

CERTIFICATE OF COMPLIANCE



GREENGUARD

PRODUCT CERTIFIED FOR
LOW CHEMICAL EMISSIONS
UL.COM/GG
UL 2818

Arold
Churchill

91939-410

Certificate Number

05/08/2017 - 08/08/2019

Certificate Period

Certified

Status

UL 2818 - 2013 Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

Commercial furniture and furnishings are tested in accordance with ANSI/BIFMA M7.1-2011(R2016) and determined to comply with ANSI/BIFMA X7.1-2011(R2016) and ANSI/BIFMA e3-2014e Credit 7.6.1. Seating products are modeled in the seating environment with a ventilation rate of 24.8 m³/hour.

Products tested in accordance with UL 2821 test method to show compliance to emission limits in UL 2818, Section 7.1.



UL investigated representative samples of the identified Product(s) to the identified Standard(s) or other requirements in accordance with the agreements and any applicable program service terms in place between UL and the Certificate Holder (collectively "Agreement"). The Certificate Holder is authorized to use the UL Mark for the identified Product(s) manufactured at the production site(s) covered by the UL Test Report, in accordance with the terms of the Agreement. This Certificate is valid for the identified dates unless there is non-compliance with the Agreement.

GREENGUARD Certification Criteria for Mattresses, Bedding, Component Materials and Seating Units

Criteria	CAS Number	Maximum Allowable Predicted Concentration	Units
TVOC ^(A)	-	0.25	mg/m ³
Formaldehyde	50-00-0	30.7 (25 ppb)	μg/m ³
Total Aldehydes ^(B)	-	0.50	ppm
4-Phenylcyclohexene ^(C)	4994-16-5	3.25	μg/m ³
Individual VOCs ^(D)	-	1/10th TLV	-

- (A) Defined to be the total response of measured VOCs falling within the C₆ – C₁₆ range, with responses calibrated to a toluene surrogate.
- (B) The sum of all measured normal aldehydes from formaldehyde through nonanal, plus benzaldehyde, individually calibrated to a compound specific standard. Heptanal through nonanal are measured via TD/GC/MS analysis and the remaining aldehydes are measured using HPLC/UV analysis.
- (C) Applicable to flooring and furniture, including component materials.
- (D) Allowable levels for chemicals not listed are derived from 1/10th of the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, and Cincinnati, OH 45211-4438).



CERTIFICATE OF COMPLIANCE



Arold
Churchill

91939-420

Certificate Number

05/08/2017 - 08/08/2019

Certificate Period

Certified

Status

UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

Commercial furniture and furnishings are tested in accordance with ANSI/BIFMA M7.1-2011(R2016) and determined to comply with ANSI/BIFMA X7.1-2011(R2016) and ANSI/BIFMA e3-2014e Credit 7.6.1, 7.6.2, and 7.6.3. Seating products are modeled in the seating environment with a ventilation rate of 24.8 m³/hour. Products also determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V1.2-2017.

Product tested in accordance with UL 2821 test method to show compliance to emission limits on UL 2818. Section 7.1 and 7.2.



UL investigated representative samples of the identified Product(s) to the identified Standard(s) or other requirements in accordance with the agreements and any applicable program service terms in place between UL and the Certificate Holder (collectively "Agreement"). The Certificate Holder is authorized to use the UL Mark for the identified Product(s) manufactured at the production site(s) covered by the UL Test Report, in accordance with the terms of the Agreement. This Certificate is valid for the identified dates unless there is non-compliance with the Agreement.

GREENGUARD Gold Certification Criteria for Furniture and Mattresses

Criteria	CAS Number	Maximum Allowable Predicted Concentration	Units
TVOC ^(A)	-	0.22	mg/m ³
Formaldehyde	50-00-0	9 (7.3 ppb)	μg/m ³
Total Aldehydes ^(B)	-	0.043	ppm
4-Phenylcyclohexene	4994-16-5	6.5	μg/m ³
1-Methyl-2-pyrrolidinone ^(C)	872-50-4	160	μg/m ³
Individual VOCs ^(D)	-	1/2 CREL or 1/100th TLV	-

- (A) Defined to be the total response of measured VOCs falling within the C₆ – C₁₆ range, with responses calibrated to a toluene surrogate.
- (B) The sum of all measured normal aldehydes from formaldehyde through nonanal, plus benzaldehyde, individually calibrated to a compound specific standard. Heptanal through nonanal are measured via TD/GC/MS analysis and the remaining aldehydes are measured using HPLC/UV analysis.
- (C) Based on the CA Prop 65 Maximum Allowable Dose Level for inhalation of 3,200 μg/day and an inhalation rate of 20 m³/day.
- (D) Allowable levels for chemicals not listed are derived from the lower of 1/2 the California Office of Environmental Health Hazard Assessment (OEHHA) Chronic Reference Exposure Level (CREL) as required per the CDPH/EHLB/Standard Method v1.2 and BIFMA level credit 7.6.2 and 1/100th of the Threshold Limit Value (TLV) industrial work place standard (Reference: American Conference of Government Industrial Hygienists, 6500 Glenway, Building D-7, and Cincinnati, OH 45211-4438).

