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Client:	MERSETA, JSC Romuvos g.19, LT-47199 Kaunas, Lithuania (Litauen)		
Test item:	Portable fire extinguishing spray (aerosol)		
Identification:	Stop Fire Reinold Max	Serial No:	
Receipt No:	1701	Date of receipt: 2005-06-23	
Testing location:	TRPS / Product Safety Testing Laboratory, Berlin Alboinstrasse 56, D-12103, Berlin, tel: +49 30 / 75 62-13 63		
Test specification:	2 PFG 1227 / 2003.05		
Test result:	The above indicated item has been tested and it meets the above mentioned test specification. The a.m. test item passed.		
Testing laboratory:			
Compiled by:	checked by:		
2005-12-20 M. Seltmann	2005-12-20	P.Suxdorf	
Date Name, Surname	Signature Date Name, Surname	Signature	
Other Aspects:			
Revision 1: 2005.12.19			
Abbreviations:	ok/P – passed fail/F – failed n.a./N – not applicable		
This test report relates to the a.m. test sample. Without permission of the test centre this test report in not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.			

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Measurement Equipment		
Measurement Equipment	Measurement Equipment No:	Next calibration date:
Measurement valve	PM-FP-11-17	2006.01
Testo 445	PM-FP-02-09	2005.08
Temperature sensor	PM-FP-02-20	2005.08
Climatic chamber	PM-FP-10-30	2005.11
Manual power gauge	PM-FP-10-29	2006.01

Purpose

The purpose of the test is to determine specific requirements to the product (portable fire extinguishing spray).

Validity range

Testing requirements are available for fire extinguishing spray with its netto capacity ≤ 500 ml which doesn't correspond with EN3.

Corresponding Directives and Standards

TRG 301	Test on pressurized vessel resistance to high pressure
DIN EN 417	Falling test - valve testing under workload
DIN EN 3-7, 9 chapter	Dielectric test on permissible deflect current
SZU 0220-M-001	Fire extinguishing efficiency test
NF S 61-804: 1998, 4.7 chapter	Fire extinguishing test
Directive 75/324/EEB	Marking on pressurized spraying product about its mission and directions for use.

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<p>Description: Consist of:</p> <p>1.1 Vessel Material vessel is made of: Manufacturing way:</p> <p>Number of partitions:</p> <p>Dimensions:</p> <p>Total capacity:</p> <p>Testing a vessel under high pressure:</p> <p>2. Filling Consist of:</p> <p>Pressure of filling at 50 °C temperature</p> <p>2.1 Toxic agents a) In TRG Annex 1 are shown as:</p> <p>Very toxic Toxic Slightly toxic</p> <p>Gas described:</p>	<p>x 1. Pressurized vessel x 2. Filling 3. Removable device</p> <p>Aluminium x without welding seam of two parts of three parts Remarks : -/-</p> <p>1</p> <p>Diameter 66 mm, total height 255 mm</p> <p>500 ml netto</p> <p>Pressure declaired by manufacturer: 10,1 -/- bar</p> <p>Experimental pressure being settled by Testing Institute: 17,2 bar, which is 1,5 times more than declaired by manufacturer at 50 °C temperature.</p> <p>Towalex AFFF (fire extinguishing foam concentrate) 2%; water 98 % and gas-nitrogen N₂.</p> <p>11,5 bar (estimated)bar (teoretical)</p> <p>Non-toxic Non-toxic Non-toxic</p> <p>Nitrogen N₂</p>
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<p>b) In the Directive on harmful working agents issued on 1982.02.11 (BGBl.I 144 page) as:</p> <p>Very harmful Harmful Slightly harmful</p> <p>c) Other agents if they are shown as toxic in Government statements about harmful and toxic agents and plants</p>	<p>Non-harmful Non-harmful Non-harmful</p> <p>Not applicable</p>
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2PfG 1227			
Clause	Requirement - Test	Result - Remark	Verdict
3. Requirements to pressure vessels			
3.1	Vessels must be made of metal or very firm polymer which doesn't crack	x Vessel is made of metal Vessel is made of polymer which doesn't crack	P
	Bottom of metal vessels which has diameter ≥ 40 mm must have concave shapes.	Diameter: 66 mm x Vessel must have concave bottom shapes x Bottom shape of vessel is concave Bottom of vessel is non concave.	P
3.2	Vessel capacity netto (refer to 2.3) must not exceed:	Capacity netto: 500 ml Measurement results: see clause 5.3	P
	1. 1000 ml if vessel is made of metal	x Doesn't exceed 1000 ml	P
	2. 100 ml if vessel is made of firm polymer	Doesn't exceed 100 ml	N/A
3.3	Vessels must have its construction which		
	1. could guarantee hermetical stage at temperature range from 0°C to +70°C. - A vessel is being cooled off to 0°C and submerged in fluid which has also 0°C temperature. Test duration – 3 min. After the test is finished there should be no effervescence in fluid.	For testing the following vessel samples with its numbering were chosen: 17; 18; 19; 20; 21: Result: no effervescence occurred	P
	-After the test at 0°C is finished, a vessel has being submerged into fluid for one hour at temperature of 0°C. In 3 min. there should be no effervescence in fluid.	Result: no effervescence occurred	P

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2PfG 1227			
Clause	Requirement - Test	Result - Remark	Verdict
	- After all a vessel is being held for an hour at environmental temperature which is approximately 20°C. Afterwards a vessel is being submerged in a container with water. This container is being heated within 30 minutes while the water temperature achieves 70°C. In 3 minutes there should be no effervescence in the water.	Result: no effervescence occurred	
	2. During a vessel test under a high pressure there were no any body deformations observed. A vessel is being emptied and filled in with water. Pressure is being increased with intensity of 1 bar/s approximately. When a high pressure's been achieved it's being kept stable within 25 sec.	The following emptied samples No are being tested: 1; 2; 3... High pressure (experimental): 17,2 bar Result: a vessel is leakproof	P
3.4	Experimental pressure must be at least 1,5 times higher than filling pressure at 50°C temperature and its value must be ≥ 10 bar.	Remark: the pressure of the following samples No is being estimated in water container at 50°C temperature: 7; 8; 9; 10;11 Pressure estimated for all samples at 50°C temperature was the same. Temperature: Pressure (experimental) 49,7°C 11,5 bar	P P P

4. Requirements to filled pressurized vessels			
4.1	A vessel must have its construction so that it could surely carry any mechanical, chemical or thermo-workloads and stay leakproof. A valve must have a protectable cap.	Protectable cap is applicable	P
4.2	Filling of pressurized vessels must conform to the following requirements:		

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2PfG 1227			
Clause	Requirement - Test	Result - Remark	Verdict
	1. Filling type, quality and concentration must be established.	Fire extinguishing foam concentrate Towalex AFFF: 2% Water: 98% Pressure agent: Nitrogen	P
	2. Agents must not react with each other in a dangerous way at normal exploitation temperature (which doesn't exceed 70°C) and pressure. Refer to TRG 102, No 4.2.	Water + Nitrogen	P
	3. Filling agents must not dangerously react a vessel's external and internal stuff agents as well as a vessel's protectable appliances.		P
4.3	Each vessel (or label if a vessel's netto capacity is ≤ 150 ml) must contain the following information:	x Information about netto capacity which is more than 150 ml is on a vessel. x Information appears Information doesn't appear	P
		Vessel with its netto capacity ≤ 150 ml. Information on: Label Vessel is: Yes No	N/A
	Manufacturer's name / brand name	JSC MERSETA www.reinoldmax.com REINOLD MAX	P

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2PfG 1227			
Clause	Requirement - Test	Result - Remark	Verdict
4.4	On each vessel with its capacity more than 50 ml or on a separate package unit the following information must appear:	x A vessel's capacity > 50 ml The information appears: x yes no	P
	“Vessel is pressurized. Avoid of heat (direct sunlight) when the temperature is over 50°C“	The information appears: x yes no The information is on: x vessel min package unit	P
	„Don't use much force to open a vessel. Avoid of flame“.	The information appears: x yes no The information is on: vessel min package unit	P
	“Toxic” or “Human skull” symbol, if necessary to mark according to the Government statements about harmful and toxic agents and plants or there are agents in filling which have been described as very toxic in Annex 1.		N/A
	“Harmful to health” arba “Cross” symbol if there are agents in filling which have been described as slightly toxic or irritating gas.		N/A

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2PfG 1227			
Clause	Requirement - Test	Result - Remark	Verdict
4.5	There should be directions for use on each vessel.	On a vessel.	P
	There should be additional appliances description as well as its directions for use on a vessel.		N/A
	The following information should appear on a vessel: „This is not a fire extinguisher according to EN 3“		P
4.6	Marking according clauses 4.3, 4.4 and 4.5 requirements should be clear.		P
	All the marking should be in German language.		P
	It is allowed to use another languages for marking.		P

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2PfG 1227			
Clause	Requirement - Test	Result - Remark	Verdict
4.7	Falling (throwing) test		
	15 samples are chosen to execute the test.	Samples No from 7 till 21.	P
	If there is any valve protection applicable the falling test is being executed including all protection appliances.	Test has been executed including all valve protection appliances.	P
	Vessels are being thrown down on solid ground from the height of 1,2m.		P
	For each new attempt a new vessel is being used.		P
	- 5 vessels must fall down on its bottom.	Vessel is leakproof	P
	- 5 vessels must fall down on its side.	Vessel is leakproof	P
	- 5 vessels must fall down on its top.	Vessel is leakproof	P
	After the falling test (which is being executed at 20±5°C temperature), vessels are being submerged in a water at the same temperature. Within 3 minutes there should be no effervescence in the water occurred.		P
	If a vessel is not leakproof, the test is being repeated taking 5 new samples for attempts.		N/A
If all vessels are leakproof the test is finished having positive results.		P	

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2PfG 1227			
Clause	Requirement - Test	Result - Remark	Verdict
5	Fire extinguishing efficiency test		
5.1	Fire extinguishing performance for solid fire source (NF S 61 – 804, clause 4.7 and annex G)	Please refer to MPA Dresden test report 05-6-2810	P
5.2	Fire extinguishing performance for fluid fire source (NF S 61 – 804, clause 4.7 annex H)	Please refer to MPA Dresden test report 05-6-2810	P
6.	Electrical nonconductancy test	Please refer to the report IB-05-8-036 about dielectric test of water based extinguishers executed by IBExU Institut für Sicherheitstechnik GmbH Freiberg	P
6.1	Test according annex A		P
6.2	Measuring of electrical current (permissible limit is 0,5 mA)		P
7.	Leakproof test (available for powder extinguishers only)		N/A
8.	Special requirements		
8.1	There should be potential to break off a stream within fire extinguishing process		P
8.2	Flexibility in action: - Exploitation of spray should be available even in „upside down“ position. - Exploitation appliances should be placed on the top of extinguishing spray.		P
8.3	Hose with nosepiece		N/A
8.4	Pressure agent (refer to Table 1)	N ₂ (Nitrogen)	P
8.5	Experimental instruments must conform to A.1		P
8.6	Execution of tests must conform to A.2.		P

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2PfG 1227 / Product specification according to SZU 0220-M-001			
Clause	Requirement - Test	Result - Remark	Verdict
9.	Filling capacity measuring test		
9.1	Measuring The weights of 3 samples are being measured when the samples are empty and filled.	Refer to Table 1	P
9.2	Specification test	Refer to Table 1 and MPA Dresden report	P
9.2.1	Preparation of samples	Refer to Table 1	P
9.2.2	Measuring The samples are being held at the lowest and highest temperatures (as manufacturer declared) for some time. After a vessel is extracted from a temperature chamber, it's being treated in normal usage conditions. At a vessel's position 1 meter from the ground it's being sprayed while becomes totally empty. Duration and distance of spraying are being estimated. Afterwards weight of an empty vessel is being measured. Result is calculated by finding average value of 3 attempts.	Refer to Table 1	P
9.2.3	Measuring results' estimation Minimal permissible spraying duration is 5 sec (if netto capacity is 500g/ml) Minimal permissible spraying distance is 1 m. Permissible value variation is 10 %.	Refer to Table 1	P
10.	Measurement equipment test		
10.1	Measuring The samples are being held at the lowest and highest temperatures (as manufacturer declared) for some time. After a vessel is extracted from a temperature chamber, it's being treated in normal usage conditions. After the sample is fixed the force to start spraying process is being measured.	Refer to Table 1	P

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2PfG 1227 / Product specification according to SZU 0220-M-001			
Clause	Requirement - Test	Result - Remark	Verdict
10.2	Measuring results estimation Force to start spraying process must not exceed 100 N.	Refer to Table 1	P

Table 1

Number of sample	Weight (vessel is filled), g	Weight (vessel is empty), g	Force to start spraying process against 5.3.3, N	Spraying duration against 5.2.2, s	Spraying distance against 5.2.4, m
Sample No 1: 0 °C	594,9	101,5	53	19,8	3,0/5,0
Sample No 2: 0 °C	594,6	99,4	53	19,0	3,0/4,8
Sample No 3: 0 °C	594,2	100,1	55	21,0	3,0/5,0
Sample No 4: 50 °C	593,9	99,3	53	18,7	3,0/5,0
Sample No 5: 50 °C	594,6	98,7	47	18,7	3,0/5,0
Sample No 6: 50 °C	594,1	98,9	53	18,5	3,0/5,0

This report contain a general test result of the tested sample in the laboratory. It also does not contain a general judge of TÜV Rheinland Product Safety GmbH about the characteristically products coming out of the working production.

End of test report

*ENGLISH VERSION of Product Safety and Quality is true.
Interpreter: Business Development manager Alisa Ratmanova
Date: 2006 February 06*