

## TEST REPORT

CheckCode:143723  
Report No.:C202011034601-2E

**Applicant:** Kunshan Hongtiankai Electronic Material Co., Ltd.  
**Address:** Building C, No.301, Zhangpu Qinhe Road, Kunshan

**The following sample information was submitted and identified by/on the behalf of the client**

**Sample Name:** Composite sound-absorbing material

**Date of Receipt:** Nov.6, 2020      **Test Period:** Nov.6, 2020 – Nov.20, 2020  
Nov.13, 2020

**Test Request:**

1. To determine Formaldehyde, Acetaldehyde, Acrolein, Benzene, Toluene, Ethylbenzene, Xylenes, Styrene and Total Volatile Organic Compounds (TVOC (C6-C16)) emission from the submitted sample.
2. To determine the top ten volatile organic compounds emission from the submitted sample.

**Test Method:** With reference to Q/TX Q2-002.2-2015, *Limits and determination method of volatile organic compounds and aldehydes and ketones in parts and raw materials, Part 2: Measurement method.*

**Test Result:** Please refer to following page(s).

Edited by Lin Guangting Reviewed by Tian Yongxin Approved by Zheng Xiaojing



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Seal of:

GUANGZHOU GRG METROLOGY & TEST CO., LTD.

Issue date: Nov.20,2020

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**GUANGZHOU GRG METROLOGY & TEST CO., LTD.**

Address: 163 Pingyun Road West of Huangpu Avenue Tianhe District Guangzhou City, 510656, P. R. China  
Tel: 4006020999 Fax: +86-020-38698685 Website: <http://www.grgtest.com>

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## 1. VOC

Test Organization			GUANGZHOU GRG METROLOGY & TEST CO., LTD.				
Sample Information	Sample Name		Composite sound-absorbing material				
	Test sample dimensions		1.00m×1.00m×69.94mm		Weight	1.05kg	
	Test date		2020-11-18		Analysis date	2020-11-18	
	Conditioning conditions		(23±2)℃, (50±5)%RH, 24h±0.5h				
	Pretreatment		Undone				
Sampling Condition	Environment temperature(℃)		23±2		Environmental humidity(%RH)		50±10
	Pump (TENAX)		GilAir PLUS		Collection rate (TENAX) (mL/min)		200
	Pump (DNPH)		GilAir PLUS		Collection time (TENAX) (min)		15
	Capacity of bag used (L)		2000		Collection volume (TENAX) (L)		3
	Nitrogen gas filled (L)		1000		Collection rate (DNPH) (mL/min)		800
	Heating temperature (℃)		60±2		Collection time (DNPH) (min)		15
	Heating time (min)		120±5		Collection volume (DNPH) (L)		12
Analysis Condition	TDS-GC/MS	TDS	PE(ATD 350)		HPLC	HPLC	Dionex (Ultimate 3000)
		GC/MS	Agilent(7890B/5977A)			Carrier liquid	Acetonitrile/water
		Column	Agilent Ultra2 50m×0.32mm×0.52μm			Column	Zorbax SB-C18, 4.6mm×250mm, I.D 5μm
		Split ratio	80:1			Injected Volume	20 μL

Equipment Name	Model	Management No.	Calibration Period
HPLC	Dionex(Ultimate 3000)	HX2010-G088	2020-10-07 – 2022-10-06
TDS-GC/MS	PE(ATD 350) -Agilent(7890B/5977B)	HX2018-Z003 /HX2016-G771	2020-05-28 – 2022-05-27
VOC Test Chamber	V-BIR-42	HX2017-G663	2020-03-23 – 2021-03-22
Condition Chamber	V-MH-30	HX2016-G117	2020-08-10 – 2021-08-09

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Measurement Result	Test Item	Amount collected in collection tube (µg/tube)	Amount of volatilization from Part (µg/m <sup>3</sup> )	MDL (µg/m <sup>3</sup> )
	Benzene	N.D.	N.D.	4
	Toluene	0.648	16	4
	Ethylbenzene	0.012	4	4
	Xylene	0.061	20	4
	Styrene	0.014	5	4
	TVOC (C6-C16)	3.656	929	4
	Formaldehyde	11.545	722	2
	Acetaldehyde	0.617	23	2
	Acrolein	N.D.	N.D.	2

## 2. The top ten volatile organic compounds

No.	Test Item	CAS No.	Amount collected in collection tube (µg/tube)	Amount volatilization of Part (µg/m <sup>3</sup> )	MDL (µg/m <sup>3</sup> )
1	Toluene	108-88-3	0.648	16	4
2	2-Propenoic acid, 2-ethylhexyl ester	103-11-7	0.617	206	4
3	1-Hexanol, 2-ethyl-	104-76-7	0.422	141	4
4	1-Butanol	71-36-3	0.414	138	4
5	Phenol	108-95-2	0.129	43	4
6	Benzenemethanol, .alpha.,.alpha.-dimethyl-	617-94-7	0.116	39	4
7	Acetic acid, 2-ethylhexyl ester	103-09-3	0.108	36	4
8	2-Propenoic acid, butyl ester	141-32-2	0.090	30	4
9	Dodecane	112-40-3	0.078	26	4
10	Nonanal	124-19-6	0.072	24	4

- Remark:
1. "MDL" =Method Detection Limit;
  2. "N.D." =Not Detected (Below Method Detection Limit);
  3. "# " =Results are semi-quantitatively determined on account of toluene TIC linear regression curve.  
Semi-quantitative results are retrieved according to the Nist library of mass spectrometry;
  4. As the sample was insufficient, the test results were based on two sample delivery tests;
  5. The report is English version of test report C202011034601-2. In case of divergence, the Chinese text shall be regarded as authentic.

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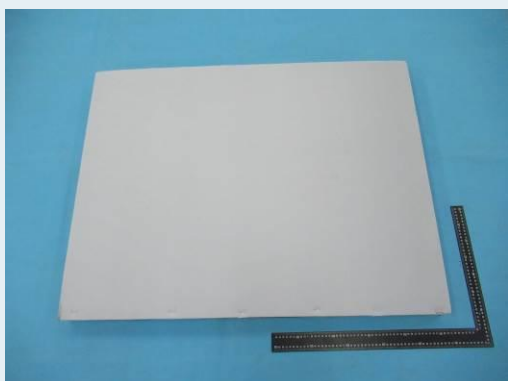
## Photo of Sample



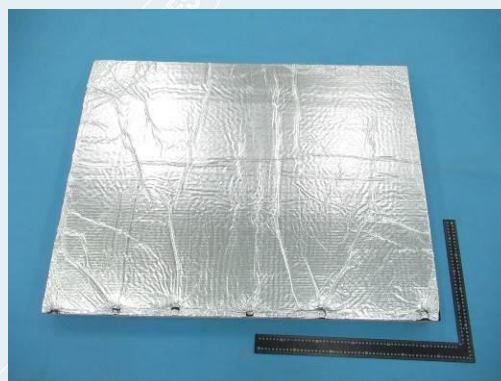
1 Before unpacking (Front)



1 Before unpacking (Reverse)



1 After unpacking (Front)



1 After unpacking (Reverse)



2 Before unpacking (Front)



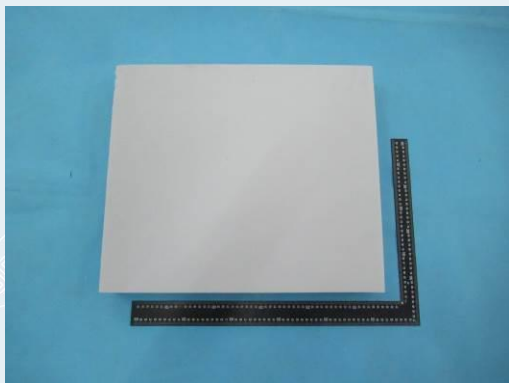
2 Before unpacking (Reverse)

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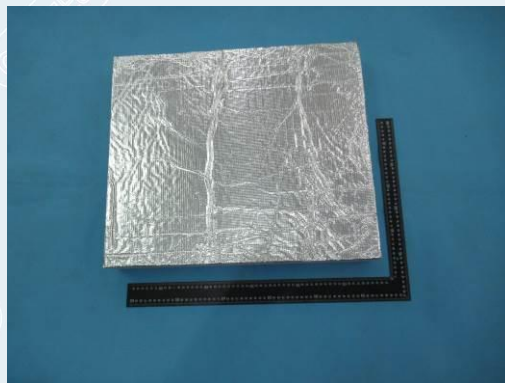
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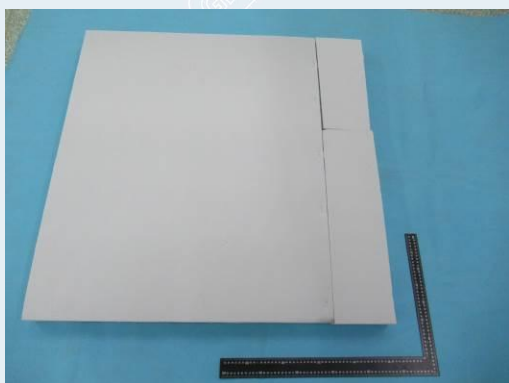
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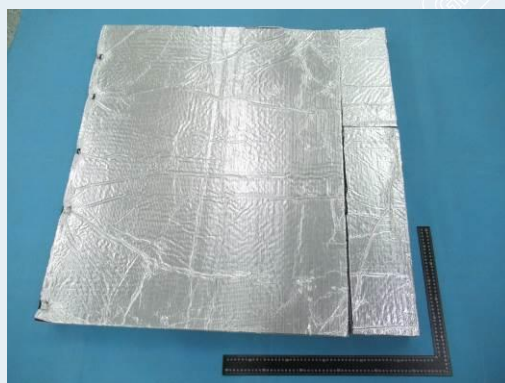
2 After unpacking (Front)



2 After unpacking (Reverse)



Sampling photo (Front)



Sampling photo (Reverse)

-----End of Report-----

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