

DIN EN ISO 5165:2018-04 (E)

Petroleum products - Determination of the ignition quality of diesel fuels - Cetane engine method (ISO 5165:2017)

Contents		Page
European foreword.....		4
Foreword.....		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	6
4	Principle	8
5	Reagents and reference materials	8
6	Apparatus	9
7	Sampling and sample preparation	13
8	Basic engine and instrument settings and standard operating conditions	13
8.1	Installation of engine equipment and instrumentation.....	13
8.2	Engine speed.....	13
8.3	Valve timing.....	14
8.4	Valve lift.....	14
8.5	Fuel pump timing.....	14
8.6	Fuel pump inlet pressure.....	14
8.7	Direction of engine rotation.....	14
8.8	Injection timing.....	14
8.9	Injector nozzle opening pressure.....	14
8.10	Injection flow rate.....	14
8.11	Injector coolant passage temperature.....	14
8.12	Valve clearances.....	14
8.13	Oil pressure.....	15
8.14	Oil temperature.....	15
8.15	Cylinder jacket coolant temperature.....	15
8.16	Intake air temperature.....	15
8.17	Basic ignition delay.....	15
8.18	Cylinder jacket coolant level.....	15
8.19	Engine-crankcase lubricating oil level.....	15
8.20	Crankcase internal pressure.....	15
8.21	Exhaust back-pressure.....	15
8.22	Exhaust and crankcase breather system resonance.....	15
8.23	Piston over-travel.....	16
8.24	Belt tension.....	16
8.25	Injector opening or release pressure.....	16
8.26	Injector spray pattern.....	16
8.27	Indexing handwheel reading.....	16
	8.27.1 General.....	16
	8.27.2 Basic setting of variable compression plug.....	16
	8.27.3 Setting handwheel micrometer drum and scale.....	16
	8.27.4 Setting handwheel reading.....	17
8.28	Basic compression pressure.....	17
8.29	Fuel pump lubricating oil level.....	17
8.30	Fuel pump timing gear-box oil level.....	18
8.31	Setting instrumentation reference pickups.....	18
8.32	Setting injector pickup gap.....	18

9	Engine qualification	18
9.1	Engine conformity	18
9.2	Checking performance on check fuels	18
9.3	Check in the case of nonconformity	19
10	Procedure	19
10.1	General	19
10.2	Sample introduction	19
10.3	Fuel flow rate	19
10.4	Fuel injection timing	19
10.5	Ignition delay	19
10.6	Equilibration	20
10.7	Handwheel reading	20
10.8	Reference fuel no. 1	20
10.9	Reference fuel no. 2	20
10.10	Number of blends of reference fuels	21
10.11	Repeat readings	21
11	Calculation	22
12	Expression of results	23
13	Precision	23
13.1	General	23
13.2	Repeatability, <i>r</i>	23
13.3	Reproducibility, <i>R</i>	23
13.4	Precision basis	24
14	Test report	24
	Bibliography	25