



March 11, 2015

Oxifree Global LLC
22955 State Highway 249
Tomball, TX 77375
ATTN: Mr. Ed Hall

Reference: Report No. F2LQ6693-C1-02S-R1
Subject: Test Results for Flammability Testing

Dear Mr. Hall:

We have completed our evaluation of your Anti-Corrosion Coating Product, Model TM198, to the following standard:

- UL 94 – Tests for Flammability of Plastic Materials for Parts in Devices and Appliances

Testing began on February 10th, 2015 and was completed on February 18, 2015 at the F2 Labs' facility.

This Report package completes all work associated with F2 Labs' project number F2LQ6693. Should you have any further questions regarding this report, please feel free to contact me at 301-253-4500.

Prepared By:

A handwritten signature in black ink, appearing to read 'Mike Ireland'.

Mike Ireland
Safety Test Engineer

Reviewed By:

A handwritten signature in black ink, appearing to read 'Andrew Bagnall'.

Andrew Bagnall
Chief Technical Officer



F2 LABS TEST DATA

Client :	Oxifree Global LLC	Engineer:	Mike Ireland	<i>Michael D.</i>
Project No.:	F2LQ6693-C1-02S-R1	Reviewer:	Andrew Bagnall	<i>Andrew Bagnall</i>
Product:	Anti-Corrosion Coating	Standard:	UL 94, 6th Edition, dated March 28, 2013	
Model no.:	TM198			

Clause	Description	Verdict
8	50 W (20 mm) Vertical Burning Test; V-2 classification for product TM198	P

**F2 LABS TEST DATA**

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Client :	Oxifree Global LLC	Engineer:	Mike Ireland	<i>Michael D.</i>
Project No.:	F2LQ6693-C1-02S-R1	Reviewer:	Andrew Bagnall	<i>A. Bagnall</i>
Product:	Anti-Corrosion Coating	Standard:	UL 94, 6th Edition, dated March 28, 2013	
Model no.:	TM198			

Test Equipment List				
Item	Asset No.	Equipment Type	Last Cal. Date	Cal. Due Date
1	0579	Stopwatch	07/07/2014	07/07/2015
2	0271	Calipers	10/08/2014	10/08/2015
3	0328	Manometer	04/30/2014	04/30/2015
4	0049	Digital Thermometer	10/09/2014	10/09/2015
5	0403	Precision Gas Mass Flow Meter	12/15/2014	12/15/2015
6	0349	Weather Station	04/30/2014	04/30/2015
7	0570	Weather Station	01/03/2015	01/03/2016
8	0603	Tape Measure	02/11/2015	02/11/2016
9	0016	Stop Watch	10/08/2014	10/08/2015
10	0218	Angle Meter	09/02/2014	09/02/2015
11	0525	Bunsen Burner	09/03/2014	09/03/2015
12	0441	Environmental Chamber	EPO	EPO
13	0504	Controller for Chamber 0441	04/09/2014	04/09/2015
14	0048	Environmental Chamber	EPO	EPO
15	0430	Controller for Chamber 0048	04/10/2014	04/10/2015

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Project No.:	F2LQ6693-C1-02S-R1	Reviewer:	Andrew Bagnall	<i>Andrew Bagnall</i>
Product:	Anti-Corrosion Coating	Standard:	UL 94, 6th Edition, dated March 28, 2013	
Model no.:	TM198			

Samples:

No.	Length (mm)	Width (mm)	Thickness (mm)	Color
1	124.8	12.8	3.8	Gray
2	125.6	13.2	3.7	Gray
3	124.0	13.3	4.0	Gray
4	125.0	13.5	3.4	Gray
5	125.3	12.6	3.8	Gray
6	123.0	13.2	3.9	Gray
7	123.3	12.8	3.4	Gray
8	123.1	13.3	3.9	Gray
9	123.5	13.0	3.7	Gray
10	123.6	13.1	3.4	Gray
	120 – 130mm	12.5 - 13.5	3.7mm +/-0.4mm	range

Conditioning of samples:

Samples 1 - 5 were conditioned at $23 \pm 2^{\circ}\text{C}$ and $50 \pm 5\%$ relative humidity for a minimum of 48 hrs. (6.1)

Conditioning Date:

Start: 02/13/2015 Time: 5:00 p.m.

End: 02/18/2015 Time: 9:00 a.m. Chamber Asset#: 0048

Samples 6 - 10 were conditioned for 168 ± 2 hrs at $70 \pm 2^{\circ}\text{C}$ and then cooled in the desiccator for at least 4 hrs at room temperature. (6.2)

Conditioning Date:

Start: 02/10/2015 Time: 11:30 a.m.

End: 02/17/2015 Time: 12:30 p.m. Chamber Asset#: 0441

Once removed from the pre-conditioning environment, specimens were tested within 30 minutes.

Test laboratory atmosphere must be $15\text{-}35^{\circ}\text{C}$ and $\leq 75\%$ relative humidity.

Cotton was conditioned in the desiccator for at least 24 hours prior to use.

Once removed from the desiccator, the cotton was used within 30 minutes.



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Model no.:	TM198			

UL94, 6th Edition, dated March 28, 2013

Clause	Verdict
8	P

Specimen Material: Anti-Corrosion Coating TM198 **Preconditioned specimens per 6.1**

Sample #:	Afterflame time after first application (t ₁ , sec.)	Afterflame time after second application (t ₂ , sec.)	Afterglow time after second application (t ₃ , sec.)	Specimen burned to the holding clamp? (Yes/No)	Specimen dripped particles? (Yes/No)	Specimen particles ignited cotton? (Yes/No)	Comments
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Supplementary information:

The sample(s) were conditioned at 23 ± 2°C and 50 ± 5% relative humidity for 48 hrs.

Date:	Test by:	Sample No.	Temp (°C):	RH (%):	Pressure (mBar)	Equip.
02/18/2015	msi	S01 – S05	20.6	34.3	980.3	0570, 0603, 0016, 0579, 0271, 0218, 0403, 0328, 0525



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Project No.:	F2LQ6693-C1-02S-R1	Reviewer:	Andrew Bagnall	
Product:	Anti-Corrosion Coating	Standard:	UL 94, 6th Edition, dated March 28, 2013	
Model no.:	TM198			

UL94, 6th Edition, dated March 28, 2013

Clause		Verdict
8	V2 classification 50W (20mm) Vertical burning Test	P

Specimen Material: Anti-Corrosion Coating TM198 **Preconditioned specimens per 6.2**

Sample #:	Afterflame time after first application (t ₁ , sec.)	Afterflame time after second application (t ₂ , sec.)	Afterglow time after second application (t ₃ , sec.)	Specimen burned to the holding clamp? (Yes/No)	Specimen dripped particles? (Yes/No)	Specimen particles ignited cotton? (Yes/No)	Comments
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Supplementary information:

The sample(s) were conditioned for 168 ± 2 hrs at 70 ± 2°C and then cooled in the desiccator for at least 4 hrs at room temperature.

Date:	Test by:	Sample No.	Temp (°C):	RH (%):	Pressure (mBar)	Equip.
02/18/2015	msi	S06 – S10	21.1	34.4	979.4	0570, 0603, 0016, 0579, 0271, 0218, 0403, 0328, 0525

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Product:	Anti-Corrosion Coating	Standard:	UL 94, 6th Edition, dated March 28, 2013	
Model no.:	TM198			

UL 94 50W (20mm) Vertical Burning Test

Test Setup:

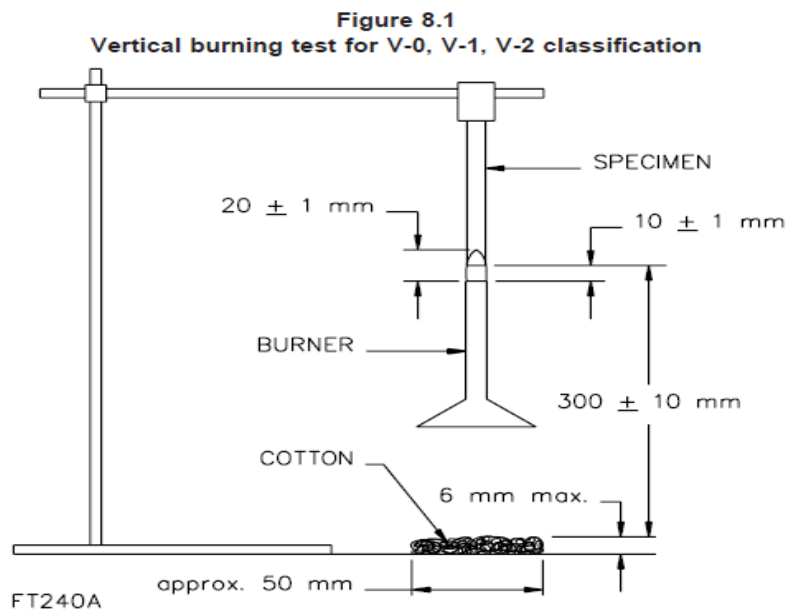


Table 8.1
Materials classifications

Criteria conditions	V-0	V-1	V-2
Afterflame time for each individual specimen t_1 or t_2	≤10s	≤30s	≤30s
Total afterflame time for any condition set (t_1 plus t_2 for the 5 specimens)	≤50s	≤250s	≤250s
Afterflame plus afterglow time for each individual specimen after the second flame application (t_2+t_3)	≤30s	≤60s	≤60s
Afterflame or afterglow of any specimen up to the holding clamp	No	No	No
Cotton indicator ignited by flaming particles or drops	No	No	Yes



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Flame Validation Data

Flame Type: 50W (20mm)

Gas Type: Methane

Required Specifications			Measured	
Gas Flow (mL/min)		105 ± 5		
Back Pressure (mm water)		<10		
Flame Height (mm)		20 ± 1		
Temperature rise measurements	Initial Slug Temperature	Temperature rise from 100° – 700° C (Sec)	Gas and equipment settings suitable per ASTM D 5207-09	Comments
1	45.0	44.0	Yes	
2	49.7	42.0	Yes	
3	49.3	42.0	Yes	
--	<50	44±2	--	Limits

Supplementary Information:

30 day Validation - Expiration Date: 02/05/2015

Date:	Tested by:	Temp (°C):	RH (%):	Pres. (mBar):	Equip:
02/11/2015	AA	20.1	46.8	981.7	0579, 0271, 0328, 0049, 0403, 0349