

# DIN EN ISO 12156-1:2019-09 (E)

## Diesel fuel - Assessment of lubricity using the high-frequency reciprocating rig (HFRR) - Part 1: Test method (ISO 12156-1:2018)

---

Contents	Page
European foreword .....	3
Foreword .....	4
Introduction .....	5
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Principle .....	7
5 Reagents and materials .....	7
6 Apparatus .....	8
7 Sampling .....	10
8 Preparation and calibration .....	11
8.1 Preparation of apparatus .....	11
8.1.1 Test plates and balls .....	11
8.1.2 Hardware .....	11
8.2 Calibration and correction .....	11
8.2.1 Temperature .....	11
8.2.2 Frequency .....	11
8.2.3 Stroke length .....	11
8.2.4 Test duration .....	11
8.2.5 Test rig performance .....	11
9 Test procedure .....	12
10 Measurement of wear scar .....	13
10.1 General .....	13
10.2 Method "A" -- Digital camera .....	13
10.3 Method "B" -- Visual observation .....	13
11 Test results .....	13
12 Precision .....	14
12.1 General .....	14
12.2 Repeatability, r .....	14
12.3 Reproducibility, R .....	14
13 Test report .....	14
Annex A (informative) Measurement of HFRR wear scars .....	16
Bibliography .....	19