



## **GREEN HEADLESS SHRIMP PACK SPECIFICATIONS**

### **PURPOSE**

The purpose of these specifications is to provide criteria for the packing of five-pound boxes (shell-on) green headless shrimp. This will assure that our pack specifications meet certain criteria as far as net weight, uniformity of size, number of pieces, etc., are concerned. Shrimp being packed should have good flavor, odor, and texture, and comply with the limits for defects, specified in this guide.

### **ITEMS NECESSARY TO PERFORM NET WEIGHT**

42.3.01 AOAC OFFICIAL METHOD 963.26 NET CONTENTS OF FROZEN FOOD  
CONTAINERS-UNGLAZED FOODS

(A) Apparatus.

(a) For packages up to 5 pounds (2.27 kg), use scale of adequate capacity with sensitivity of 0.01 oz.

(b) For packages over 5 pounds (2.27 kg), use scale of adequate capacity with sensitivity of 0.025 oz..

(B) Procedure. Set scale on firm support and level. Adjust load indicator to Zero (0.00) or rest point and check sensitivity. Remove package from low temperature storage, remove frost and ice from outside of package, and weigh immediately (W). Open package; remove contents, including any product particles and frost crystals. Air-dry empty package at room temperature and weigh (E). Weight of contents=W-E.

### **NET WEIGHT FOR IQF**

35.1.02 AOAC OFFICIAL METHOD 963.18 NET CONTENTS OF FROZEN SEAFOODS  
- GLAZED FOODS

Set scale, -963.26A (see 42.3.01) on firm support and level. Adjust 0 load indicator or rest point and check sensitivity.

(a) Remove package from low temperature storage, open immediately and place contents under gentle spray of cold water. Agitate carefully so product is not broken. Spray until all ice glaze that can be seen or felt is removed. Transfer product to circular No. 8 sieve, 20 cm (8.0") diameter for packages #0.9 kg (2 lb) and 30 cm (12.0") for packages >0.9 kg (2 lb). Without shifting product, incline sieve at angle of 17-20° to facilitate drainage and drain exactly 2 min. (stopwatch). Immediately transfer product to tared pan (B) and weigh (A). Weight of product=A-B.

## NET WEIGHT FOR BLOCK FROZEN

35.1.08 AOAC OFFICIAL METHOD 967.13 DRAINED WEIGHT OF FROZEN SHRIMP AND CRABMEAT  
(A) Apparatus.

(a) Container - Wire mesh basket large enough to hold contents of one package and with openings small enough to retain all pieces. Expanded metal test-tube basket or equivalent, fully lined with standard 16 mesh per linear inch (2.54 cm) insect screen is satisfactory. (b) Balance - Sensitive to 0.25 g or 0.01 oz. (c) Sieves - U.S. No. 8, 20 cm (8.0") and 30 cm (12.0"). (B) Determination. Place contents of individual package in wire mesh basket and immerse in 15 L (4-gal.) container of fresh water at  $26 \pm 3^{\circ}\text{C}$  ( $80 \pm 5^{\circ}\text{F}$ ) so that top of basket extends above water level. Introduce water of same temperature at bottom of container at flow rate of 4-11 L (1-3 gal.)/min. As soon as product thaws, as determined by loss of rigidity, transfer all material to 30 cm (12.0") (for packages 450 g [1lb.]), or 20 cm (8.0") (for packages  $\leq$  450 g [1 lb.]) No. 8 sieve, distributing evenly. Without shifting material on sieve, incline sieve to ca 30° from horizontal to facilitate drainage. Two minutes from time placed on sieve, transfer product to previously weighed pan, and weigh. Weight so found minus weight of pan is drained weight of product.

## COUNT SIZE

Ideally, the number of shrimp per pound will average to the median of the grade range stated on the box. For example, 36/40 count should contain 38 shrimp per pound. It should be realized that this is not possible in all cases and certain tolerances must be made. The actual count will not be more than 1/2 of a count larger or smaller than the range declared on the box; i.e., 36/40 count shrimp will not have less than 35 1/2 or more than 40 1/2 shrimp average per pound. The following commercial counts and tolerances will be used.

<u>COUNT</u>	<u>NO LESS THAN</u>	<u>NO MORE THAN</u>	<u>MEDIAN COUNT</u>
U/10	8	10	9
10/14	10	14	12
15/20	15	20	17
21/25	21	25	23
26/30	26	30	28
31/35	31	35	33
36/40	36	40	38
41/50	41	50	45
51/60	51	60	55
61/70	61	70	65
71/80	71	80	75
81/90	81	90	85

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The actual count is determined by dividing the weight of the whole shrimp (drained weight minus pieces) by the number of whole shrimp in a box. This gives the average weight per shrimp. The average weight per shrimp is then divided into either 16 ounces or 454 grams to determine the count per pound.

**FORMULA:**

Gross Drained Weight (-) Pieces - Number Whole Shrimp = Average Weight per Shrimp

16 Ounces or 454 grams - Average Weight per Shrimp = Count

The middle of the count range will be strived for; if a pack is consistently at either the upper or lower limit the grader will be adjusted accordingly.

**PIECED, BROKEN, & DAMAGED**

A piece is defined as any portion of shrimp not possessing at least 5 full segments and the tail section intact. Tail sections with one or two segments will be considered as extraneous material, as they cannot be readily utilized. Damaged shrimp is defined as shrimp that is crushed or mutilated so as to materially affect its appearance usability. Percentage of pieces broken and damaged in the various count sizes increases as the size becomes smaller. No more than 2% by weight on shrimp up to 70 count, and no more than 8 % by weight on shrimp over 70 count will be tolerated.

Percentage of pieces by weight is determined by dividing the actual weight (drained) into the weight of the pieces and multiplying by 100.

**FORMULA**

Weight of Pieces - Gross Drained Weight x 100 = Percent pieces

Pieces packed into 5 lb. boxes will be divided into three groups: large, medium, small. During the pack-out, larger pieces will be those originating from and closely resembling 21/25 count or larger, medium pieces will be those originating from and closely resembling 26.30 to 36/40 count, and the small being those originating from and closely resembling 41.50 or smaller.

**UNIFORMITY OF SIZE**

Under the best circumstances all shrimp in a box will fall into the grade declared if weighed individually, In most cases, some shrimp from a smaller count size and some shrimp from a larger count size will appear in the box without changing the average count of the box. Although this situation is expected under commercial operations, certain limits are established to insure a fairly uniform box of shrimp as far a size is concerned



The method we use for assessing uniformity of size involves the weighing of individual shrimp to determine the ratio of the larger shrimp to the smaller shrimp, the perfect ration being 1.0, in which the total weight of the largest shrimp is equal to the total weight of the smallest shrimp.

Depending on the actual count size, a certain number of shrimp (at least 10% of the box) will be picked without consideration for size (randomly) and weighed individually. The sample is then halved into the heaviest and lightest shrimp. The total of the heaviest half is divided by the total of the lightest half.

The following number of shrimp listed for each grade is the minimum number that will be evaluated for that count size.

U/10 equals 10 shrimp	36/40 equals 20 shrimp
10/14 equals 10 shrimp	41/50 equals 24 shrimp
15/20 equals 10 shrimp	51/60 equals 28 shrimp
21/25 equals 12 shrimp	61/70 equals 34 shrimp
26/30 equals 14 shrimp	Over 70 equals 40 shrimp
31/35 equals 16 shrimp	

A simple ration cannot be applied to all grade sizes because some grade sizes are more difficult to grade than others. The following ratios are suggested as the maximum for a good pack.

	FROM	TO		FROM	TO
U/10 equals	1.26	1.50	36/40 equals	1.50	1.75
10/14 equals	1.30	1.50	41/50 equals	1.50	1.75
15/20 equals	1.34	1.50	51/60 equals	1.50	1.75
21/25 equals	1.38	1.50	61/70 equals	1.50	1.75
26/30 equals	1.50	1.75			
31/35 equals	1.50	1.75	Over 70 depends on actual count		

## **BLACK SPOTS, THROATS, AND IMPROPERLY CLEANED END**

Black spots refer to the presence of any objectionable black darkened area that affects the desirability or eating quality of the shrimp. Black spots will occur in the shell as well as migrate in the flesh of the shrimp. Throats and improperly cleaned ends refer to the first segment after heading.

Black spots, throats, and improperly cleaned ends will not be found on more than 4 % of the shrimp by weight.

## **DEHYDRATION**

Refers to the whitish dry area of exposed shrimp tissue that has been “freezer burned.” Not more than 5 % by count should appear dehydrated in the frozen state and no more than 3 % by count should be noted in the thawed sample.





## **DETERIORATION**

Off odor or “stinker” shrimp or off colors (pink) that indicate spoilage are unacceptable. Tolerance for deterioration is 0%.

## **EXTRANEOUS MATERIAL**

Extraneous material includes walking legs, flippers, loose shell, antennae and unusable material.

Legs refer to walking legs, (not swimmerets) that might remain attached to the tail when shrimp are headed.