

ISO/IEC 28360-1:2018 (E)

Information technology — Office equipment — Determination of chemical emission rates from electronic equipment — Part 1: Using-consumables

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Symbols and abbreviated terms
4.1	Abbreviated terms
4.2	Symbols
5	Conformance
6	Method overview
7	ETC requirements
7.1	Construction materials
7.2	Air tightness
7.3	Air mixing efficiency
8	Determination method
8.1	Test conditions
8.1.1	General
8.1.2	Operating temperature and relative humidity (RH)
8.1.3	Air exchange rate (n)
8.1.4	Air velocity
8.1.5	Sampled air flow
8.2	Handling of EUT and ETC
8.2.1	Selection and storage of EUT
8.2.2	Loading Factor
8.2.3	ETC purging
8.2.4	Background concentrations (C _{bg})
8.2.5	EUT unpacking
8.2.6	Preparation of the EUT before testing
8.2.7	EUT installation
8.2.8	EUT operation during test
8.2.8.1	General
8.2.8.2	Special requirements on relative humidity
8.2.8.3	Pre-operating phase
8.2.8.4	Operating phase
8.2.8.5	Post-operating phase
8.2.8.6	Recording of EUT operation
8.3	VOC, carbonyl compounds
8.3.1	Sorbents
8.3.2	Sample collection
8.3.3	Emission rate calculation
8.3.3.1	General
8.3.3.2	Emissions in the pre-operating phase
8.3.3.3	Emissions in the operating and post-operating phase
8.3.3.3.1	General case

- 8.3.3.3.2 Special cases
- 8.3.3.3.3 RAL-UZ 205 Option
- 8.3.3.4 TVOC (RAL-UZ 205 Option)
- 8.4 Ozone
 - 8.4.1 Analyser and sampling line requirements
 - 8.4.2 Monitoring
 - 8.4.3 Emission rate calculation
- 8.5 Particulate matter
 - 8.5.1 Weighing and Filter conditioning
 - 8.5.2 Sampling
 - 8.5.3 Emission rate calculation
 - 8.6 Fine and Ultrafine Particles (FP and UFP)
 - 8.6.1 General Requirements for Aerosol Measuring Systems (AMS)
 - 8.6.1.1 General
 - 8.6.1.2 Particle size range
 - 8.6.1.3 Particle number concentration range
 - 8.6.1.4 Time resolution
 - 8.6.1.5 Working fluids for CPC
 - 8.6.1.6 Connection of AMS to ETC
 - 8.6.1.7 Quality Assurance
 - 8.6.2 Measurement
 - 8.6.3 Calculation
 - 8.6.3.1 General
 - 8.6.3.2 Calculation of Particle loss coefficient β
 - 8.6.3.3 Calculation of PER and TP
 - 8.6.3.4 Calculation of PER and TP, final steps

9 Test report

Annex A (normative) Print Patterns

- A.1 Monochrome print pattern, 5 % coverage
- A.2 Colour print pattern, 20 % coverage

Annex B (normative) Preparatory AMS Test Procedures

- B.1 Procedures for operational readiness of AMS
 - B.1.1 Particle size concentration range measurements
 - B.1.2 Particle number concentration range measurements
- B.2 Procedures for operational readiness test of Fast AMS
 - B.2.1 Set up of instrument
 - B.2.2 Preparation for measurement
- B.3 Procedures for operational readiness test of CPC
 - B.3.1 Set up the instrument
 - B.3.2 Preparation for measurement

Annex C (informative) Emission rate model

- C.1 Objective
- C.2 Approach
- C.3 General mass balance and concentration equations
- C.4 Background SER
- C.5 Emission during pre-operating phase
- C.6 Emission during operating phase
- C.7 Emission during post-operating phase
- C.8 Special cases
- C.9 Model for RAL-UZ 205 Option

Page count: 40