ISO 29904:2013-09 (E)

Fire chemistry - Generation and measurement of aerosols

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Terms,definitions,symbolsandabbreviatedterms 2
3.1 Terms and definitions 2
3.2 Symbols and abbreviated terms 2

4 Aerosol properties 3
4.1 General 3
4.2 Movement and evolution of fire aerosol 4
4.3 Measurable properties of aerosols 5

5 Methods of measurement 11
5.1 Applications 11
5.2 Categories of aerosol measurement 12
5.3 Initial considerations for sampling and analysis of aerosols 19
5.4 Selection of methods 20
5.5 In situ measurement methods 21
5.6 Extractive measurement methods 27

6 Aerosol measurement metrology 43
6.1 Standard aerosol generators for calibration of instrumentation 43
6.2 Qualification (Verification) of generators 45
6.3 Calibration methods exigencies 46
6.4 Validation 47

7 Presentation of results 51
7.1 Calculations 51
7.2 Measurement report 53
7.3 Uncertainties 53

Annex A (informative) Experimental measurements of Dpp, Npp, Rg, Df and kf 55

Annex B (informative)Adsorptionofcombustiongasesonparticles 57

Annex C (informative) Inhalation dynamics and toxicity of particles 60

Annex D (informative) Non-toxicological effects of particles 64

Annex E (informative) Example of report 65

Bibliography 68