REFERENCE SHEET

REFERENCE MATERIAL

IAEA-MA-B-3/RN

RADIONUCLIDES
IN MARINE FISH FLESH

Date of issue: January 2000

Reference Date for decay correction: 1st January 1986

<table>
<thead>
<tr>
<th>Radionuclide</th>
<th>Recommended Value Bq/kg</th>
<th>95% Confidence Interval Bq/kg</th>
<th>N*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>40K</strong></td>
<td>272</td>
<td>252 – 299</td>
<td>27</td>
</tr>
<tr>
<td><strong>137Cs</strong></td>
<td>14.2</td>
<td>13.7 – 15.3</td>
<td>33</td>
</tr>
</tbody>
</table>

* Number of accepted laboratory means which were used to calculate the recommended values and corresponding confidence intervals about the median values.

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The values listed above were established on the basis of statistically valid results submitted by laboratories which had participated in an international intercomparison exercise organized between 1985-87. The details concerning the criteria for qualification as a recommended value can be found in the report (IAEA/RL/149) "Intercomparison of Radionuclide Measurements in Marine Fish Flesh Sample MA-B-3" [1]. This report is available free of charge upon request.
**Intended Use**

This sample is intended to be used as a reference material for the measurement of radionuclides in marine organisms. It can also be used as a quality control material for the assessment of a laboratory's analytical work, for the validation of analytical methods and for quality assurance within a laboratory.

**Origin and preparation of the material**

The Garpike fish (*Belona belona*) used to produce IAEA-MA-B-3/RN was caught in the Western Baltic Sea (Kattegatt) in 1984 and obtained from a commercial supplier in Denmark. Approximately 600 kg of fresh fish was filleted and lyophilized and shipped to IAEA-MEL.

The material was ground to pass a 1 mm sieve and the fraction below this value was homogenised in a rotating stainless steel drum for 150 hours. The material was dispensed in 50 g units.

**Homogeneity**

The homogeneity of the bottled material was assessed using marker radionuclides ($^{40}$K and $^{137}$Cs) in several samples from bottles taken at random. The homogeneity was determined using one-way analysis of variance and it was concluded that the material satisfied the homogeneity criteria for the radionuclides concerned.

**Dry weight determination**

All recommended values are expressed on a dry weight basis. Therefore, the dry weight must be determined at the time of analysis, using separate sub-samples of at least 500 mg dried to constant weight in a drying oven set to 105 °C. Subsequent weighings should differ by less than 5 mg.

**Instructions for use e.g.**

The recommended minimum intake mass for analysis of radionuclides is 20 g.

Analysts are reminded to take appropriate precautions in order to avoid contamination of the material during handling. No special precautions are required for the storage of this material.

**Legal disclaimer**

The IAEA makes no warranties, expressed or implied, with respect to the data contained in this reference sheet and shall not be liable for any damage that may result from the use of such data.

**References**
