**ICS: 67.220.10**

# PAKISTAN STANDARD SPECIFICATION

# FOR

# TURMERIC WHOLE AND GROUND
# (1ST REVISION)





**PAKISTAN STANDARDS & QUALITY CONTROL AUTHORITY**
**Standards Development Centre,**
**Mubarak Manzil, 39-Garden Road, Saddar,**
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# TURMERIC WHOLE AND GROUND (1ST REV.)

## 0 FOREWORD

0.1 This Pakistan Standards was adopted by the Pakistan Standards Institution on **5th October, 2010** after the draft finalized; by the Spices & Condiment products Sectional Committee has been approved by the Agriculture & Food Products Divisional Council.

0.2 Turmeric (Haldi) is one of the 5 important and commonly used material in Pakistan dietary. It is marked as dry whole bulbs or fingers; as well in ground form,

0.3 While formulating this standard the Sectional Committee responsible for the formulation of Pakistan Standard on Spices and Condiments, took into consideration the prevailing methods of trade. This standard however, subject to the restrictions imposed under the Pakistan Pure Food Rules where ever applicable.

0.4 This standard is intended chiefly to cover the technical provisions relating to Haldi Powder and it does not cover all the necessary provision of a contract.

0.5 For the purpose of deciding whether a particular requirements of this standard complied with the final value observed or calculated expressing the result of a test or analysis shall be rounded off in accordance with Methods of Rounding Off Numerical Values, the number of significant places retained in the rounded off value (PS:103) shall be same as that of the specified value in a standard.

0.6 All the ingredients preparation, processing, packaging storage and for transportation shall be according to PS:3733 for Halaal Food Management System Requirement for any Organization in the Food Chain.

## 1. SCOPE & FIELD OF APPLICATION

1.1 This Pakistan Standard specifies the requirements for Turmeric (Curcuma longa) Ground (Powdered).

2. **DESCRIPTION**

2.1 Whole Turmeric constituted by cured primary or secondary rhizomes, called commercially bulbs or fingers, of (Curcuma long Linnaeus)

2.1.1 The rhizomes shall be dry, well developed and shall have the shape and typical colour of the variety. The rhizomes are cured by soaking them in boiling water and then drying them to avoid regeneration. They may be in the natural state or polished.

2.1.2 Ground (Powdered) turmeric is obtained by grinding whole turmeric.

3. **REQUIREMENT**

3.1 ODOUR FLAVOUR AND COLOUR

Turmeric ground (Powdered), shall have the characteristic odour and flavour of the spice. It shall be free from mustiness, foreign artificial colouring matter and other foreign flavours.

3.2 Freedom from insects moulds etc. Nom which the turmeric powder is obtained by the whole turmeric shall be free from living insects, moulds, fungus and shall be practically free from dead insects, insect fragments and rodent contamination

3.3 Extraneous Matter

3.3.1 Whole Turmeric from which the powdered turmeric is obtained

Extraneous matter in whole turmeric includes:

a) Chaff, dried leave, stones, particles of soil, dust and etc:
b) all vegetable matter other than the rhizomes.

3.3.2 GROUND (POWDERED) TURMERIC.

The ground (Powdered), turmeric shall conform with the microscopic characteristic of whole turmeric.

3.4 **DEFECTIVE RHIZOMES.**

Shriveled fingers and bulbs, internally damaged, hollow or porous rhizomes, rhizomes scorched by boiling and other types of' damaged rhizomes shall be considered, as defective.

The proportion of defective rhizomes shall not exceed 5% (m/m)

3.5 **GRADING**:

3.5.1 **GROUND (POWDERED) TURMERIC**

Ground (powdered) turmeric is graded according to its particle size into two types as follows :

a) coarse powder 98 % of the product shall pass through a sieve of aperture size 500 micron.
b) fine powder; 98 % of the product shall pass through a sieve of aperture size 300 micron.

3.6 **REQUIREMENTS (WHOLE & GROUND)**

Turmeric, whole or ground (powdered), in addition to clause 3.1 – 3.5.1 shall comply with the requirements given in the table-1.

**TABLE**

**REQUIREMENTS FOR TURMERIC WHOLE & GROUN D**

| Sl . No. | CHARACTERISTIC | REQUIREMENTS WHOLE / GROUND | | METHOD OF TEST REF.* |
|---|---|---|---|---|
| 1 | Extraneous matter % (m/m),, max. | 2 | - | ISO: 927 |
| 2 | Moisture content % (m/m), max. | 12 | 10 | PS : 3614 |
| 3 | Total Ash % (m/m) on dry basis max. | 9 | 9 | PS : 3611 |
| 4 | Acid insoluble ash % (m/m) on dry basis, max. | 1.5 | 1.5 | PS : 3609 |
| 5 | Lead as Pb, mg / kg max | 5 | 5 | - |
| 6 | Test for Lead Chromate | Negative | | Appendix - A |
| 7 | Volatile Oil ml / 100 g (on dry basis), min. | 2.5 | 1.5 | PS : 3611 |
| 8 | Curcumin content, percent by mass, min. | -. | 3.0 | -. |
| 9 | Starch percent by mass, max | - | 60 | - |

* Note: The relevant Testing Method of ISO, CAC and of other internationally recognized standard methods may be taken into account for analysis purpose.

3.7 The Turmeric (Whole & Ground) should be manufactured and packed under hygienic conditions and shall comply with the requirements given in the Table-2.

**TABLE – 2**

**MICROBIOLOGICAL REQUIREMENTS FOR TURMERIC POWDER**

| S. No | CHARACTERISTIC | REQUIREMENTS | Reference |
|---|---|---|---|
| 1. | Total Bacterial count | 1 X $10^6$ cfu /gm | McCormic & ESA |
| 2. | E coli cfu/gm | <100 | - |
| 3. | Salmonella/25 gm | Absent | McCormic |
| 4. | Staph.aureus cfu/gm | Absent | - |
| 5. | Yeast / Mould count cfu /gm | 1x$10^4$ | - |

## 4. SAMPLING

4.1 In accordance with PS: 2990 for Spices & Condiments Sampling.

## 5. PACKING

5.1 Turmeric Whole or Ground (Powdered) shall be packed in clean, sound and dry containers made of a material which does not affect the turmeric and protects its from moisture absorption and from the loss of volatile oils.

### 5.2 MARKING / LABELLING

In accordance with PS:1485 for Labelling of Prepacked Foods.

a) Name of the product and trade name or brand name if any.
b) Name and address of the Manufacture.
c) Batch or code number.
d) Date of Packing and Expiry.
e) The net mass.
f) Any other marking required by the purchaser.
g) This Pakistan Standard number PS. Mark and Licence number.



## APPENDIX – A

## CHROMATE TEST

### A.1 REAGENT

A.1.2 Dilute Sulphuric Acid (1 : 7 by volume)

A.1.3 Diphenyl Carbazide solution 0.2 percent (v/v) in ethyl alcohol 95 percent v/v.

### A.2 PROCEDURE

A.2.1 Ash about 2 g of the material dissolve the ash in 4 to 5 ml of dilute sulphuric acid in a test tube and add one milliliter of diphenyl carbazide solution. The presence of chromate is indicated by the production of violet colour.

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