

DIN EN ISO 13137:2014-03 (E)

Workplace atmospheres - Pumps for personal sampling of chemical and biological agents - Requirements and test methods (ISO 13137:2013)

Contents	Page
Foreword	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terms and definitions	6
4 Types of pump	8
5 Requirements	8
5.1 Features	8
5.2 Mass	8
5.3 Design safety	9
5.4 Operating time	9
5.5 Start-up and long-term performance	9
5.6 Short-term interruption of air flow	9
5.7 Temperature dependence	9
5.8 Mechanical strength	10
5.9 Pulsation of flow rate (for type P pumps only)	10
5.10 Flow rate stability under increasing pressure drop	10
5.11 Timer accuracy	10
5.12 Electromagnetic compatibility	10
5.13 Explosion hazard	11
6 Test conditions	11
6.1 Number of test objects	11
6.2 Test instruments	11
6.3 Preconditioning and sequence of tests	12
6.4 Adjustment of volume flow rate and pressure drop	12
6.5 Test set-up and performance	12
7 Test methods	13
7.1 Features	13
7.2 Mass	13
7.3 Design safety	13
7.4 Operating time	13
7.5 Start-up and long-term performance	13
7.6 Short-term interruption of air flow	14
7.7 Temperature dependence	15
7.8 Mechanical strength	166
7.9 Pulsation of flow rate (for type P pumps only)	17
7.10 Flow rate stability under increasing pressure drop	19
7.11 Timer accuracy	20
7.12 Electromagnetic compatibility	20
7.13 Explosion hazard	20
8 Test report	20

9	Instructions for use	21
10	Charger	21
10.1	Requirements	21
10.2	Testing	21
11	Marking	22
Annex A (informative) Types of pump mechanism and control system		23
Annex B (informative) Internal sensors of sampling pumps		26
Annex C (informative) User tests for pumps and flowmeters		28
Annex D (informative) Pressure drop due to collection substrates		31
Annex E (informative) Test instruments		35
Bibliography		36