

# DIN EN 1622:2006-10 (E)

## Water quality - Determination of the threshold odour number (TON) and threshold flavour number (TFN)

---

| <b>Contents</b>                                     |  | <b>Page</b> |
|---|--|-------------|
| Foreword .....                                      |  | 4           |
| Introduction .....                                  |  | 5           |
| 1   | Scope .....  | 6           |
| 2   | Normative references .....                             | 6           |
| 3   | Terms and definitions .....                            | 6           |
| 4   | Principle .....  | 8           |
| 5   | Hazards .....  | 8           |
| 6   | Test environment .....                                 | 8           |
| 7   | Apparatus and reagents .....                           | 8           |
| 8   | Sampling and sample preservation .....                 | 9           |
| 9   | Test panel and selected assessors .....                | 9           |
| 10  | Procedure for unforced choice .....                    | 10          |
| 10.1  | General .....  | 10          |
| 10.2  | Type of test .....                                     | 10          |
| 10.2.1  | The triangle test .....                                | 10          |
| 10.2.2  | The paired test .....                                  | 10          |
| 10.3  | Type of method .....                                   | 10          |
| 10.3.1  | Short method .....                                     | 10          |
| 10.3.2  | Full method .....                                      | 11          |
| 11  | Expression of results .....                            | 13          |
| 11.1  | The short method .....                                 | 13          |
| 11.2  | The full method .....                                  | 13          |
| 12  | Test report .....                                      | 13          |
| Annex A (normative) Chlorinated water .....         |  | 15          |
| A.1   | General .....  | 15          |
| A.2   | Dechlorination by addition of sodium thiosulfate ..... | 15          |
| A.2.1   | Preparation of reagent .....                           | 15          |
| A.2.2   | Procedure .....  | 15          |
| A.3   | Dechlorination by addition of ascorbic acid .....      | 15          |
| A.3.1   | Preparation of reagent .....                           | 15          |
| A.3.2   | Procedure .....  | 15          |
| Annex B (normative) Forced choice test method ..... |  | 16          |
| B.1   | General .....  | 16          |
| B.2   | Determination of TON and TFN .....                     | 16          |

|  |                               |           |
|--|-------------------------------|-----------|
| <b>B.3</b>   | <b>Expression of results</b>  | <b>17</b> |
| <b>B.3.1</b>   | <b>The short method</b>       | <b>17</b> |
| <b>B.3.2</b>   | <b>The full method</b>        | <b>17</b> |
| <b>B.3.3</b>   | <b>Test report</b>            | <b>17</b> |
| <b>Annex C (normative) Qualitative simplified procedure</b>  |                               | <b>18</b> |
| <b>Annex D (informative) Method for the preparation of reference water )</b>   |                               | <b>19</b> |
| <b>D.1</b>   | <b>Apparatus and reagents</b> | <b>19</b> |
| <b>D.2</b>   | <b>Procedure</b>              | <b>19</b> |
| <b>Annex E (informative) Selection of the test panel</b>   |                               | <b>20</b> |
| <b>E.1</b>   | <b>General</b>                | <b>20</b> |
| <b>E.2</b>   | <b>Self-evaluation</b>        | <b>20</b> |
| <b>E.3</b>   | <b>Screening test</b>         | <b>20</b> |
| <b>Annex F (informative) Preparation of dilutions</b>  |                               | <b>23</b> |
| <b>Annex G (informative) Interlaboratory test by forced choice methodology</b>   |                               | <b>24</b> |
| <b>Bibliography</b>  |                               | <b>27</b> |
| <b>Figures Figure G.1 -- Graphical presentation of threshold flavour number; calculated threshold flavour number is 13,5</b>   |                               | <b>25</b> |
| <b>Tables Table 1 -- Threshold numbers</b>   |                               | <b>13</b> |
| <b>Table E.1 -- Long term constraints form</b>   |                               | <b>21</b> |
| <b>Table E.2 -- Test report form for individual candidates</b>   |                               | <b>22</b> |
| <b>Table F.1 --Examples of successive dilutions, x p (10.3. 2.2)</b>   |                               | <b>23</b> |
| <b>Table G.1 -- Statistical evaluation by forced choice triangle test (TFN), concerning the measurements obtained by 10 selected assessors, for assessment of drinking water (x=2)</b> |                               | <b>24</b> |
| <b>Table G.2 -- Measurements on odour and flavour on geosmin solutions (forced choice, triangle test)</b>  |                               | <b>25</b> |
| <b>Table G.3 -- Measurements on odour and flavour on geosmin solutions (forced choice, paired test)</b>  |                               | <b>26</b> |