



# ISO/TC 28 Petroleum products and lubricants

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## CEN/TC 19 Liaison Report to the 23<sup>rd</sup> meeting of ISO/TC 28

### 1) Meetings

CEN/TC 19 has met in June 2003 in Cannes, France. The Technical Committee plans to meet again in May 2005 in Oslo, Norway.

### 2) Fuel specifications and test methods (WG 21, 23, 24)

In January this year the fuel specifications EN 228 (petrol), EN 589 (LPG) and EN 590 (diesel) have been published. Starting from 1-1-2005 lower sulfur and aromatics contents are legally required and the majority of the EU countries literally follow the CEN specifications. Main changes are updating of the test methods for sulfur (UVF, WDXRF and EDXRF), benzene, olefins and aromatics (multi-GC), water content, flash point and ash content. Furthermore, it is allowed to blend up to 5% biodiesel according to EN 14214.

Most of the referenced test methods in the European fuel specification standards are developed and published by ISO/TC 28 (Parallel processing under "Vienna Agreement"). This close cooperation with ISO/TC 28 is highly appreciated as long as this will not cause any delay as compared to the normal CEN route. The remaining work is now to update all draft standards referenced in EN 228 and EN 590. This will be done in one correction run after all test methods are published. Progress in the ISO/TC 28 work is therefore still essential.

Actual matters of interest concerning the EU fuel specifications are ethanol (see later on), silver corrosion, DCN, free water and residue in diesel. A proposal of the UK to further update the FIA method has not been supported by the majority in CEN.

#### 2.1) Silver corrosion

CEN/TC 19/WG 21 has not found conclusive data to amend the gasoline specification, incorporating a silver corrosion test, also because no robust test method exists at the moment.

#### 2.2) Derived Cetane Number

CEN/TC 19 has started a new work item to adopt IP 498-04 as an European Standard. At the moment the project leader is preparing a draft. Enquiry is estimated to start in November 2004.

#### 2.3) Free water

A special Taskforce has studied the problems with free water in diesel. A standard test method has not been suggested, but the WG 24 convenor wrote an official letter to the oil and OEM industry to emphasize the problem. Another TF has started investigational work together with CONCAWE to prepare a Guide for good housekeeping for the oil industry.

#### 2.4) Residues in diesel (WG 31)

A RR on a total contamination gravimetric measurement has nearly been finalised. A pass-fail criterion like in the aviation fuel tests, rather than an quantitative limit is preferred by the experts. The experts also indicated their preference to know more details on the effect of additives and filtration time.

### 3) Mandate M/238 "Fire-resistant hydraulic fluids" (WG 28)

A good part of the work is finished and the documents have been brought to publication, very recently EN ISO 20763. EN 14489 (Guidelines for the selection of fluids and the consideration of safety, health

and environmental hazards) has not passed the balloting and will now be published as a CEN/TS. At the moment the adoption of ISO 4263-1:2003 as EN-ISO-method is under UAP ballot.

#### **4) FAME test methods**

Since the work of CEN/TC 307 and CEN/TC 19/WG 26, the experience with biodiesel has evolved and so should have the precision. A taskforce has started to study improvements for:

1. ester and polyunsaturated ester content,
2. triglyceride and free glycerol content
3. metals content,
4. stability.

Once the test methods are published, revision of EN 14214 (automotive) and EN 14213 (heating) will follow. No ISO methods are involved. Estimated project time is two years. Furthermore, an IR determination method for FAME in fuel (EN 14078) has been published in November 2003 and the ICP-OES method prEN 14538 for Ca and Mg will be published for formal vote this year.

#### **5) Ethanol**

The EC has given a mandate to CEN to:

- write a ethanol specification for blending up to 5 % in gasoline according to EN 228,
- write an industry agreement on a 85 % ethanol blend for adapted vehicles, and
- define a determination of the biological origin of bio-ethanol to distinguish it from fossil ethanol

Work on all three parts has been initiated and is in different stages of development

#### **6) Other activities**

The two fuel quality monitoring Standards (EN 14275 and EN 14275) have been published in 2003 and have also been implemented in the EU reporting scheme on fuel quality (gasoline and diesel).

EN 14517 (multidimensional GC) will be published this month. It will no be brought to revision under parallel development with ISO/TC 28.

A RR on two ISO 13757-alternative, environmentally more friendly LPG residue test methods has been initiated. Results will be discussed next month.

Draft text of EN 12916 (Aromatics by HPLC) and the revision of EN 116 (CFPP) are being balloted. The former ISO NWI's 15595 and 15596 have passed enquiry stage as prEN 14832 and prEN 14833.

CEN has started drafting a Technical Report on Guidance to flash point methods (under leadership of Mr. Phipps) and a threefold European Standard on simulated distillation (led by Mr. Spaans). Also it intends to draft a Standard for determination and detection method for solvent yellow 124, the new EU colouring agent for diesel.

Two work items have been withdrawn in the last two years "Determination of total aromatics by two dimensional gas chromatography" and "Determination of benzene, toluene and methyl-tert-butylether in petrol - Method by capillary gas chromatography".

#### **7) Parallel development requests**

At the last two ISO/TC 28 meetings urgent revision of ISO 3170, ISO 3837, ISO 3838 and ISO 4259 was requested by CEN/TC 19. This request is still valid for the last one, whereas for the FIA method we have reconciled ourselves to the automatic deletion from the TC 28 work programme.

Furthermore, our recommendation to ISO/TC 28 to start an early revision of ISO 12156-1 (diesel lubricity) has not exactly been followed. However, we have a DIS ballot on a full revision now, which incorporates CEC SF-006. The MON and RON test methods' revision progress is still important.

*CEN/TC 19 reiterates its request of an early revision of ISO 14596:1998, "Petroleum products - Determination of sulfur content - Wavelength dispersive X-ray fluorescence method", which is now under consideration by ISO/TC 28.*

Our needs are less insistent, but we still appreciate discussion on how to progress and speed up future parallel developments. Furthermore, the MOU is still of interest to the CEN community.

The progress of all other CEN/TC 19 standards on the parallel programme, with ISO/TC 28 under "Vienna Agreement", for instance flash point methods being developed by the Joint Working Group ISO/TC 28/ & TC 35 and CEN counterparts CEN/TC 19 & TC 139, can be found at the attached CEN/TC 19 Work Programme.

### **8) Update on CEN/TC 19 Working groups**

<b><u>Working Group</u></b>	<b><u>Title</u></b>
JWG	Flash point methods Convenor: Mr. J. Phipps (Institute of Petroleum); BSI/IP, UK
WG 9 <sup>1</sup>	Benzene, oxygenates, aromatics and olefins in gasoline Convenor: Mr. J-C. Froehling (Aral); DIN/FAM, Germany
WG 14	Cold flow properties of diesel fuels Convenor: Mr. W. Dörmer (Aral); DIN/FAM, Germany
WG 15	Vapor pressure test methods Convenor: Mr. R.W. Hooks (Shell); BSI/IP. UK
WG 18	Aromatics in diesel fuels Convenor: Ms. E. Remy (Totalfina-ELF); AFNOR/BNPé, France
WG 21 <sup>2</sup>	Specification for unleaded petrol Convenor: Mr. C.A.F. Stapel (ExxonMobil); NEN, Netherlands
WG 22	PCB in lubricating oils, petroleum products and used oils Convenor: Mr. S.H. Kägler (PETR-U-S); DIN/FAM, Germany
WG 23	Specification for automotive LPG Convenor: Mr. J. Visser (BP); NNI, Netherlands
WG 24 <sup>3</sup>	Specification for automotive diesel Convenor: Mr. C. Bartlett; BSI/IP. UK
WG 25	Specification for FAME used as fuel for heating oil Convenor: Mr. F. Heger (OMV); ON, Austria
WG 27	Elemental analysis of petroleum and related products Convenor: Mr. P. Tittarelli (SSC); UNI, Italy
WG 28	Fire-resistant hydraulic fluids Convenor: Mr. J. Reichel; DIN/FAM, Germany
WG 29	Test methods for LPG Convenor: Mr. B. d'Haen (BK-Gas); NEN, the Netherlands
WG 31	Total contamination Convenor: Mr. J. Bennett (Ford); BSI/IP, UK

<sup>1</sup> Including a specific Taskforce on "Solvent Yellow 124" and on "Ethanol test methods"

<sup>2</sup> Including a specific Taskforce on "Ethanol as Extender for Gasoline"

<sup>3</sup> Including specific Taskforces on "FAME for blending purposes in Diesel", "Ignition Quality" and "Guidance for good house keeping"

**CEN/TC 19 Work Program as of 31-08-2004**

Standard	Part	Title	Phase
<i>Mandate requests</i>			
		Specification of ethanol as a gasoline-blending component	WD due
228		Automotive fuels - Unleaded petrol - Requirements and test methods	EN
589		Automotive fuels - LPG - Requirements and test methods	EN
590		Automotive fuels - Diesel - Requirements and test methods	EN
1601		Liquid petroleum products - Unleaded petrol - Determination of organic oxygenate compounds and total oxygen content by gas chromatography	EN
14078		Liquid petroleum products – Determination of fatty acid methyl ester (FAME) content in middle distillates – Infrared spectrometry	EN
14213		Heating oils - Fatty acid methyl esters (FAME) - Requirements and test methods	EN
14214		Automotive fuels - Fatty acid methyl esters (FAME) for diesel engines - Requirements and test methods	EN
14274		Automotive fuels - Assessment of petrol and diesel quality -Fuel quality monitoring system (FQMS)	EN
14275		Automotive fuels -Assessment of petrol and diesel quality - Sampling from retail site pumps and commercial site fuel dispensers	EN
14489		Fire-resistant hydraulic fluids - Guidelines for the selection of fluids and the consideration of safety, health and environment	prEN/TR due
<i>Items only in CEN, referred to in the automotive fuel specifications</i>			
116	rev	Diesel and domestic heating fuels - Determination of cold filter plugging point	WD due
237	rev	Liquid petroleum products - Petrol - Determination of low lead concentrations by atomic absorption spectrometry	prEN FV issued
238		Liquid petroleum products - Petrol - Determination of the benzene content by infrared spectrometry	EN
12177		Liquid petroleum products - Unleaded petrol - Determination of benzene content by gas chromatography	EN
12662		Liquid petroleum products - Determination of contamination in middle distillates	EN
13016	-1	Liquid petroleum products - Vapour pressure - Part 1: Determination of air saturated vapour pressure (ASVP)	prEN CE due
14517		Petroleum products - Determination of hydrocarbon types and oxygenates in petrol - Multidimensional gas chromatography	publication due
<i>Items only in CEN, related to the automotive fuel specifications</i>			
		Applicability of test method standards for Fatty Acid Methyl Esters (FAME) - Information and results on round robin tests	prEN/TR due
241		Diesel fuels - Determination of Derived Cetane Number for automotive fuels	WD issued
		Liquid petroleum products - Determination of sodium content - Atomic absorption spectrometric method	EN
12634		Petroleum products and lubricants - Determination of acid number - Potentiometric titration method	EN
12916		Petroleum products - Determination of aromatic hydrocarbon types in middle distillates - High performance liquid chromatography	prEN CE issued
13016	-2	Liquid petroleum products - Vapour pressure - Part 2: Determination of absolute vapour pressure (AVP) between 40 °C and 100 °C	prEN CE due
13132		Liquid petroleum products - Unleaded petrol - Determination of organic oxygenate compounds and total organically bound oxygen c	EN
13837		Automotive diesel fuels - Determination of filtrability - SFPP method	CR
13838		Automotive diesel fuels - Determination of filtrability - Agelfi method	CR
14538		Fat and derivatives – Fatty acid methyl ester (FAME) – Determination of Ca and Mg content by optical emission spectral analysis	prEN CE issued
<i>Items only in CEN, not related to mandate work</i>			
		Petroleum products - Determination of nickel and vanadium content - Sample preparation by microwave incineration technique	WD due
		Petroleum products - Simulated distillation (SimDist) by gas chromatography (GC)	WD issued
		CEN/TR Flash point testing - A Guide	WD issued
		Fuels supply chain - House-keeping guide	NWI issued
12766	-1	Petroleum products and used oils - Determination of PCBs and related products - Part 1: Separation and determination of selected PCB congeners by gas chromatography (GC) using an electron capture detector (ECD)	EN
12766	-2	Petroleum products and used oils - Determination of PCBs and related products - Part 2: Calculation of polychlorinated biphenyl	EN
12766	-3	Petroleum products and used oils - Determination of PCBs and related products - Part 3: Determination and quantification of pol	prEN FV issued
13131		Liquid petroleum products - Determination of nickel and vanadium content - Atomic absorption spectrometric method	EN
13723		Petroleum products - Determination of low lead contents in gasolines - Wavelength-dispersive X-ray fluorescence spectrometry (X	EN

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Standard	Part	Title	Phase
14077		Petroleum products - Determination of organic halogen content - Oxidative microcoulometric method	EN
14331		Liquid petroleum products - Separation and characterization of fatty acid methyl esters (FAME) and middle distillate fuels - Li	EN
14832		Petroleum and related products - Determination of the oxidation stability and corrosivity of fire-resistant fluids	prEN CE issued
14833		Petroleum and related products - Determination of hydrolytic stability of fire-resistant fluids	prEN CE issued
<i>Items in cooperation with ISO, referred to in the automotive fuel specifications</i>			
2160		Petroleum products - Corrosiveness to copper - Copper strip test	EN ISO
2719		Determination of flash point - Pensky-Martens closed cup method	EN ISO
3015		Petroleum products - Determination of cloud point	EN ISO
3104		Petroleum products - Transparent and opaque liquids - Determination of kinematic viscosity and calculation of dynamic viscosity	EN ISO
3170		Petroleum liquids - Manual sampling (ISO 3170:2004)	EN ISO
3171		Petroleum liquids - Automatic pipeline sampling	EN ISO
3405		Petroleum products - Determination of distillation characteristics at atmospheric pressure	EN ISO
3675		Crude petroleum and liquid petroleum products - Laboratory determination of density - Hydrometer method	EN ISO
3993		Liquefied petroleum gas and light hydrocarbons - Determination of density or relative density - Pressure hydrometer method	EN ISO
4256		Liquefied petroleum gases - Determination of gauge vapour pressure - LPG method	EN ISO
4257		Liquefied petroleum gases - Method of sampling (ISO/DIS 4257:1997)	EN ISO
4259	rev	Petroleum products - Determination and application of precision data in relation to methods of test	prEN ISO/DIS issued
4260		Petroleum products and hydrocarbons - Determination of sulfur content - Wickbold combustion method	EN ISO
4264		Petroleum products - Calculation of cetane index of middle-distillate fuels by the four-variable equation	EN ISO
5163	rev	Petroleum products - Determination of knock characteristics of motor and aviation fuels - Motor method	prEN ISO/DIS issued
5164	rev	Petroleum products - Determination of knock characteristics of motor fuels - Research method	prEN ISO/DIS issued
5165		Petroleum products - Determination of the ignition quality of diesel fuels - Cetane method	EN ISO
6245		Petroleum products - Determination of ash	UAP issued
6246		Petroleum products - Gum content of light and middle distillate fuels - Jet evaporation method	EN ISO
6251		Liquefied petroleum gases - Corrosiveness to copper - Copper strip test	EN ISO
7536		Petroleum products - Determination of oxidation stability of gasoline - Induction period method	EN ISO
7941		Commercial propane and butane - Analysis by gas chromatography	EN ISO
8819		Liquefied petroleum gases - Detection of hydrogen sulfide - Lead acetate method	EN ISO
8973		Liquefied petroleum gases - Calculation method for density and vapour pressure	EN ISO
10370		Petroleum products - Determination of carbon residue - Micro method	EN ISO
12156	1	Diesel fuel - Assessment of lubricity using the high-frequency reciprocating rig (HFRR) - Part 1: Test method (ISO 12156-1:1997)	prEN ISO/DIS due
12185		Crude petroleum and petroleum products - Determination of density - Oscillation U-tube method	EN ISO
12205		Petroleum products - Determination of the oxidation stability of middle-distillate fuels	EN ISO
12937		Petroleum products - Determination of water - Coulometric Karl Fisher titration method	EN ISO
13757		Liquefied petroleum gases - Determination of oily residues - High-temperature method	EN ISO
13758		Liquefied petroleum gases - Assessment of the dryness of propane - Valve freeze method	EN ISO
13759		Petroleum products - Determination of alkyl nitrate in diesel fuels - Spectrometric method	EN ISO
20846		Petroleum products - Determination of sulfur content of automotive fuels - Ultraviolet fluorescence method	EN ISO
20847		Petroleum products - Determination of sulfur content of automotive fuels - Energy-dispersive X-ray fluorescence spectrometry	EN ISO
20884		Petroleum products - Determination of sulfur content of automotive fuels - Wavelength-dispersive X-ray fluorescence spectrometry	EN ISO
<i>Items in cooperation with ISO, related to the automotive fuel specifications</i>			
2592		Petroleum products - Determination of flash and firepoints - Cleveland open cup method (ISO 2592:2000)	EN ISO
3696		Water for analytical laboratory use – Specification and methods of test	EN ISO
3830		Petroleum products - Gasoline - Determination of lead content of gasoline - Iodine monochloride method	EN ISO
13736		Petroleum products and other liquids - Determination of flash point - Abel closed cup method	EN ISO

**CEN/TC 19 Work Program as of 31-08-2004**

Standard	Part	Title	Phase
<i>Items in cooperation with ISO, not related to automotive fuel specifications</i>			
1516		Determination of flash/no flash - Closed cup equilibrium method	EN ISO
1523		Determination of flash point - Closed cup equilibrium method	EN ISO
3679		Determination of flash point - Rapid equilibrium closed cup method	EN ISO
3680		Determination of flash/no flash - Rapid equilibrium closed cup method	EN ISO
3735		Crude petroleum and fuel oils - Determination of sediment - Extraction method	EN ISO
3837		Liquid petroleum products - Determination of hydrocarbon types - Fluorescent indicator adsorption method	WI cancelled
3838		Crude petroleum and liquid or solid petroleum products - Determination of density or relative density - Capillary-stoppered pycnometer	publication due
4263	-1	Petroleum products - Determination of the ageing behaviour of inhibited oils and fluids - TOST test - Part 1: Procedure for min	UAP issued
4263	-2	Petroleum products - Determination of the ageing behaviour of inhibited oils and fluids - TOST test - Part 2: Procedure for cat	EN ISO
4267	-2	Petroleum and liquid petroleum products - Calculation of oil quantities - Part 2: Dynamic measurement (revision of ISO 4267-2:1	EN ISO
4404	-2	Petroleum and related products - Determination of the corrosion resistance of fire-resistant hydraulic fluids - Part 2: Non-aqu	EN ISO
6551		Petroleum liquids and gases - Fidelity and security of dynamic measurement - Cabled transmission of electric and/or electronic pulsed data	EN ISO
6743	-4	Lubricants, industrial oils and related products (class L) - Classification - Part 4: Family H (Hydraulic systems)	EN ISO
7278	-1	Liquid hydrocarbons - Dynamic measurement - Proving systems for volumetric meters - Part 1: General	EN ISO
7278	-2	Liquid hydrocarbons - Dynamic measurement - Proving systems for volumetric meters - Part 2: Pipe provers	EN ISO
8222		Petroleum measurement systems - Calibration - Temperature corrections for use with volumetric reference measuring systems (ISO	EN ISO
8311		Refrigerated light hydrocarbon fluids - Calibration of membrane tanks and independent prismatic tanks in ships - Physical measurement	EN ISO
8754		Petroleum products - Determination of sulfur content - Energy-dispersive X-ray fluorescence spectrometry (ISO 8754:2003)	EN ISO
9029		Crude petroleum - Determination of water - Distillation method	EN ISO
12922		Lubricants, industrial oils and related products (class L) - Family H (Hydraulic systems) - Specifications for categories HFAE,	EN ISO
14596		Petroleum products - Determination of sulfur content - Wavelength dispersive X-ray fluorescence method	EN ISO
14597		Petroleum products - Determination of vanadium and nickel in liquid fuels - Wavelength dispersive X-ray fluorescence method	EN ISO
14935		Petroleum and related products - Determination of wick flame persistence of fire resistant fluids	EN ISO
15029	-1	Petroleum and related products - Determination of spray ignition characteristics of fire-resistant fluids - Part 1: Spray flame persistence - Hollow cone nozzle method	EN ISO
15029	-2	Petroleum and related products - Determination of spray ignition characteristics of fire-resistant fluids - Part 2: Spray test - Stabilized flame heat release spray method	prEN ISO/DIS due
15029	-3	Petroleum products - Determination of spray ignition characteristics of fire-resistant fluids - Part 3: Spray test - Large scale method	prEN ISO/DIS due
16591		Petroleum products - Determination of the sulfur content - Oxidative microcoulometric method	prEN ISO/DIS issued
20623		Petroleum and related products - Determination of the extreme-pressure and anti-wear properties of fluids - Four ball method (European conditions) (ISO 20623:2003)	EN ISO
20763		Petroleum and related products - Determination of anti-wear properties of hydraulic fluids - Vane pump method	EN ISO
20764		Petroleum and related products - Preparation of a test portion of high-boiling liquids for the determination of water content - Nitrogen purge method (ISO 20764:2003)	EN ISO
20783	-1	Petroleum and related products - Determination of emulsion stability of fire-resistant fluids - Part 1: Fluids in category HFAE (ISO 20783:2003)	EN ISO
20783	-2	Petroleum products and related products - Determination of emulsion stability of fire-resistant hydraulic fluids - Part 2: Fluids in category HFB (ISO 20783-2:2003)	EN ISO
20823		Petroleum and related products - Determination of the flammability characteristics of fluids in contact with hot surfaces - Manifold ignition test (ISO 20823:2003)	EN ISO
20843		Petroleum and related products - Determination of pH of fire-resistant fluids within categories HFAE, and HFAS and HFC (ISO 20843:2003)	EN ISO
20844		Petroleum and related products - Determination of the shear stability of polymer-containing oils using a diesel injection nozzle	EN ISO