



SÜDZUCKER
G R O U P



Bioethanol Fuel Standards

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Standardization - Introduction

- Goals (selected)
 - Product comparability
 - Product safety
 - Product quality
 - Commodification
 - Environmental protection
 - Health safety and protection

- Standardization policy (selected)
 - Objective and factual
 - Complete stakeholder attendance
 - State of the art
 - Consent oriented
 - General benefit over particular interests
 - Internationality



EU biofuels regulation

- Biofuels directive (2003/30/EG):
 - Minimum percentage of biofuels
 - until end of 2005: 2%
 - until end of 2010: 5.75%
 - Percentage based on energy content

- Consequences
 - **EC Directorate General for Energy and Transport:**
 - **We can not achieve the targets of 5.75% by 2010 with existing legislation & EN 228 (petrol), EN 590 (diesel)!**
 - **The Commission has proposed amending the fuel quality directive to increase the maximum blending of ethanol in petrol to 10 volume% (6.8 energy%). This proposal is under consideration by the Council and the European Parliament.**



National frame conditions

- Coalition pact of Deutsche Bundesregierung, 11.11.2005
 - „bio fuel quota instead of tax incentives“
 - Biokraftstoffquotengesetz BioKraftQuG, 18.9.2006
 - Quota rules for biofuels
 - Energy based quota

- Quota in detail
 - Diesel: from 2007 4.4%
 - Gasoline: from 2007 2.0%
 - from 2010 3.0%
 - additionally
 - Total quota of biofuels
 - from 2009 5.7%
 - from 2010 6.0%

- Political strategy in order to achieve these goals determines any future fuel standards.



EU level bioethanol standards

- CEN Technical Committee TC 19 (Gaseous and liquid fuels and related products of petroleum, synthetic and biological origin)
 - EN 228: Automobile fuels - Unleaded petrol – requirements and test methods
 - EuroSuper „RON 95“
 - Corresponds to **E5** specification
 - prEN 15376: Automotive fuels – Ethanol as a blending component for petrol
 - Concluding the EC mandate M/344
 - Automotive fuels – Ethanol (E85) – Requirements and test methods
 - Based on CWA 15293
 - Currently in preparation



German level bioethanol standards

- DIN FAM (Fachausschuss Mineralöl- und Brennstoffnormung)
Arbeitsausschuss 632 „Anforderungen an flüssige Kraftstoffe“
 - DIN EN 228: Kraftstoffe für Kraftfahrzeuge – Unverbleite Ottokraftstoffe – Anforderungen und Prüfverfahren
 - **E5**: EuroSuper „RON 95“, SuperPlus „RON 98“, national amendment: Normal „RON91“
 - E DIN 51626
 - Standard for gasoline including higher ethanol content
 - Status: comments until mai 2008
 - E DIN EN 15376: Kraftstoffe für Kraftfahrzeuge – Ethanol zur Verwendung als Blendkraftstoff in Ottokraftstoffen - Anforderungen und Prüfverfahren
 - German version of prEN 15376
 - E DIN 51625: Kraftstoffe für Kraftfahrzeuge – Ethanol – Anforderungen und Prüfverfahren
 - Status: final text in preparation



International bioethanol standards

- Different standards in EU, Brazil and USA.
- Tripartite white paper on global bioethanol standards harmonization
 - EU by CEN
 - Brazil by ABTN
 - USA by ASTM
 - Published under http://ec.europa.eu/energy/res/biofuels_standards/international_biofuels_standards.htm
 - Main difference: Water content
 - EU (EN 15376) 0.3 mass-% (corr. 0.2 Vol-%)
 - US 1.0 Vol-%
 - Brazil not specified, calculated 0.4 Vol-%



EN 228 is a E5 specification

- Need for Revision of EN 228 concluding the biofuels directive

	Ethanol Vol-%	ETBE Vol-%	Bioenergy in gasoline Energy-%
Current EN 228	5	0	3.3
	5	5.9	5.6
	10	0	6.6
	10	1.3	7.1



Revision of EN 228

- Max. oxygen content has to be raised
 - Fuel quality directive limit 2.7% (m/m) → 3.7 % (m/m) ?
- Equal treatment with respect to Super and SuperPlus?
 - Normal grade petrol is just part of german national amendment.
- Vapour pressure
- Cautions with cars not appropriate for higher ethanol content.
 - Reopened issue in Germany.



Conclusions

- EN 228 is still valid.
- Revision is mandatory to achieve biofuels quota.

- E85 standards
 - Already official in Austria, France.
 - Germany: Expected in 2008.
 - Expected in 2009 EU wide.

- Harmonization of Ethanol standards amongst EU, Brazil and US has started.
 - Water content is pivotal quality parameter.

