TEST REPORT

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PRODUCT EVALUATED: 3M™ IC15 WB+ 10 oz cartridge

EVALUATION PROPERTY: CDPH Specification 01350 v1.1: Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers v1.1

Report of for compliance with the applicable requirements of the following criteria: CDPH Specification 01350 v1.1: Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers v1.1 and LEED v4.

1 Table of Contents

2 Introduction

Intertek has conducted testing for 3M on 3M™ IC15 WB+ 10 oz cartridge. Testing was conducted following the standard methods of CDPH Specification 01350 v1.1: Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers v 1.1.

3 Test Samples

3.1. SAMPLE SELECTION

Two samples of 98-0400-5509-1 3M™ IC15 WB+ 10 oz cartridge lot 62109CJ was bulk manufactured on 7/28/2016. The bulk material was packaged on 8/1/2016 in standard packaging for 10 oz finish cartridge. The samples were shipped by Andrew J. Mais on 8/1/2016. The sample arrived on 8/3/2016 in the Middleton Lab ID Tracking number: MID1608031410-001.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The sample was placed in a ½ inch wide by ½ inch deep channel in an aluminum tray cut to about 10 inches long. The empty metal channel was weight. The tube was inserted into the applicator gun. The applicator tip was cut to produce about a ½ inch bead of material. About 100g of material was dispensed and discarded. The sample was placed in the tray holder using a single smooth stroke of the gun. Any excess caulk was wiped from the exterior of the channel holder. The metal channel was reweighed after applying the caulk to determine the number of grams of wet caulk per linear meter of ½ inch bead. The sample was immediately transferred to the environmental chamber and the date and time recorded. See appendix 1 for the photo of the sample.

4 Testing and Evaluation Methods

Testing was in accordance with CDPH Specification 01350 v1.1: Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers v1.1.

Testing for the private office, and classroom scenario with Floors, Ceiling and walls, and around windows and doors. The chamber volume is 50.0 L with an inlet flow of 50.0 L/hour. The load factor is based on the total surface area of the system in the standard environment, where the product is applied as stated in section 4.3.6 of the standard. 10 inches is the maximum required length stated in section 3.4.1 of the standard for caulk preparation. The conditioning started on 8/12/2016 and was completed on 8/22/2016. The average temperature range was 23 ^{o}C +/- 2 and 50 +/- 5 %RH. The sampling started on 8/23/2016 and completed 8/26/2016. All GC and LC testing was completed by 8/30/2016.

The VOC for the LC sampling was collected on Sep-Pak DNPH-Silica Cartridges. Collection was performed at 50 ml/min for 20 minutes using a vacuum pump with a mass flow meter. The Sep-Pak DNPH-Silica Cartridges were stored in the refrigerator until eluted according to the manufactures instructions into 5 ml of ACN. The samples were collected at 96 hours within the time limitations specified in the standard. The Sep-Pak DNPH-Silica Cartridges samples were run on Shimadzu HPLC system using a Waters Symetry C18 5um 3.9 x 150 column. A gradient

profile was used to run the standard Aldehyde/Ketone –DNPH Mix.

For the HPLC testing, no target VOCs were found at the 96 hr time point. No quantification was required using the standard with minimum of a 5 point curve. A check standard was run during the samples to verify system suitability.

The VOC for the GC/MS was collected on Thermo Desorption (TD) tubes Atas GL (A100054) fritted linters filled with Tenax GR packing material. Collection was performed at 50 ml/min for 20 minutes using a vacuum pump with a mass flow meter. The TD tubes were verified to be clean before testing. The samples were collected at 24, 48, and 96 hours within the time limitations specified in the standard, and tested the same day. The samples were run on Shimadzu GC/MS with an ATAS GL High Performance injector for the TD tubes. A Restek Rtx-VMS 40 meter, 0.18 mm ID, 1um df was used.

For determining TVOC direct injection of toluene was used with at least 5 different concentrations.

Standard Curves diluted with toluene were performed in triplicate for each standard. The standard was run with the same GC temperature profile as the TD tubes.

The LOQ for toluene was determined to be 0.008044 ug/m^3.

4.1.1. Deviation from Standard Method

There were no deviations from the test standard.

4.2. RESULTS AND OBSERVATIONS

Private Office	m^2		Classroom	m^2
net wall	33.4		net wall	94.6
ceiling	11.1		Walls and Ceiling	183.8
Floors	11.1			
Total surface	55.6		Total surface	278.4

Testing Scenario:	Private Office	Standard Classroom
Product Quantities:	Floors, Ceiling and walls, and around windows	Floors, Ceiling and walls, and around windows and doors
Inlet flow rate Q (m^3 h^-1)	0.05	0.05
Flow rate of the outside ventilation are Q_B (m^3 h^-1)	20.7	191
Exposed surface area of the installed material in the building A_B (m^2)	55.6	278.4
Area Specific flow rate q_A (m^3 h^-1)= Q_B/A_B	0.3723	0.6861
The emission factor can be based on Volume (EfV), length (EFL), mass (EFM) or unit specifc mission rate (ug m-3h-1, ug kg-1 or ug h-1 per unit) by subsituting the appropriate parameter used to quntify the material specimen (See section3,10.1.3 of the standard)	77.052	77.052

Specified Units for the specified emission factor: g/linear foot of 1/2 caulk

							Testing Scenario:	Private Office	Standard Classroom
							Product Quantities:	Floors, Ceiling and walls, and around windows and doors	Floors, Ceiling and walls, and around windows and doors
							Sampling Time (hrs):	24 hr	24 hr
Compound	CAS Number	Retention Time	Area Count Sample	Area Count Background	Chamber Concentration Cit	Chamber background concentration	Specific Emissions Factor at the sampling time (EF_{si})	Specfic Estimated Building Concentration C_{Bi} for Target VOC using EFxi	Specfic Estimated Building Concentration C_{Bi} for Target VOC using EFxi
name	number	minutes	No units	No units	(ug m^-3)	(ug m^-3)	g/foot	(ug m^-3)	(ug m^-3)
Total VOC	na	na	1,762,630	0	31.9648526	0	0.0207	0.0557	0.1496

							Testing Scenario:	Private Office	Standard Classroom
							Product Quantities:	Floors, Ceiling and walls, and around windows and doors	Floors, Ceiling and walls, and around windows and doors
							Sampling Time (hrs):	24 hr	24 hr
Compound	CAS Number	Retention Time	Area Count Sample	Area Count Background	Chamber Concentration Cit	Chamber background concentration	Specific Emissions Factor at the sampling time (EF_{si})	Specfic Estimated Building Concentration C_{Bi} for Target VOC using EFxi	Specfic Estimated Building Concentration C_{Bi} for Target VOC using EFxi
name	number	minutes	No units	No units	(ug m^-3)	(ug m^-3)	g/linear foot of 1/2 caulk	(ug m^-3)	(ug m^-3)
Total VOC	na	na	10046249	0	151.3293046	0	0.0982	0.2638	0.7085

							Testing Scenario:	Private Office	Standard Classroom
							Product Quantities:	Floors, Ceiling and walls, and around windows and doors	Floors, Ceiling and walls, and around windows and doors
							Sampling Time (hrs):	96 hr	96 hr
Compound	CAS Number	Retention Time	Area Count Sample	Area Count Background	Chamber Concentration Cit	Chamber background concentration	Specific Emissions Factor at the sampling time (EF_{si})	Specfic Estimated Building Concentration C_{Bi} for Target VOC using EFxi	Specfic Estimated Building Concentration C_{Bi} for Target VOC using EFxi
name	number	minutes	No units	No units	(ug m^-3)	(ug m^-3)	g/linear foot of 1/2 caulk	(ug m^-3)	(ug m^-3)
Methylacetylene	74-99-7	8.641	635,651	0	15.725	0	0.0102	0.0274	0.0736
Total VOC	na	na	1,168,092	0	23.398	0	0.0152	0.0408	0.1095

4.3. EXAMINATION OF RESULTS

The results are based on the use of 77.05 g/linear foot of 1/2 caulk in a private office or standard classroom placing caulk on the parameters of using floors, ceilings walls and floors and around doors and windows. The amount of the VOC present in the room are based on the total surface area of the system in the standard environment, where the product is applied, using 10 inches of sample in a ½ inch deep by ½ inch wide channel of aluminum with a 50 liter VOC chamber.

One compounds was identified at the 96 hour collection time point. Methyl acetylene CAS# 74-99-7 was determined to be present in the sample by GC/MS analysis. The concentration of the peak was estimated by the use of a surrogate compound of toluene. No Formaldehyde or Acetaldehyde were found by HPLC analysis. No CRELs compounds were found. The summary for each testing scenario is listed in the result above in section 4.2.

5 Appendix A

Photo of tested sample:

6 Conclusion

Intertek has conducted testing for 3M, on 3M™ IC15 WB+ 10 oz cartridge , to evaluate CDPH Specification 01350 v1.1; Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers v1.1.

IC15 WB+ 10 oz cartridge complies with limits specified in CDPH Specification 01350 v1.1 February 2010 for private office and classroom. The sample passed the LEED v4 for total VOC and Target Chemical listed in CDPH Standard Method v 1.1 Table 4-1.

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

INTERTEK
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Reviewed by:

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7 Revision Summary

DATE	SUMMARY
Sept 29, 2016	Original date of report