

# CERTIFICATE OF COMPLIANCE



## Mimaki Engineering Co. Ltd.

UV ink LUS-170

Restrictions: Certified for Signage Applications

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

99655-410

Certificate Number

09/05/2017 - 03/27/2018

Certificate Period

Certified

Status

---

Decorative Display applications are determined compliant using an Office Environment with an air change of  $0.68 \text{ hr}^{-1}$  and a loading of  $3.00 \text{ m}^2$ .

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



**Environment**

## GREENGUARD Certification Criteria for Building Products and Interior Finishes

Criteria	CAS Number	Maximum Allowable Predicted Concentration	Units
TVOC <sup>(A)</sup>	-	0.50	mg/m <sup>3</sup>
Formaldehyde	50-00-0	61.3 (50 ppb)	μg/m <sup>3</sup>
Total Aldehydes <sup>(B)</sup>	-	0.10	ppm
Particle Matter less than 10 μm <sup>(C)</sup>	-	50	μg/m <sup>3</sup>
4-Phenylcyclohexene	4994-16-5	6.5	μg/m <sup>3</sup>
Individual VOCs <sup>(D)</sup>	-	1/10th TLV	-

- (A) Defined to be the total response of measured VOCs falling within the C<sub>6</sub> – C<sub>16</sub> range, with responses calibrated to a toluene surrogate. Maximum allowable predicted TVOC concentrations for GREENGUARD (0.50 mg/m<sup>3</sup>) fall in the range of 0.5 mg/m<sup>3</sup> or less, as specified in CDPH Standard Method v1.1.
- (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) Particle emission requirement only applicable to HVAC Duct Products with exposed surface area in air streams (a forced air test with specific test method) and for wood finishing (sanding) systems.
- (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).



Environment

# CERTIFICATE OF COMPLIANCE



**Mimaki Engineering Co.  
Ltd.**

**UV ink LUS-170**

Restrictions: Certified for Signage Applications

99655-420

Certificate Number

09/05/2017 - 03/27/2018

Certificate Period

Certified

Status

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

Decorative Display determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V1.1-2017 using a Classroom Environment with an air change of  $0.82 \text{ hr}^{-1}$  and a loading of  $11.90 \text{ m}^2$ ; and Decorative Display determined compliant in accordance with California Department of Public Health (CDPH) Standard Method V1.1-2017 using an Office Environment with an air change of  $0.68 \text{ hr}^{-1}$  and a loading of  $3.00 \text{ m}^2$ .

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



**Environment**

## GREENGUARD Gold Certification Criteria for Building Products and Interior Finishes

Criteria	CAS Number	Maximum Allowable Predicted Concentration	Units
TVOC <sup>(A)</sup>	-	0.22	mg/m <sup>3</sup>
Formaldehyde	50-00-0	9 (7.3 ppb)	µg/m <sup>3</sup>
Total Aldehydes <sup>(B)</sup>	-	0.043	ppm
4-Phenylcyclohexene	4994-16-5	6.5	µg/m <sup>3</sup>
Particle Matter less than 10 µm <sup>(C)</sup>	-	20	µg/m <sup>3</sup>
1-Methyl-2-pyrrolidinone <sup>(D)</sup>	872-50-4	160	µg/m <sup>3</sup>
Individual VOCs <sup>(E)</sup>	-	1/2 CREL or 1/100th TLV	-

- (A) Defined to be the total response of measured VOCs falling within the C<sub>6</sub> – C<sub>16</sub> range, with responses calibrated to a toluene surrogate. Maximum allowable predicted TVOC concentrations for GREENGUARD Gold (0.22 mg/m<sup>3</sup>) fall in the range of 0.5 mg/m<sup>3</sup> or less, as specified in CDPH Standard Method v1.1.
- (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) Particle emission requirement only applicable to HVAC Duct Products with exposed surface area in air streams (a forced air test with specific test method) and for wood finishing (sanding) systems.
- (D) Based on the CA Prop 65 Maximum Allowable Dose Level for inhalation of 3,200 µg/day and an inhalation rate of 20 m<sup>3</sup>/day
- (E) 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 v1.1 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).



**Environment**