DIN EN ISO 10882-1:2024-12 (E)

Health and safety in welding and allied processes - Sampling of airborne particles and gases in the operator's breathing zone - Part 1: Sampling of airborne particles (ISO 10882-1:2024)

Contents

Page

European foreword ... **4**

Foreword ... **5**

Introduction ... **6**

1 Scope ... **7**

2 Normative references ... **7**

3 Terms and definitions ... **7**
3.1 General definitions ... 8
3.2 Sampling definitions ... 9
3.3 Welding terms ... 11
3.4 Statistical terms ... 12

4 Principle ... **12**

5 Requirement ... **13**

6 Equipment ... **13**
6.1 Sampling equipment ... 13
6.2 Weighing equipment, if required ... 14

7 Assessment strategy ... **15**

8 Measurement strategy ... **15**
8.1 General ... 15
8.2 Personal exposure measurement ... 15
8.3 Fixed-point measurements ... 15
8.4 Selection of measurement conditions and measurement pattern ... 16
8.4.1 General ... 16
8.4.2 Screening measurements of time-weighted average concentration and worst-case measurements ... 16
8.4.3 Measurements for comparison with limit values and periodic measurements ... 16

9 Procedure ... **17**
9.1 Preliminary considerations ... 17
9.1.1 Selection of exposure metric(s) ... 17
9.1.2 Selection and use of samplers ... 17
9.1.3 Selection of sampling period ... 17
9.1.4 Consideration of temperature and pressure effects ... 18
9.2 Preparation for sampling ... 18
9.2.1 Cleaning of samplers ... 18
9.2.2 Loading collection substrates into samplers ... 18
9.2.3 Setting of flow rate ... 18
9.3 Sampling position ... 19
9.3.1 Personal sampling position ... 19
9.3.2 Fixed-point sampling position ... 19
9.4 Sampling ... 19
9.5 Transportation ... 20
9.6 Analysis ... 20
9.6.1 Gravimetric analysis of samples ... 20
9.6.2 Chemical analysis of samples ... 20
9.7 Expression of results ... 21

9.7.1 Concentration of airborne particles and/or chemical agent(s) of interest 21
9.7.2 Calculation of the time-weighted average concentration 21
9.7.3 Temperature and pressure correction for the indicated sampling flow rate 21
10 Exposure assessment **22**
11 Recording of sampling data and presentation of results **22**
Annex A (normative) **Gravimetric analysis** **23**
Annex B (informative) **Examples of arrangements for mounting samplers** **24**
Annex C (informative) **An example of a report** **33**
Annex D (informative) **Blank report form** **36**
Bibliography **39**