

ISO/TS 21396:2017-12 (E)

Rubber - Determination of mass concentration of tire and road wear particles (TRWP) in soil and sediments - Pyrolysis-GC/MS method

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Principle	2
5	Reagents	2
6	Apparatus	3
7	Specimen preparation laboratory	5
8	Measuring range	5
9	Limit of detection	5
10	Procedure	6
10.1	General	6
10.2	Sample collection	6
10.3	Deuterated internal standard preparation	6
10.4	Calibration curve preparation	7
10.4.1	Stock solutions	7
10.4.2	Calibration curves	7
10.5	Sample preparation	8
10.5.1	Oven drying	8
10.5.2	Sieving and homogenization	8
10.6	Sample measurement	8
10.6.1	Sample mass	8
10.6.2	Internal standard addition	9
10.6.3	Pyrolysis-gas chromatograph/mass spectrometer measurement	9
11	Analysis	9
11.1	TRWP detection limit	9
11.2	Quantity of tyre polymer in the sample	9
11.3	Mass concentration of TRWP	10
12	Performance characteristics	10
12.1	General	10
12.2	Specific performance characteristics	10
12.3	Method detection limit	10
13	Test report	10
Annex A (informative)	Recipe for calibration curves and stock solutions	12

Annex B (informative) Curie-point pyrolyser	14
Annex C (informative) Representative calibration curves and pyrograms	15
Annex D (normative) Calculation of TRWP detection limits	20
Annex E (normative) Calculation of results using dimer markers	21
Bibliography	23