

vehicle emissions as a basis for fuel specifications

introduction to EN 228 and EN 590



INTERNATIONAL CONFERENCE ON BIOFUELS STANDARDS

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European fuels in perspective

- until 1985 there were no European specifications at all
- instead, most European countries had national standards
- remaining needs were satisfied by company specifications dominated by nearly exclusive use of ASTM standards
- CEN/TC19 created only a few test methods of sufficiently common European interest e.g. density, distillation, CFPP

fuel standards in Europe mirrored national boundaries and interests

European policies initiated on health, environment, energy

starting 1985 European policies began to emerge:

- lead & benzene in petrol 85/210/EEC
- oxygenates 85/536 & 87/441/EEC
- fuels emission directive (road) 98/69/EC
 - emission reduction NO_x, CO, CH and PM (diesel only)
 - exhaust+evap. emissions, on-board management
- fuels directive 98/70+2003/17/EC
 - low-S petrol and diesel environmental specifications
 - EU road fuel quality monitoring system
- biofuel directive 03/30/EC
 - CO₂, energy goals (energy content 2% now, 5.75% 2010)



policies - standards interface

- EU policies need technical definitions
- EC preferred CEN technical committees, offering best available fuels & application expertise to develop specification standards
- European standards complement e.g. the environmental laws, adding performance, safety and consumer protection

political decisions required first

- US auto-oil starting point for EU follow-up
- EPEFE, European program on emissions, fuels and engine technology, to design:
 - air quality standards
 - vehicle exhaust emissions limits
 - fuel quality requirements

based on sound protocols and technical info,
air quality data and cost-benefit analysis

focus on knowledge gaps in the engine-fuel interface

- unleaded petrol
 - sulfur, aromatics, E50
- diesel fuel
 - cetane, density, heavy ends, polyaromatics

no attention for alternative fuels, tax policies,
quality monitoring, fleet management etc.

CEN fuel standards in response

1987 first European UL petrol specification

- EN 228 automotive fuels: unleaded petrol
- EN 589 automotive fuels: LPG
- EN 590 automotive fuels: diesel
- EN 14274 fuels quality monitoring system
- followed by standards for biofuels



plus test methods for all the included properties

European motor fuels evolution

20 years of legislation & standardisation created the present set of EU directives and CEN specification standards, in support of:

- improved air quality
- open borders
- security of supply
- customer protection

(oxygenates limits reflect field problems 1974+)

CEN in global perspective

- European international standards body
- cooperating with ISO (Vienna agreement)
- limited liaising with ASTM
- CEN fuel standards used as a reference in many other parts of the world
- ISO/TC28, ASTM D02 and CEN/TC19 try to improve cooperation in international standardisation and avoid duplication

memorandum of understanding ISO/TC28, ASTM D02 and CEN/TC19

trial mou does not meet expectations sofar:
some progress on TC's working level, but

- difficult alignment of TC priorities
- incompatible rules of mother organisations
- competition and differing organisation structures preventing harmonisation

conditions for success in creating global biofuel specs

- participating governments can provide a sound basis, by harmonising policies on international products and applications
- representation of all stakeholders in the process, for full coverage of interests, including consumer protection and safety
- standards bodies may seek cooperation to standardise their internal rules, enough for effective international standardisation

what are standards?

- standards are technical definitions
- prepared by all interested parties
- with consensus, openness, transparency
- in recognised standards organisations
- for voluntary application
- becoming binding only
 - by contract, when agreed by business partners
 - by law, if referenced by a legislator in a legal act