Oven Solvent Loading
Test Report

General Motors, LLC
Detroit-Hamtramck Assembly (Factory ZERO)
2500 East General Motors Boulevard
Detroit, MI 48211

November 13, 2024

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

APPENDIX

1. Introduction

General Motors, LLC (GM) retained Axalta Coating Systems to conduct Oven Solvent Loading for the GM Detroit Hamtramck facility (Factory ZERO) located at 2500 E. General Motors Blvd., Detroit, MI 48211, PTI-209-19A. Oven Solvent Loading Testing of the Primer Surfacer (primer, monocoat) and Topcoat (base solid, base metallic, clearcoat) operations. Testing included: Oven exhaust control device VOC loading rates (Oven Solvent Loading).

AQD has published a guidance document entitled "Format for Submittal of Source Emission Test Plans and Reports" (November 2019). The following is a summary of the emissions test plan in the format suggested by the aforementioned document.

1.a Identification, Location, and Dates of Test

Oven Solvent Loading Testing of the Primer Surfacer, Basecoat and Clearcoat systems was conducted October 25, 2024. Testing was conducted at the Axalta Coating Systems facility in Mount Clemens, MI.

1.b Purpose of Test

Testing was conducted for FGAUTOASSEMBLY (TESTING V. 4) operations as prescribed by Permit Number PTI-209-19A and the test plan as approved by the Air Quality Division (letter dated August 23, 2024)

1.c Source Description

The GM facility is an automotive assembly center. The facility utilizes numerous raw materials in the process of automotive assembly, varying from imported parts and products to pre-assembled automotive supplies. The materials utilized that are influential for the proposed emissions test program are paints that are cured in curing ovens.

1.d Test Program Contacts

The contact for the source and test report is:

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2. Summary of Results

2.a Operating Data

The operating parameters of the regenerative thermal oxidizers are as follows:

Temp – minimum 1520 degrees Fahrenheit
Minimum of 0.5~~9~~ second gas retention time

The attached report provided as Appendix A provides a summary of process operating parameters.

2.b Applicable Permit

The applicable permit number is PTI-209-19A. The emission unit ID is FGAUTOASSEMBLY.

2.c Results

The attached report provided as Appendix A provides a summary of results.

3. Source Description

3.a Process Description

EUTOPCOATSYSTEM - A topcoat spray booth followed by a curing oven. There is a heated flash-off area located between the basecoat portion of the booth and the clearcoat portion of the booth. The waterborne basecoat is applied automatically with air atomized or electrostatic spray guns. The solventborne clearcoat is applied automatically with air atomized or electrostatic spray guns. Spray booth overspray (basecoat and clearcoat) is controlled by a waterwash particulate control system. Exhaust from all basecoat and clearcoat spray booths and all observation zones is controlled by a bank of three RTOs (RTO 110, RTO 120, and RTO 130) for control of VOCs. Exhaust from all basecoat heated flash-

off areas and all topcoat curing ovens is exhausted to a bank of two RTOs (RTO 210 and RTO 220) for control of VOCs. The spot reprocess area is exhausted through downdraft ventilation through a dry filter particulate control system and vented back into the in-plant environment.

EUPRIMERSURFACER - A guidecoat (primer surfacer) spray booth followed by a curing oven. The solventborne primersurfacer is applied automatically with air atomized or electrostatic spray guns. Primer coating booth overspray is controlled by a waterwash particulate control system. The exhaust from the primer coating booth and observation zone is controlled by a bank of three RTOs (RTO 110, RTO 120, and RTO 130) for control of VOCs. Primer curing oven emissions are exhausted to a bank of two RTOs (RTO 210 and RTO 220) for control of VOC emissions. The cooling tunnels are exhausted to the atmosphere.

Oven solvent loading test results are used to calculate paint shop VOC emissions.

3.b Type of Raw and Finished Materials

The following materials were used in the testing program:

- Generic médium Gray solventborne primer
- Black Monocoat solventborne monocoat
- Summit White waterborne basecoat
- Zephyr Matte Met waterborne basecoat
- 2K Clearcoat

3.c Capacity of the Process

The applicable permit number is Permit to Install 209-19A and the SRN is M4199. The applicable VOC limits are 330.3 tpy and 3.0 lbs/job.

3.d Process Instrumentation

Process instrumentation is not associated with this testing.

4. Sampling and Analytical Procedures

Oven Solvent Loading

Primer Surfacer

W0 = weight of bare panel
Apply primer surfacer
W1 = Weight of panel + primer surfacer (immediately after spraying as practical)
Flash for 16 min 56 sec minutes at ambient temp
W2 = Weight of primed panel after flash
Bake Panel at 38 min 30 sec @ 285°F

Let panel cool
W3 = Weight of cooled, cured primed panel

Monocoat

W0 = weight of bare panel
Apply primer surfacer
W1 = Weight of panel + primer surfacer (immediately after spraying as practical)
Flash for 16 min 56 sec minutes at ambient temp
W2 = Weight of primed panel after flash
Bake Panel at 38 min 30 sec @ 285°F
Let panel cool
W3 = Weight of cooled, cured primed panel

Waterborne Basecoat Body System

W0 = weight of bare panels
Apply basecoat (Zephyr Metallic) and Summit White (solid) (2 separate panels)
W1 = Weight of each panel + basecoat (immediately after spraying as practical)
Flash for 1 minute, 12 seconds at ambient temperature
W2 = Weight of basecoated panels after flash
Oven for 6 minutes at 180°F
W3 = Weight of basecoated panel after heated flash
Flash for 13 minutes at ambient temperature
W4 = Weight of basecoated panel after flash
Bake for 36 minutes, 24 seconds at 250°F
Let panel cool
W5 = Weight of cooled, cured basecoated panels

Clearcoat Body System

W0 = Weight of bare panel
W1 = Weight of panel + clearcoat (immediately after spraying as practical)
Flash for 6 minutes and 25 seconds at ambient temperature
W2 = Weight of clearcoated panel after flash
Bake for 36 minutes, 45 seconds at 250F
Let panel cool
W3 = Weight of cooled, cured clearcoated panel

Please note, the following items were identified as parameters to monitor and/or report in the approved test plan but as discussed with EGLE, were not applicable to this test. It was conducted in a lab per the methods outlined above.

- Not Applicable to Monitor and Record:
    - Gas testing requires stratification checks according to the applicable regulation every test event.

- Flow measurements require cyclonic checks every test event.
- Line speed
- Booth airflow

- Not Applicable to the Report:
  - Stack dimensions including upstream and downstream distances.
  - Sampling point locations/distances for stratification test and sampling runs.
  - Sampling probe length and unique identifier.
  - All pre-test and post-test meter box calibration, pitot tube calibration, nozzle calibration and field data sheets.
  - All calibration and cyclonic flow checks.
  - Certificate of Analysis sheets for all calibration gases used.
  - Make, model and serial number of all CEMs tested.

5. Test Results

5.a-b Test Results Summary

A summary is presented in the attached reports provided as Appendix A. Results from this test program will be used to calculate associated emissions from the respective sources.

5.c Sampling Procedure Variation

Not applicable for this testing.

5.d Process or Control Device Upsets

Not applicable for this testing.

5.e Control Device Maintenance

Not applicable for this testing.

5.f Re-test

Per GM's notification on October 18, 2024, the initial test results for this test were deemed invalid due to improper analytical methodology and sample handling, and a retest was completed on October 25, 2024.

5.g Quality Assurance Audit Samples

Not applicable for this testing.

5.h Calibration Sheets

Photo of certification of scale accuracy documentation is provided as Appendix B.

5.i Sample calculations

Not applicable for this testing.

5.j Field Data Sheets

Included in attached reports provided as Appendix A.

5.k Laboratory Data

Included in attached reports provided as Appendix A.

Appendix A

Oven Solvent Loading Report Format

Plant ID	FACTORY ZERO	**Date of Test**	10/25/2024
Supplier	AXALTA	**MTR REF #**	09PT8644
Supplier Contact	Troy Lictawa	**MATERIAL TYPE (PRIMER, BC, CC, ETC)**	GRAY PRIMER

	Panel 1	Panel 2	Panel 3
Product Code	2765-224E / 2765A31243		
Color Name	GENERIC MEDIUM GRAY		
GMXX#			
WAXXXX#	WA224E		
Film Build (mils)	1.210	1.160	1.080
W0: Bare Panel (g)	0.838	0.840	0.841
W2: Painted Before Oven (g)	1.275	1.314	1.334
W3: Painted-After Oven (g)	1.192	1.218	1.237
T1: PRIMER only (mils)	1.210	1.160	1.080
WFS PRIMER (% wt solids)	69.170	69.170	69.170
WGC PRIMER (lb/gal)	10.180	10.180	10.180
VFS PRIMER (% vol solids)	56.241	56.241	56.241
Dpr = (WGC*WFS)/VFS	12.520	12.520	12.520
WSD CC =	12.520	12.520	12.520
WPS = W3 - W0(g slds applied)	0.354	0.378	0.396
WSA = W2 - W3 (g VOC)	0.083	0.096	0.098
CDL = WSD*(WSA/WPS)	2.924	3.180	3.088
CDL average	3.064		

Flash Study Report

Plant ID	FACTORY ZERO	**%Weight Non Volatile**	69.170
Supplier	AXALTA	**%Volume Non Volatile**	56.241
Paint Technology	Gray Primer	**Density (lb/gal)**	10.180
Date of Test	10/25/2024	**Density - Non Volatile (lb/gal)**	12.520

Panel Mass (g)

	Panel 1	Panel 2	Panel 3
W0=Bare Panel Wt.	0.838	0.840	0.841
W1 =Panel & Primer after spray	1.328	1.368	1.389
W2 =Panel & Primer after flash	1.275	1.314	1.334
W3=after 38 min 30 sec @ 285°F	1.192	1.218	1.237

Film Mass (g)

	Panel 1	Panel 2	Panel 3
W1	0.490	0.528	0.548
W2	0.437	0.474	0.493
W3	0.354	0.378	0.396

Solvent Mass (g)

Flash time (min)	Panel 1	Panel 2	Panel 3
W1 =Panel & Primer after spray	0.136	0.150	0.152
W2 =Panel & Primer after flash	0.083	0.096	0.098
W3=after 38 min 30 sec @ 285°F	0.000	0.000	0.000

Lbs VOC in Film/ gal. of solids applied

	Panel 1	Panel 2	Panel 3	Average
W1	4.812	4.955	4.813	4.860
W2	2.924	3.180	3.088	3.064
W3	0.000	0.000	0.000	0.000

Oven Solvent Loading Report Format

Plant ID	FACTORY ZERO	**Date of Test**	10/25/2024
Supplier	AXALTA	**MTR REF #**	09PT8644
Supplier Contact	Troy Lictawa	**MATERIAL TYPE (PRIMER, BC, CC, ETC)**	MONOCOAT

	Panel 1	Panel 2	Panel 3
Product Code	2250-8555 / 2250-01730		
Color Name	Black		
GMXX#			
WAXXXX#	WA8555		
Film Build (mils)	2.040	2.210	2.110
W0: Bare Panel (g)	0.839	0.827	0.839
W1: Painted Before Oven (g)	1.584	1.536	1.598
W2: Painted-After Oven (g)	1.496	1.452	1.510
T1: MONOCOAT only (mils)	2.040	2.210	2.110
WFS MONOCOAT (% wt solids)	57.960	57.960	57.960
WGC MONOCOAT (lb/gal)	8.420	8.420	8.420
VFS MONOCOAT (% vol solids)	51.739	51.739	51.739
Dpr = (WGC*WFS)/VFS	9.432	9.432	9.432
WSD CC =	9.432	9.432	9.432
WPS = W3 - W0(g slds applied)	0.485	0.457	0.496
WSA = W2 - W3 (g VOC)	0.173	0.168	0.175
CDL = WSD*(WSA/WPS)	3.365	3.465	3.318
CDL average	3.383		

Flash Study Report

Plant ID	FACTORY ZERO	**%Weight Non Volatile**	57.960
Supplier	AXALTA	**%Volume Non Volatile**	51.739
Paint Technology	Monocoat	**Density (lb/gal)**	8.420
Date of Test	10/25/2024	**Density - Non Volatile (lb/gal)**	9.432

Panel Mass (g)

	Panel 1	Panel 2	Panel 3
W0=Bare Panel Wt.	0.839	0.827	0.839
W1 =Panel & MC spray	1.584	1.536	1.598
W2 =Panel & MC after flash	1.496	1.452	1.510
W3=after 38 min 30 sec @ 285°F	1.323	1.284	1.335

Film Mass (g)

	Panel 1	Panel 2	Panel 3
W1	0.745	0.710	0.759
W2	0.658	0.625	0.671
W3	0.485	0.457	0.496

Solvent Mass (g)

Flash time (min)	Panel 1	Panel 2	Panel 3
W1 =Panel & MC after spray	0.260	0.253	0.263
W2 =Panel & MC after flash	0.173	0.168	0.175
W3=after 38 min 30 sec @ 285°F	0.000	0.000	0.000

Lbs VOC in Film/ gal. of solids applied

	Panel 1	Panel 2	Panel 3	Average
W1	5.061	5.210	4.992	5.088
W2	3.365	3.465	3.318	3.383
W3	0.000	0.000	0.000	0.000

FORM 4 - OVEN SOLVENT LOADING AND FLASH STUDY
Oven Solvent Loading Report Format

ZONE : After Spray (W0 - W1)

Plant ID	FACTORY ZERO	**Date of Test**	10/25/2024
Supplier	AXALTA	**MTR REF #**	09PT8644
Supplier Contact	Troy Lictawa	**MATERIAL TYPE (PRIMER, BC, CC, ETC)**	Waterborne BC

	Panel 1	Panel 2	Panel 3	Panel 1	Panel 2	Panel 3	
Product Code:	562-63122			561-63531			
Color Name:	Summit White			Zephyr Matte Met			
GMXX#							
WAXXXX#:	WA8624			WA139H			
Film Build:	1.02	0.96	0.98	0.80	0.77	0.78	
Fi: Bare Panel/Foil (g)	0.843	0.848	0.845	0.861	0.853	0.867	Data from panels (solids on work) W0
Gi: Painted Before Zone (g)	NA			NA	NA	NA	
Gf: Painted-After Zone (g)	1.446	1.469	1.484	1.633	1.657	1.680	Data after W1
W_{ci} : Painted After Fully Baked (g)	1.138	1.159	1.182	1.058	1.061	1.064	Data after W5
P_{Bi} = Gi - Fi :Weight of paint sample before zone	0.000	0.000	0.000	0.000	0.000	0.000	
P_{Ci} = Gf - Fi :Weight of paint sample after zone	0.604	0.622	0.639	0.771	0.805	0.813	
$\%VOC_{Bi}$: %Organic Before Zone	0.000	0.000	0.000	0.000	0.000	0.000	
%NV: Before Zone	NA	NA	NA	NA	NA	NA	
%Water: Before Zone	NA	NA	NA	NA	NA	NA	
$\%VOC_{Ci}$: %Organic After Zone	2.459	2.510	2.459	1.950	1.918	2.017	Determined by GC @ W1
%NV: After Zone	48.874	50.072	52.768	25.451	25.879	24.274	
%Water: After Zone	48.667	47.418	44.773	72.599	72.202	73.709	
WFS Basecoat (% wt solids)	40.690	40.690	40.690	20.020	20.020	20.020	
WGC Basecoat (lb/gal)	10.040	10.040	10.040	8.590	8.590	8.590	
VFS Basecoat (% vol solids)	28.130	28.130	28.130	17.014	17.014	17.014	
D_{COS} = (WGC*WFS)/VFS (Solids Density)	14.523	14.523	14.523	10.108	10.108	10.108	
W_{VOC} =[P_{Bi} X $\%VOC_{Bi}$] - [P_{Ci} X $\%VOC_{Ci}$] (g VOC)	0.015	0.016	0.016	0.015	0.015	0.016	
W_{COS} = W_{Ci} - F_i (g slds applied)	0.295	0.311	0.337	0.196	0.208	0.197	
CL(total) = D_{COS} X (W_{VOC} / W_{COS})	0.731	0.728	0.677	0.774	0.749	0.840	
CL average (Lbs VOC / Gal Solids Applied)		0.712			0.788		

FORM 4 - OVEN SOLVENT LOADING AND FLASH STUDY
Oven Solvent Loading Report Format

ZONE : Ambient Flash (W1 - W2)

Plant ID	FACTORY ZERO	**Date of Test**	10/25/2024
Supplier	AXALTA	**MTR REF #**	09PT8644
Supplier Contact	Troy Lictawa	**MATERIAL TYPE (PRIMER, BC, CC, ETC)**	Waterborne BC

	Panel 1	Panel 2	Panel 3	Panel 1	Panel 2	Panel 3	
Product Code:	562-63122			561-63531			
Color Name:	Summit White			Zephyr Matte Met			
GMXX#							
WAXXXX#:	WA8624			WA139H			
Film Build:	1.02	0.96	0.98	0.80	0.77	0.78	
Fi: Bare Panel/Foil (g)	0.848	0.849	0.843	0.853	0.853	0.867	Data from panels (solids on work) W0
Gi: Painted Before Zone (g)	1.446	1.469	1.484	1.633	1.657	1.680	Data after W1
Gf: Painted-After Zone (g)	1.431	1.438	1.409	1.614	1.647	1.651	Data after W2
W_{ci} : Painted After Fully Baked (g)	1.163	1.159	1.182	1.054	1.061	1.064	Data after W5
P_{Bi} = Gi - Fi :Weight of paint sample before zone	0.604	0.621	0.642	0.771	0.805	0.813	
P_{Ci} = Gf - Fi :Weight of paint sample after zone	0.583	0.589	0.566	0.762	0.794	0.784	
$\%VOC_{BI}$: %Organic Before Zone	2.459	2.510	2.459	1.950	1.918	2.017	Determined by GC @ W1
%NV: Before Zone	48.874	50.072	52.768	25.451	25.879	24.274	
%Water: Before Zone	48.667	47.418	44.773	72.599	72.202	73.709	
$\%VOC_{CI}$: %Organic After Zone	2.388	2.271	2.546	1.911	1.880	1.977	Determined by GC @ W2
%NV: After Zone	53.989	52.675	59.951	26.460	26.222	25.172	
%Water: After Zone	43.624	45.054	37.503	71.629	71.898	72.850	
WFS Basecoat (% wt solids)	40.690	40.690	40.690	20.020	20.020	20.020	
WGC Basecoat (lb/gal)	10.040	10.040	10.040	8.590	8.590	8.590	
VFS Basecoat (% vol solids)	28.130	28.130	28.130	17.014	17.014	17.014	
D_{COS} = (WGC*WFS)/VFS (Solids Density)	14.523	14.523	14.523	10.108	10.108	10.108	
W_{VOC} =[P_{Bi} X $\%VOC_{BI}$] - [P_{CI} X $\%VOC_{CI}$] (g VOC)	0.001	0.002	0.001	0.000	0.001	0.001	
W_{COS} = W_{Ci} - F_I (g slds applied)	0.315	0.310	0.340	0.202	0.208	0.197	
CL(total) = D_{COS} X (W_{VOC} / W_{COS})	0.043	0.103	0.058	0.024	0.024	0.046	
CL average (Lbs VOC / Gal Solids Applied)		0.068			0.031		

FORM 4 - OVEN SOLVENT LOADING AND FLASH STUDY
Oven Solvent Loading Report Format

ZONE : Heated Flash (W2 - W3)

Plant ID	FACTORY ZERO	**Date of Test**	10/25/2024
Supplier	AXALTA	**MTR REF #**	09PT8644
Supplier Contact	Troy Lictawa	**MATERIAL TYPE (PRIMER, BC, CC, ETC)**	Waterborne BC

	Panel 1	Panel 2	Panel 3	Panel 1	Panel 2	Panel 3	
Product Code:	562-63122			561-63531			
Color Name:	Summit White			Zephyr Matte Met			
GMXX#							
WAXXXX#:	WA8624			WA139H			
Film Build:	1.02	0.96	0.98	0.80	0.77	0.78	
Fi: Bare Panel/Foil (g)	0.849	0.848	0.847	0.856	0.853	0.867	Data from panels (solids on work) W0
Gi: Painted Before Zone (g)	1.431	1.438	1.409	1.614	1.647	1.651	Data after W2
Gf: Painted-After Zone (g)	1.174	1.185	1.173	1.070	1.085	1.080	Data after W3
W_{ci} : Painted After Fully Baked (g)	1.157	1.154	1.141	1.051	1.061	1.064	Data after W5
P_{BI} = Gi - Fi :Weight of paint sample before zone	0.583	0.589	0.562	0.762	0.794	0.784	
P_{Ci} = Gf - Fi :Weight of paint sample after zone	0.326	0.337	0.326	0.214	0.232	0.213	
$\%VOC_{BI}$: %Organic Before Zone	2.388	2.271	2.546	1.911	1.880	1.977	Determined by GC @ W2
%NV: Before Zone	53.989	52.675	59.951	26.460	26.222	25.172	
%Water: Before Zone	43.624	45.054	37.503	71.629	71.898	72.850	
$\%VOC_{CI}$: %Organic After Zone	0.507	0.482	0.496	0.476	0.436	0.484	Determined by GC @ W3
%NV: After Zone	94.840	90.656	90.064	91.343	89.664	92.629	
%Water: After Zone	4.653	8.862	9.440	8.181	9.900	6.887	
WFS Basecoat (% wt solids)	40.690	40.690	40.690	20.020	20.020	20.020	
WGC Basecoat (lb/gal)	10.040	10.040	10.040	8.590	8.590	8.590	
VFS Basecoat (% vol solids)	28.130	28.130	28.130	17.014	17.014	17.014	
D_{COS} = (WGC*WFS)/VFS (Solids Density)	14.523	14.523	14.523	10.108	10.108	10.108	
W_{VOC} =[P_{BI} X $\%VOC_{BI}$] - [P_{CI} X $\%VOC_{CI}$] (g VOC)	0.012	0.012	0.013	0.014	0.014	0.014	
W_{COS} = W_{CI} - F_I (g slds applied)	0.309	0.306	0.294	0.195	0.208	0.197	
CL(total) = D_{COS} X (W_{VOC} / W_{COS})	0.577	0.559	0.627	0.701	0.676	0.741	
CL average (Lbs VOC / Gal Solids Applied)		0.588			0.706		

FORM 4 - OVEN SOLVENT LOADING AND FLASH STUDY
Oven Solvent Loading Report Format

ZONE : Clearcoat Zone (W3 - W4)

Plant ID FACTORY ZERO
Supplier AXALTA
Supplier Contact Troy Lictawa

Date of Test 10/25/2024
MTR REF # 09PT8644
MATERIAL TYPE (PRIMER, BC, CC, ETC) Waterborne BC

	Panel 1	Panel 2	Panel 3	Panel 1	Panel 2	Panel 3	
Product Code:	562-63122			561-63531			
Color Name:	Summit White			Zephyr Matte Met			
GMXX#							
WAXXXX#:	WA8624			WA139H			
Film Build:	1.02	0.96	0.98	0.80	0.77	0.78	
Fi: Bare Panel/Foil (g)	0.849	0.847	0.846	0.856	0.853	0.867	Data from panels (solids on work) W0
Gi: Painted Before Zone (g)	1.174	1.185	1.173	1.070	1.085	1.080	Data after W3
Gf: Painted-After Zone (g)	1.171	1.175	1.187	1.079	1.078	1.076	Data after W4
W_{ci} : Painted After Fully Baked (g)	1.153	1.154	1.141	1.060	1.061	1.064	Data after W5
P_{Bi} = Gi - Fi :Weight of paint sample before zone	0.326	0.338	0.327	0.214	0.232	0.213	
P_{Ci} = Gf - Fi :Weight of paint sample after zone	0.322	0.328	0.340	0.223	0.225	0.209	
$\%VOC_{BI}$: %Organic Before Zone	0.507	0.482	0.496	0.476	0.436	0.484	Determined by GC @ W3
%NV: Before Zone	94.840	90.656	90.064	91.343	89.664	92.629	
%Water: Before Zone	4.653	8.862	9.440	8.181	9.900	6.887	
$\%VOC_{CI}$: %Organic After Zone	0.000	0.000	0.000	0.005	0.005	0.005	Determined by GC @ W4
%NV: After Zone	94.346	93.480	86.507	91.697	92.369	94.312	
%Water: After Zone	5.654	6.520	13.493	8.299	7.626	5.683	
WFS Basecoat (% wt solids)	40.690	40.690	40.690	20.020	20.020	20.020	
WGC Basecoat (lb/gal)	10.040	10.040	10.040	8.590	8.590	8.590	
VFS Basecoat (% vol solids)	28.130	28.130	28.130	17.014	17.014	17.014	
D_{COS} = (WGC*WFS)/VFS (Solids Density)	14.523	14.523	14.523	10.108	10.108	10.108	
$W_{VOC} = [P_{BI} \times \%VOC_{BI}] - [P_{CI} \times \%VOC_{CI}]$ (g VOC)	0.002	0.002	0.002	0.001	0.001	0.001	
$W_{COS} = W_{Ci} - F_i$ (g slds applied)	0.304	0.307	0.294	0.204	0.208	0.197	
CL(total) = $D_{COS} \times (W_{VOC} / W_{COS})$	0.079	0.077	0.080	0.050	0.049	0.052	
CL average (Lbs VOC / Gal Solids Applied)		0.079			0.050		

ZONE : Bake Oven (W4 - W5)

Plant ID	FACTORY ZERO	**Date of Test**	10/25/2024
Supplier	AXALTA	**MTR REF #**	09PT8644
Supplier Contact	Troy Lictawa	**MATERIAL TYPE (PRIMER, BC, CC, ETC)**	Waterborne BC

	Panel 1	Panel 2	Panel 3	Panel 1	Panel 2	Panel 3	
Product Code:	562-63122			561-63531			
Color Name:	Summit White			Zephyr Matte Met			
GMXX#							
WAXXXX#:	WA8624			WA139H			
Film Build:	1.02	0.96	0.98	0.80	0.77	0.78	
Fi: Bare Panel/Foil (g)	0.850	0.846	0.841	0.852	0.853	0.867	Data from panels (solids on work) W0
Gi: Painted Before Zone (g)	1.171	1.175	1.187	1.079	1.078	1.076	Data after W4
Gf: Painted-After Zone (g)	1.154	1.154	1.141	1.049	1.065	1.050	Data after W5
W_{Ci} : Painted After Fully Baked (g)	1.154	1.154	1.141	1.049	1.065	1.050	Data after W5
P_{Bi} = Gi - Fi :Weight of paint sample before zone	0.322	0.329	0.346	0.227	0.225	0.209	
P_{Ci} = Gf - Fi :Weight of paint sample after zone	0.305	0.308	0.300	0.198	0.212	0.183	
$\%VOC_{BI}$: %Organic Before Zone	0.000	0.000	0.000	0.005	0.005	0.005	Determined by GC @ W4
%NV: Before Zone	94.346	93.480	86.507	91.697	92.369	94.312	
%Water: Before Zone	5.654	6.520	13.493	8.299	7.626	5.683	
$\%VOC_{CI}$: %Organic After Zone	0.000	0.000	0.000	0.000	0.000	0.000	Determined by GC @ W5
%NV: After Zone	100.000	100.000	100.000	100.000	100.000	100.000	
%Water: After Zone	0.000	0.000	0.000	0.000	0.000	0.000	
WFS Basecoat (% wt solids)	40.690	40.690	40.690	20.020	20.020	20.020	
WGC Basecoat (lb/gal)	10.040	10.040	10.040	8.590	8.590	8.590	
VFS Basecoat (% vol solids)	28.130	28.130	28.130	17.014	17.014	17.014	
D_{COS} = (WGC*WFS)/VFS (Solids Density)	14.523	14.523	14.523	10.108	10.108	10.108	
W_{VOC} =[P_{Bi} X $\%VOC_{BI}$] - [P_{Ci} X $\%VOC_{CI}$] (g VOC)	0.000	0.000	0.000	0.000	0.000	0.000	
W_{COS} = W_{CI} - F_i (g slds applied)	0.305	0.308	0.300	0.198	0.212	0.183	
CL(total) = D_{COS} X (W_{VOC} / W_{COS})	0.000	0.000	0.000	0.001	0.000	0.001	
CL average (Lbs VOC / Gal Solids Applied)		0.000			0.001		

Oven Solvent Loading Report Format

Plant ID	FACTORY ZERO	**Date of Test**	10/25/2024
Supplier	AXALTA	**MTR REF #**	09PT8644
Supplier Contact	Troy Lictawa	**MATERIAL TYPE (PRIMER, BC, CC, ETC)**	**CLEARCOAT - THREE COAT**

	Panel 1	Panel 2	Panel 3
Product Code Color Name GMXX# WAXXXX#	RKS61013 / VGS40410 Clearcoat		
Film Build (mils)	2.200	2.160	2.180
W0: Bare Panel (g)	0.838	0.839	0.832
W1: Painted Before Oven (g)	1.469	1.543	1.539
W2: Painted-After Oven (g)	1.416	1.458	1.431
T1: CC only (mils)	2.200	2.160	2.180
WFS CC (% wt solids)	55.070	55.070	55.070
WGC CC (lb/gal)	8.370	8.370	8.370
VFS CC (% vol solids)	48.833	48.833	48.833
Dpr = (WGC*WFS)/VFS	9.439	9.439	9.439
WSD CC =	9.439	9.439	9.439
WPS = W3 - W0(g slds applied)	0.484	0.515	0.503
WSA = W2 - W3 (g VOC)	0.093	0.104	0.095
CDL = WSD*(WSA/WPS)	1.818	1.899	1.781
CDL average	1.833		

Flash Study Report

Plant ID	FACTORY ZERO	**%Weight Non Volatile**	55.070
Supplier	AXALTA	**%Volume Non Volatile**	48.833
Paint Technology	2K Clearcoat	**Density (lb/gal)**	8.370
Date of Test	10/25/2024	**Density - Non Volatile (lb/gal)**	9.439

Panel Mass (g)

	Panel 1	Panel 2	Panel 3
W0=Bare Panel Wt.	0.838	0.839	0.832
W1 =Panel & CC spray	1.469	1.543	1.539
W2 =Panel & CC after flash	1.416	1.458	1.431
W3=after 36 min 45 sec @ 250°F	1.323	1.355	1.336

Film Mass (g)

	Panel 1	Panel 2	Panel 3
W1	0.631	0.703	0.707
W2	0.578	0.619	0.598
W3	0.484	0.515	0.503

Solvent Mass (g)

Flash time (min)	Panel 1	Panel 2	Panel 3
W1 =Panel & CC after spray	0.146	0.188	0.204
W2 =Panel & CC after flash	0.093	0.104	0.095
W3=after 36 min 45 sec @ 250°F	0.000	0.000	0.000

Lbs VOC in Film/ gal. of solids applied

	Panel 1	Panel 2	Panel 3	Average
W1	2.853	3.439	3.819	3.371
W2	1.818	1.899	1.781	1.833
W3	0.000	0.000	0.000	0.000