



Subpart B-United States Standards for Grades of Cod Fillets

Product description

The product described in this part consists of clean, whole, wholesome fillets or primarily large pieces of clean, whole, wholesome fillets, cut away from either side of cod, *Gadus morhua* or *Gadus macrocephalus*; the fillets may be either skinless or with skin on. They are packaged in accordance with good commercial practice and are maintained at temperatures necessary for the preservation of the product. The product may contain bones when it is clearly labeled on the principle display panel to show that the product contains bones. (This part does not provide for the grading of pieces of fish flesh cut away from previously frozen fish blocks, slabs, or similar products.

[42 FR 52756, Sept. 30, 1977, as amended at 55 FR 23551, June 11, 1990]

Grades of cod fillets

- (a) “U.S. Grade A” is the quality of cod fillets that possess good flavor and odor; and for those factors of quality which are rated in accordance with the scoring system outlined in this part the total score is not less than 85 points.
- (b) “U.S. Grade B” is the quality of cod fillets that possess at least reasonably good flavor and odor: and for those factors of quality which are rated in accordance with the scoring system outlined in this part the total score is not less than 70 points.
- (c) “Substandard” is the quality of cod fillets that fail to meet the requirements of U.S. Grade B.

Product forms

- (a) Types:
 - (1) Fresh.
 - (2) Frozen, solid pack; glazed or unglazed.
 - (3) Frozen individually; glazed or unglazed.
- (b) Styles:
 - (1) Skin on.
 - (2) Skinless.
- (c) *Bone classifications.*
 - (1) Practically boneless fillet.
 - (2) Bone-in (fillet cut, with bones.)

[42 FR 52756, Sept. 30, 1977, as amended at 55 FR 23551, June 11, 1990]



Recommended weights and dimensions

(a) The recommendations as to net weights and dimensions of packaged cod fillets are not incorporated in the grades of the finished product since net weights and dimensions, as such, are not factors of quality for the purpose of these grades.

(b) It is recommended that the net weights of the packaged frozen cod fillets be not less than 12 ounces and not over 10 pounds.

Ascertaining the grade.

The grade of cod fillets is ascertained by examining the product in the fresh or frozen, thawed, and cooked states. The following factors of quality are evaluated in ascertaining the grade of the product: Flavor and odor, appearance, size, absence of defects, and character. These factors are rated in the following manner:

(a) *Flavor and odor.* This factor is rated directly by organoleptic evaluation. Score points are not assessed (see Evaluation of the unscored factor of flavor and odor).

(b) *Appearance, size, absence of defects, and character.* The relative importance of these factors is expressed numerically on the scale of 100. The maximum number of points that may be given each of these factors are:

Factors	Points
Appearance	25
Size	20
Absence of defects	40
Character	15
Total Possible Score	100

Evaluation of the unscored factor of flavor and odor.

(a) *Good flavor and odor.* “Good flavor and odor” (essential requirement for a Grade A product) means that the fish flesh has good flavor and odor characteristic of cod (*Gadus morhua* or *Gadus macrocephalus*) and is free from staleness, and off-flavor and off-odors of any kind.

(b) *Reasonably good flavor and odor.* “Reasonably good flavor and odor” (minimum requirement of a Grade B product) means that the fish flesh may be somewhat lacking in good flavor and odor; and is free from objectionable off-flavors and off-odors of any kind.

Evaluation and rating of the scored factors; appearance, size, absence of defects, and character.

The essential variations in quality within each factor which is scored are so described that the value may be ascertained for each factor and expressed numerically. Point deductions are allotted for each degree or amount of variation within each factor. The net score for each factor is the maximum points for that



factor less the sum of the deduction-points within the factor. The total score for the product is the sum of the net scores for the four scored factors.

Appearance

(a) The factor of appearance refers to the normal color of the species of fresh or frozen fish flesh, and to the degree and amount of surface dehydration of the frozen product.

(b) For the purpose of rating the factor of appearance the schedule of deduction points in Tables I and II apply. Frozen cod fillets which receive 25 deduction points for the factor of appearance shall not be graded above Substandard regardless of the total score for the product. This is a limiting rule.

TABLE I-SCORE DEDUCTIONS FOR DISCOLORATION

Color of Product	DEDUCTION POINTS	
	“Light” colored portion comprising main portion of fillet	“Dark” colored portion occurring under skin mainly along lateral line
No discoloration	0	0
Slight yellowing	2	1
Moderate yellowing	4	2
Excessive yellowing and/or any rusting	13	12

TABLE II-SCORE DEDUCTIONS FOR DEHYDRATION

Degree of dehydration of frozen product	Surface area affected (percent)		Deduction points
	Over	Not Over	
Slight-Shallow and not color masking	0	1	0
	1	50	2
	50	100	5
Moderate-Deep but just deep enough to easily scrape off with fingernail	1	25	5
	25	50	8
	50	100	16
Excessive-Deep dehydration not easily scraped off	1	25	12
	25	100	25

Size

(a) The factor of size refers to the degree of freedom from undesirably small fillet pieces. Any fillet piece weighing less than 2 ounces is classed as being undesirably small.

(b) For the purpose of rating the factor of size the schedule of deduction-points in Table III apply. Cod fillets which receive 20 deduction points for this factor shall not be graded above Substandard regardless



of the total score for the product. This is a limiting rule.

TABLE III-SCORE DEDUCTIONS FOR SIZE OF FILLET PIECES

NUMBER OF FILLET PIECES LESS THAN 2 OUNCES PER POUND		DEDUCTION POINTS
Over—	Not over—	
	0	0
0	1	1
1	2	10
2	3	15
3	4	20

Workmanship defects

(a) The factor of “workmanship defects” refers to the degree of freedom from improper packing, cutting and trimming imperfections, blemishes, and bones. Evaluation for the defect of improper packing is made on the frozen product. Evaluation of the defects of cutting and trimming, blemishes, and bones are made on the thawed product.

- (1) *Improper packing.* “Improper packing” means poor arrangement of fillets, presence of voids, depressions, frost, and the imbedding of packaging material into the frozen fish flesh.
- (2) *Cutting and trimming imperfections.* “Cutting and trimming imperfections” means that the fillets have ragged edges, tears, holes, or are otherwise improperly cut or trimmed.
- (3) *Blemish.* “Blemish” means an instance of skin (except for skin-on fillets), scales, blood-spot, bruise, blackbelly lining, fin, or extraneous material.
 - (i) One “instance of skin” consists of one piece of skin not less than 1/2 square inch and not more than 1 1/2 square inches in area; each additional 1/2 square inch area of individual skin pieces greater and 1 1/2 square inches is considered as an additional instance.
 - (ii) One “instance of blood spot” is one of such size and prominence as to be considered objectionable.
 - (iii) One “instance of black-belly lining” is any piece of black-belly lining not less than 1/2 inch and not more than 1 inch in length; each additional 1/2 inch length of individual pieces of black-belly lining longer than 1 inch is considered as an instance.
 - (iv) Each aggregate area of identifiable fin or parts of any fin up to 1 square inch is considered as one “instance of fin”.
 - (v) Each aggregate area up to 1 square inch per fillet of one scale or group of scales is considered as one “instance of scales”.
 - (vi) An “instance of bruise” consists of a bruise not less than 1/2 square inch and not more than 1 1/2 square inches in area; each bruise larger than 1 1/2 square inches is considered as two instances of bruise.
- (4) *Bones.* One “instance of bone” means one bone or one group of bones occupying or contacting a circular area up to 1 square inch (6.5 cm²). In fillets intended to contain bones, the presence of bones will not be considered a workmanship defect.



(b) For the purpose of rating the factor of “absence of defects” the schedule of deduction-points in Table IV apply.

TABLE IV-SCORE DEDUCTIONS FOR WORKMANSHIP DEFECTS

DEFECT SUBFACTORS	METHOD OF DETERMINING SUBFACTOR SCORE	DEDUCTION POINTS
Improper packing	Moderate defects, noticeably affecting the product's appearance	2
	Excessive defects, seriously affecting product's appearance	4
Blemishes	Number of blemishes per 1 lb. of fish flesh:	
	Over 0 not over 1	1
	Over 1 not over 2	3
	Over 2 not over 3	5
	Over 3 not over 4	8
	Over 4 not over 5	12
	Over 5 not over 6	16
	Over 6 not 7	30
Over	40	

[42 FR 52756, Sept. 30, 1977, as amended at 51 FR 34990. Oct. 1, 1986; 55 FR 23551, June 11, 1990]

Character

(a) The factor of character refers to the amount of free drip in the thawed fillets, and to the tenderness and moistness of the cooked fish flesh.

(b) For the purpose of rating the factor of character, the schedule of deduction-points in Table V apply. Cod fillets which receive 15 deduction points for the factor of character shall not be graded above Substandard regardless of the total score for the product. This is a limiting rule.

TABLE V-SCORE DEDUCTIONS FOR CHARACTER

CHARACTER SUBFACTORS	METHOD OF DETERMINING SUBFACTOR SCORE	DEDUCTION
Texture	Texture of the cooked fish: a. firm, slightly resilient but not tough or rubbery; moist but not mushy.	0
	b. Moderately firm; only slightly tough or rubbery; does not form a fibrous mass in the mouth; moist but not mushy.	4
	c. Moderately tough or rubbery; has noticeable tendency to form a fibrous mass in mouth; or is dry; or is mushy.	8
	d. Excessively tough or rubbery; has marked tendency to form a fibrous mass in the mouth; or is very dry; or is very mushy.	15
Drip	Percent of drip:	
	Over 0 not over 5	0
	Over 5 not over 6	1
	Over 6 not over 8	2
	Over 8 not over 10	4
	Over 10 not over 12	6
	Over 12 not over 14	9
	Over 14 not over 16	12
Over 16	15	



Definitions and methods of analysis

(a) *Percent of drip*. “Percent of drip” means the percent by weight of “free drip” (the fluid which is not reabsorbed by the fish tissue when the frozen fish thaws, and which separates freely without the aid of any external forces except gravity) in an individual package as determined by the following method:

(1) *Apparatus and materials*.

- (i) Water bath.
- (ii) Balance, accurate to 0.1 gm; or 0.01 ounce.
- (iii) Pliable and impermeable bag (cryovac, pliofilm, etc.).
- (iv) Corrosion resistant metal rod weight (preferably stainless steel or monel metal), measuring 3½ inches in length and approximately ¼-½ inch in diameter.
- (v) U.S. Standard No. 8 mesh circular sieve (both 8 and 12 inch diameters).
- (vi) Stirring motor.
- (vii) Identification tags.

(2) *Procedure*.

- (i) Place metal rod weight into an empty-pliable bag.
- (ii) Weigh the bag and the metal weight.
- (iii) Remove the frozen fish material from the container (container consists of the carton and the inner and outer wrapping).
- (iv) Place the frozen product, plus scraps of any material remaining in the container, into the pliable bag.
- (v) Weigh the bag and its contents and subtract tare (empty bag and metal weight) to determine the net weight of the product.
- (vi) Suspend the bag and contents in an agitated water bath maintained at 68 · F. plus or minus 2 · F. The bag should be suspended in the water so that the fish flesh is below the water line.
- (vii) Allow the bag and its contents to remain immersed until the product is defrosted (a “test run”, in advance, is necessary to determine time required for each product and quantity of product.)¹
- (viii) Remove bag and contents from bath and gently dry outside of bag.
- (ix) Weigh dry U.S. Standard No. 8 mesh circular sieve.
- (x) Open bag and empty contents onto U.S. Standard No. 8 circular sieve so as to distribute the product evenly, inclining the sieve slightly to facilitate drainage, and allowing to drain for 2 minutes.
- (xi) Weigh sieve and its contents and calculate drained weight. The drained weight is the weight of sieve and fillets less the weight of the dry sieve.
- (xii) Calculate percent drip:

$$\text{Net Weight (v) - drained weight (xi) x (100)/ Net weight (v) = Percent of drip}$$

¹ The purpose of the “test run” is to determine the time necessary to thaw the product. The complete thawing of the product is determined by frequent but gentle squeezing of the bag until no hard core or ice crystals are felt. This package which has been squeezed cannot be used for drained weight calculations.



(b) *Cooking in a suitable manner.* “Cooking in a suitable manner” shall mean that the product is cooked as follows: Place the thawed unseasoned product into a boilable film-type pouch; fold the open end of the pouch over the suspension bar and clamp in place to provide a loose seal. Immerse the pouch and its contents in boiling water and cook until the internal temperature of the fillets reaches 160°F. (about 20 minutes).

Tolerances for certification of officially drawn samples

The sample rate and grades of specific lots shall be certified in accordance with Part 260 Subpart A of this chapter. (Regulations Governing Processed Fishery Products.)

SCORE SHEET

Score sheet for cod fillets.

- Label.....
- Size and kind of container.....
- Container mark or identification.....
- Size of lot.....
- Number of packages per master carton.....
- Size of sample
- Type of overwrap
- Actual net weight:..... (lb.)(kg.).....

Factor	Score point	Sample score
Appearance	25	
Size	20	
Absence of defects	40	
Character	15	
Total	100	

- Flavor and odor.....
- Final grade