



## ***Sample Preparation Instructions for Aquacheck Trials Determination of Threshold Flavour Number (TFN) and Threshold Odour Number (TON)***

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### ***General Instructions***

#### **Sample Storage**

All samples and spiking solutions should be stored in a refrigerator at 4(±2)C in the dark from the time of arrival at your laboratory. If a preservative is routinely added to the type of sample provided as part of your laboratory procedures, a suitable aliquot should be preserved as soon as possible in the normal way. Any dilutions that result from addition of preservatives should be corrected for before submission of results.

#### **Sample Preparation**

All samples used for taste and odour should be equilibrated at room temperature 20(±5)C before any dilutions or analyses are performed. Samples should be prepared in accordance with the specific instructions for the group. The dilutions specified should be conducted in such a way as to ensure that any errors introduced by this dilution are much smaller than the analytical errors involved in your method. As a general rule it is suggested that the error from dilution should be less than 1%. Example dilutions are given for illustration to help clarify the meaning of the instructions. These procedures should be followed exactly to ensure comparability of results. **It is not necessary to correct results for the dilutions that are detailed as part of these procedures.**

#### **Sample Analysis**

Participants should analyse the samples using their routine laboratory methods as far as practicable. In order to ensure comparability between participants the following procedures must be followed.

Participants are required to carry out a quantitative determination of the Threshold Flavour Number (TFN) and the Threshold Odour Number (TON) as described in EN1622:2006. A range of dilutions of the test sample are prepared in a geometric series

$$P_x$$

Where

x is the ratio of the concentration of successive dilutions in the series (the value of x shall be between 1.3 and 3)

P is a series of whole numbers (1,2,3,4...) indicating the position of each dilution in the test series

The samples are presented to each panellist in a paired testing procedure. The samples should be diluted by participants using their own 'blank' water and this should also be used as the 'reference' sample when the dilutions are presented to the panellists.

The two samples (one a dilution of the test sample and one, a blank, reference water) are presented at the same time by a 'coordinator' and the panellist will select the sample with the 'stronger' taste or odour. The greatest dilution at which the panellist can determine a difference between the diluted sample and the reference sample is the 'result' for that panellist.



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### **Calculation**

Participants may use as many panellists as they wish, but should report the TON and TFN as calculated below.

$$TON = \sqrt[n]{TON_1 \times TON_2 \times TON_3 \times \dots \times TON_n}$$

$$TFN = \sqrt[n]{TFN_1 \times TFN_2 \times TFN_3 \times \dots \times TFN_n}$$

Where  $TON_n$  and  $TFN_n$  are the results of the  $n$ th selected panellist.

### **Materials Supplied**

- 1 x 1000mL glass bottle containing test solution for the determination of TON.
- 1 x 500mL PET bottle containing test solution for the determination of TFN.

**N.B:** The reference/blank water required for the dilution of this test sample is **NOT** supplied by LGC Standards

### **Preparation**

Determinand	Assigned value	SDPA	Units	Decimal places
TON	Median	1.0000	-	1
TFN	Median	1.0000	-	1