



| GREENGUARD CERTIFICATION TEST REPORT | | | | | |
|---------------------------------------|--|-------------|---------------------|------------------------|-----------------|
| Customer Information | JIANGSU ZHENGYOUNG FLOORING DECORATION MATERIAL CO., LTD. MICHELE FEI NO.32 CUIBEI, HENGLIN TOWN WUJIN DISTRICT, CHANGZHOU, JIANGSU CHINA | | | | |
| Product Description | 14.0mm SPC with 0.7mm Wearable Layer without Underlayment, Slotted (SPC + 2 Layer LVT Core) | | | | |
| Test Group | Vinyl Flooring - 01 (SPC) | | | | |
| Category | Flooring | | | | |
| Test Type | Initial | | | | |
| Test Method | UL 2821 "GREENGUARD Certification Program Method for Measuring and Evaluating Chemical Emissions From Building Materials, Finishes and Furnishings Using Dynamic Environmental Chambers" | | | | |
| | Environment | TVOC | Formaldehyde | Total Aldehydes | CREL/TLV |
| GREENGUARD | Office | ✓ | ✓ | ✓ | ✓ |
| GREENGUARD Gold | Office | ✓ | ✓ | ✓ | ✓ |
| | Classroom | ✓ | ✓ | ✓ | ✓ |
| ✓ - meets criteria; X - over criteria | | | | | |
| Laboratory Approval |  Ring Zhong Laboratory Testing Supervisor | | | | |

| MODELING FOR PREDICTED AIR CONCENTRATION | | | | | |
|--|---------------------------|----------------|--------------------------------|-------------------------------|------------|
| Certification Program | Environment Basis | Modeling Basis | Surface Area (m ²) | Room Volume (m ³) | ACH (1/hr) |
| GREENGUARD and GREENGUARD Gold Office | CDPH/EHLB/Standard Method | floor | 11.1 | 30.6 | 0.68 |
| GREENGUARD Gold Classroom | CDPH/EHLB/Standard Method | floor | 89.2 | 231 | 0.82 |

Note that certain environments and/or modeling scenarios may prevent assessment of low level CREL and TLV analytes due to the emissions being below the lower LOQ (0.04 µg). For example, benzene ½ CREL is 1.5 µg/m³.

PHOTOGRAPH OF SAMPLE



GREENGUARD RESULTS SUMMARY

| Product Description | | 14.0mm SPC with 0.7mm Wearable Layer without Underlayment, Slotted (SPC + 2 Layer LVT Core) | |
|------------------------------------|----------------------------|---|----------------------------|
| GREENGUARD Acceptable IAQ Criteria | | 168 Hour Product Measurement | Product Compliance for IAQ |
| TVOC ^a | ≤ 0.5 mg/m ³ | 0.012 mg/m ³ | Yes |
| Formaldehyde | ≤ 0.05 ppm | < 0.002 ppm | Yes |
| Total Aldehydes ^b | ≤ 0.10 ppm | < 0.002 ppm | Yes |
| 4-Phenylcyclohexene | ≤ 0.0065 mg/m ³ | < 0.003 mg/m ³ | 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 (C₆) and n-hexadecane (C₁₆) 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.
^cAll 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:

| | |
|------------------|---|
| Table 1 | Environmental Chamber Study Parameters |
| Table 2 | Emission Factors and Predicted Air Concentrations |
| Table 3 | Chamber Concentrations of Identified VOCs |
| Table 4 | Emission Factors of Identified VOCs |
| Table 5 | Chamber Concentrations of Target List Aldehydes |
| Table 6 | Emission Factor of Target List Aldehydes |
| Table 7 | Supplemental Emissions Information |
| Chain of Custody | Chain of Custody |
| Appendix 1 | GREENGUARD Gold Results Summary |

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/2/2018/02/Product-Evaluation-Methodologies-GG.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

| ENVIRONMENTAL CHAMBER STUDY PARAMETERS | |
|---|--|
| Product Description | 14.0mm SPC with 0.7mm Wearable Layer without Underlayment, Slotted (SPC + 2 Layer LVT Core) |
| Product Manufacture Date | April 8, 2019 |
| Product Collection Date | April 8, 2019 |
| Product Shipping Date | April 8, 2019 |
| Date Received | April 12, 2019 |
| Accredited Laboratory Location* | ULE – Guangzhou |
| Test Description | The product was received by ULE Guangzhou Laboratory 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 finished surfaces only. The sample was placed inside the environmental chamber, and tested according to the specified protocol. |
| Test Period | 4/22/2019 - 4/29/2019 |
| Area | one-sided area = 0.0372 m ² |
| Chamber Volume | 0.0878 m ³ |
| Product Loading | 0.42 m ² /m ³ |
| Test Conditions | 1.00 ± 0.05 ACH 50% RH ± 5% RH 23°C ± 1°C |

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 - Cabiato | UL International Italia S.r.l ATTN: IAQ Laboratory Via Europa, 9, I – 22060 – Cabiato (Como), Italia |
| 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 under the laboratory's ISO/IEC 17025 accreditation issued by International Accreditation Service. Refer to certificate and scope of accreditation TL-441.

TABLE 2

| Product Description | | 14.0mm SPC with 0.7mm Wearable Layer without Underlayment, Slotted (SPC + 2 Layer LVT Core) | | |
|--|--|---|--|------------|
| TVOC CHAMBER CONCENTRATIONS, EMISSION FACTORS AND PREDICTED AIR CONCENTRATIONS | | | | |
| Elapsed Exposure Hour* | Chamber Concentration $\mu\text{g}/\text{m}^3$ | Emission Factor $\mu\text{g}/\text{m}^2\cdot\text{hr}$ | Predicted Air Concentration** $\mu\text{g}/\text{m}^3$ | |
| 0 (Background) | BQL | BQL | --- | |
| 6 | 26.2 | 61.4 | 33 | |
| 24 | 16.4 | 38.8 | 20 | |
| 48 | 13.5 | 31.7 | 18 | |
| 72 | 13.2 | 31.0 | 17 | |
| 96 | 12.3 | 29.0 | 15 | |
| 168 | 9.3 | 22.0 | 12 | |
| 1 st Order Exponential Decay Constant = $k_T = 0.004$ | | | | |
| FORMALDEHYDE CHAMBER CONCENTRATIONS, EMISSION FACTORS AND PREDICTED AIR CONCENTRATIONS | | | | |
| Elapsed Exposure Hour* | Chamber Concentration $\mu\text{g}/\text{m}^3$ | Emission Factor $\mu\text{g}/\text{m}^2\cdot\text{hr}$ | Predicted Air Concentration** | |
| | | | $\mu\text{g}/\text{m}^3$ | ppm |
| 0 (Background) | BQL | BQL | --- | --- |
| 6 | BQL | BQL | < 3 | < 0.002 |
| 24 | BQL | BQL | < 3 | < 0.002 |
| 48 | BQL | BQL | < 3 | < 0.002 |
| 72 | BQL | BQL | < 3 | < 0.002 |
| 96 | BQL | BQL | < 3 | < 0.002 |
| 168 | BQL | BQL | < 3 | < 0.002 |
| TARGET LIST ALDEHYDES CHAMBER CONCENTRATIONS, EMISSION FACTORS AND PREDICTED AIR CONCENTRATIONS | | | | |
| Elapsed Exposure Hour* | Chamber Concentration $\mu\text{g}/\text{m}^3$ | Emission Factor $\mu\text{g}/\text{m}^2\cdot\text{hr}$ | Predicted Air Concentration** | |
| | | | $\mu\text{g}/\text{m}^3$ | ppm |
| 0 (Background) | BQL | BQL | --- | --- |
| 6 | 2.8 | 6.6 | 4 | < 0.002 |
| 24 | 3.7 | 8.7 | 4 | < 0.002 |
| 48 | 2.6 | 6.1 | 4 | < 0.002 |
| 72 | 3.0 | 7.1 | 3 | < 0.002 |
| 96 | BQL | BQL | < 3 | < 0.002 |
| 168 | BQL | BQL | < 3 | < 0.002 |
| Power Law Decay Constant = $k_A = 0.245$ | | | | |

*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 | | 14.0mm SPC with 0.7mm Wearable Layer without Underlayment, Slotted (SPC + 2 Layer LVT Core) | | | | | | |
|--|--|---|------|-----|-----|-----|-----|-----|
| CHAMBER CONCENTRATIONS OF IDENTIFIED INDIVIDUAL VOLATILE ORGANIC COMPOUNDS | | | | | | | | |
| CAS Number | Compound | Elapsed Exposure Hour ($\mu\text{g}/\text{m}^3$) | | | | | | |
| | | 0 (BG) | 6 | 24 | 48 | 72 | 96 | 168 |
| 104-76-7 | 1-Hexanol, 2-ethyl [†] | BQL | 13.7 | 8.8 | 7.0 | 6.2 | 5.7 | 4.1 |
| 108-88-3 | Toluene (Methylbenzene) [†] | BQL | 7.7 | 5.6 | 4.7 | 4.6 | 4.3 | 3.7 |
| 7473-98-5 | 2-Hydroxy-iso-butyrophenone* | BQL | 6.4 | 4.4 | 3.7 | 4.1 | 3.8 | 2.6 |
| 15206-55-0 | Benzeneacetic acid, a-oxo-, methyl ester* | BQL | 2.1 | | | | | |
| 78-93-3 | 2-Butanone (Methyl ethyl ketone, MEK) [†] | BQL | 2.0 | | | | | |

TABLE 4

| Product Description | | 14.0mm SPC with 0.7mm Wearable Layer without Underlayment, Slotted (SPC + 2 Layer LVT Core) | | | | | | |
|--|--|---|------|------|------|------|-----|--|
| EMISSION FACTORS OF IDENTIFIED INDIVIDUAL VOLATILE ORGANIC COMPOUNDS | | | | | | | | |
| CAS Number | Compound | Elapsed Exposure Hour ($\mu\text{g}/\text{m}^2\cdot\text{hr}$) | | | | | | |
| | | 6 | 24 | 48 | 72 | 96 | 168 | |
| 104-76-7 | 1-Hexanol, 2-ethyl [†] | 32.2 | 20.8 | 16.5 | 14.6 | 13.5 | 9.8 | |
| 108-88-3 | Toluene (Methylbenzene) [†] | 18.0 | 13.3 | 11.1 | 10.7 | 10.1 | 8.8 | |
| 7473-98-5 | 2-Hydroxy-iso-butyrophenone* | 15.0 | 10.3 | 8.6 | 9.6 | 9.0 | 6.1 | |
| 15206-55-0 | Benzeneacetic acid, a-oxo-, methyl ester* | 4.9 | | | | | | |
| 78-93-3 | 2-Butanone (Methyl ethyl ketone, MEK) [†] | 4.7 | | | | | | |

*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 5

| Product Description | | 14.0mm SPC with 0.7mm Wearable Layer without Underlayment, Slotted (SPC + 2 Layer LVT Core) | | | | | | |
|--|----------------------------------|---|------------|------------|------------|------------|-----------|------------|
| CHAMBER CONCENTRATIONS OF TARGET LIST ALDEHYDES | | | | | | | | |
| CAS Number | Compound | Elapsed Exposure Hour ($\mu\text{g}/\text{m}^3$) | | | | | | |
| | | 0 (BG) | 6 | 24 | 48 | 72 | 96 | 168 |
| 4170-30-3 | 2-Butenal | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 75-07-0 | Acetaldehyde | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 100-52-7 | Benzaldehyde | BQL | 2.8 | 3.7 | 2.6 | 3.0 | BQL | BQL |
| 5779-94-2 | Benzaldehyde, 2,5-dimethyl | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 529-20-4 | Benzaldehyde, 2-methyl | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 620-23-5 /104-87-0 | Benzaldehyde, 3- and/or 4-methyl | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 123-72-8 | Butanal | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 590-86-3 | Butanal, 3-methyl | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 50-00-0 | Formaldehyde | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 66-25-1 | Hexanal | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 110-62-3 | Pentanal | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 123-38-6 | Propanal | BQL | BQL | BQL | BQL | BQL | BQL | BQL |

TABLE 6

| Product Description | | 14.0mm SPC with 0.7mm Wearable Layer without Underlayment, Slotted (SPC + 2 Layer LVT Core) | | | | | | |
|--|----------------------------------|---|------------|------------|------------|-----------|------------|-----|
| EMISSION FACTORS OF TARGET LIST ALDEHYDES | | | | | | | | |
| CAS Number | Compound | Elapsed Exposure Hour ($\mu\text{g}/\text{m}^2\cdot\text{hr}$) | | | | | | |
| | | 6 | 24 | 48 | 72 | 96 | 168 | |
| 4170-30-3 | 2-Butenal | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 75-07-0 | Acetaldehyde | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 100-52-7 | Benzaldehyde | 6.6 | 8.7 | 6.1 | 7.1 | BQL | BQL | BQL |
| 5779-94-2 | Benzaldehyde, 2,5-dimethyl | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 529-20-4 | Benzaldehyde, 2-methyl | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 620-23-5 /104-87-0 | Benzaldehyde, 3- and/or 4-methyl | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 123-72-8 | Butanal | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 590-86-3 | Butanal, 3-methyl | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 50-00-0 | Formaldehyde | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 66-25-1 | Hexanal | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 110-62-3 | Pentanal | BQL | BQL | BQL | BQL | BQL | BQL | BQL |
| 123-38-6 | Propanal | BQL | BQL | BQL | BQL | BQL | BQL | BQL |

BQL = Below quantifiable level of 0.1 μg based on a standard 45 L air collection volume.

TABLE 7

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 | | 14.0mm SPC with 0.7mm Wearable Layer without Underlayment, Slotted (SPC + 2 Layer LVT Core) | | | | | |
|---------------------|--|---|-----|------|----------------|------|-----|
| CAS Number | Compound | √() = FOUND IN LISTING (CLASS) | | | | | |
| | | CAL PROP. 65 | NTP | IARC | CAL AIR TOXICS | CREL | TLV |
| 78-93-3 | 2-Butanone (Methyl ethyl ketone, MEK) [†] | | | | √(IIA) | | √ |
| 108-88-3 | Toluene (Methylbenzene) [†] | √(2) | | √(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

3 = unclassifiable as to carcinogenicity to humans

2A = probably carcinogenic to humans

4 = probably not carcinogenic to humans

2B = possibly 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.

CHAIN OF CUSTODY

9/201

SF 011763063368
②

| INTERNAL Use Only | | | |
|-------------------|------------|-------|-------|
| Project # | 1000634631 | | |
| Product # | 2106612 | | |
| Order # | 12731130 | | |
| Task Line | 7.1 | UL BU | WC VS |
| 1 of 1 | | | |

2106612

Description: 14.0 x 18.0 SPC with 0.7mm wear-bite Layer without Underlayment.
 (3)-test(SPC + 2 Layer LVT Core)

Customer: Jiangsu Zhengyoung Flooring De
 Received Date: 2019-APR-16 06:30:15 PM Oracle Project No.:
 Aurora Project No.: 1000624621
 Order No.: 12731130
 Oracle Project No.:



Rush Request - Subject to upcharge. Customer must confirm with UL prior to submitting product.

| GREENGUARD Test Information | | | |
|-----------------------------|--|---|------------------|
| Test Type | <input checked="" type="checkbox"/> Certification Test - Annual/Initial Year <u>Initial</u> | <input type="checkbox"/> Out-of-Scope Test | |
| | <input type="checkbox"/> Quarterly Test - Year _____ Quarter _____ | <input type="checkbox"/> Profile Study Test | |
| Service Line | <input type="checkbox"/> GREENGUARD <input type="checkbox"/> GREENGUARD GOLD <input type="checkbox"/> Other | | |
| Test Group | <u>Vinyl Flooring - 01 (SPC)</u> | | |
| Product Category | Subcategory | | |
| Application | <input type="checkbox"/> Floor/Ceiling <input type="checkbox"/> Panel <input type="checkbox"/> Wall <input type="checkbox"/> Work Surface <input type="checkbox"/> Other | | |
| Wet Products Only | Coverage Rate | Density | Specific Gravity |

| Product and Company Information | | | |
|---------------------------------|--|-------------------|--------------------------|
| Product Description | <u>SPC 14.0mm SPC with 0.7mm wearable layer without Underlayment, Slotted SPC + 2 layer LVT Core</u> | | |
| Manufacture ID# | S7 | | |
| Company Name | Jiangsu Zhengyoung Flooring Decoration Material Co., Ltd | Date Manufactured | 4/8/2019 |
| Address | No 33, Guibai, Hongjin Town, Wuyin Dist, | Contact Name | Michele |
| | Changzhou, Jiangsu, China | Job Title | SALES |
| | | Contact Phone | 17712763320 |
| | | Contact Email | michele@z-youngfloor.com |

| Collection Information | |
|------------------------|-------------------------|
| Collector Name | Date Collected 4/8/2019 |
| Collector Phone | Time Collected |
| Collector Signature | Collection Location |

| Shipping Information | |
|----------------------|-----------------------|
| Carrier | Date Shipped 4/8/2019 |
| Shipper Name | Time Shipped |
| Shipper Phone | Air Bill # |
| Shipper Signature | |

| Sample Submitted to | | | |
|--|---|---|--------------------------------|
| <input type="checkbox"/> UL Environment (Marietta), 2211 Newmarket Way, Suite 100, Marietta, GA 30067, USA | <input checked="" type="checkbox"/> UL Verification Services (Guangzhou), Building A1, SF, Hainan Science and Technology Innovation City, No. 28, South Huanan Avenue, Xingang Road, Guangzhou, China | <input type="checkbox"/> UL International Italia S.p.A., V.le Europa, 9, 20139, Milano (Italy), Italy | <input type="checkbox"/> Other |

| Post Testing Sample Disposition | |
|---------------------------------|--------------------------|
| Return Shipping Co. | Customer Shipping Acct # |

| Internal Use Only - Receiving Information | | | |
|---|--|--------------|------------------|
| Receiver Name | Receiver Signature | <u>UL</u> | |
| Condition Upon Arrival | <input checked="" type="checkbox"/> Acceptable <input type="checkbox"/> Not Acceptable | Receive Date | <u>2019.4.12</u> |
| Condition Notes | | Receive Time | <u>9:30</u> |
| Completed By | Escalation | | Date |

APPENDIX 1

GREENGUARD GOLD RESULTS SUMMARY

| | | | | |
|---|---|---|---------------------------|-----------------------------------|
| Product Description | 14.0mm SPC with 0.7mm Wearable Layer without Underlayment, Slotted (SPC + 2 Layer LVT Core) | | | |
| COMPLIANCE WITH GREENGUARD GOLD STANDARD | | | | |
| GREENGUARD Gold Acceptable IAQ Criteria | | 168 Hour Predicted Concentration** | | Product Compliance for IAQ |
| | | Office | Classroom | |
| TVOC | ≤ 0.22 mg/m³ | 0.012 mg/m ³ | 0.010 mg/m ³ | Yes |
| Formaldehyde | ≤ 0.0073 ppm | < 0.002 ppm | < 0.002 ppm | Yes |
| Total Aldehydes | ≤ 0.043 ppm | < 0.002 ppm | < 0.002 ppm | Yes |
| 1-Methyl-2-Pyrrolidinone | ≤ 0.16 mg/m³ | < 0.003 mg/m ³ | < 0.002 mg/m ³ | Yes |
| Individual VOCs | ≤ 1/100 TLV and ≤ ½ chronic REL | See Below | | |

**Predicted Air Concentrations are based on GREENGUARD Gold modeling predicted concentration parameters.

| TOP TEN MOST ABUNDANT IDENTIFIED VOCS, INCLUDING ALDEHYDES | | | | | |
|---|--------------------------------------|---|--|--|-----------|
| CAS Number | Compound | 168 Hour Chamber Concentration (µg/m ³) | 168 Hour Emission Factor (µg/m ² ·hr) | Predicted Air Concentration** (µg/m ³) | |
| | | | | Office | Classroom |
| 104-76-7 | 1-Hexanol, 2-ethyl [†] | 4.1 | 9.8 | 5 | 5 |
| 108-88-3 | Toluene (Methylbenzene) [†] | 3.7 | 8.8 | 5 | 4 |
| 7473-98-5 | 2-Hydroxy-iso-butyrophenone* | 2.6 | 6.1 | 3 | 3 |

| CHEMICALS OF CONCERN WITH EXISTING TLV, CREL, CA PROP 65 OR CAL TOXIC AIR CONTAMINANT VALUES | | | | | | | | | |
|---|--------------------------------------|---|--|---|-----------|------------------------------|--------|---------|-----------|
| CAS Number | Compound | 168 Hour Chamber Concentration (µg/m ³) | 168 Hour Emission Factor (µg/m ² ·hr) | 168 Hour Predicted Concentration** (µg/m ³) | | ✓ INDICATES PRESENCE ON LIST | | | |
| | | | | Office | Classroom | CA PROP 65 | CA TAC | CA CREL | ACGIH TLV |
| | | | | | | | | | |
| 108-88-3 | Toluene (Methylbenzene) [†] | 3.7 | 8.8 | 5 | 4 | ✓(2) | ✓(IIA) | ✓ | ✓ |

| COMPARISON OF COMPOUNDS FOUND WITH EXISTING TLV AND/OR CHRONIC REL | | | | | | |
|---|-------------------------|---|--|---|-----------|--------------------|
| CAS Number | Compound | 1/100 TLV ^a (µg/m ³) | ½ CA Chronic REL ^b (µg/m ³) | 168 Hour Predicted Concentration** (µg/m ³) | | Product Compliance |
| | | | | Office | Classroom | |
| 108-88-3 | Toluene (Methylbenzene) | 750 | 150 | 5 | 4 | Yes |

^aAmerican Conference of Governmental Industrial Hygienists. Threshold Limit Values for Chemical Substances and Physical Agents. Cincinnati, OH: ACGIH.

^bChronic Reference Exposure Levels (CRELs) adopted by the State of California Office of Environmental Health Hazard Assessment (OEHA).

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

*Indicates compound identified and quantified by DNPH derivitization and HPLC/UV analysis with multipoint authentic standard.

*Identification based on NIST mass spectral database only.

**Predicted Air Concentrations are based on modeling predicted concentration parameters shown [above](#).