

CODEX ALIMENTARIUS

INTERNATIONAL FOOD STANDARDS



Food and Agriculture
Organization of
the United Nations



World Health
Organization

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STANDARD FOR INSTANT NOODLES

CXS 249-2006

Adopted in 2006. Amended in 2016, 2018.

1. SCOPE

The standard shall apply to various kinds of noodles. The instant noodle may be packed with noodle seasonings, or in the form of seasoned noodle and with or without noodle garnish(s) in separate pouches, or sprayed on noodle and ready for consumption after dehydration process. This standard does not apply to pasta.

2. DESCRIPTION

Instant Noodle is a product prepared from wheat flour and/or rice flour and/or other flours and/or starches as the main ingredient, with or without the addition of other ingredients. It may be treated by alkaline agents. It is characterized by the use of pregelatinization process and dehydration either by frying or by other methods. The product should be presented as one of the following styles:

2.1 Fried noodles, or

2.2 Non-fried noodles

3. ESSENTIAL COMPOSITION AND QUALITY FACTORS

3.1 Composition

3.1.1 *Essential Ingredients*

- (a) Wheat Flour and/or Rice Flour and/or other flours and/or starches;
- (b) Water.

3.1.2 *Optional Ingredients*

The optional ingredients shall be ingredient(s) which are commonly used.

3.2 Quality Criteria

3.2.1 *Organoleptic*

Shall be acceptable in term of appearance, texture, aroma, taste and colour.

3.2.2 *Foreign Matter*

The product shall be free from foreign matter.

3.2.3 *Analytical Requirement for Noodle Block (Noodle Excluding Seasonings)*

- (a) Moisture Content
 - Maximum of 10% for fried noodles
 - Maximum of 14% for non-fried noodles
- (b) Acid value: maximum of 2 mg KOH/g oil (applicable only to fried noodles)

4. FOOD ADDITIVES

The use of food additive(s) as well as food additive(s) carry-over shall comply with the maximum level permitted by the *General Standard for Food Additives* (GSFA), CXS 192-1995. However, until the food additive provisions for the food category 06.4.3 "Pre-cooked pastas and noodles and like products" in the GSFA is finalised, the following listed food additives will apply¹.

¹ This sentence and the food additive list which follows will be removed from the standard once the GSFA on the food category 06.4.3. "Pre-cooked pastas and noodles and like products" is completed.

INS No.	Food Additive	Maximum Level
Acidity Regulators		
260	Acetic acid, glacial	GMP
262(i)	Sodium acetate	GMP
270	Lactic acid (L-, D-, and DL-)	GMP
296	Malic acid (DL-)	GMP
327	Calcium lactate	GMP
330	Citric acid	GMP
331(iii)	Trisodium citrate	GMP
334	Tartaric acid (L(+)-)	7500mg/kg
350(ii)	Sodium malate	GMP
365	Sodium fumarates	GMP
500(i)	Sodium carbonate	GMP
500(ii)	Sodium hydrogen carbonate	GMP
501(i)	Potassium carbonate	GMP
516	Calcium sulphate	GMP
529	Calcium oxide	GMP
Antioxidants		
300	Ascorbic acid (L-)	GMP
304	Ascorbyl palmitate	500 mg/kg Singly or in combination as ascorbyl stearate
305	Ascorbyl stearate	
306	Mixed tocopherols concentrate	200 mg/kg Singly or in combination
307	Alpha-tocopherol	
310	Propyl gallate	200 mg/kg Singly or in combination expressed as a fat or oil basis
319	Tertiary butylhydroquinone (TBHQ)	
320	Butylated hydroxyanisole (BHA)	
321	Butylated hydroxytoluene (BHT)	
Colours		
100(i)	Curcumin	500 mg/kg
101(i)	Riboflavin	200 mg/kg Singly or in combination as riboflavin
101(ii)	Riboflavin 5'-phosphate, sodium	
102	Tartrazine	300 mg/kg
110	Sunset yellow FCF	300 mg/kg
120	Carmines	100 mg/kg
123	Amaranth	100 mg/kg
141(i)	Chlorophyll copper complex	100 mg/kg

141(ii)	Chlorophyllin copper complex, sodium and potassium salts	100 mg/kg
143	Fast green FCF	290 mg/kg
150a	Caramel I-plain	GMP
150b	Caramel II-caustic sulphite process	50000 mg/kg
150c	Caramel III-ammonia process	50000 mg/kg
150d	Caramel IV-ammonia sulphite process	50000 mg/kg
160a(i)	Beta carotene (synthetic)	1200 mg/kg
160a(ii)	Carotenes, Vegetable	1000 mg/kg
160a(iii)	Beta-carotene (Blakeslea trispora)	1000 mg/kg
160e	Beta-apo-carotenal	200 mg/kg
160f	Beta-apo-8'-carotenic acid, methyl or ethyl ester	1000 mg/kg
162	Beet red	GMP
Flavour Enhancers		
620	Glutamic acid (L(+)-)	GMP
621	Monosodium glutamate, L-	GMP
631	Disodium 5'-inosinate,	GMP
627	Disodium 5'-guanylate	GMP
635	Disodium 5'-ribonucleotides	GMP
Stabilizers		
170(i)	Calcium carbonate	GMP
406	Agar	GMP
459	Beta-cyclodextrin	1000 mg/kg
Thickeners		
400	Alginic acid	GMP
401	Sodium Alginate	GMP
410	Carob Bean Gum	GMP
407	Carrageenan and its Na, K, NH ₄ salts (includes furcellaran)	GMP
407a	Processed Eucheuma Seaweed	GMP
412	Guar gum	GMP
414	Gum Arabic (acacia gum)	GMP
415	Xanthan gum	GMP
416	Karaya Gum	GMP
417	Tara Gum	GMP
418	Gellan Gum	GMP

424	Curdlan	GMP
440	Pectins	GMP
466	Sodium carboxymethyl cellulose	GMP
508	Potassium chloride	GMP
1401	Acid treated starch	GMP
1402	Alkaline treated starch	GMP
1403	Bleached starch	GMP
1404	Oxidized Starch	GMP
1405	Starches, enzyme-treated	GMP
1410	Monostarch phosphate	GMP
1412	Distarch phosphate esterified with sodium trimetaphosphate; esterified with phosphorous oxychloride	GMP
1413	Phosphated distarch phosphate	GMP
1414	Acetylated distarch phosphate	GMP
1420	Starch acetate	GMP
1422	Acetylated distarch adipate	GMP
1440	Hydroxypropyl starch	GMP
1442	Hydroxypropyl distarch phosphate	GMP
1450	Starch sodium octenyl succinate	GMP
1451	Acetylated oxidized starch	GMP
Humectants		
325	Sodium lactate	GMP
339(i)	Monosodium orthophosphate	2000 mg/kg Singly or in combination as phosphorus
339(ii)	Disodium orthophosphate	
339(iii)	Trisodium orthophosphate	
340(i)	Monopotassium orthophosphate	
340(ii)	Dipotassium orthophosphate	
340(iii)	Tripotassium orthophosphate	
341(iii)	Tricalcium orthophosphate	
450(i)	Disodium diphosphate	
450(iii)	Tetrasodium diphosphate	
450(v)	Tetrapotassium diphosphate	
450(vi)	Dicalcium diphosphate	
451(i)	Pentasodium triphosphate	
452(i)	Sodium polyphosphate	
452(ii)	Potassium polyphosphate	

452(iv)	Calcium polyphosphates	
452(v)	Ammonium polyphosphates	
420	Sorbitol and sorbitol syrup	
1520	Propylene glycol	10000 mg/kg
Emulsifiers		
322	Lecithin	GMP
405	Propylene glycol alginate	5000 mg/kg
430	Polyoxyethylene (8)stearate	5000 mg/kg (dry basis) Singly or in combination
431	Polyoxyethylene (40)stearate	
432	Polyoxyethylene (20)sorbitan monolaurate	5000 mg/kg Singly or in combination as total polyoxyethylene (20) sorbitan esters
433	Polyoxyethylene (20)sorbitan monooleate	
434	Polyoxyethylene (20)sorbitan monopalmitate	
435	Polyoxyethylene (20)sorbitan monostearate	
436	Polyoxyethylene (20)sorbitan tristearate	
471	Mono and di-glycerides of fatty acids	GMP
472e	Diacetyltartaric and fatty acid esters of glycerol	10000 mg/kg
473	Sucrose esters of fatty acids	2000 mg/kg
475	Polyglycerol esters of fatty acids	2000 mg/kg
476	Polyglycerol esters of interesterified ricinoleic acids	500 mg/kg
477	Propylene glycol esters of fatty acids	5000 mg/kg (dry basis)
481(i)	Sodium stearyl lactylate	5000 mg/kg
482(i)	Calcium stearyl lactylate	5000 mg/kg
491	Sorbitan monostearate	5000 mg/kg (dry basis) Singly or in combination
492	Sorbitan tristearate	
493	Sorbitan monolaurate	
495	Sorbitan monopalmitate	
Flour Treatment Agents		
220	Sulphur dioxide	20 mg/kg Singly or in combination as sulphur dioxide
221	Sodium sulphite	
222	Sodium hydrogen sulphite	
223	Sodium metabisulphite	
224	Potassium metabisulphite	

225	Potassium sulphite	
539	Sodium thiosulphate	
Preservatives		
200	Sorbic acid	2000 mg/kg Singly or in combination as Sorbic acid
202	Potassium sorbate	
203	Calcium sorbate	
Anticaking Agent		
900a	Polydimethylsiloxane	50 mg/kg

5. CONTAMINANTS

The products covered by this Standard shall comply with the Maximum Levels of the *General Standard for Contaminants and Toxins in Foods and Feed* (CXS 193-1995).

6. CONTAINERS OR PACKING CONDITION

Instant noodles shall be packaged in containers which will safeguard the hygienic, nutritional, technological and organoleptic qualities of the product.

The containers, including the packaging materials, shall be made of substances which are safe and suitable for their intended use. They should not impart any toxic substances or undesirable odour or flavour to the product.

7. FOOD HYGIENE

It is recommended that the products covered by the provisions of this standard be prepared and handled in accordance with the appropriate sections of the *General Principle of Food Hygiene* (CXC 1-1969) and other relevant Codex texts such as codes of hygienic practice and codes of practice.

The products should comply with any microbiological criteria established in accordance with the *Principles and Guidelines for the Establishment and Application of Microbiological Criteria for Foods* (CXG 21-1997).

8. LABELLING

The product covered by this Standard shall be labelled in accordance with the *General Standard for the Labelling of Prepackaged Foods* (CXS 1-1985).

8.1 Name of the Food

The name of the food shall be "Instant Noodle(s)", or optionally as "Fried Noodle(s)" or "Non-fried Noodle(s)" in accordance to Subsections 2.1 and 2.2. Other names may be used if allowed by national legislation.

8.2 Labelling for "Halal"

Claim on "Halal" Instant Noodles shall follow the appropriate section of the *General Guidelines for Use of The Term "Halal"* (CXG 24-1997)

9. METHODS OF ANALYSIS AND SAMPLING

9.1 Sampling

Sampling shall follow the *General Guidelines on Sampling* (CXG 50-2004).

9.2 Determination of Moisture

9.2.1 Apparatus

- (a) Aluminum dish: diameter ≥ 55 mm, height ≥ 15 mm, and with inverted tight-fitting lid.
- (b) Air-oven: with control accuracy ± 1 °C.
- (c) Air-tight desiccator: silica gel heated at 150 °C is satisfactory drying agent.

9.2.2 Preparation of Test Sample

Remove instant noodles from package, and leave garnishing and seasoning in package. Transfer the noodles to plastic bag to prevent moisture change, and then break these into small fragments with hands or wooden hammer. Select broken noodles in the size range of 2.36 mm to 1.7 mm by using two sieves with 2.36 mm and 1.7 mm openings (mesh size 12-8), and mix well. Use these noodles for test sample. If noodles are too thin to screen with sieves, cut them into 1 to 2 cm lengths, mix well, and use these cut noodles for test sample.

9.2.3 Determination

9.2.3.1 Fried Noodles

In cooled and weighed dish (with lid), previously heated to 105°C, weigh ca 2 g well-mixed test portion to 1 mg. Uncover test portion and dry dish, lid, and contents 2 h in oven provided with opening for ventilation and maintained at 105°C. (The 2 h drying period begins when oven temperature is actually 105 °C.) After drying period, cover dish while still in oven, transfer to desiccator, and weigh to 1 mg soon after reaching room temperature. Report loss in weight as moisture (indirect method).

9.2.3.2 Non-fried Noodles

For non-fried noodles, follow the directions for fried noodles, but dry test portion for 4 h.

9.2.4 Calculation

Calculate using the following equation:

$$\text{Moisture (\%)} = \{(\text{g test portion before drying} - \text{g test portion after drying}) / \text{g test portion before drying}\} \times 100$$

9.3 Extraction of Oil from Instant Noodles

9.3.1 Apparatus

- (a) Rotary evaporator
- (b) Water bath

9.3.2 Preparation of Test Sample

Remove instant noodles from package, and leave garnishing and seasoning in package. Transfer the noodles to plastic bag to prevent moisture change, and then break these into small fragments with hands or wooden hammer. Select broken noodles in the size range of 2.36 mm to 1.7 mm by using two sieves with 2.36 mm and 1.7 mm openings, and mix well. Use these noodles for the test sample. If the noodles are too thin to screen with sieves, cut them into 1 to 2 cm lengths, mix well, and use these cut noodles for the test sample.

9.3.3 Extraction

Weigh 25 g test portion into 200 mL Erlenmeyer flask. Add 100 mL petroleum ether to the flask after replacing air in flask by N₂ gas. Stopper flask and leave for 2 hours. Decant supernatant through filter paper into separating funnel. Add 50 mL petroleum ether to residue and filtrate supernatant through filter paper into the separating funnel. Add 75 mL water to the separating funnel and shake well. Allow layers to separate and drain the lower aqueous layer. Add water, shake, and remove aqueous layer again as done previously. Decant the petroleum ether layer after dehydration with Na₂SO₄ into pear-shaped flask. Evaporate petroleum ether in the flask on rotary evaporator at not over 40°C. Spray N₂ gas on extract in the flask to remove all petroleum ether.

9.4 Determination of Acid Value

9.4.1 Definition and Principle

Acid value of oil from fried instant noodles = mg KOH required to neutralize 1 g oil. Oil extracted from noodle is dissolved in alcohol-ether mixture and titrated with alcoholic KOH standard solution.

9.4.2 Apparatus

Air-tight desiccator: silica gel heated at 150°C is satisfactory drying agent.

9.4.3 Reagents

- (a) Alcoholic potassium hydroxide standard solution: 0.05 mol/L. Dissolve 3.5 g potassium hydroxide in equal volume of water (CO₂-free) and add ethanol (95%) to 1 L. After mixing, let solution stand for several days keeping the solution CO₂-free. Use supernatant after standardization.

Standardization:

Weigh required quantity of amidosulfuric acid (certified reference material for volumetric analysis) and place it into desiccator (<2.0 kPa) for 48 hour. Next, accurately weigh 1 to 1.25 g (recording the weight to 0.1mg), dissolve in water (CO₂-free), and dilute to 250 mL. Put 25 mL solution into Erlenmeyer flask, add 2 to 3 drops of bromothymol blue indicator and titrate with 0.05 mol/L alcoholic potassium hydroxide solution until colour of solution change to faint blue.

Calculation:

Factor of molarity = (g amidosulfuric acid × purity × 25) / 1.2136 / mL KOH

- (b) Alcohol-ether mixture: equal volumes ethanol (99.5%) and ether.
(c) Phenolphthalein solution: 1% in alcohol.

9.4.4 Titration

Before sampling, liquefy extracted oil using water bath. Weigh 1 to 2 g liquefied test portion into Erlenmeyer flask. Add 80 mL alcohol-ether mixture and a few drops of phenolphthalein solution. Titrate with 0.05 mol/L alcoholic KOH until faint pink colour appears and retain for more than 30 s. Perform blank test using only alcohol-ether mixture and phenolphthalein solution.

9.4.5 Calculation

Calculate using following equation:

Acid value [mg/g] = (mL test portion – mL blank) × factor of molarity × 2.806 / g test portion