ISO 16900-1:2019-08 (E)

Respiratory protective devices - Methods of test and test equipment - Part 1: Determination of inward leakage

Contents

Page

Foreword v

Introduction vi

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Prerequisites 2

5 General test requirements 2

6 Principle 2
6.1 General 2
6.2 Choice of test agent 2

7 Human test panel 4
7.1 General 4
7.2 Test panel 5

8 Test agents 5

9 Apparatus 6

10 RPD preparation 6
10.1 General 6
10.2 Sample tubes and probe 7
10.3 Sample flow rates 11
10.4 Filtering RPD preparation 11
10.4.1 Unassisted filtering RPD with a connector in accordance with ISO 17420-3 11
10.4.2 Unassisted filtering RPD fitted with particle filters or combination filters 11
10.4.3 Unassisted filtering RPD with gas/vapour or combination filters 11
10.4.4 Assisted filtering RPD with particle filter(s) or combination filter(s) 12
10.4.5 Assisted filtering RPD with gas/vapour or combination filter(s) 12
10.5 Supplied breathable gas devices 12
10.6 Supplied breathable gas devices incorporating additional filtration facility (combined RPD) 13

11 Test methods 13
11.1 General 13
11.2 Test method 1: Sulfur hexafluoride (SF6) 14
11.2.1 Test equipment 14
11.2.2 Calculation of leakage 17
11.3 Test method 2: Sodium chloride (NaCl) 17
11.3.1 Test equipment 17
11.3.2 Pulsed sampling -- Method 2A 22
11.3.3 Continuous sampling -- Method 2B 24
11.4 Test method 3: Corn oil aerosol 24
11.4.1 Test equipment 24

11.5 Determination of inward leakage in the ocular zone 26

12 Test report 26

13 Uncertainty of measurement 27

Annex A (normative) Application of uncertainty of measurement -- Determination of compliance 28

Annex B (normative) Test exercise regime 30

Annex C (informative) Material porosity test 34

Annex D (informative) Preparation and use of bivariate test panel 36

Bibliography 37