Released by UL Environment
Date Issued: April 17, 2019
Product ID #: 1000640852-2123343
Test Report #: 1000640852-2123343R1

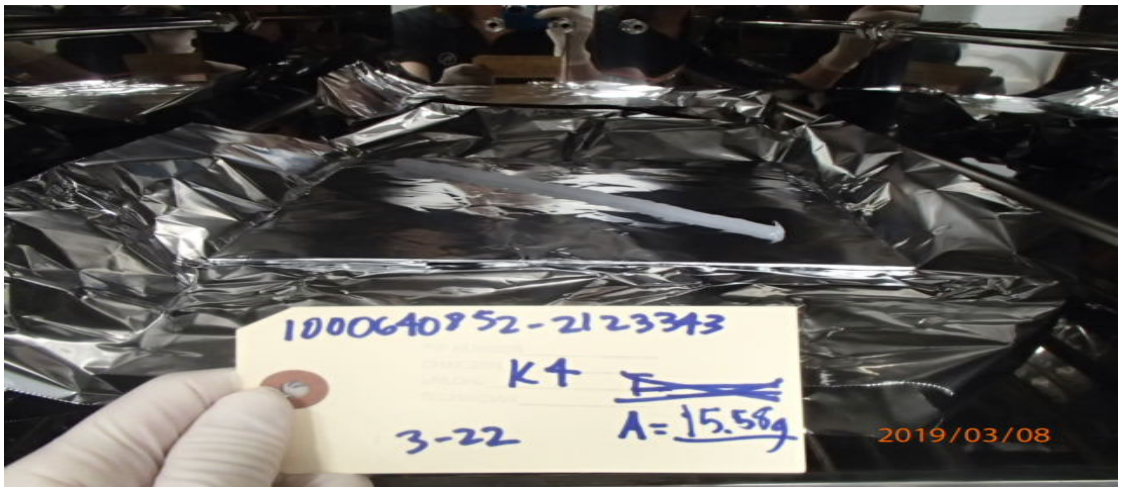
CDPH2
Supersedes Test Report #: 1000640852-2123343

INDOOR AIR QUALITY EVALUATION FOLLOWING THE REQUIREMENTS OF CDPH/EHLB/STANDARD METHOD		
Product Description	DOWSIL™ 799 Silicone Glass and Metal Building Sealant	
Customer Information	DOW SILICONES CORP KELLY ALLORE 2200 W SALZBURG RD MIDLAND MI 48686	
Testing Laboratory	2211 Newmarket Parkway, Suite 106, Marietta, GA 30067-9399 USA	
Product Category	Adhesives/Sealants	
Product Sub-Category	Sealants	
Date Received	March 4, 2019	
Test Description	The product was received by UL Environment as packaged and shipped by the customer. The package was visually inspected and stored in a controlled environment immediately following sample check-in. Just prior to loading, a ⅜" wide bead 11.5" long was applied to a foil-wrapped plate. The sample was immediately placed inside the environmental chamber, and tested according to the specified protocol.	
Test Date	3/8/2019 - 3/22/2019	
Product Area Exposed	length = 0.2920 m	
Chamber Volume	0.0863 m^3	
Product Loading Ratio	3.38 m/m^3	
Test Chamber Conditions	Air change rate: 1.00 ± 0.05 1/h Inlet air flow rate: 0.0863 ± 0.004 m^3/h	Temperature: 22.1ºC - 22.8ºC* Relative Humidity: 50% RH ± 5%
Test Method	CDPH - CA Section 01350 *Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers* Version 1.2.	
Released by	Allyson M. McFry Chemistry Laboratory Director	

*The temperature range specification is 23°C ± 1°. The actual temperature range listed above may vary slightly. If the range is outside this specification, data was reviewed to ensure a negative impact did not occur.

This test is accredited under the laboratory's ISO/IEC 17025 accreditation issued by ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation AT-1297.

PHOTOGRAPH OF SAMPLE



RESULTS SUMMARY

Product Description	DOWSIL™ 799 Silicone Glass and Metal Building Sealant				
Environment	**Product Usage**	**Product Surface Area**	**Room Volume**	**Ventilation Rate (ACH)**	**Product Compliance?**
Classroom	Bead adhesive	39 m	231 m³	0.82	Yes
Office	Bead adhesive	14.6 m	30.6 m³	0.68	Yes

PROJECT DESCRIPTION

The product was monitored for emissions of TVOC, individual VOCs, formaldehyde and other aldehydes over the 96-hour test period. Measurements were made and predicted exposures were calculated according to the CA Section 01350 protocol. As specified in this protocol, the results at 96 hours, after 10 days of conditioning, were compared to ½ (one-half) the current Chronic Reference Exposure Levels (CRELs), as adopted from the California OEHHA list. All identified VOCs were also compared to the California-EPA OEHHA Proposition 65 list and the California-EPA Air Resource Board list of Toxic Air Contaminants (TACs).

Report Outline:

For UL Environment's technical references and resources click here or https://industries.ul.com/wp-content/uploads/sites/2/2018/02/Technical-references-and-resources.pdf

For Product Evaluation Methodologies information click here or https://industries.ul.com/wp-content/uploads/sites/2/2018/03/ProductEvaluationMethodologies-PE.pdf

For Quality Control Program or Environmental Chamber Evaluations information click here or https://industries.ul.com/wp-content/uploads/sites/2/2018/02/Quality-Control-Procedures.pdf

For RSD, Quality Assurance Report or other quality documents, Request here or contact ULE.

TABLE 1

Product Description	DOWSIL™ 799 Silicone Glass and Metal Building Sealant

COMPARISON OF DATA TO METHOD REQUIREMENTS AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING

Compound	CAS Number	½ CREL (µg/m³)	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m•hr)	Classroom Predicted Concentration (µg/m³)**	Office Predicted Concentration (µg/m³)**	Meets ½ CREL? (Classroom/ Office)
Acetaldehyde	75-07-0	70	BQL	BQL	BQL	BQL	Yes
Benzene	71-43-2	1.5	BQL	BQL	BQL	BQL	Yes
Carbon disulfide*	75-15-0	400	BQL	BQL	BQL	BQL	Yes
Carbon tetrachloride*	56-23-5	20	BQL	BQL	BQL	BQL	Yes
Chlorobenzene	108-90-7	500	BQL	BQL	BQL	BQL	Yes
Chloroform*	67-66-3	150	BQL	BQL	BQL	BQL	Yes
Dichlorobenzene (1,4-)	106-46-7	400	BQL	BQL	BQL	BQL	Yes
Dichloroethylene (1,1)*	75-35-4	35	BQL	BQL	BQL	BQL	Yes
Dimethylformamide (N,N-)*	68-12-2	40	BQL	BQL	BQL	BQL	Yes
Dioxane (1,4-)	123-91-1	1,500	BQL	BQL	BQL	BQL	Yes
Epichlorohydrin	106-89-8	1.5	BQL	BQL	BQL	BQL	Yes
Ethylbenzene	100-41-4	1,000	BQL	BQL	BQL	BQL	Yes
Ethylene glycol	107-21-1	200	BQL	BQL	BQL	BQL	Yes
Ethylene glycol monoethyl ether acetate*	111-15-9	150	BQL	BQL	BQL	BQL	Yes
Ethylene glycol monoethyl ether*	110-80-5	35	BQL	BQL	BQL	BQL	Yes
Ethylene glycol monomethyl ether acetate*	110-49-6	45	BQL	BQL	BQL	BQL	Yes
Ethylene glycol monomethyl ether*	109-86-4	30	BQL	BQL	BQL	BQL	Yes
Formaldehyde	50-00-0	9.0***	BQL	BQL	BQL	BQL	Yes

Product Description	DOWSIL™ 799 Silicone Glass and Metal Building Sealant

COMPARISON OF DATA TO METHOD REQUIREMENTS AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING

Compound	CAS Number	½ CREL (µg/m³)	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m•hr)	Classroom Predicted Concentration (µg/m³)**	Office Predicted Concentration (µg/m³)**	Meets ½ CREL? (Classroom/ Office)
Hexane (n-)	110-54-3	3,500	BQL	BQL	BQL	BQL	Yes
Isophorone*	78-59-1	1,000	BQL	BQL	BQL	BQL	Yes
Isopropanol	67-63-0	3,500	BQL	BQL	BQL	BQL	Yes
Methyl chloroform*	71-55-6	500	BQL	BQL	BQL	BQL	Yes
Methyl t-butyl ether	1634-04-4	4,000	BQL	BQL	BQL	BQL	Yes
Methylene chloride*	75-09-2	200	BQL	BQL	BQL	BQL	Yes
Naphthalene	91-20-3	4.5	BQL	BQL	BQL	BQL	Yes
Phenol	108-95-2	100	BQL	BQL	BQL	BQL	Yes
Propylene glycol monomethyl ether*	107-98-2	3,500	BQL	BQL	BQL	BQL	Yes
Styrene	100-42-5	450	BQL	BQL	BQL	BQL	Yes
Tetrachloroethylene (perchloroethylene)	127-18-4	17.5	BQL	BQL	BQL	BQL	Yes
Toluene	108-88-3	150	BQL	BQL	BQL	BQL	Yes
Trichloroethylene	79-01-6	300	BQL	BQL	BQL	BQL	Yes
Vinyl acetate	108-05-4	100	BQL	BQL	BQL	BQL	Yes
Xylenes (m-, o-, p-)	1330-20-7	350	BQL	BQL	BQL	BQL	Yes

BQL denotes below quantifiable level of 0.04 µg for individual VOCs, with the exceptions benzene and epichlorohydrin which have a QL of 0.02 µg, based on a standard 18 L air collection volume.

††The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_C), the chamber volume (V_C), and the product area exposed in the chamber (A_C) as: $EF = (CC*V_C*N_C)/A_C$.

*Denotes compound is within volatility range of method but no calibration standard was available.

**The predicted building exposure concentration (BC) is calculated from the emission factor (EF), the building air change rate (N_B), the building room volume (V_B), and the product area exposed in the building room (A_B) as: $BC = (EF*A_B)/(V_B*N_B)$. For more information on Predicted Concentration modeling parameters, click here.

***Guidance value per CA Standard Method.

TABLE 2

Product Description	DOWSIL™ 799 Silicone Glass and Metal Building Sealant	
CHAMBER CONCENTRATIONS AND EMISSION FACTORS FOR TVOC AND FORMALDEHYDE AT 24, 48, AND 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING		
Elapsed Exposure Hour After 10 Days Conditioning	**Chamber Concentration (µg/m³)**	**Emission Factor†† (µg/m•hr)**
TVOC†		
24	533	158
48	456	135
96	428	127
Formaldehyde‡		
24	BQL	BQL
48	BQL	BQL
96	BQL	BQL

BQL denotes below quantifiable level of 2 µg/m³.

Exposure hours are nominal (± 1 hour).

†Defined as the sum of those VOCs that elute between the retention times of n-hexane (C_6) and n-hexadecane (C_{16}) on a non-polar capillary GC column quantified based on a toluene response factor.

‡ Compound identified and quantified by DNPH derivitization and HPLC/UV analysis.

††The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_C), the chamber volume (V_C), and the product area exposed in the chamber (A_C) as: $EF = (CC*V_C*N_C)/A_C$.

TABLE 3

Product Description	DOWSIL™ 799 Silicone Glass and Metal Building Sealant

TEN MOST ABUNDANT IDENTIFIED INDIVIDUAL VOLATILE ORGANIC COMPOUNDS (VOCs) AND/OR ALDEHYDES AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING

CAS Number	Compound	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m•hr)	Calculated Predicted Exposure Concentration** (µg/m³)	
				Classroom	Office
---	**TVOC‡‡**	**428**	**127**	**26.1**	**88.8**
540-97-6	Cyclohexasiloxane, dodecamethyl	169	49.8	10.3	34.9
541-02-6	Cyclopentasiloxane, decamethyl	130	38.3	7.9	26.9
96-29-7	2-Butanone, oxime*	88.0	26.0	5.4	18.2
107-50-6	Cycloheptasiloxane, tetradecamethyl-*	20.4	6.0	1.2	4.2
541-05-9	Cyclotrisiloxane, hexamethyl	8.3	2.5	0.5	1.8
13794-28-0	Ethyl 2-isocyanatopropionate*	6.9	2.1	0.4	1.5
556-67-2	Cyclotetrasiloxane, octamethyl	6.5	1.9	0.4	1.3
78-93-3	2-Butanone (Methyl ethyl ketone, MEK)†	2.5	0.7	0.1	0.5

Exposure hours are nominal (± 1 hour).

VOC data obtained by scanning GC/MS; identification of compound made by retention time and mass spectral characteristics.

†Quantified using multipoint authentic standard curve. Other VOCs quantified relative to toluene.

*Identification based on NIST mass spectral database only.

‡Compound identified and quantified by DNPH derivitization and HPLC/UV analysis.

††The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_C), the chamber volume (V_C), and the product area exposed in the chamber (A_C) as: $EF = (CC*V_C*N_C)/A_C$.

‡‡Defined as the sum of those VOCs that elute between the retention times of n-hexane (C_6) and n-hexadecane (C_{16}) on a non-polar capillary GC column quantified based on a toluene response factor.

**The predicted building exposure concentration (BC) is calculated from the emission factor (EF), the building air change rate (N_B), the building room volume (V_B), and the product area exposed in the building room (A_B) as: $BC = (EF*A_B)/(V_B*N_B)$. For more information on Predicted Concentration modeling parameters, click here.

TABLE 4

Product Description	DOWSIL™ 799 Silicone Glass and Metal Building Sealant

VOC PREDICTED AIR CONCENTRATIONS AND REGULATORY INFORMATION AT 96 HOURS FOLLOWING 10 DAYS OF CONDITIONING

CAS Number	Compound	Chamber Concentration (µg/m³)	Emission Factor†† (µg/m•hr)	Predicted Exposure Concentration** (µg/m³)		✓ Indicates Presence On List		
				Classroom	Office	CA PROP 65	CA AIR TOXIC	CREL
78-93-3	2-Butanone (Methyl ethyl ketone, MEK)†	2.5	0.7	0.1	0.5		✓(IIA)	

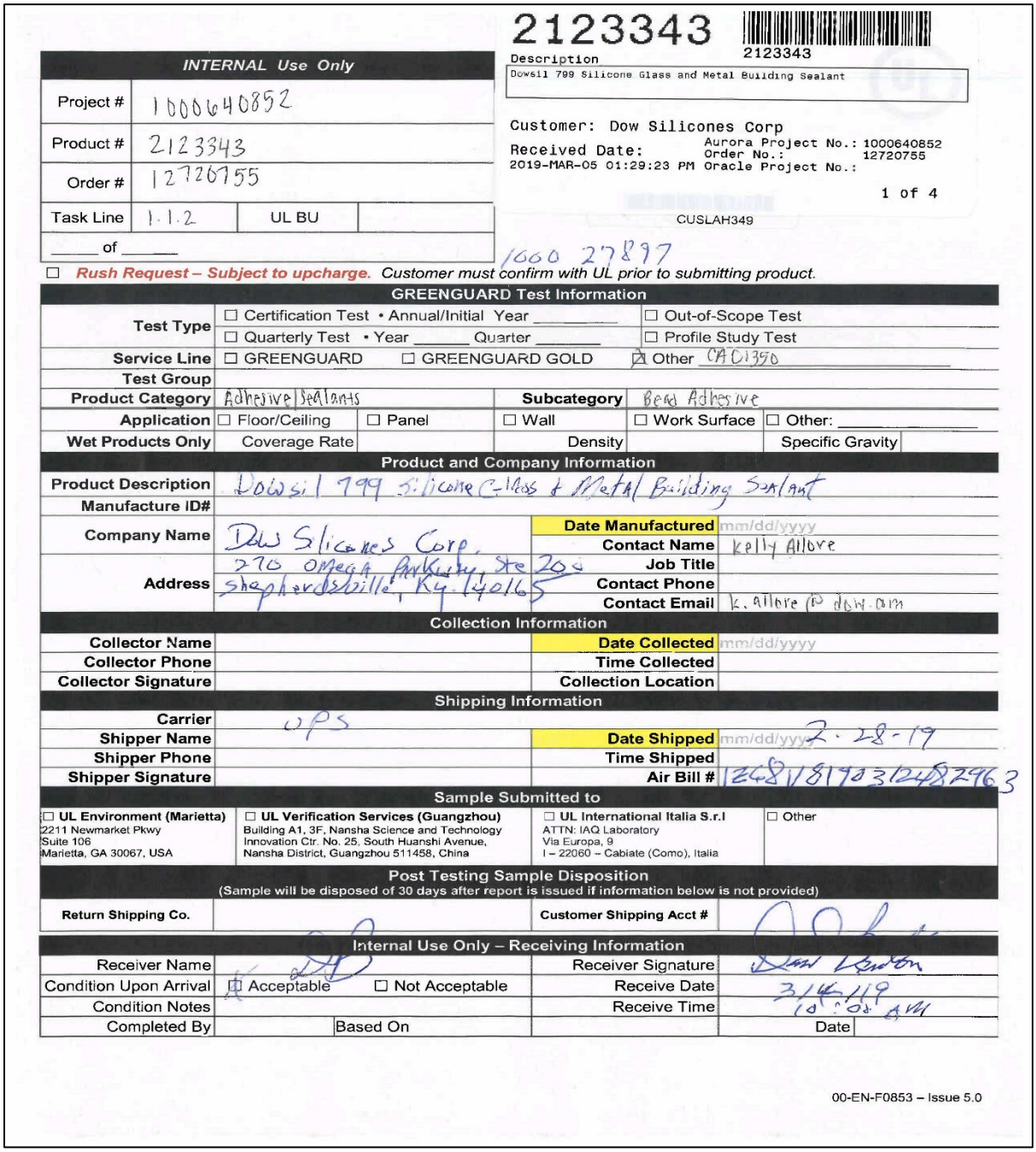
†Quantified using multipoint authentic standard curve. Other VOCs quantified relative to toluene.
‡Compound identified and quantified by DNPH derivitization and HPLC/UV analysis.
††The emission factor (EF) is calculated from the chamber concentration (CC), the chamber air change rate (N_C), the chamber volume (V_C), and the product area exposed in the chamber (A_C) as: $EF = (CC*V_C*N_C)/A_C$.
**The predicted building exposure concentration (BC) is calculated from the emission factor (EF), the building air change rate (N_B), the building room volume (V_B), and the product area exposed in the building room (A_B) as: $BC = (EF*A_B)/(V_B*N_B)$. For more information on Predicted Concentration modeling parameters, click here.
CAL Prop. 65: California Health and Welfare Agency, Proposition 65 Chemicals
1 = known to cause cancer
2 = known to cause reproductive toxicity

CAL Toxic Air Contaminant:
I) Substances identified as Toxic Air Contaminants, known to be emitted in California, with a full set of health values reviewed by the Scientific Review Panel.
IIA) Substances identified as Toxic Air Contaminants, known to be emitted in California, with one or more health values under development by the Office of Environmental Health Hazard Assessment for review by the Scientific Review Panel.
IIB) Substances NOT identified as Toxic Air Contaminants, known to be emitted in California, with one or more health values under development by the Office of Environmental Health Hazard Assessment for review by the Scientific Review Panel.
III) Substances known to be emitted in California, and are NOMINATED for development of health values or additional health values.
IVA) Substance identified as Toxic Air Contaminants, known to be emitted in California, and are TO BE EVALUATED for entry into Category III.
IVB) Substance NOT identified as Toxic Air Contaminants, known to be emitted in California, and are TO BE EVALUATED for entry into Category III.
V) Substance identified as Toxic Air Contaminants, and NOT KNOWN TO BE EMITTED from stationary source facilities in California based on information from the AB 2588 Air Toxic "Hot Spots" Program and the California Toxic Release Inventory.
VI) Substances identified as Toxic Air Contaminants, NOT KNOWN TO BE EMITTED from stationary source facilities in California, and are active ingredients in pesticides in California.

Chronic REL: California Office of Environmental Health Hazard Assessment (OEHHA), Chronic Reference Exposure Levels
✓ = Found in Listing

Product Description	DOWSIL™ 799 Silicone Glass and Metal Building Sealant

CHAIN OF CUSTODY



2123343

Description: Dowsil 799 Silicone Glass and Metal Building Sealant

Customer: Dow Silicones Corp
Received Date: 2019-MAR-05 01:29:23 PM
Aurora Project No.: 1000640852
Order No.: 12720755
Oracle Project No.:
1 of 4
CUSLAH349

1000 27897

INTERNAL Use Only

Project #	1000640852		
Product #	2123343		
Order #	12720755		
Task Line	1.1.2	UL BU	
_____ of _____			

☐ ***Rush Request – Subject to upcharge.*** *Customer must confirm with UL prior to submitting product.*

GREENGUARD Test Information

Test Type	☐ Certification Test • Annual/Initial Year _____	☐ Out-of-Scope Test	
	☐ Quarterly Test • Year _____ Quarter _____	☐ Profile Study Test	
Service Line	☐ GREENGUARD ☐ GREENGUARD GOLD	☒ Other CA C1350	
Test Group			
Product Category	Adhesive/Sealants	**Subcategory**	Bead Adhesive
Application	☐ Floor/Ceiling ☐ Panel	☐ Wall ☐ Work Surface	☐ Other: _____
Wet Products Only	Coverage Rate	Density	Specific Gravity

Product and Company Information

Product Description	Dowsil 799 Silicone Glass & Metal Building Sealant		
Manufacture ID#			
Company Name	Dow Silicones Corp.	**Date Manufactured**	mm/dd/yyyy
		Contact Name	Kelly Allore
Address	270 Omega Parkway, Ste 200	**Job Title**	
	Shepherdsville, KY 40165	**Contact Phone**	
		Contact Email	k.allore@dow.com

Collection Information

Collector Name		**Date Collected**	mm/dd/yyyy
Collector Phone		**Time Collected**	
Collector Signature		**Collection Location**	

Shipping Information

Carrier	UPS		
Shipper Name		**Date Shipped**	mm/dd/yyyy 2-28-19
Shipper Phone		**Time Shipped**	
Shipper Signature		**Air Bill #**	1Z681819031248296 3

Sample Submitted to

☐ **UL Environment (Marietta)** 2211 Newmarket Pkwy Suite 106 Marietta, GA 30067, USA	☐ **UL Verification Services (Guangzhou)** Building A1, 3F, Nansha Science and Technology Innovation Ctr. No. 25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China	☐ **UL International Italia S.r.l** ATTN: IAQ Laboratory Via Europa, 9 I – 22060 – Cabiate (Como), Italia	☐ Other

Post Testing Sample Disposition
(Sample will be disposed of 30 days after report is issued if information below is not provided)

Return Shipping Co.		**Customer Shipping Acct #**	

Internal Use Only – Receiving Information

Receiver Name		Receiver Signature	
Condition Upon Arrival	☐ Acceptable ☐ Not Acceptable	Receive Date	3/4/19
Condition Notes		Receive Time	10:08 AM
Completed By	Based On		Date

00-EN-F0853 – Issue 5.0

VOC EMISSION RESULTS COMPARISON TO STANDARD

Standard referenced: *CDPH/EHLB/Standard Method V1.2 (January 2017) "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers" (aka CA Section 01350).*

PRODUCT SAMPLE INFORMATION

Manufacturer	Dow Silicones Corp
Product Description	DOWSIL™ 799 Silicone Glass and Metal Building Sealant
Product Type	Adhesives/Sealants
Sample Identification	UL Environment's 1000640852-2123343
Manufactured Date	Not Provided
Test Completed Date	3/22/2019
UL Environment Report #	1000640852-2123343
Report Date	April 17, 2019

TEST RESULTS COMPARISON TO STANDARD CRITERIA

Environment	**Classroom**		**Office**	
Surface Area	39.0 m		14.6 m	
	Criterion	**Meets?**	**Criterion**	**Meets?**
Individual VOC	≤ ½ CREL	Yes	≤ ½ CREL	Yes
Formaldehyde	≤ 9.0 µg/m³	Yes	≤ 9.0 µg/m³	Yes

Environment	**Classroom**	**Office**
Surface Area	39.0 m	14.6 m
TVOC	0.5 mg/m³ or less	0.5 mg/m³ or less

TVOC comparison is based on LEED BD+C: New Construction v4 (LEED v4), Indoor environmental quality (EQ) category/Low-emitting materials credit/Emissions and content requirements/General emissions evaluation.
http://www.usgbc.org/node/2614095?return=/credits/new-construction/v4/indoor-environmental-quality

Reviewed By	Allyson McFry Chemistry Laboratory Manager

Complete testing and data results are presented in UL Environment Report