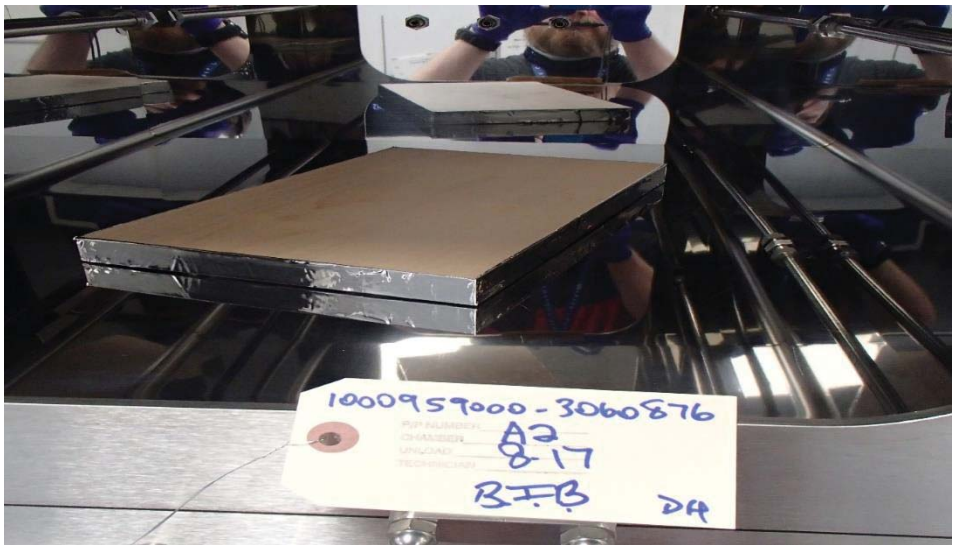
Date Issued: August 26, 2020
Product ID #: 1000959000-3060876
Test Report #: 1000959000-3060876

BSM2

GREENGUARD CERTIFICATION TEST REPORT					
Customer Information	AKZONOBEL PAULINE KRETCHUM 1431 PROGRESS AVE HIGH POINT NC 27260-8322				
Product Description	Airguard Low Gloss Lot # 1792916				
Test Group	Stains and Finishes				
Category	Surfacing Materials				
Test Type	Certification	Year 4			
Test Method	UL 2821 "GREENGUARD Certification Program Method for Measuring and Evaluating Chemical Emissions From Building Materials, Finishes and Furnishings Using Dynamic Environmental Chambers"				
GREENGUARD	**TVOC**	**Formaldehyde**	**Total Aldehydes**	**TLV**	
	✓	✓	✓	✓	
GREENGUARD Gold	**TVOC**	**Formaldehyde**	**Total Aldehydes**	**CREL/TLV**	**NMP**
	✓	✓	✓	✓	✓
✓ - meets criteria; X - over criteria					
Authorized by	Allyson M. McFry Chemistry Laboratory Director				

MODELING PREDICTED CONCENTRATION PARAMETERS						
Certification Program	**Environment Basis**	**Product Usage**	**Surface Area (m^2)**	**Room Volume (m^3)**	**ACH (1/hr)**	**Air Flow Rate (m^3/hr)**
GREENGUARD	Private Office Configuration	workstation	20.1	65.2	0.53	34.68

PHOTOGRAPH OF SAMPLE



GREENGUARD RESULTS SUMMARY

Product Description	Airguard Low Gloss Lot # 1792916		
GREENGUARD Acceptable IAQ Criteria		**168 Hour Product Measurement**	**Product Compliance for IAQ**
TVOC[a]	≤ 0.5 mg/m³	0.011 mg/m³	Yes
Formaldehyde	≤ 0.05 ppm	0.007 ppm	Yes
Total Aldehydes[b]	≤ 0.1 ppm	0.007 ppm	Yes
4-Phenylcyclohexene	≤ 0.0065 mg/m³	< 0.002 mg/m³	Yes
Individual VOCs	all ≤ 1/10 TLV	----------[c]	Yes

[a] "TVOC" is the sum of all VOCs measured via TD/GC/MS which elute between n-hexane (C_6) and n-hexadecane (C_{16}) quantified using calibration to a toluene surrogate.
[b] "Total Aldehydes" is the sum of all measured normal aldehydes from formaldehyde to nonanal, plus benzaldehyde. Heptanal through nonanal are analyzed using TD/GC/MS. The remaining aldehydes are analyzed using HPL/UV methodology. All aldehydes are quantified to authentic standards.
[c] All individual VOCs detected met the criteria of less than 1/10 the ACGIH established threshold limit values (TLVs).

PROJECT DESCRIPTION

This study was conducted using a UL Environment's GREENGUARD test method following the requirements of GREENGUARD Certification program. The product was monitored for emissions of total volatile organic compounds (TVOC), formaldehyde, target list aldehydes, and other individual volatile organic compounds (VOCs) over a 168 hour exposure period. These emissions were measured and the resultant air concentrations were determined for each of the potential pollutants. Determination of compliance is based on predicted air concentrations modeled using the GREENGUARD program room loading.

Report Outline:

Download more information regarding UL's technical references and resources, product evaluation methodologies information, quality control program, and environmental chamber evaluations from our website click here or https://www.ul.com/offerings/greenguard-certification

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

TABLE 1

ENVIRONMENTAL CHAMBER STUDY PARAMETERS			
Product Description	Airguard Low Gloss Lot # 1792916		
Product Manufacture Date	July 28, 2020		
Product Collection Date	July 31, 2020		
Product Shipping Date	July 31, 2020		
Date Received	August 3, 2020		
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, the product was unpackaged and prepared for the required loading to expose the top surface only. The sample was placed inside the environmental chamber, and tested according to the specified protocol.		
Test Period	August 10, 2020 - August 17, 2020		
Area	one-sided area = 0.05527 m²		
Environmental Chamber ID and Volume	SA2 - 0.0903 m³		
Product Loading	0.61 m²/m³		
Test Conditions	1.00 ± 0.05 ACH 50% RH ± 5% RH 22.5ºC - 23.5ºC		
***Accredited Laboratory Locations**	**Testing Laboratory**	**Analytical Laboratory**	**Technical Reporting Location**
	ULE - Marietta	ULE - Marietta	ULE - Marietta

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.

*Accredited Laboratory Locations	
Location	**Address**
ULE - Marietta	UL Environment 2211 Newmarket Parkway, Marietta, GA 30067-9399 USA
ULE - Guangzhou	UL Verification Services (Guangzhou) 1-3F & Room 501, Building 2 (R&D Center A1), No. 25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China
ULE - Cabiate	UL International Italia S.r.l ATTN: IAQ Laboratory Via Europa, 9, I – 22060 – Cabiate (Como), Italia
ULE - Vietnam	UL VS (VIET NAM) CO. LTD., Lot C5, Conurbation 2, Street K1, Cat Lai Industrial Zone, Thanh My Loi Ward, District 2, Ho Chi Minh City, Vietnam
UL - Shimadzu	Shimadzu Techno-Research, Inc. 1, Nishinokyo-Shimoaicho Nakagyo-ku, Kyoto 604-8436 Japan
KCL	Korea Conformity Laboratories #805, I-Valley, 149 Gongdan-ro Gunpo-si, Gyeonggi-do, 15849 Korea

This test is accredited and meets the requirements of ISO/IEC 17025 as verified by ANSI National Accreditation Board. Refer to certificate and scope of accreditation AT-1297.

TABLE 2

Product Description	Airguard Low Gloss Lot # 1792916		
TVOC EMISSION FACTORS AND PREDICTED AIR CONCENTRATIONS			
Elapsed Exposure Hour*	**Emission Factor µg/m²•hr**	**Predicted Air Concentration** µg/m³**	
6	125	73	
24	48.7	28	
48	41.2	24	
72	35.8	20	
96	27.9	17	
168	19.6	11	
1st Order Exponential Decay Constant = k_T = 0.007			
FORMALDEHYDE EMISSION FACTORS AND PREDICTED AIR CONCENTRATIONS			
Elapsed Exposure Hour*	**Emission Factor µg/m² • hr**	**Predicted Air Concentration****	
		µg/m³	**ppm**
6	31.0	18	0.015
24	22.6	12	0.010
48	19.6	12	0.009
72	18.5	11	0.009
96	15.9	10	0.008
168	16.7	9	0.007
1st Order Exponential Decay Constant = k_F =0.002			
TOTAL ALDEHYDE EMISSION FACTORS AND PREDICTED AIR CONCENTRATIONS			
Elapsed Exposure Hour*	**Emission Factor µg/m² • hr**	**Predicted Air Concentration****	
		µg/m³	**ppm**
6	34.6	20	0.015
24	22.6	12	0.010
48	19.6	12	0.009
72	18.5	11	0.009
96	15.9	10	0.008
168	16.7	9	0.007
1st Order Exponential Decay Constant = k_A = 0.002			

*Exposure hours are nominal (± 1 hour).

BQL = Below quantifiable level of 0.04 µg based on a standard 18 L air collection volume for VOCs and 0.1 µg based on a standard 45 L air collection volume for aldehydes.

**Predicted Air Concentrations are based on GREENGUARD modeling predicted concentration parameters. For more information click here.

TABLE 3

Product Description	Airguard Low Gloss Lot # 1792916						
EMISSION FACTORS OF IDENTIFIED INDIVIDUAL VOLATILE ORGANIC COMPOUNDS							
CAS Number	**Compound**	**Elapsed Exposure Hour (µg/m²•hr)**					
		6	**24**	**48**	**72**	**96**	**168**
71-36-3	1-Butanol (N-Butyl alcohol)†	58.1	28.4	24.6	21.1	18.5	17.9
110-43-0	2-Heptanone	22.9	6.0	4.5	4.0	3.4	
123-86-4	Acetate, butyl	17.3	7.1	6.2	5.5	4.8	4.1
78-83-1	1-Propanol, 2-methyl (Isobutyl alcohol)	10.4	6.0	5.2	4.6	3.9	3.9
42125-10-0	2-Penten-1-ol, acetate, (Z)-*	8.4	5.6	4.2	3.6		
108-95-2	Phenol†	8.2					
790248-21-4	4,6-Dimethylheptan-2-one*	6.2					
106-33-2	Dodecanoic acid, ethyl ester*	6.2	5.6	5.2	4.5	3.9	
123-19-3	4-Heptanone	3.8					
108-83-8	4-Heptanone, 2,6-dimethyl	3.8					
124-19-6	Nonyl aldehyde (Nonanal)†	3.6					

*Indicates NIST/EPA/NIH best library match only based on retention time and mass spectral characteristics.

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

Quantifiable level is 0.04 µg based on a standard 18 L air collection volume.

TABLE 4

Product Description	Airguard Low Gloss Lot # 1792916						
EMISSION FACTORS OF TARGET LIST ALDEHYDES							
CAS Number	**Compound**	**Elapsed Exposure Hour (µg/m²•hr)**					
		6	**24**	**48**	**72**	**96**	**168**
4170-30-3	2-Butenal						
75-07-0	Acetaldehyde						
100-52-7	Benzaldehyde						
5779-94-2	Benzaldehyde, 2,5-dimethyl						
529-20-4	Benzaldehyde, 2-methyl						
620-23-5 /104-87-0	Benzaldehyde, 3- and/or 4-methyl						
123-72-8	Butanal						
590-86-3	Butanal, 3-methyl						
50-00-0	Formaldehyde	31.0	22.6	19.6	18.5	15.9	16.7
66-25-1	Hexanal						
110-62-3	Pentanal						
123-38-6	Propanal						

Quantifiable level is 0.1 µg is based on a standard 45 L air collection volume.

TABLE 5

SUPPLEMENTAL EMISSIONS INFORMATION

The table below represents this product's identified chemical emissions found on certain regulatory lists. This list only provides a statement regarding possible health effects associated with this compound and not the relative risks of exposure. Proper interpretation of the risks associated with exposure to a given regulated compound requires a more detailed evaluation of toxicological activity. Certain purchasing programs may require this information be submitted.

Product Description	Airguard Low Gloss Lot # 1792916						
CAS Number	**Compound**	**✓() = FOUND IN LISTING (CLASS)**					
		CAL PROP. 65	**NTP**	**IARC**	**CAL AIR TOXICS**	**CREL**	**TLV**
71-36-3	1-Butanol (N-Butyl alcohol)†				✓(IVB)		✓
78-83-1	1-Propanol, 2-methyl (Isobutyl alcohol)						✓
110-43-0	2-Heptanone						✓
123-19-3	4-Heptanone						✓
108-83-8	4-Heptanone, 2,6-dimethyl						✓
123-86-4	Acetate, butyl						✓
50-00-0	Formaldehyde	✓(1)	✓(2A)	✓(1)	✓(IIA)	✓	✓
108-95-2	Phenol†			✓(3)	✓(IIA)	✓	✓

†Denotes quantified using multipoint authentic standard curve

CAL Prop. 65: California Health and Welfare Agency, Proposition 65 Chemicals
1 = known to cause cancer
2 = known to cause reproductive toxicity

NTP: National Toxicology Program
2A = known to be carcinogenic to humans
2B = reasonably anticipated to be carcinogenic to humans

IARC: International Agency on Research of Cancer
1 = carcinogenic to humans
2A = probably carcinogenic to humans
2B = possibly carcinogenic to humans
3 = unclassifiable as to carcinogenicity to humans
4 = probably not carcinogenic to humans

California Air Toxics
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.
IVBA =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.

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

ACGIH TLV American Conference of Governmental Industrial Hygienists Threshold Limit Values for Chemical Substances and Physical Agents.
✓ = Found in Listing.

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Description
Airguard Low Gloss Lot # 1792916

Customer: AkzoNobel

Received Date: 2020-AUG-04 07:24:45 AM
Aurora Project No.: 1000959000
Order No.: 13351288
Oracle Project No.:

2 of 4

CUUGBA110

INTERNAL Use Only			
Project #	1000959000		
Product #	3060876		
Order #	13351288		
Task Line	1.1	UL BU	
_____ of _____	90343		

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

GREENGUARD Test Information

Test Type (Adam 8/3/2020)	☑ Certification Test ☑ ~~Quarterly Test~~	Annual/Initial Year ~~2020~~ 4 • Year _____ Quarter _____	☐ Out-of-Scope Test ☐ Profile Study Test	
Service Line	☑ GREENGUARD	☐ GREENGUARD GOLD	☐ Other _____	
Test Group	Stains and Finishes			
Product Category		Subcategory		
Application	☐ Floor/Ceiling	☑ Panel	☐ Wall	☐ Work Surface ☐ Other: _____
Wet Products Only	Coverage Rate		Density	Specific Gravity

Product and Company Information

Product Description	Airguard Low Gloss Lot # 1792916		
Manufacture ID#	M330-2065U-2082		
Company Name	AKZO Nobel	Date Manufactured	07/28/2020
		Contact Name	David Rodger
Address	1431 Progress Ave High Point NC 27260	Job Title	Chemist
		Contact Phone	
		Contact Email	David.Rodger@akzonobel.com

Collection Information

Collector Name	David Batorick	Date Collected	07/31/2020
Collector Phone		Time Collected	11:00 Am
Collector Signature	David Batorick	Collection Location	Lab

Shipping Information

Carrier	Fed-Ex		
Shipper Name		Date Shipped	07/31/2020
Shipper Phone		Time Shipped	
Shipper Signature		Air Bill #	771 47649026

Sample Submitted to

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

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

Return Shipping Co.	Na	Customer Shipping Acct #	Na

Internal Use Only – Receiving Information

Receiver Name		Receiver Signature	
Condition Upon Arrival	☑ Acceptable ☐ Not Acceptable	Receive Date	8/3/20
Condition Notes		Receive Time	9:29 AM
Completed By	Based On		Date

00-EN-F0853 – Issue 5.0