

Test Report No.: 8828 / 30768

Date: 18.04.2011

BASF SE
Brandschutztechnik
G-KTF/EG - A521
D-67056 Ludwigshafen

Test according to

DIN 5510 Part 2 : 2009-05

Preventive fire protection in railway vehicles - Part 2: Fire behaviour and fire side effects of materials and parts; Classification, requirements and test methods

Test according to DIN 54837 : 2007-12 Testing of materials, small components and component sections for rail vehicles - Determination of burning behaviour using a gas burner

Client:

Henkel AG & Co. KGaA Heidelberg
Standort Heidelberg
Henkel-Teroson-Strasse 57

69123 Heidelberg

The results refer exclusively to the tested samples.

As an accredited Test Laboratory, the BASF SE Fire Safety Technology Test Centre is authorized to conduct fire tests in accordance with DIN EN ISO/IEC 17025 : 2005.

DAR-Register-No.: DGA-PL-6430.06



DGA-PL-6430.06

ID number EBA (German Rail): EBA – 012 / 07 / 10 –

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Receipt of order: 10.06.2010
Receipt of samples: 28.12.2010
Date of test: 20.01.2011

1. **Material:** (Information supplied by client)

Terostat MS 939 FR

Colour: Black

Field of application: Direct Glazing

2. **Summary of results and classification:**

Length of damaged area	9,0 cm	Combustibility	S4
Afterflame time	0 s		
Integral of smoke development	1 %•min	Smoke development class	SR2
Falling debris	no burning droplets / debris	Dripping class	ST2

Remarks:

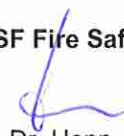
Corrected version of report from 31.01.2011.

Note: This report is valid for 3 years according to DIN 5510-2 (2009:05), if not differently regulated by the responsible authority.

Any conclusions we draw about the fire safety of the materials we test are based exclusively on the results of the test under the conditions described.

The extent to which such conclusions can be applied to non-tested material under non-standard conditions is the sole responsibility of the customer and is done so at his own risk.

BASF Fire Safety Technology


Dr. Henn
Head of Laboratory

Ludwigshafen, 18.04.2011


Kaiser
Technician

BASF – Fire Safety Technology

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3. Material:

Information supplied by client

Terostat MS 939 FR

Additional details from test laboratory

Adhesive in aluminium profile

4. Samples:

Sample size (determined by BASF test laboratory):

Length:	500*	[mm]	Weight:	[g]
Width:	10,0*	[mm]	Weight per unit area:	[kg/m ²]
Thickness:	5,0*	[mm]	Density:	[kg/m ³]
Outer diameter:		[mm]	Remarks:	*Dimension of adhesive
Inner Diameter:		[mm]		

Pre-conditioning:

	Conditions	Duration days
Client: (Information supplied by client)		
Test Laboratory:	Standard 23/50-1 DIN 50014	23

Sample preparation:

Exposed surface: Adhesive

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5. Test results:

Test apparatus: DIN 50 050	Sample:	1	2	3	4	5	Avg.
Ignition	at [min:s]	1:01	0:54	1:02	1:09	0:58	1:01
	Afterflame time [s]	0	0	0	0	0	0
Glowing	at [min:s]	1:05	1:13	1:18	1:25	1:14	1:15
	Afterglow time [s]	0	0	0	0	0	0
Flame height	Maximum [cm]	7	7	7	7	7	7
	at [min:s]	3:00	3:00	3:00	3:00	3:00	3:00
Falling debris	at [min:s]	---	---	---	---	---	
	Burning duration [s]	---	---	---	---	---	---
Smoke density	Maximum (%)	1	1	1	1	1	1
	at [min:s]	3:05	3:06	3:05	3:15	3:05	3:07
Integral of smoke development	[% *min]	1	1	1	1	1	1
Max. length of damaged area	[cm]	9	9	9	9	9	9,0
Termination by extinguishing at	[min:s]	---	---	---	---	---	
Burning or melting through the sample	[yes/no]	no	no	no	no	no	

Observations:

6. Test equipment:

Test apparatus	PK 0011
Sliding gauge	MB 0036
Balance	MW 0003
Light measurement system	ML 0003
Data acquisition	MC 0007
Burner nozzle	BN 0002
Mass flow meter	MG 0045

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7. Requirements:

Standard	Criteria	Classification
DIN 5510 Part 2	Combustibility class	
	Length of damaged area: ≤ 30 cm Afterflame time: Burning to the end of test and extinguishing allowed	S2
	Length of damaged area: ≤ 25 cm Afterflame time: ≤ 100 s (no single value ≥ 120 s)	S3
	Length of damaged area: ≤ 20 cm Afterflame time: ≤ 10 s	S4
	Length of damaged area: 0 cm Afterflame time: 0 s	S5
	Smoke development class	
	Integral of smoke development: > 100 %•min	SR1 not achieved
	Integral of smoke development: ≤ 100 %•min	SR1
	Integral of smoke development: ≤ 50 %•min	SR2
	Dripping class	
	Burning droplets / debris	ST1
	No burning droplets / debris *	ST2

* A classification as ST2 can also be achieved in case of burning droplets/debris, provided that the average time of afterburning is ≤ 20 seconds

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8. Pictures:

