

Testing Method Recommendations for Short Weight in Frozen Seafood Products on IA 99-47

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This recommendation is intended to provide supplemental general information to private laboratories on methods of analysis and test portion sizes when testing for short weight adulteration in frozen seafood products. This document does not outline all the analytical methods or worksheet requirements for packages being submitted for FDA review.

Please refer to the current FDA Laboratory Manual, Volume III, Section 7 for comprehensive information on private laboratory package requirements and the review process: <https://www.fda.gov/media/73540/download>

Sample Collection:

- Samples should consist of at least **48 subsamples** (48 units) for official analysis. There is no alternative number of subsamples, e.g. for large subsamples. The relevant CPG is [562.300](#).
- The 48 subsamples **must** be from only one lot number.
- Product should be IQF and ice glazed.

Analytical Protocol:

- The recommended method is AOAC 963.18 Net Contents of Frozen Seafoods Drained Weight: Procedure. Part (a) is for glazed seafood, and Part (b) is for unglazed seafood. Note that in 963.18 Part (a), the product is not thawed before draining; hence it is not a drained weight; do not thaw the product while conducting the method. More information is in NOAA Seafood Inspection Manual, Part 4 ([link](#)), Ch. 11, section D.
- See alternative methods, below, for large subsamples, seafood frozen together in a block subsample, and shrimp on skewers.
- Percent short weight = $[(\text{absolute value of } X - Y) / Y] \times 100$
Where X = average weight (average of actual weights, i.e. weights determined by lab)
Y = declared net weight (label statement of Net Quantity of Contents)
- Use balance with readability as outlined in AOAC 963.18, which refers to AOAC 963.26. In general, the balance readability should be 0.2 g or better (for packages up to 5 lb.) or 0.5 g or better (for packages over 5 lb.).
- Record data based on balance readability, i.e., record data to at least one digit past the decimal.
- In the analytical work package, record each subsample weight in units of grams.
- Converting retail package net weight to units of grams:
 - Convert the label statement of net contents to units of grams, if not already in grams.
 - If net weight is declared on the retail package in *only one unit*, and the unit is not grams, then convert the declared net weight to units of grams.
 - If net weight is declared on the retail package in *more than one unit*, and if one of the units is grams, then use the weight declared in grams. Do not convert other declared weights to grams.
 - If net weight is declared on the retail package in more than one unit, and if none of the units is grams, then use the weight declared in the smallest unit and convert it to grams. For example, if net weight is declared in both lb. and kg. on the retail package, convert lb. to grams (because 1 lb. is smaller than 1 kg.); do not convert kg. to grams.

In addition to other information mentioned in FDA Laboratory Manual, Vol. III, Sec. 7, include this information in the submission to FDA:

- Number of subsamples analyzed – Regardless of method used, 48 subsamples must be analyzed.
- Name of method (e.g., AOAC Official Method 963.18 Net Contents of Frozen Seafoods, Drained Weight Procedure, etc.)
- Net weight declared on label
- When converting the retail label's net weight to grams, state which weight was converted (e.g., lb. to g, or kg. to g).
- Photos of the smallest package net weights (package used to conduct analysis), clearly showing net weight
- Photos of the product received at the lab (before lab testing is performed). Be sure to include photo(s) showing that the product is separate frozen pieces with ice glaze.

- Describe the product condition and indicate whether the product appears to be individually quick frozen with no evidence of thawing and refreezing (e.g., product clumped together, see photo below).
- Photo of product taken immediately after deglazing.
- Lab test result (e.g., drained weight determined) for each individual subsample
- Average test result (e.g., drained weight) for all subsamples
- Range of test results/weights (minimum and maximum weights)
- Average percentage under the declared weight (average short weight, across all subsamples), if applicable
- Equipment used for conducting the analysis (balance, timer, etc.), and include calibration/verification records.



Example of product which was IQF when collected; however, when received at the lab, there was evidence it had thawed and refrozen.

Large subsamples:

AOAC 963.18 is generally the preferred method. However, larger subsamples may present challenges. For larger subsamples, one option is to use 963.18 and analyze the subsamples in portions to obtain the total deglazed product weight; divide the shrimp (or other product), putting one portion at a time on the sieve; however, the entire contents of the package must be deglazed (not a portion) for the analysis. Another option is to utilize 35.1.08 AOAC Official Method 967.13 Drained Weight of Frozen Shrimp and Crabmeat.

Seafood frozen together in block subsamples:

For seafood frozen together in a water glazed block (not fish blocks), the recommended methods are found in [NOAA Seafood Inspection Manual](#), Part 4 Policies, Procedures and Requirements for the Inspection of Fisheries Products on a Lot by Lot Basis. Do not use the calculation in 970.60; rather, use the percent short weight calculation identified above.

From NOAA's manual: "AOAC 967.13 and 970.60 Drained Weight of Frozen Shrimp and Crabmeat (Immersion-Thaw Method) - This method is used to determine the net weight of shrimp or other seafood frozen together in a block. The individual pieces are not readily separable in the frozen state. This method is also used for IQF shrimp of such small size that the glaze cannot be removed practically without thawing or partially thawing at least some of the

shrimp. It is also used for IQF products which contain clumps or clusters in excess of 15% by weight of the glazed weight. Results of this method are reported as drained weight. Note: Exception to methods 967.13 and 970.60: Nylon mesh bags are used in lieu of a wire mesh basket.”

Product on skewers:

Remove all skewers. Once skewers are removed, analyze per AOAC 963.18. Deglaze but don't thaw the product. Do not include skewer weight in the test result (weight of product). There is no need to weigh the skewers separately.

Quality Assurance:

Laboratory must follow the methodology specified in its private laboratory analytical package submission. Any method modifications, or deviations to the cited method, must be explained and validation must be documented.

FDA does not endorse any private laboratory firms, nor requires specific methods to be used for Private Laboratory Analytical Packages (PLAPs). Information herein is provided as a courtesy, but private laboratories are not required to use them. The requirements state the method should be locally validated and should adequately identify and or quantitate the violative analyte(s). The information herein may also provide supplementary sampling, method information and/or sample preparation information to assist private laboratories who are analyzing products being held under Detention Without Physical Examination (DWPE) as part of an Import Alert to assist private laboratories with submitting scientifically sound PLAPS as testimony pursuant to FD&C Act section 801 and 21 CFR 1.94 or FD&C Act section 422(b) and 21 CFR 1.1107.