ISO 13301:2018-04 (E)

Sensory analysis - Methodology - General guidance for measuring odour, flavour and taste detection thresholds by a three-alternative forced-choice (3-AFC) procedure

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms and definitions 2

4 Principles 3
4.1 Experimental procedures 3
4.2 Data processing 3

5 Experimental procedures 4
5.1 Preparation of samples 4
5.1.1 General precautions 4
5.1.2 Gases 4
5.1.3 Liquids 4
5.1.4 Solids 4
5.2 Selection of concentrations of the stimulus 4
5.3 Presentation of samples 5
5.3.1 Preparation 5
5.3.2 Gases 5
5.3.3 Liquids 5
5.3.4 Solids 5
5.4 Training of assessors 5
5.5 Selection of assessors 6
5.5.1 General 6
5.5.2 Individual threshold 6
5.5.3 Distribution of thresholds 6
5.5.4 Measurement of thresholds of stimuli 6
5.6 Design of the experiment 6
5.6.1 Individual threshold 6
5.6.2 Distribution of thresholds 7
5.6.3 Measurement of the threshold of a stimulus for a group of assessors 7

6 Data processing 9
6.1 Mathematical and statistical models 9
6.2 Preliminary inspection of data 9
6.2.1 Preparation 9
6.2.2 Preliminary estimation of threshold and slope using the logit transformation 10
6.3 Maximum likelihood procedure for fitting the data to a logistic model and estimating error bounds 10
6.3.1 General 10
6.3.2 The parameter, b 10
6.3.3 Confidence intervals for estimated parameters 11
6.4 Interpretation of results 11
6.5 Selecting a detection rate target (pd) other than 0,5 12
6.6 Estimation of the best estimate threshold (BET) 12
6.7 Presentation of results 12

Annex A (informative) Estimated number of assessors required for a given degree of precision 14

Annex B (informative) Examples 15

Bibliography 28