RESULT OF VOTING ON NEW WORK ITEM PROPOSAL
AND COMMITTEE DRAFT

Date	ISO/TC 28 / SC	N 2240
2004-09-10		REVISED

Title of TC/SC concerned
Petroleum products and lubricants

To be completed by the secretariat and sent to the ISO Central Secretariat and to all P- and O-members of the TC or SC concerned, with a copy to the TC secretariat in the case of a subcommittee.

Proposal	ISO/TC **28**/SC	N **2221**	Circulation **2004-05-05**	Deadline **2004-08-05**

Title (new title if appropriate; French title to be indicated in all cases, even when no French version is envisaged)

English title: **ISO 15029-2 Petroleum and related products — Determination of spray ignition characteristics of fire-resistant fluids — Part 2: Spray test — Stablized flame heat release method**

French title: **ISO 15029-2 Pétrole et produits connexes — Détermination des caractéristiques d'inflammation des fluides difficilement inflammables en jet pulvérisé — Partie 2: Essai sur jet pulvérisé — Méthode par dégagement de chaleur d'une flamme stabilisée**

Results (the compilation of results is given as an annex)

The following criteria for acceptance have been met:

- ☒ Average points (y/x) awarded by P-members for market relevance greater than 15
- ☒ Approval by a simple majority of the voting P-members
- ☒ 5 or more P-members voting approval have agreed to participate in the development of the project and have nominated an expert

The proposal is therefore:

- ☒ **Approved** (all approval criteria met)
- ☐ **Not approved** (one or more approval criteria not met)

The associated drafts have been approved as:

- ☐ **Committee draft (CD)**
- ☒ **Draft International Standard (DIS)**

Further procedures (attribution to TC/SC/WG, Project Leader, development procedure, meetings, etc.)

- ☐ The project is to be registered as a Preliminary Work Item (stage 10.00)
- ☒ The project is to be registered as an active work item

Other:

Experts (give details below, or as a separate annex)

Victor D'Hollander, France; Juergen Reichel, Germany; G. Ponti, Italy; Margaret Simonson, Sweden; Stuart Jagger, UK; ISO/TC 28 P-members on CEN/TC 19/WG 28

Documents to be considered (give details below, or as a separate annex)

Target date for submission:	as a CD:		as a FDIS:	**2007-03-08**
	as a DIS:	**2006-03-08**	for publication:	**2007-09-08**

Secretariat	**Secretary**
API/ANSI	**Paula Watkins**

Registration by the Central Secretariat

Date	Allocated project number
2004-09-08	**15029-2**

☒ **Other information, comments, etc. appended**

See ISO/TC 28 Resolution 8/2004.

Compilation of the results of voting on ISO/NP-CD 15029-2

Member body	Member status	Evaluation	Justification	Vote			Participation	Expert(s) nominated	Approval + Part.+Nomin.		Accepted as DIS	CD Comments enclosed	no reply (optional)
			Q. 2	Q. 3.1			Q. 3.2		3.1+ 3.2	Q. 3.3			
	P/O	Points	Y/N	Yes	No	Abst.	Y/N	Y/N	Y/N	Y/N	Y/N		
AUSTRIA	P												X
BELGIUM	P	15	Y	X			N				Y		
CHINA	P												X
EGYPT	P												X
FRANCE	P	19	Y	X			Y	Y	Y		Y		
GERMANY	P	17	Y	X			Y	Y	Y		Y	Y	
ISRAEL	P	13	Y	X			N	N	N		Y		
ITALY	P												X
IVORY COAST	P												X
JAPAN	P												X
KENYA	P												X
KOREA, REPUBLIC OF	P	20		X			N	N	N		Y		
NETHERLANDS	P					X							
NORWAY	P												X
POLAND	P												X
SINGAPORE	P	15		X			N	N	N		Y		
SLOVAKIA	P												X
SPAIN	P	15	Y	X			N	N	N		Y		
SWEDEN	P	20	Y	X			Y	Y	Y		Y	Y	
SWITZERLAND	P												X
TURKEY	P												X
UK	P	25	Y	X			Y	Y	Y		Y	Y	
USA	P					X							
Trinidad & Tobago	O	15		X			N	N	N		Y		
Totals (P-members only)		159		9	0	2	3	4	4	-	9	3	12

Abstentions and incomplete votes are not counted

Total number of points awarded by voting P-members (y): **159**

Total of P-members voting (x): **9**

Average points per P-member voting (y/x): **18**

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
DE				**1 - Number of categories** This test describes in Table 1 eight (A to H) fire resistance categories by three criteria (ignitability factor, RI; Flame length index RL; and Smoke Density, D). This gives the safest rating for a fluid the Category A (A/A), and for the most hazardous rating for a fluid the Category H (F/D). Since there is only a limited number of test facilities, it has been and still is quite difficult (not to say close to impossible) to establish realistic and reliable precision data for the fluids which are in use today. We therefore propose to reduce the number of categories to a maximum of 3 or 4 wider categories in order to make sure that repeated measurements will render the same category. More details or options which should accompany this proposal are given in the following paragraphs of our comment.		
DE				**2 - Calibration fluids and real world samples** Calibration of the test rig is done with mixtures of ethylene glycol with water. This set of calibration fluids does not cover the complete range of fire resistant hydraulic fluids (FHRF) which are used today for hydrostatic power transmission. We propose to give at least some indication about how the mentioned glycol / water mixtures relate to other FRHF with a different "chemistry".		
DE				**3 - Burner, position of thermo element and calibration** Source, long-term availability and specification for the burner should be verified. It is also accepted that the position of the thermo element is crucial. Even small position changes can cause different results. The resulting necessity for a normalisation of intermediate results during calibration by statistic correlation should be made more clear in the manuscript.		

1 **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by ******)
2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial
NOTE Columns 1, 2, 4, 5 are compulsory.

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
DE				**4 - high and low propane flow rates** The statistical correlations mentioned above not the same for different propane flow rates. This can lead to additional confusion, when two different flow rates are specified. It is therefore necessary to make unmistakably clear which of the two propane flow rate shall be used for testing of a certain FRHF for testing for a certain class. It must be avoided that the test produces a different category when a different (and undefined) by using a different flow rate. An alternative proposal is to harmonize the method for only one single propane flow rate on the basis. In connection to this, the following reasoning can be used: -- fluids of Categories A and B will, if at all, only ignite with a propane flow rate which is not too low.; -- a uniform but higher flow rate, e.g. of 0,2Nm^3/h, could be defined and tested for analysis of real FRHFs; -- Group G and H could be withdrawn from the test, when the RI is, say, below 25 because in this region, there is only a marginal difference between Group G and Group H fluids. This makes the distinction between Group G and group H type fluids somewhat artificial. In addition, there are no distinction criteria for G and H type fluids for flame length index, RL, and for smoke density, D.		

1 **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by ******)
2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial
NOTE Columns 1, 2, 4, 5 are compulsory.

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
				5 - alternative categories This proposal would lead to an alternative Table 1 with a reduced number of categories as follows, where the limits would be subject to verification in CEN/TC 19 WG 28 (corresponding table please see below). Results for this alternative proposal for a reduced number of categories: - All HFDU would be group D; - HFB and HFDR would be in group C (old previous group E); - HFC would be in group B (old previous group B); - HFA would be in group A (old previous group A). Experts say that this alternative classification also corresponds well to experiences made with the ignition of sprays which hit an external ignition source. **Remarks** HFA – liquids in this new category A have usually water contents above 95%. Such fluids could even be used to extinguish fire. This means that the definition of only three categories of fire resistance (B, C, D) is not very unrealistic, which leads to the following descriptions for use: **Fire-resistant categories in accordance with table 1 and tested in the flame heat release method ISO 15029-2** Group A fluids that are non-flammable A (A/A) Group B fluids that are unable to ignite a spray flame Group C fluids that are usually unable to stabilize a spray flame (continued on next page)		

1 **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by ******)
2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial
NOTE Columns 1, 2, 4, 5 are compulsory.

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
DE				Group D fluids that are less flammable than mineral oil but able to stabilize a spray flame under certain conditions D(D/D) Looking into details for a risk assessment, this could mean: I) not a high risk when categories A or B are used; II) still acceptable risk for category C, when, depending of the actual use, other additional precautions or protective measures are introduced, like additional fire extinguishers; III) use of category D not acceptable, or not acceptable without extensive introduction of other safety precautions.		

Table for [comment] 5:

Category	A (HFA)	B (HFC)	C (HFB, HFDR)	D (HFDU)
Ignitability factor, RI	> 100	100 - 65	64 - 36	35 - 24
Flame length index, RL	> 100	100 - 51	50 - 7	≤ 6
Smoke density, D	< 0,01	0,01 - 0,1	> 0,1	-

DE				**Additional remarks concerning special applications:** - It should be recommended to do additional testing according to EN ISO 14935, especially when there is a high risk of spillage into absorbing (e.g. insulating) material; - It should be recommended to use EN ISO 20823 for cases where a fluid not under pressure can lose droplets onto a hot surface. This can happen in power plants and also in metal casting. - Is should be noted that losing droplets into a hot liquid metal mold is not covered by any of these tests.		

1 **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by ******)
2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial
NOTE Columns 1, 2, 4, 5 are compulsory.

1	2	(3)	4	5	(6)	(7)
MB[1]	**Clause No./ Subclause No./ Annex** (e.g. 3.1)	**Paragraph/ Figure/Table/ Note** (e.g. Table 1)	**Type of com-ment**[2]	**Comment (justification for change) by the MB**	**Proposed change by the MB**	**Secretariat observations** on each comment submitted
SE			Ge	The figures should be more clear.		
GB	3.5			The smoke opacity in the flame is not measured – should it not be the smoke opacity in the exhaust.		
GB	6.1.4.1 et seq			The temperature range 13-20C is very restrictive. Consideration should be given to a common test temperature range for all materials of 10-25C.		
GB	Annex B			The calibration procedure is very onerous and detailed and two procedures are given (Annexes B and C). Should not consideration be given to any overlap of these two procedures and consequent reduction in the scope of Annex B, thus reducing the work involved in calibration.		

1 **MB** = Member body (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by ******)
2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial
NOTE Columns 1, 2, 4, 5 are compulsory.