food and Agriculture Division Council.

Deep-fried snack foods are very popular in India for reasons of taste and nutritional value. Success in deep-fat frying of snack foods depends upon several factors, such as: (a) the use of proper raw material of optimum maturity or quality, (b) correct method of preparation, (c) use of suitable equipment, (d) selection of appropriate fat or oil as frying medium, (e) optimum time and temperature of frying, (f) efficient packaging, and (g) proper storage. Though consumption of these products is at present very high, there is no systematic quality control. Formulation of national standards would assist in the manufacture and sale of standardized, nutritious, safer and more hygienically processed products.

Fried potato chips, also known as potato wafers, are prepared by peeling and slicing or shredding potatoes and deep-fat frying the slices/shreds in suitable edible oil or fat, or combinations thereof. In case of sliced potatoes, these are sliced breadthwise to give thin slices. The slices/shreds are washed and fried in fat/oil or combinations thereof, held at proper temperature and time to render them crisp. Salt and other seasonings are added after frying. When groundnut or other unsaturated oils are used, permitted antioxidants in the frying medium are sufficient to give protection to the potato chips.

This standard was first published in 1989. In this revision, the description clause has been modified and the requirement of moisture has been updated.

In the formulation of this standard, due consideration has been given to the relevant Rules prescribed by the Government of India under the Prevention of Food Adulteration Act, 1954 and the Standards of Weights and Measures (Packaged Commodities) Rules, 1977. This standard is, however, subject to the restrictions imposed under these rules, wherever applicable.

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 IS 2 : 1960 ‘Rules for rounding off numerical values (revised)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.
Indian Standard

FRIED POTATO CHIPS — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for fried potato chips.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<table>
<thead>
<tr>
<th>IS No.</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>1070 : 1992</td>
<td>Reagent grade water (third revision)</td>
</tr>
<tr>
<td>2491 : 1998</td>
<td>Food hygiene — General principles — Code of practice (second revision)</td>
</tr>
<tr>
<td>3508 : 1966</td>
<td>Methods of sampling and test for ghee (Butterfat)</td>
</tr>
<tr>
<td>4905 : 1968</td>
<td>Methods for random sampling</td>
</tr>
<tr>
<td>7224 : 2006</td>
<td>Iodized salt, vacuum evaporated iodized salt and refined iodized salt — Specification (second revision)</td>
</tr>
<tr>
<td>9504 : 2007</td>
<td>L(+)-tartaric acid, food grade — Specification (first revision)</td>
</tr>
<tr>
<td>9505 : 2007</td>
<td>Monosodium L-glutamate, food grade — Specification (first revision)</td>
</tr>
<tr>
<td>10633 : 1999</td>
<td>Vanaspati — Specification (second revision)</td>
</tr>
<tr>
<td>12569 : 1989</td>
<td>Potato french fries (frozen) — Specification</td>
</tr>
<tr>
<td>13186 : 1991</td>
<td>Citric acid food grade — Specification</td>
</tr>
<tr>
<td>14515 : 1998</td>
<td>Fish pickles — Specification</td>
</tr>
</tbody>
</table>

3 INGREDIENTS

3.1 Essential Ingredients

The following raw materials shall be used in the manufacture of fried potato chips:

a) Potatoes — Potatoes of round to round oval shape and 4-6 cm size with shallow eyes should normally be used. Potatoes which are green or which have internal/external defects should not be used.

b) Edible Oil — Refined edible oil containing permitted antioxidants.

c) Salt — Conforming to IS 7224.

3.2 Optional Ingredients

In addition to the essential ingredients specified in 3.1, the following optional ingredients may be added:

a) Spices — These shall be clean, freshly ground, such as, chilli, pepper or others or combinations thereof, free from infection, infestation, foreign matter and any undesirable odour or taste and conforming to the relevant Indian Standards.

b) Permitted flavourings.

c) Citric acid (see IS 13186), Tartaric acid (see IS 9504).

d) Monosodium glutamate (see IS 9505), to be declared on the label.

4 REQUIREMENTS

4.1 Description

4.1.1 The fried potato chips shall have an attractive light to golden yellow colour without brown spots, crisp texture, and pleasant taste and odour. Salt and other seasoning shall be added to taste. The chips shall be of thickness between 1.0 to 2.5 mm, free from blisters, excessive brown pigmentation and wet centres. The chips shall not be excessively greasy and shall be free from rancidity and other objectionable odour and taste.

4.1.2 The material shall be free from insects, insect residues, rodent hair and excreta, and fungal infestation.

4.2 Frying

The frying medium shall be regularly replaced with fresh batches of oil or fat or combination thereof, to conform to good manufacturing practices. The initial temperature of the frying medium shall be between 180°C and 185°C.
4.3 Hygienic Conditions

The fried potato chips shall be manufactured, packed and stored under hygienic conditions (see IS 2491).

4.4 The fried potato chips shall conform to the requirements given in Table 1.

5 PACKING AND MARKING

5.1 Packing

The fried potato chips shall be packed in flexible thermoplastic films of multilayer or monolayer construction, or their laminates with paper and/or aluminium foil so as to provide a high resistance to the passage of oxygen, light and water vapour and to produce an effective heat seal. The sealing shall be done hermetically with or without nitrogen flushing to retain the contents in a fresh condition.

5.2 Marking

The following particulars shall be marked or labelled on each container:

a) Name of the material and trade-mark, if any;
b) Name and address of the manufacturer;
c) Batch or code number;
d) Net quantity;
e) Date of manufacture;
f) List of ingredients;
g) The words ‘Best before........’ (the date to be given by the manufacturer); and
h) Any other markings required under the Standards of Weights and Measures (Packaged Commodities) Rules, 1977 and the Prevention of Food Adulteration Act, 1954 and the Rules framed thereunder

6 SAMPLING

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 Annex A.

7 TEST

7.1 Tests shall be carried out as by the methods referred to in col 4 of Table 1.

7.2 Quality of Reagents

Unless specified otherwise, pure chemicals and reagent grade water (see IS 1070) shall be employed in tests.

NOTE — ‘Pure chemicals’ shall mean chemicals that do not contain impurities which affect the result of analysis.

Table 1 Requirements for Fried Potato Chips

(Clauses 4.4 and 7.1)

<table>
<thead>
<tr>
<th>Sl No.</th>
<th>Characteristic</th>
<th>Requirement</th>
<th>Method of Test, Ref to Annex/Clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>i)</td>
<td>Moisture, percent by mass, <em>Max</em></td>
<td>2.0</td>
<td>B of IS 12569</td>
</tr>
<tr>
<td>ii)</td>
<td>Acid insoluble ash (on dry basis), percent by mass, <em>Max</em></td>
<td>0.15</td>
<td>C of IS 12569</td>
</tr>
<tr>
<td>iii)</td>
<td>Fat (on dry basis), percent by mass, <em>Max</em></td>
<td>35</td>
<td>D of IS 12569</td>
</tr>
<tr>
<td>iv)</td>
<td>Acid value of extracted fat, <em>Max</em></td>
<td>2.0</td>
<td>E of IS 12569</td>
</tr>
<tr>
<td>v)</td>
<td>Peroxide value, meq oxygen/kg fat, <em>Max</em></td>
<td>10</td>
<td>22 of IS 3508</td>
</tr>
<tr>
<td>vi)</td>
<td>Salt, percent by mass, <em>Max</em></td>
<td>2.5</td>
<td>C of IS 14515</td>
</tr>
</tbody>
</table>

ANNEX A

(Clause 6)

SAMPLING OF FRIED POTATO CHIPS

A-1 GENERAL REQUIREMENTS

A-1.1 In drawing, storing, preparing and handling test samples, the following precautions and directions shall be observed.

A-1.1.1 The samples shall be taken in a protected place not exposed to damp air, dust or soot.

A-1.1.2 The sampling instruments shall be clean and dry.

A-1.1.3 The samples shall be placed in clean and dry containers.

A-1.1.4 The sample containers shall be of such a size that they are almost completely filled by the sample.
A-1.1.5 Precautions shall be taken to protect the samples, the material being sampled, the sampling instruments and the sample containers from adventitious contamination.

A-1.1.6 Each sample container shall be sealed with a stopper or a suitable closure after filling in such a way that it is not possible to open and resell it without detection, and marked with full details of sampling, such as, name of the material, name of the manufacturer, type of package and other important particulars of the consignment.

A-2 SCALE OF SAMPLING

A-2.1 Lot

All the packages in a single consignment of the same type, manufactured under relatively uniform conditions of production and having similar composition shall constitute a lot.

A-2.2 Samples shall be tested from each lot separately for ascertaining the conformity of a lot to the requirements of this specification.

A-2.3 The number of packages to be selected from a lot shall depend on the size of the package as well as the size of the lot and shall be according to Table 2.

A-2.3.1 These packages shall be selected from the lot at random. In order to ensure the randomness of selection, procedures given in IS 4905 may be followed.

A-3 TEST SAMPLES AND REFEREE SAMPLES

A-3.1 Draw small portions of the material with a suitable sampling instrument from different parts of each selected package. The total quantity of material drawn from each package shall be sufficient to make triplicate determinations for all the characteristics given in the specification.

A-3.2 Mix all portions of the material drawn from each selected package thoroughly. Out of the mixture, a small but approximately equal quantity of material shall be taken and mixed thoroughly so as to form a composite sample sufficient to make triplicate determinations for all the characteristics given in this specification. The composite sample so prepared shall be divided into three equal parts, one for the purchaser, another for the supplier and the third for the referee. These parts shall be immediately transferred to clean and dry containers which are then sealed airtight and labelled with all the particulars given in A-1.1.6.

A-3.2.1 The referee sample shall bear the seals of the purchaser and the supplier so as to be used in the case of a dispute between the two.

A-4 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

A-4.1 All the characteristics given in this specification shall be tested on the composite sample.

A-4.2 The lot shall be decided as conforming to the requirements of this specification if all the test results on the composite sample meet the corresponding specification requirements.

### Table 2 Number of Packages to be Selected for Sampling (Clause A-2.3)

<table>
<thead>
<tr>
<th>For Packages Below 500 g</th>
<th>For Packages 500 g to 1 kg</th>
<th>For Packages of More Than 1 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Packages in the Lot</td>
<td>Sample Size</td>
<td>Number of Packages in the Lot</td>
</tr>
<tr>
<td>Up to 100</td>
<td>8</td>
<td>Up to 50</td>
</tr>
<tr>
<td>101 to 300</td>
<td>13</td>
<td>51 to 100</td>
</tr>
<tr>
<td>301 to 500</td>
<td>20</td>
<td>101 to 300</td>
</tr>
<tr>
<td>501 to 1,000</td>
<td>32</td>
<td>301 to 500</td>
</tr>
<tr>
<td>1,001 and above</td>
<td>50</td>
<td>501 and above</td>
</tr>
</tbody>
</table>
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This Indian Standard has been developed from Doc No.: FAD 16 (1855).

Amendments Issued Since Publication

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