

ISO 4589-4:2021 (E)

Plastics — Determination of burning behaviour by oxygen index — Part 4: High gas velocity test

Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Principles for determination of HOI
5	Apparatus
6	Calibration of equipment
7	Preparation of test specimens
7.1	Test specimen form
7.2	Sampling
7.3	Test specimen dimensions and preparation
7.4	Marking of test specimen
7.5	Conditioning
8	Procedure for determination of HOI
8.1	Setting up the apparatus
8.2	Setting volume fraction of oxygen and gas flow velocity
8.3	Procedure for ignition of the test specimen
8.4	Assessing the burning behaviour of test specimen
8.5	Selecting successive volume fraction of oxygen
8.6	Determining the preliminary volume fraction of oxygen
8.7	Volume fraction of oxygen changes
9	Calculation and expression of results
9.1	Calculation of the HOI
9.2	Determination of k
9.3	Standard deviation of oxygen volume fraction measurements
10	Precision of test results
11	Test report
Annex A	(normative) Calibration of equipment
A.1	Leak tests
A.2	Gas flow rates
A.3	Gas velocity
A.4	Oxygen analyser
A.5	Mass flow controller
A.6	Temperature measurement device
Annex B	(informative) Example of test results sheet for HOI
B.1	Test results sheet for HOI
B.2	Determination of oxygen volume fraction for one pair of “X” and “O” responses at ≤ 1 % O ₂ volume fraction interval

- B.3** **Determination of HOI**
- B.4** **Verification of step size d % oxygen volume fraction**
- B.5** **Ancillary information**

Annex C **(informative) Interlaboratory test data on HOI measurement**

Annex D **(informative) Blow-off behaviour at high gas velocity — How to predict the flammability of materials**

- D.1** **Background**
- D.2** **Analytical model for flammability limiting curve**
- D.3** **Relationship between the blow-off behaviour and flammability in microgravity**

Page count: 29