

Marine Stewardship Council

MSC Seafood Sampling Procedure
For use at Consumer-Facing Organisation (CFO) audits



Version 1.1, 12 June 2015

About the Marine Stewardship Council

Vision

Our vision is of the world's oceans teeming with life, and seafood supplies safeguarded for this and future generations.

Mission

Our mission is to use our ecolabel and fishery certification program to contribute to the health of the world's oceans by recognising and rewarding sustainable fishing practices, influencing the choices people make when buying seafood, and working with our partners to transform the seafood market to a sustainable basis.

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The official language of this standard is English. The definitive version is maintained on the MSC's website www.msc.org. Any discrepancy between copies, versions or translations shall be resolved by reference to the definitive English version.

The MSC prohibits any modification of part or all of the contents in any form

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1. Responsibility for this procedure

The Marine Stewardship Council is responsible for this MSC Seafood Sampling Procedure for CABs conducting audits of Consumer-Facing Organisations (CFOs). This document will be reviewed on a periodic basis, and readers should verify that they are using the latest version. Updated documents, together with a master list of all available MSC documents, can be found on the MSC's website.

Versions issued

Version No.	Date	Description Of Amendment
1.0	20 February 2015	First publication
1.1	12 June 2015	List of priority species updated

2. Executive Summary

As part of the Consumer-Facing Organisation (CFO) requirements, auditors may be required to take small samples of seafood or seafood products during consumer-facing site visits. These samples must be sent to the MSC, who will forward the samples to an authorised laboratory for DNA testing.

This document is intended to be read together with the CFO CoC Audit Checklist and/or the MSC CoC Certification Requirements section 8.3 "Evaluation of CFO audits". The intention of this procedure is to ensure that auditors are informed about which species or products to sample and the process for collecting and posting the samples.

This document may be updated periodically due to the availability of new product testing techniques, or to reflect specific products or species considered to be high-risk for mislabelling. The latest version of this document can always be found on the MSC website.

3. Planning

The MSC will provide CABs with the equipment needed for auditors to collect tissue samples. The CAB head office will then be responsible for making sure that all auditors receive the sampling equipment before carrying out a CFO CoC audit which requires sample collection.

The package sent by the MSC to the CAB head offices will contain sample tubes pre-labelled with an ID code and bags in which to store and ship the samples. The tubes contain the buffer, which is a special liquid used to preserve the sample until its arrival at the laboratory.

Auditors can obtain a sharp knife at the site and clean it before using the knife to collect samples. Auditors need access to a freezer space to store samples between collection and postage.

Auditors need to use the sample log in the CFO CoC Audit Checklist to record details of all samples collected.

Below are some images of



Sharp, clean knife to take sample



Sample tube labelled with unique ID code

the equipment needed:

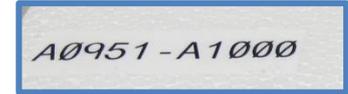


Figure 1: Images of the equipment needed

4. Species selection

Auditors should refer to the list of Priority Species identified by the MSC and should try to select these species wherever possible for sample collection. At the time of publication, the following Priority Species (Table 1) and Optional Species (Table 2) have been identified by the MSC for product authentication testing:

If none of the species above are available for sampling during the visit, the auditor does not need to collect any samples, and should document the rationale in the CoC Audit Checklist.

Note: the species list will be revised on a period basis to update with tests that become available and new risk or priority areas. Please check you have the latest version of this document.

Table 1: List of Priority Species, by scientific name

Common name	Sub-type (if applicable)	Scientific name
Cod	Atlantic	<i>Gadus morhua</i>
Cod	Pacific	<i>Gadus macrocephalus</i>
Haddock	-	<i>Melanogrammus aeglefinus</i>
Halibut	-	<i>Hippoglossus stenolepis</i>
Plaice	European	<i>Pleuronectes platessa</i>
Pollock	walleye	<i>Theragra chalcogramma/ Gadus chalcogrammus</i>
Saithe	-	<i>Pollachius virens</i>
Pacific salmon	-	<i>Oncorhynchus sp</i>
Sole	rock	<i>Lepidopsetta bilineata or polyxystra</i>
Toothfish	Patagonian	<i>Dissostichus eleginoides</i>

Table 2: List of Optional Species, by scientific name

Common name	Sub-type (if applicable)	Scientific name
Hoki		Macruronus spp.

5. Sampling Method

It is very important that auditors avoid cross contamination of the samples. Materials (product, knife, hands or work surface) that may have been in contact with other fish species can contaminate the sample. It is essential to use clean materials to avoid cross-contamination. Auditors should make sure to always wash their hands and the knife with soap and water before and between sample collections.

Avoid damaging the product. This is especially important where the product is in the final format in which it will be consumed. In exceptional cases, if the product is damaged and is considered unfit for sale, the MSC can refund the client for the value of the product if a receipt is collected.

The actions that need to be followed are outlined below:

1. Choose the product based on the Priority Species or Optional Species lists as outlined above.
 - a. Select only samples that are labelled or identified as 'certified' or with the certified trademarks.
 - b. Prioritise products for sampling that are ready to be sold or served if possible.
2. Is the product canned? If so, label the can and keep it to send unopened. **Do not sample canned products.**
3. If the product is not canned, select a pre-numbered sample tube and record it in the log in the CFO CoC audit checklist.
4. Wash your hands.
5. Wash the knife and dry it.
6. Cut a small portion of seafood tissue (approx. 3-5 mm thick, and smaller than the diameter of the sampling tube) from the product.

Try to sample from an area of the product that looks fresh and clean. If the surface of the product is heavily discoloured and/or degraded, you should remove an outer layer of tissue and sample closer to the centre of the product. Blot the sample with a clean tissue if there is a lot of liquid present. Compare the sample you have taken to the example sample size blue cube. Make sure your sample is **no larger** than the blue cube. It doesn't need to be cube shaped, but the volume of the sample must not be larger than the cube. See Figure 2.

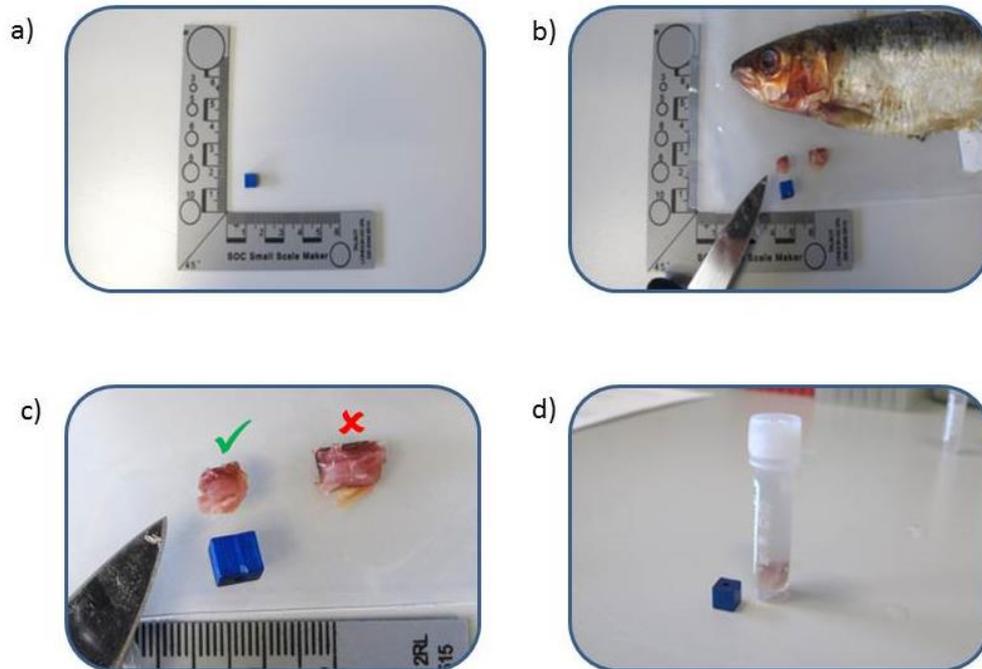


Figure 2. a) Example MAXIMUM sample size – 5 mm cube, b) Samples taken from seafood product with a clean knife, c) samples examined for size – left hand sample is suitable but right hand sample is too large, d) Chosen sample has been transferred to the correct tube and submerged in the buffer.

7. When you are happy that the sample size is no larger than the example blue cube in size, place the seafood tissue into the sample tube with the correct label, ensuring that:
 - a. The sample is fully submerged in the buffer (see Figure 2)

Note: some sample types may float, but try to submerge the sample first so that it is covered in buffer.

- b. The tube is not filled completely to the top – allow at least 5 mm of air above the buffer to allow for expansion on freezing.



Figure 3: Example of the correct sample size – not too small, not too large

8. Screw the cap securely onto the tube and wipe away any liquid on the outside with a tissue. Keep the tube upright.
9. Add the full details of the product to the log in the CoC audit checklist.
10. Ensure you obtain a copy of the material where the 'certified' claim is made or the ecolabel is used to identify the product as certified (e.g. the tag on the fish counter or on the menu). Where this is not possible, you can take a photograph of the menu or the label.
11. Repeat steps 1-10 for any other samples to be taken at this time.
12. Immediately following sampling, store the tube(s) upright, at room temperature for a few hours (~4 to 24h) to allow the buffer to permeate the tissue.
13. After the tube has been at room temperature for a few hours, freeze the sample tube upright in the storage box until all samples are ready for submission for testing. When all samples have been taken, the storage box can be dispatched to the [MSC London office](#) at room temperature.

Note: Do not repeatedly freeze and thaw tubes, this will degrade the DNA present in the seafood sample.

6. Sending the samples to the MSC

Please send the following to the MSC (see address below) in one package within one month of the samples being taken:

1. Printed copy of the completed log in the CoC audit checklist;
2. The filled sample tubes in the padded bag provided by MSC;
3. Physical copy or printed photograph of the menu, label, tag where the product is identified as 'certified'
4. If relevant, a receipt for any damaged products which need to be refunded to the client
5. Receipt for cost of courier/post – this can go inside the same package if possible; otherwise a scanned copy or picture can be sent by email to the address below.

Inform productintegrity@msc.org when you are ready to post the package or after it has been sent. If samples are collected from different clients within one month of each other, please store the samples in a freezer and ship the samples together in one package, clearly identifying which ones relate to each client.

If you are intending to bring samples to the MSC office, place them in your hold luggage and never in your hand luggage.

Address:

Chain of Custody
Marine Stewardship Council
Marine House
1 Snow Hill
London
EC1A 2DH
United Kingdom

7. What happens next?

The MSC will collect all samples received and will send periodic batches to be tested at its designated laboratory. A yearly allocation of samples for testing will be established, and the MSC may not always test all samples collected. The MSC will however keep the untested tubes frozen for future sampling if required. Note that test results may not be returned until six months after the audit.

The MSC will inform the CAB of all testing results relating to their clients on a quarterly basis in an excel spreadsheet within five working days of the results being available. It is the CAB's responsibility to inform the client of results within 10 working days for negative results, and when the CAB deems it appropriate for positive results.

In the event of a negative result (where the labelled species did not match the product testing result), the client must follow the relevant procedure in the CFO CoC standard clause 5.6.3 to investigate the problem and report back to the CAB. In addition, the MSC may use the information provided in the audit checklist to conduct a full supply chain trace-back to identify the cause of the substitution/mislabelling. In this case, the MSC may contact the certificate holder and their suppliers directly during this process, and will keep the CAB informed of the process and outcome.

8. Frequently Asked Questions

Q: What can I do if I run out of sample tubes?

A: First, if you are an auditor please check with your CAB head office. If you still need more sample tubes, please email productintegrity@msc.org to request additional materials.

Q: What if certified seafood is only available in cold storage, but not being sold or displayed as certified on the day of the audit?

A: Auditors need to prioritise sampling from products that are ready to serve/sell. Where there is no seafood available, auditors may sample from products that have been manipulated or handled by staff. However, in no instance should the auditor sample from product that is still in sealed supplier packaging.

Q: What if the client does not want the auditor to take a sample, but has offered for a chef to do so?

A: If the client is persistent, you can allow the client to take the sample, but under close supervision and instruction from the auditor.

Q: What shall I say if the client asks me about DNA test results?

A: Explain that samples are collected by the MSC and from there sent to a laboratory for testing. The MSC informs CABs of test results on a quarterly basis, when CABs can inform their clients. If there is a negative result, the MSC will follow up directly with the CAB and client to investigate the issue. The MSC will have further information on the process available on its website at <http://www.msc.org/get-certified/supply-chain/dna-testing>.

Q: What shall I do if none of the Priority or Optional species are available, or there is no certified seafood onsite?

A: If no Priority or Optional species are available, or no certified products are onsite, do not collect a sample. Please make a note in the CoC audit checklist explaining the circumstances.

Q: What happens if the sample is not taken correctly, for example, the sample was too large or small, or not immersed in the buffer?

A: It is quite likely that for such samples, the product authentication tests may not work successfully as it will not be possible to extract the relevant DNA sequences. In these cases, the test result will come back as a 'Fail' and the test results will be excluded from any overall findings. This is why following the procedure above as carefully as possible will help the MSC to ensure accurate results.

Q: How does the MSC determine which laboratories to use, and how can we have confidence in the test results?

A: The MSC uses independent laboratories which have established protocols and use genetic techniques such as sequencing or SNPs (Single Nucleotide Polymorphisms) of mitochondrial or nuclear DNA. Laboratories are selected through a competitive tender process. Laboratories used by the MSC for product testing reference published recognised databases of genetic sequences for species identification. These include:

NCBI: <http://www.ncbi.nlm.nih.gov/guide/dna-rna/#databases>

BOLD databases: <http://www.boldsystems.org/index.php/Login/page>

In most cases, the result of a DNA test therefore confirms the species based on the unique sequences and a % confidence level is not relevant (above 99%). In some cases, e.g. where product processing has caused damage to the DNA, it may not be possible to extract DNA of sufficient sequence length and in these cases the species cannot be identified.

The laboratories are required to provide a detailed report of any negative result found including the protocol used which MSC will share with the CAB and client.

Q: Why aren't all samples tested?

A: Due to forward planning and budget considerations, as well as changing priority and risk areas, the MSC may not always be able to test all product samples collected. The

additional tests will be stored for one year in the event that future sampling is required; for example, in the event of a negative result or if complaints are raised about a specific company.