



**The Coordinating European Council**  
for the Development of Performance Tests for Fuel, Lubricants and other Fluids

# **CEC 2010 - Role of CEC in Developing Tests for the European Automotive Industry**



**Derek Mackney – CEC Chairman of the Board**



**The Coordinating European Council**  
for the Development of Performance Tests for Fuel, Lubricants and other Fluids



## CEC Chairman – Derek Mackney

**Derek Mackney is quite well known in the European Lubricants industry as he has been involved in ATC and CEC committees for many years.**

Professionally his early years were spent with Ford at their UK Research and Engineering Centre. He has worked for Lubrizol at their Technical Centre near Derby in the UK for the last 24 years. He is presently Senior Technical Manager for Engine Oils, responsible for OEM liaison, Engine Oil approvals and Industry Committee representation.

He is chairman of the ATC group that manages the ATC Code of Practice.

From the 1<sup>st</sup> January 2010 he has taken on the role of Director and Chairman of the CEC Management Board.

Derek obtained his Engineering qualifications and Business Degree from North East London Polytechnic. He also has a Masters degree from Lancaster University. He has written and co-authored a number of technical papers for SAE, ASTM, CEC and other bodies and is co-inventor on a number of patents.



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## What is CEC?

**The Co-ordinating European Council for the development of performance tests for transportation fuels, lubricants and other fluids**

**CEC is an Industry-based organisation for the development of Test Procedures and Methods:**

- Automotive Fuels, Engine Oils & Transmission Fluids
- Marine & Large Engine Oils
- Two-stroke Engine Oils
- Associated Bench Tests
- Industrial & Hydraulic Fluids



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**CEC was reorganised in 2001. Its Board of Directors is made up from members of four Industry Associations:-**

**1. ACEA: [www.ACEA.be](http://www.ACEA.be)**

Association des Constructeurs Europeens de l'Automobile

**2. ATC: [www.ATC-Europe.org](http://www.ATC-Europe.org)**

ATC is the Organisation of Europe's biggest additive manufactures

**3. ATIEL: [www.ATIEL.org](http://www.ATIEL.org)**

ATIEL is the Organisation of Europe's leading engine oil manufactures

**4. CONCAWE :[www.concawe.be](http://www.concawe.be)**

The Oil companies' European association for environment, health and safety in refining and distribution



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## These organisations are:

### 1. [ACEA: www.ACEA.be](http://www.ACEA.be)

Association des Constructeurs Européens de l'Automobile

The screenshot shows the ACEA website homepage. At the top is the ACEA logo and the text 'EUROPEAN AUTOMOBILE MANUFACTURERS' ASSOCIATION'. Below this is a navigation bar with links: HOME, PRESS ROOM, STATISTICS, PUBLICATIONS, EVENTS, ABOUT US, CONTACT US. A search bar is also present. The main content area features a large banner titled 'Cars, Trucks & the Environment'. Below the banner, there are three columns of content. The left column lists various topics: CO2 EMISSIONS, ENVIRONMENT, ROAD SAFETY, COMPETITIVENESS, INDUSTRY AND ECONOMY, REGULATION AND STANDARDS. The middle column has a 'FOCUS: ENVIRONMENT' section with three articles: 'Cars, Trucks and the Environment', 'Electric Vehicles: Turning buzz into reality', and 'Copenhagen: Automakers reaffirm commitment to sustainable mobility'. The right column has a 'TOP ISSUES' section with three articles: 'CARS 21: together for a competitive and sustainable auto-industry', 'Vehicle compatibility with new fuel standard E10 for petrol', and 'Automobile Industry'. At the bottom, there is a 'LATEST PRESS RELEASES' section with four news items. On the left side of the page, there is a vertical list of member logos: DAF, DAIMLER, FIAT GROUP, Ford, GM, JAGUAR, LAND ROVER, MAZDA, and PORSCHE. On the right side, there is a vertical list of logos: PSA PEUGEOT CITROËN, RENAULT, SCANIA, TOYOTA, VOLKSWAGEN, and VOLVO.

ACEA  
EUROPEAN AUTOMOBILE MANUFACTURERS' ASSOCIATION

HOME PRESS ROOM STATISTICS PUBLICATIONS EVENTS ABOUT US CONTACT US

search article SEARCH

CO2 EMISSIONS  
ENVIRONMENT  
ROAD SAFETY  
COMPETITIVENESS  
INDUSTRY AND ECONOMY  
REGULATION AND STANDARDS

DAF  
DAIMLER  
FIAT GROUP  
Ford  
GM  
JAGUAR  
LAND ROVER  
MAZDA  
PORSCHE

**Cars, Trucks & the Environment**

**FOCUS: ENVIRONMENT**

**Cars, Trucks and the Environment**  
**updated:** Using limited resources responsibly and protecting our environment: European automobile manufacturers have an important role to play. →

**Electric Vehicles: Turning buzz into reality**  
Electric mobility will make an important contribution towards ensuring sustainable mobility and meeting the environmental demands of the future. →

**Copenhagen: Automakers reaffirm commitment to sustainable mobility**  
European automakers reaffirm their commitment to sustainable mobility at the heart of their business strategies. →

**TOP ISSUES**

- CARS 21: together for a competitive and sustainable auto-industry →
- Vehicle compatibility with new fuel standard E10 for petrol →
- Automobile Industry

**LATEST PRESS RELEASES**

- 18/11/2010 Europe's commercial vehicle manufacturers are driving force in transition to sustainable transport →
- 18/11/2010 European, Japanese, and North American heavy-duty engine and vehicle manufacturers call for harmonized global approach and cooperation in efforts to improve fuel efficiency →
- 16/11/2010 PASSENGER CARS: registrations drop 16.6% in October →
- 09/11/2010 EUCAR calls for dedicated automotive R&D programmes in the EU to focus on the challenge of sustainable mobility for Europe →

more... →

PSA PEUGEOT CITROËN  
RENAULT  
SCANIA  
TOYOTA  
VOLKSWAGEN  
VOLVO





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for the Development of Performance Tests for Fuel, Lubricants and other Fluids

These organisations are:

2. ATC: [www.ATC-Europe.org](http://www.ATC-Europe.org)

ATC is the Organisation of Europe's biggest additive manufacturers

The screenshot shows the ATC website homepage. At the top, there is a navigation bar with links: Home | Contact | About | Links. Below this is the ATC logo and a welcome message: "Welcome to the Technical Committee of Petroleum Additive Manufacturers in Europe". A banner image shows various industrial and laboratory scenes. Below the banner is a menu bar with links: ATC Committees, Publications, Member Companies, Members Login, and a search bar. The main content area is divided into several sections: "News and Events" with a date "1st December: RSG meet ATIEL's ExCo in Brussels"; "ATC Additives Technical Committee" with a description of the committee's purpose and activities; "REACH" with information about the committee's work on REACH registration; "Actions and Successes" with news about the committee's activities in 2010 and 2011; and "Publications" with links to documents. On the right side, there is a sidebar with a "List of ATC Member Companies" section, listing various companies: Afton Chemical, Baker Hughes, BASF, Chemtura Corporation, Chevron Oronite, CIBA, Clariant, Croda, Evonik RohMax Additives GmbH, Infineum, Innospec Fuel Specialties, Lubrizol, and Rheinchemie.

Home | Contact | About | Links

**ATC**

Welcome to the Technical Committee of Petroleum Additive Manufacturers in Europe

ATC Committees Publications Member Companies Members Login Search Publications Go

! News and Events 1st December: RSG meet ATIEL's ExCo in Brussels |

**ATC Additives Technical Committee**  
Technical Committee of Petroleum Additive Manufacturers in Europe

ATC provides a forum for additive companies to meet and discuss developments of a technical and/or statutory nature concerning the application of additives in fuels, lubricants and other petroleum products. Petroleum additives are used in fuels and lubrication.

Our main activity is to ensure co-ordinated communication with related international and national technical groups and organisations.

We participate in work of a technical nature in conjunction with associated industry or statutory organisations or groups.

**REACH**

Members of the ATC have been working together with other organisations to develop and communicate descriptors and generic exposure scenarios for both lubricant and fuel additives. This information is the lubricants and fuel supply chains, and will assist both suppliers and consumers to meet their obligations.

Information specific to lubricants and lubricant additives has been developed in co-operation with A website. [Click here](#).

Information specific to fuel additives and additised fuels was developed by ATC and can be found I

**Actions and Successes**

With 2010 and REACH registration fast approaching, ATC's REACH WG have been very busy - particularly in developing the users data highlighted above.

There has been much activity in the fuels area, including review of current CEC tests.

ATC is also looking to take its turn in providing the next CEC chairman, with Derek Mackney now appointed chairman-designate.

**Publications**

[Document 94](#)  
The Only Representative s

[Document 97](#)  
Double Pre-Registration un

**List of ATC Member Companies**

- Afton Chemical
- Baker Hughes
- BASF
- Chemtura Corporation
- Chevron Oronite
- CIBA
- Clariant
- Croda
- Evonik RohMax Additives GmbH
- Infineum
- Innospec Fuel Specialties
- Lubrizol
- Rheinchemie



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## These organisations are:

### 3. ATIEL: [www.ATIEL.org](http://www.ATIEL.org)

ATIEL is the Organisation of Europe's leading engine oil manufactures

Members' log-in | Site map | Contact Us | Home

**atiel**  
DRIVING STANDARDS  
IN LUBRICANT TECHNOLOGY

About Us | Contact | Code of Practice | News & Information | REACH | List of Members | Links

**Members' LOG-IN**

Membership of ATIEL is open to any European oil marketer or manufacturer - interested parties should [CLICK HERE](#)

Welcome to the official website of ATIEL, the technical association of the European lubricants industry.

**REACH and its impact on base oils and lubricants markets**

[ATIEL brochure - download or order a copy \(revised and updated for 2010\)](#)

[To view the ATIEL presentation click here](#)

**Renewal of EELQMs letters of Conformance - Update November 2010**

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- [Lotos Oil](#)
- [LUKOIL](#)
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- [ORLEN OIL](#)
- [PETRONAS](#)
- [REPSOL](#)
- [Shell](#)
- [SK Lubricants](#)
- [Statoil Lubricants](#)
- [Total](#)
- [UEFL \(Union Indépendante de l'Industrie Européenne des Lubrifiants\)](#)
- [Valvoline](#)



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## These organisations are:

### 4. CONCAWE : [www.concawe.be](http://www.concawe.be)

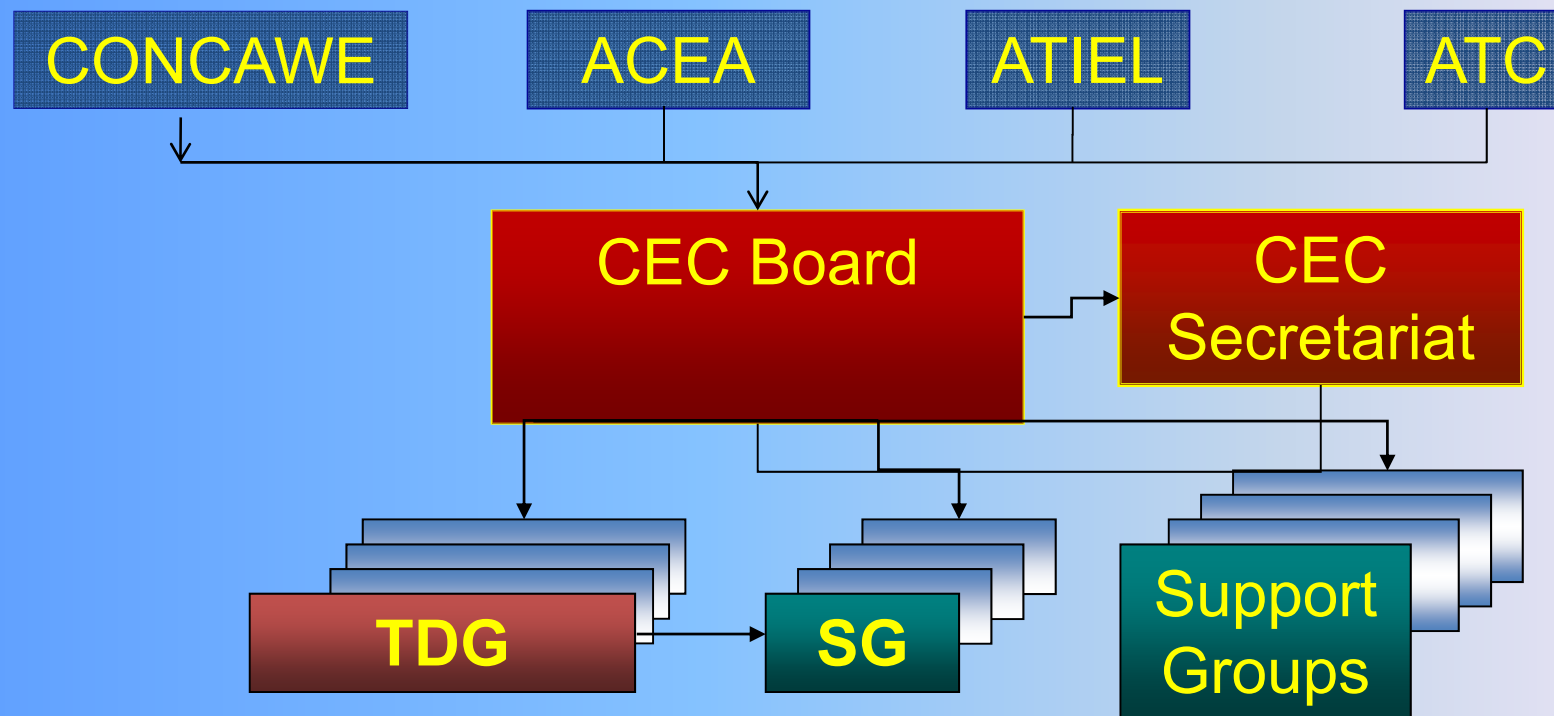
The Oil companies' European association for environment, health and safety in refining and distribution

The screenshot shows the CONCAWE website. At the top is the CONCAWE logo. Below it is a navigation bar with icons for fuel, environment, safety, and other topics. The main content area is titled 'About us' and includes a 'Membership' section. This section lists 40 member companies, organized in three columns.

Membership		
AlmaPetroli	INA*	OMV
APC	INEOS	Petroplus
api	IPLOM	PKN Orlen
BP	Koch	Preem
CEPSA	KPI	Repsol
Chevron	LOTOS	Rompotrol
ConocoPhillips	LUKOIL	SARA
DOW	LyondellBasell	SARAS
ENI	MOL	Shell
ERG	Motor Oil (Hellas)	SRD
ExxonMobil	Murco	Statoil
Galp Energia	Neste Oil	Tamoil
Hansen & Rosenthal	Nynas	TOTAL
Hellenic Petroleum		



## CEC Organisation





# The Coordinating European Council for the Development of Performance Tests for Fuel, Lubricants and other Fluids

## CEC Management Board

Nigel Elliot – ExxonMobil  
Benoit Engelen - Total

Peter Brett – BP  
Bob Mainwaring - Shell

Anders Roj – Volvo AB  
Paul Greening – ACEA director

Derek Mackney – Lubrizol, Chairman:  
Ian Field – Infineum  
Frank Stunnenberg – Chevron Oronite

CONCAWE

ACEA

ATIEL

ATC

CEC Board

CEC  
Secretariat

TDG

SG

Support  
Groups



# The Coordinating European Council

for the Development of Performance Tests for Fuel, Lubricants and other Fluids

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CONCAWE

ACEA

ATIEL

ATC

CEC Board

CEC  
Secretariat

Articles of  
Association

Bye-Laws

Guidelines

Test  
Methods

Legal  
requirement

Constitution

How to  
operate

End result



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## ACEA European Oil Sequences and EELQMS

In 1995 the European industry associations ACEA, ATC and ATIEL developed a quality system to ensure that engine lubricants claiming performance against the ACEA Oil Sequences would have been developed and tested according to best industry practices.


This system is called the “**European Engine Lubricant Quality Monitoring System (EELQMS)**”


There are 4 major parts:

1. ACEA European Oil Sequences
2. ATC Code of Practice
3. ATIEL Code of Practice
4. CEC test methods



The ATIEL Code of Practice for Developing Engine Oils  
Meeting the Requirements of the ACEA Oil Sequences



A SECTOR GROUP OF 

ATC  
CODE OF PRACTICE

A Code of Practice devised by the members of the European lubricant additive industry. The Code is intended to aid continuous improvement in the development of engine lubricants and the consistency and validity of performance claims made for them.

The Code specifies engine tests, procedures and record keeping.

L-54	01	Content:	10-Nov-08
CEC Code	L-54-96		
Test Method	Fuel Economy Effects of Engine Lubricants		
Rig / Engine	Mercedes Benz M111 E20		
Status	Surveillance		
Issue N°	11		
Date of last modification	10-Nov-08		
Review Frequency	Annual		


CEC RELEASE DATE 10th November

Revision

Master Copy on the CEC Web-Site


Approved for publication by Management Board

Name: ...P.M.J. Thomassen...  
Chairman



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ACEA  
European  
Automobile  
Manufacturers  
Association

ACEA EUROPEAN OIL SEQUENCES

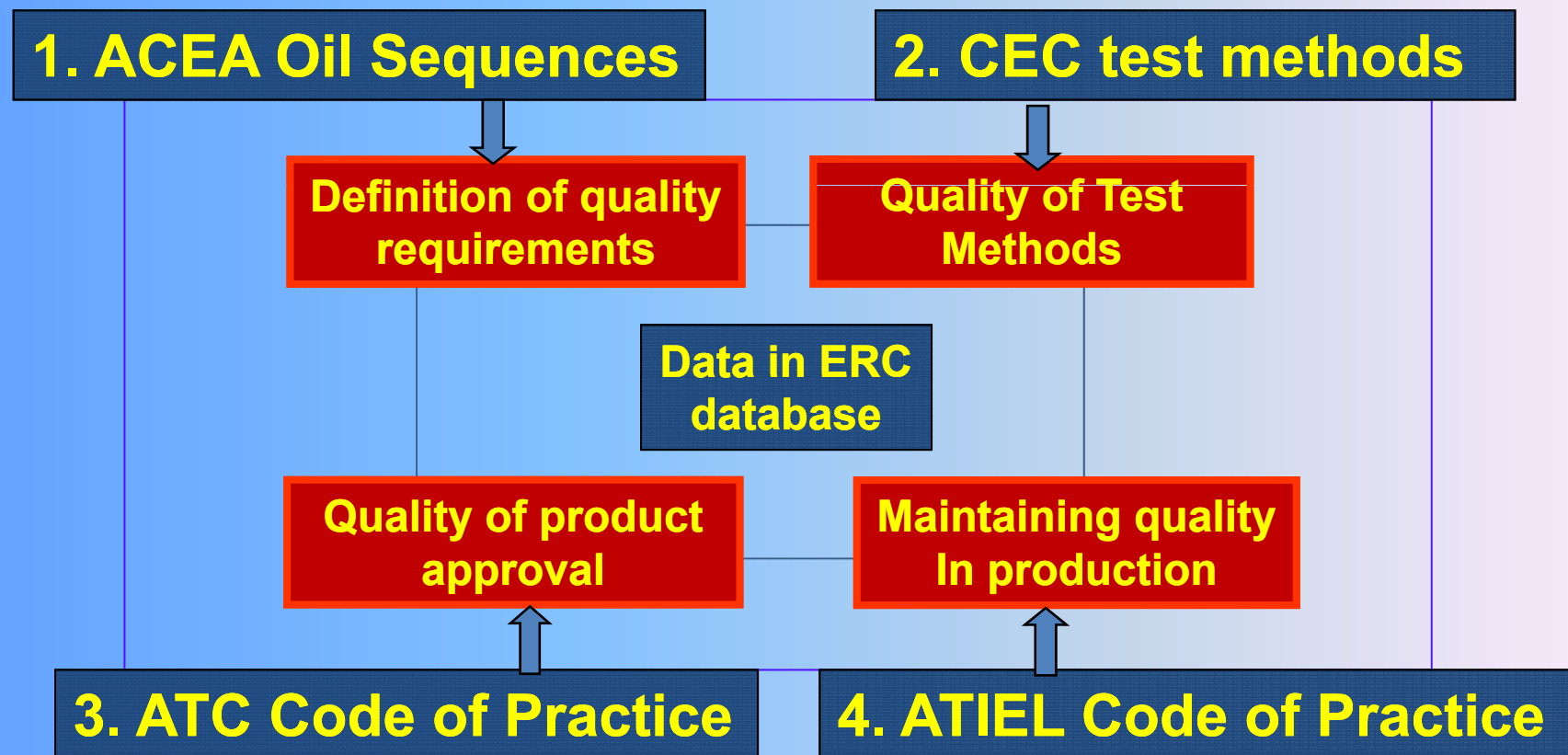
2010

SERVICE FILL OILS FOR  
GASOLINE ENGINES  
LIGHT DUTY DIESEL ENGINES  
ENGINES WITH AFTER TREATMENT DEVICES and  
HEAVY DUTY DIESEL ENGINES

Laboratory tests for gasoline and light duty diesel engine oils.  
Engine tests for gasoline and light duty diesel engine oils.  
Laboratory tests for engine with after treatment devices.  
Engine tests for engine with after treatment devices.  
Laboratory tests for heavy duty diesel engine oils.  
Engine tests for heavy duty diesel engine oils.

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VIA BE 444 072 435  
RGB 210-000404-04

## CEC's role in EELQMS







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## CEC Mission

Managed by  
industry  
stakeholders

Quality  
processes for  
test labs

TMS for  
bench tests

Rating  
workshops

Use of lead  
lab to  
develop new  
tests

**All CEC processes  
combine to provide high  
quality tests that will  
reliably assess the true  
performance of a lubricant  
or fuel**

Support of  
statistics  
group

Terms of  
reference for  
new test  
development

Expert fuels  
and lubes  
advisors

Monitoring  
and  
referencing of  
test engines



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# CEC Test Methods

## Engine Oils – Passenger Cars

- CEC L-38-94 - Gasoline Engine Valve Train Scuffing Test (PSA TU3 Engine)
- CEC L-53-95 - Evaluation of Sludge in Gasoline Engines (MB M111 E20)
- CEC L-54-96 – Fuel Economy Effects of Engine Lubricants (MB M111 E20)
- CEC L-78-99 – DI Diesel Ring Sticking & Piston Cleanliness Test (VW 1.9L Turbocharged)
- CEC L-88-02 - Evaluation of Oil Viscosity Increase, High Temperature Deposits & Ring Sticking in Gasoline Engines (Peugeot TU5 JP+)
- CEC L-93-04 - Oil Dispersion Test at Medium Temperature for Passenger Car Direct Injection Diesel Engines

## Engine Oils – Heavy Duty Diesel

- CEC L-101-09 - Piston Cleanliness and Bore Polishing Test (OM 501LA)

## Engine Oils – Light & Heavy Duty Diesel

- CEC M-100-09 - Code of Practice Turbo Deposits
- CEC L-99-08 – Evaluation of engine crankcase lubricants with respect to low temperature lubricant thickening & wear under severe operating conditions (OM646LA)



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# CEC Test Methods

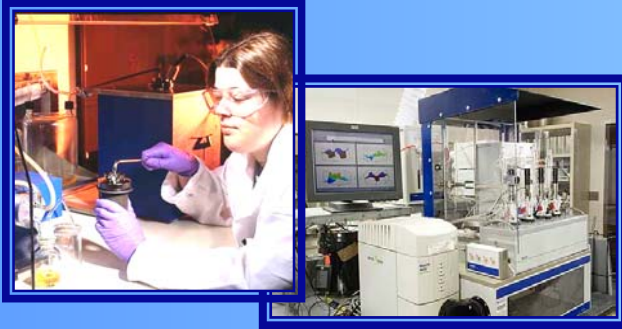
## Automotive Fuels

- CEC F-05-93 - Inlet Valve Cleanliness in the MB M102E Engine
- CEC F-16-96 - Assessment of the Inlet Valve Sticking Tendency of Gasoline Fuels (VW Waterboxer Gasoline Engine)
- CEC F-20-98 - Deposit Forming Tendency on Intake Valves.
- CEC F-23-01 - Procedure for Diesel Engine Injector Nozzle Coking Test (PSA XUD9A/L 1.9 Litre 4 Cylinder indirect injection diesel engine)
- CEC F-98-08 - Direct Injection, Common Rail Diesel Engine Nozzle Coking Test.
- CEC M-92-03 – Code of Practice - Engine Non-Start Problems Relating to CCD Flaking (CCDs = Combustion Chamber Deposits)



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# CEC Test Methods

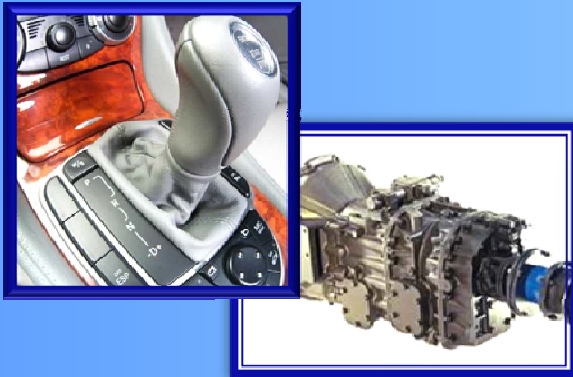
## Bench Tests

- CEC L-14-93 - Shear Stability of Lubricating Oils Containing Polymers (Fuel Injection Pump)
- CEC L-36-90 - The Measurement of Lubricants Dynamic Viscosity, High Shear
- CEC L-39-96 - The Evaluation of Oil - Elastomer Compatibility (Laboratory Test)
- CEC L-40-93 - Evaporation Loss of Lubricating Oils (NOACK Evaporative Tester)
- CEC L-48-A-00 - Oxidation Stability of Lubricating Oils used in Automotive Transmissions by Artificial Ageing (Laboratory Test)
- CEC L-82-97 - Spectrophotometric determination of Soot in Used Engine Oil
- CEC L-83-97 - Measurement of Kinematic Viscosity @100 Deg C of Used Oil Samples
- CEC L-85-99 - Hot Surface Oxidation ? Pressure Differential Scanning Calorimeter (PDSC)
- CEC F-06-96 - Measurement of Diesel Fuel Lubricity (HFRR fuel lubricity tester)



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# CEC Test Methods

## Transmission Fluids

- CEC L-07-A-95 - Load Carrying Capacity Test for Transmission Lubricants (FZG Test Rig)
- CEC L-45-99 - Viscosity Shear Stability of Transmission Lubricants (Taper Roller Bearing Rig)
- CEC L-66-99 - Evaluation of the Synchromesh Endurance Life using the FZG SSP 180 synchromesh test rig
- CEC L-84-02 - FZG Scuffing Load Carrying Capacity Test for High EP Oils





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## CEC Test Methods



### Marine & Large Engine Oils

- CEC L-94-10 Determination of Asphaltenes in Used Engine Oil
- CEC L-47-M-97 (U) - Recommended Standard Methods for Analysis of Used Oil from Large Diesel Engines (including CEC M-12-T-91 Sampling of Engine Lubricants on Board Ship)

### Two-Stroke Engine Oils

- CEC L-33-A-93 (U) - Biodegradability of Two-Stroke Cycle Outboard Engine Oils in Water

### Reference Fluids Manuals

- CEC P-017-97 - Reference Fuels Manual.
- CEC P-072-98 - Reference Oils Manual.

(U) Unsupported – no longer supported by a CEC Group

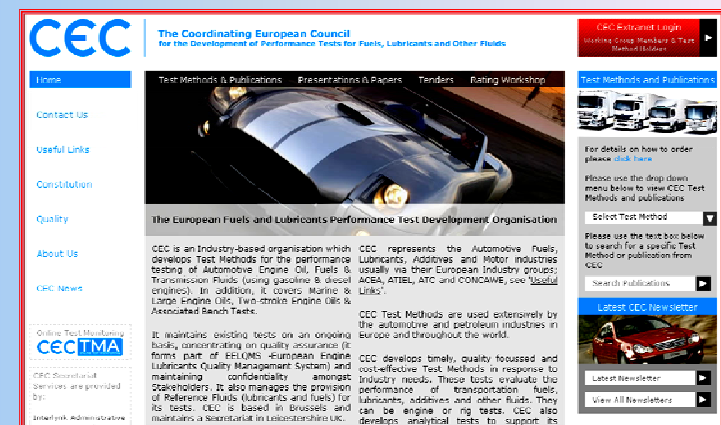


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# CEC Secretariat

Website: [www.CECtests.org](http://www.CECtests.org)


- Secretarial & administrative support to Management Board
- Finance, Legal and Accounts
- Support to all CEC Groups
- Maintenance, updating and sales of Test Methods
- Maintenance of CEC's secure Web Site and information to stakeholders.
- TMS facilitator
- Helpdesk facility
- Organisation of CEC Conferences






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CEC - Website: [www.CECtests.org](http://www.CECtests.org)



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Online Test Monitoring  


CEC Secretariat  
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**CEC Test Methods and Publications For Sale**

**Standard test methods**

Used world-wide for quality control. CEC Test Methods are used extensively by the automotive and petroleum industries in Europe and throughout the world.

By using CEC test methods to the approved quality standards, OEM's and suppliers avoid the requirement for expensive and time-consuming individual tests.

CEC develops timely, quality focussed and cost-effective test methods in response to Industry needs.

These tests evaluate automotive engine oil, fuels and transmission fluids, using gasoline and diesel engines. CEC test methods also cover marine & large engine oils, two-stroke engine Oils, associated bench tests, plus industrial and hydraulic Fluids.

**Codes of Practice**

CEC test procedures that do not apply to a specific engine type. These procedures can be applied to various test apparatus under different situations.

**General publications**

Include resources for companies wishing to deploy CEC test methods, including Reference Fuel and Oil manuals. Also the ISO17025 Interpretation Document for CEC Engine Test Methods defines specific requirements for laboratories.

**Reports**


The results of surveys and analyses carried out by CEC working groups on specific topics.

**Disclaimer**

CEC Test Methods, Codes of Practice and all its other publications do not purport to address all of the safety concerns, if any, associated with their use. It is the responsibility of the user to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use

**CEC Extranet Login**  
Working Group Members & Test Method Holders

**Test Methods and Publications**



For details on how to order please [click here](#)


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# Test Laboratory Quality Requirements

All laboratories running CEC tests must have an ISO 9001 equivalent system for the general quality definition and procedures.

For engine/rig tests an ISO 17025 equivalent system is required.

Laboratories must actively participate in CEC Group activities, meetings and round robins. E.g., every laboratory must contribute to the improvement of the test method and share data/experience.



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## Test Laboratory OEM Quality Requirements

Especially for lubricant engine tests included in the ACEA Oil Sequences additional requirements must be satisfied:

- Audit by supporting OEM
- Confidentiality agreement with OEM

These requirements may exclude laboratories not meeting the “standard” required by CEC and the supporting OEM.






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# CEC Web-based Test Monitoring

- Simple process for uploading Reference data and Graphical software for analysis of data
- Location: [www.cec-tms.net](http://www.cec-tms.net)



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CEC Performance Tests

You have entered an incorrect username and / or password. Please try again.

Username:

Password:


Login

Online Test Monitoring

An online system has been adopted for monitoring all non-ERC database CEC tests. Introduction of the new system, which makes it easy to capture and analyse real-time reference test data, will be completed by 2008 and is key to maintaining test quality.

Reference test results are recorded on a continuous basis rather than the traditional manual 'round robin' approach. Members can display, analyse and compare reference test results in graphic format across all key test parameters, making this a powerful tool for monitoring test quality and spotting data trends.

Enter your login details on the left to sign in the CEC Online Test Monitoring System

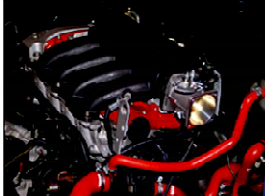


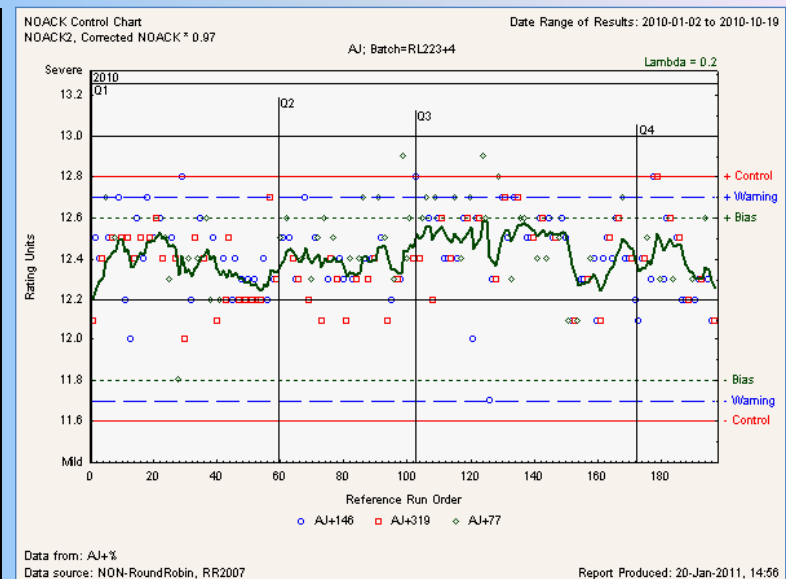
About CEC

CEC is an industry-based organisation for the development of new Test Procedures for the performance testing of Automotive Engine Oil, Fuels & Transmission Fluids (using gasoline & diesel engines). In addition, it covers Marine & Large Engine Oils, Two-stroke Engine Oils & Associated Bench Tests.

It maintains existing tests on an ongoing basis, concentrating on quality assurance (it forms part of EELQMS - European Engine Lubricants Quality Management System) and maintaining confidentiality amongst Stakeholders. It also manages the provision of Reference Fluids (lubricants and fuels) for its tests. CEC is based in Brussels and maintains a Secretariat in Leicestershire UK.

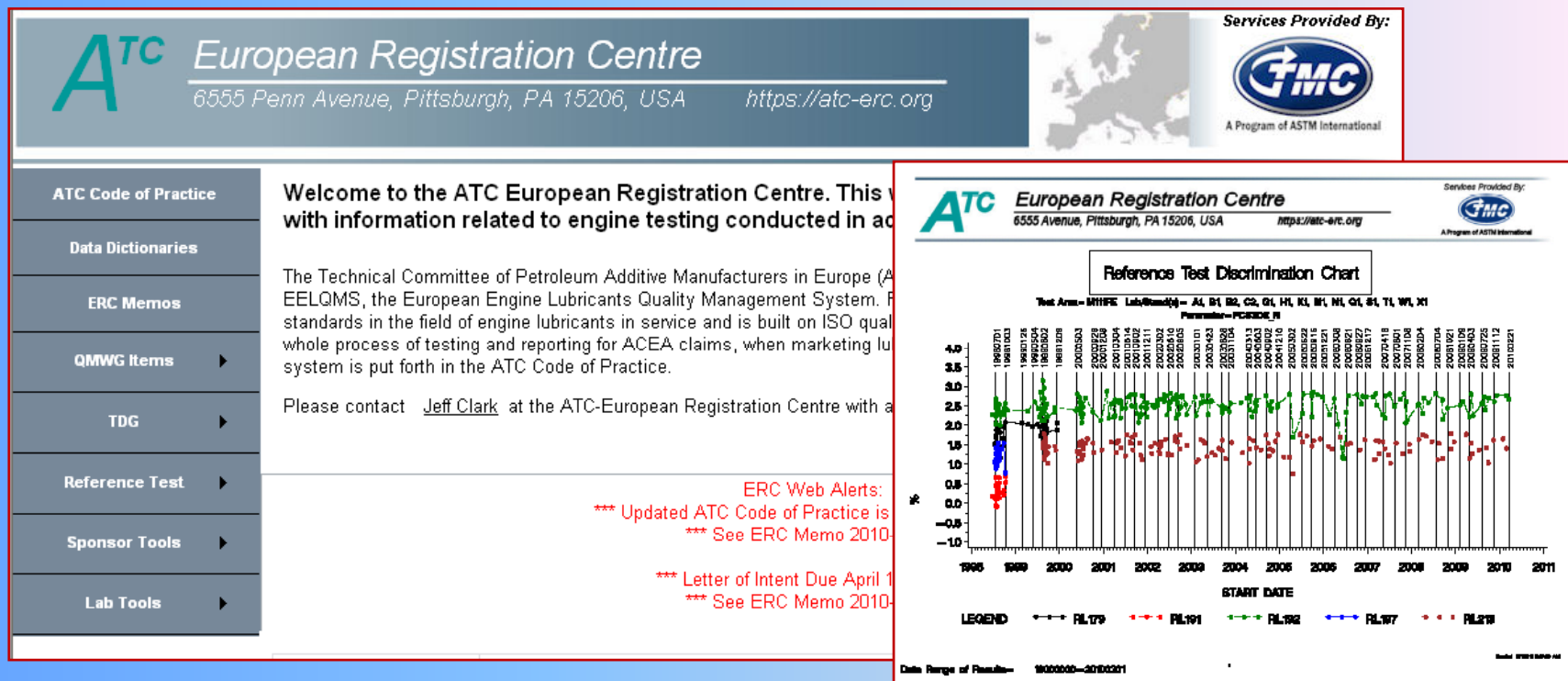
For More information on CEC [click here](#).





ERC – ATC's European Registration Centre  
<https://atc-erc.org>

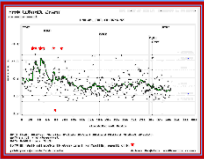
- **Candidate test registration database**
- **Reference test registration database and charting**



# Support Groups

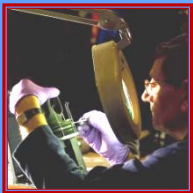
- **Statistical Development Group -SDG**

- A designated Statistical Development Liaison Officer allocated to each Group
- Assuring Quality of Test Results



- **Rating Group - RG**

- Regular Workshops for Raters
- Ensure Rating is consistent across the industry



- **Reference Fuels Group - RFG**

- A suite of reference fuels are supplied for use within TDG and SG test groups to ensure consistency of fuel used.



- **Reference Oils Group - ROG**

- Reference oils are supplied to TDG and SG test groups to enable the initial development of tests using calibration oils and to ensure correct severity of testing by running Round Robins and/or set reference frequency protocols.





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## Recent Test Developments

- CEC F-98-08 – Injector Fouling in Direct Injection Diesel Engines (DW10)
- CEC L-99-08 – Diesel Engine Wear Test (OM646LA)
- CEC L-101-09 - Piston Cleanliness and Bore Polishing Test (OM 501LA)
- Turbo Deposits Test - Code of Practice
- CEC L-94-10 Determination of Asphaltenes in Used Engine Oil

## New Developments

- TDG-L-103 – Biological Degradability
- TDG L-104 - Effects of Biodiesel Fuel (March 2010)
- TDG L-105 - Low Temperature Operability Test
- CEC L-93-04 - Oil Dispersion Test at Medium Temperature for Passenger Car Direct Injection Diesel Engines - Replacement test using an Euro 5 engine is under discussion

## CEC L-99-08 - Diesel Engine Wear Test (OM646LA)

- Replacement for OM602A in ACEA and for OM611LA in Mercedes-Benz (MB) in-house specifications
- Cam wear is main parameter for ACEA.
- MB parameters include – Piston merits, Cylinder, Ring, Timing chain and
- Bearing wear, Viscosity increase, Bore polishing and Engine sludge
- B5 Biodiesel used
- 300 hours cyclic test



OM 646 LA - Euro V

- Engine type: R4 CDI
- Capacity: 2.2 l
- Power max: 110 kW
- Torque max: 340 Nm



## CEC L-101-09 - Piston Cleanliness and Bore Polishing Test (OM 501LA)

- Replacement for OM441LA in ACEA and Mercedes-Benz (MB) specifications
- Piston merit is main criteria for ACEA
- MB parameters include - Engine sludge, General engine deposits, Bore polishing, Cylinder wear, Ring sticking and Oil consumption.
- B5 Biodiesel used
- 300 hours cyclic test



OM 501 LA - Euro V

- Engine type: HDD V6
- Capacity: 11.9 l
- Power max: 350 kW
- Torque max: 2300 Nm

## New Test Development Group (TDG): CEC TDG-L-104 – Effects of Biodiesel Test (OM646LA)

### Terms of Reference for TDG-L-104

- 1<sup>st</sup> meeting : 12<sup>th</sup> March 2010
- New Biodiesel test to determine the effects on Piston deposits, Engine Sludge and Oil degradation.
- Using the same Daimler AG OM 646 DE 22 LA engine as used in CEC L-099.
- Test Fuel - B15 = 85% Diesel Fuel + 15% FAME
- Test Oil will be diluted with  $\approx$  7% B100



OM 646 LA - Euro V

- Engine type: R4 CDI
- Capacity: 2.2 l
- Power max: 110 kW
- Torque max: 340 Nm

## New Test Development Group (TDG): (CEC TDG-L-105) Low Temperature Pumpability for Used Oils

### Terms of Reference for TDG-L-105

- Development of an bench test which simulates low temperature pumpability problems observed in the field during the cold Winter of 2008/2009
- ISP selected by tender as the Lead Laboratory
- TDG will evaluate low temperature pumpability (as measured by MRV) of engine oil dosed with biofuel and aged in laboratory glassware. The initial phase of the test development will include an investigation phase. It's expected that the following factors will be investigated:
  - Test hardware and type: GFC or Daimler
  - Modifications to current GFC oxidation and Daimler oxidation methods
  - Fuel type (B15 or B100)
- First meeting 15<sup>th</sup> December 2010





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# Potential Future Test Developments

- Updated Engine for DV4 - CEC L-93-04
- New Gasoline Sludge Test, replacing the M111.
- New Fuel Tests under consideration.
- New Fuel Economy test



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***On behalf of the CEC Management  
Board,  
Thank You  
for visiting us today.***