



Key Test Method Information (Dec. 2025)

Introduction

CEC test methods are used extensively in Europe and widely throughout the world. They are used to develop new products, specify products requirements and for research purposes.

CEC was established over 30 years ago and now has more than 1500 participants from over 300 companies. Representatives can contribute to CEC affairs at all levels.

CEC manages many test methods for combustion engine fuels and combustion engine fluids such as lubricants. Most methods managed by the CEC are in the surveillance stage (SG) with others in the developmental stage (TDG).

The information related to each test method is typically only available to members of the working group that develops and manages the test method. CEC recognises that in many cases the individuals, companies and organisations using CEC test methods are not members of the relevant SG or TDG and therefore have only very limited access to information about the test method.

CEC has therefore decided to publish a minimum set of data for each test method to improve access to the critical information needed by the wider community.

Surveillance Stage

Methods in the surveillance stage (SG) are methods that have completed the developmental stage and have been approved as meeting CEC quality criteria with regards to :

- Repeatability
- Reproducibility
- Discriminating power

Methods in SG status can be used for research, product development and in product specifications.

The members of the surveillance group are charged with maintaining and where possible improving the quality and safety performance of the test method. The group is also responsible for communicating to the wider community regarding the status of the test including quality performance, hardware and reference fluid availability.

Companies wishing to join an existing working group must contact the CEC Secretariat. Full details of CEC processes can be found in the Operating Guidelines on the CEC website.

Developmental Stage

Methods in the developmental stage (TDG) are methods that are being actively developed. Such methods are developed against an agreed Terms of Reference (ToR) document that explains why the project is needed, the targets for the project and any boundary conditions. The ToR document is based on a Needs Statement provided by the broader industry and explains why a new test method development project is required.

The TDG stage has two main phases, in the first phase the detailed method is finalised and repeatability is demonstrated at a single test laboratory whereas in the second phase reproducibility is demonstrated by all (or at least a majority of) contributing laboratories.

Methods in TDG status can only be used for 'at risk' testing and are inappropriate for inclusion in product specifications.

Companies wishing to participate in a TDG working group must join the TDG during the call for sponsors. Full details of CEC processes can be found in the Operating Guidelines on the CEC website.

Fuels Engine Test Methods

At the time of writing CEC has 7 active fuels engine test methods and the key information for each of them is provided in the following table.

Method	Engine	Purpose
CEC SG-F-005	Mercedes Benz M102E	Intake Valve Cleanliness Gasoline Fuel
CEC SG-F-016	VW Water Boxer	Inlet Valve Sticking Tendency of Gasoline Fuel
CEC SG-F-020	Mercedes Benz M111	Deposit Forming Tendency on Intake Valves of Gasoline Engines
CEC SG-F-023	Peugeot XUD9	Diesel Engine Injector Nozzle Coking Test
CEC SG-F-098	Peugeot DW10B	Direct Injection Common Rail Diesel Engine Nozzle Coking Test
CEC SG-F-110	Peugeot DW10C	Internal Diesel Injector Deposit Test for DI Common Rail Engine
CEC TDG-F-113	VW EA111 Euro IV	DISI (Direct Injection spark ignited engine) Injector fouling Test

Lubes Engine Test Methods

At the time of writing CEC has 10 active automotive lubricant engine test methods and the key information for each of them is provided in the following table.

Method	Engine	Purpose
CEC SG-L-054	Mercedes-Benz M111E20	Determination of fuel economy effects of engine lubricants
CEC SG-L-078	VW 1.9 Liter Turbocharged Intercooled DI Diesel	Passenger Car Direct Injection Diesel Engine Ring Sticking and Piston Cleanliness Test
CEC SG-L-099	Mercedes-Benz OM646LA	Passenger Car Diesel Engine Wear Test using the Mercedes OM 646 DE22LA engine
CEC SG-L-104	Mercedes-Benz OM646LA	Engine Oil Performance Test to Measure the Effects of Biodiesel using the Mercedes OM646 DE 22 LA Engine
CEC SG-L-106	PSA DV6C	This method allows the evaluation of combustion soot effect on engine oil viscosity and piston cleanliness
CEC SG-L-107	Mercedes-Benz M271EVO	The Evaluation of Engine Crankcase Lubricants with Respect to Sludge Behaviour
CEC SG-L-111	PSA EP6CDT	This method allows to assess the piston cleanliness and turbocharger desposits using a Turbocharged Gasoline Direct Injection Engine (TGDI)
CEC SG-L-114	Toyota 1KD-FTV	Determination of Turbocharger compressor deposits in a light duty diesel engine
CEC SG- L-117	VW EA288 (engine code CUNA)	The evaluation of engine oils in direct injection turbo diesel engines with respect to piston cleanliness
CEC SG-L-118	Mercedes Benz OM471 FE1	Piston cleanliness test (HD Diesel engine)

Lubes Bench Test Methods

At the time of writing CEC has 11 active automotive lubricant bench test methods and the key information for each of them is provided in the following table.

Method	Purpose
CEC SG-L-14	Evaluation of the Mechanical Shear Stability of Lubricating Oils Containing Polymers (Fuel Injection Pump)(Replaces CEC L-14-A-88)
CEC SG-L-36	The Measurement of Lubricants Dynamic Viscosity under Conditions High Shear
CEC SG-L-40	Evaporation Loss of Lubricating Oils (NOACK Evaporative Tester)
CEC SG-L-82	Spectrophotometric determination of Soot in Used Engine Oil
CEC SG-L-83	Measurement of Kinematic Viscosity @100 Deg C of Used Oil Samples
CEC SG-L-85	Hot Surface Oxidation - Pressure Differential Scanning Calorimeter (PDSC)
CEC L-101-09	Evaluation of Performance of Heavy Duty Engine Oils
CEC L-103-12	Biological Degradability of Lubricants in Natural Environment
CEC L-105-12	Low Temperature Pumpability
CEC L-109-14	Oxidation Test For Engine Oils Operating In The Presence Of Biodiesel Fuel
CEC L-112-16	The Evaluation of Oil - Elastomer Compatibility

Transmission Oil Test Methods

At the time of writing CEC has 6 active automotive transmission oil test methods and the key information for each of them is provided in the following table.

Method	Purpose
CEC SG-L-07	Load Carrying Capacity Test for Transmission Lubricants (FZG Test Rig)
CEC SG- L-45	Viscosity Shear Stability of Transmission Lubricants (Taper Roller Bearing Rig)
CEC SG-L-48	Oxidation Stability of Lubricating Oils used in Automotive Transmissions by Artificial Aging (Laboratory Test)
CEC SG-L-66	Evaluation of the Synchronesh Endurance Life using the FZG SSP 180 synchronesh test rig
CEC SG-L-84	FZG Scuffing Load Carrying Capacity Test for High EP Oils
CEC SG-L-108	FZG Pitting Load Carrying Capacity Test for Gear Oils