

DIN EN ISO 16179:2025-07 (E)

Footwear - Critical substances potentially present in footwear and footwear components - Determination of organotin compounds in footwear materials (ISO 16179:2025)

Contents	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	1
5 Reagents	2
6 Apparatus and materials	3
7 Preparation of the sample	3
8 Procedure	4
8.1 General.....	4
8.2 Preparation of the sodium tetraethylborate solution.....	4
8.3 Preparation of standard solutions.....	4
8.3.1 General.....	4
8.3.2 Internal standards — stock solution (1 000 mg/l of organotin cation).....	5
8.3.3 Internal standards — working solution (10 mg/l of organotin cation).....	6
8.3.4 Target compounds — stock solution (1 000 mg/l of organotin cation).....	6
8.3.5 Target compounds — working solution (10 mg/l of organotin cation).....	6
8.4 Preparation of the tropolone solution.....	6
8.5 Preparation of the buffer solution.....	6
8.6 Preparation of the calibration solutions.....	6
8.7 Sample preparation.....	7
8.8 Preparation of the blank solution.....	7
8.9 Gas chromatography.....	7
8.9.1 General.....	7
8.9.2 With MS.....	7
8.9.3 With MS/MS.....	8
9 Expression of the results	8
9.1 Determination of the mass fraction of the tin organic compounds.....	8
9.2 Precision of the test method.....	9
10 Test report	9
Annex A (informative) Gas chromatography apparatus and conditions for organotin analysis	10
Annex B (informative) Suitable conditions for mass spectroscopy	11
Annex C (informative) Reliability of the method	13
Bibliography	14