

PRODUCT REFERENCE / NTO

Naturally Tree-Opened In-Shell Pistachios

A reference specification for raw, naturally opened in-shell pistachios with no blend of artificially opened nuts authorized in the reference grade system.

REFERENCE STATUS

Values in this sheet are adapted from the supplied third-party technical reference. They are not a Certificate of Analysis or a guaranteed PEZTEH production specification. Final grade, tolerances, treatment, packing, shelf life and legal limits must be confirmed in the signed commercial specification and current lot documents.

Product profile

Product form	Raw in-shell pistachios, naturally tree-opened
Varieties	Fandoghi, Ahmad Aghaei, Kalleh Ghouchi and Akbari
Shapes	Round and long; jumbo and medium profiles
Caliber	Super jumbo 18/22; jumbo 22/26; medium 26/30; regular 30/34; small 34/38 fruits per ounce
Sensory	Crunchy; typical pistachio flavor; free from off-taste and foreign odor
Source shelf-life reference	18 months after packing; target storage 5-15 C and 55% RH

Reference grade tolerances

Factor (% by weight unless stated)	Fancy	Extra	No.1	No.2
Open mouth	98	97	95	93
Closed shell	2	3	5	7
Tight split	20	30	N/A	N/A
Wide split	>70	>50	>30	N/A
Adhering hull	0.5	1	2	2
Stained	3	5	7	10
Out of caliber	10	15	20	N/A
Midgets	2	3	5	10
Damage by other means	2	3	8	12
Total external defects	20	30	N/A	N/A
Discoloration	5	10	20	N/A
Dissimilar varieties	6	10	20	30

Factor (% by weight unless stated)	Fancy	Extra	No.1	No.2
Size uniformity ratio	1.6	1.75	1.9	N/A
Edible meat	>50	>50	>50	>50
Damaged kernels	2	3	5	5
Serious damage	1	1	2	3
Maximum insect damage	0.5	0.5	1	2
Total internal defects	3	4	7	8
Shell pieces and blanks	2	2	3	5
Loose kernels	2	2	3	5
Foreign material	0.02	0.02	0.05	0.05

Reference moisture: 3-6%. Aflatoxin limits are confirmed against current destination law and customer requirements.

Defect definitions

- 1. Closed shell** - A tightly closed nut where a human nail cannot enter the suture.
- 2. Tight split** - Opening below 2 mm for round types or below 1 mm for long types.
- 3. Wide split** - Opening above 4 mm for round types or above 3 mm for long types.
- 4. Adhering hull** - Hull material covering more than one-quarter of the shell surface in aggregate.
- 5. Stained** - Contrasting yellow, dark brown or black discoloration affecting more than one-quarter of the shell.
- 6. Out of caliber** - Oversized and undersized nuts relative to the declared lot caliber.
- 7. Midgets** - In-shell pistachios passing through a 10 mm round-hole screen.
- 8. Damage by other means** - Shell damage or defects that affect product quality.
- 9. Total external defects** - Combined closed shell, adhering hull, stained, out-of-caliber, midget and other external damage.
- 10. Discoloration** - Natural light or dark grey shell color contrasting with ordinary shell color.
- 11. Dissimilar varieties** - Other varieties present in the principal variety.
- 12. Size uniformity** - Weight ratio of the 15 largest to 15 smallest nuts in 100 g, tested at least three times.
- 13. Edible meat** - Aggregate kernel weight in a 100 g in-shell sample.
- 14. Damaged** - Immature or underfilled kernels, or significant kernel spotting.
- 15. Serious damage** - Visible insect evidence, mold, distinct rancidity or decay.
- 16. Total internal defects** - Combined damaged and seriously damaged kernels.
- 17. Shell pieces and blanks** - Open or half shells containing no kernel.
- 18. Foreign material** - Material other than pistachio shells or kernels. Glass, metal and live insects are not permitted.
- 19. Off-taste and foreign odor** - Any flavor or odor not typical of pistachios, assessed by trained personnel.