

PI ADVANCED MATERIALS CO.,LTD.  
Grand Central B16F.,14 Sejong-daero  
Jung-gu.,Seoul  
Korea



The following sample(s) was/were submitted and identified by/on behalf of the client as:-

**SGS File No.** : AYAA22-48289  
**Product Name** : PI Powder  
**Item No./Part No.** : N/A  
**Received Date** : 2022. 12. 20  
**Test Period** : 2022. 12. 20 to 2022. 12. 30  
**Test Results** : For further details, please refer to following page(s)

SGS Korea Co., Ltd.



Tommy Oh/ Chemical Lab Mgr

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**Sample No.** : AYAA22-48289.001  
**Sample Description** : PI Powder  
**Item No./Part No.** : N/A  
**Materials** : N/A  
**Sample Size** : 1g

**VOCs (Volatile Organic Compounds)**

Analysis Conditions			40 °C, 30min	
Test Items	Unit	Test Method	MDL	Results
Phosphine	ppmV	In-House method, detection tube	0.08	N.D

**VOCs (Volatile Organic Compounds) 2)**

Analysis Conditions			40 °C, 30min	
Test Items	Unit	Test Method	MDL	Results
Toluene	ppmV	In-House method, Tenax tube-GC/MS	16	N.D.
Benzene	ppmV	In-House method, Tenax tube-GC/MS	0.8	N.D.
Formaldehyde	ppmV	In-House method, HPLC	0.06	N.D.

- NOTE: (1) MDL : Method Detection Limit  
 (2) N.D. : Not detected or below MDL  
 (3) ppmV : Part Per Million by Volume  
 (4) Tedlar bag size / Sampling Volume (N<sub>2</sub>)

## 1) Simple Method

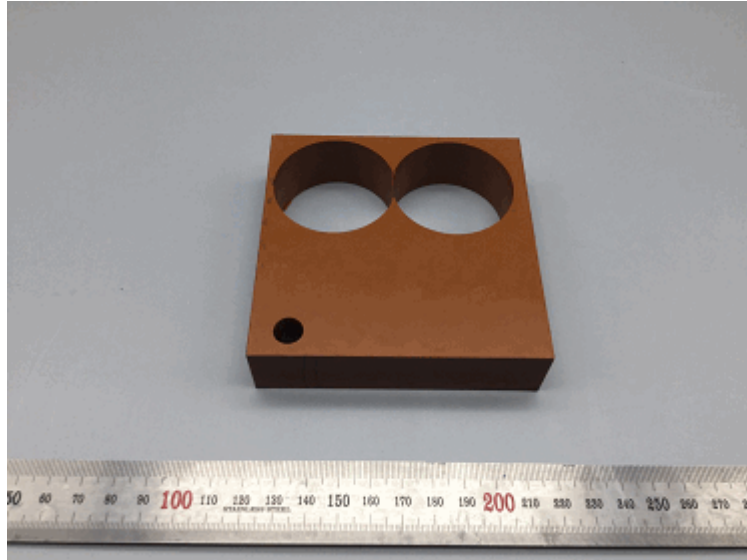
Benzene	5 L / 0.5 L
Toluene	5 L / 0.2 L
Phosphine	5 L / 0.5 L
Formaldehyde	5 L / 0.5 L

## 2) Precise Method

TVOC, Benzene, Toluene	5 L / 0.5 L
Phosphine (Simple method)	5 L / 0.5 L
Formaldehyde	5 L / 2 L
Formaldehyde (Box paper)	5 L / 3 L

- (5) Gas detecting tube test can be interfered by certain substances especially;  
 Benzene - Aromatic hydrocarbons  
 Toluene - Aromatic hydrocarbons (Xylene, Cumene, Ethylbenzene, Diethylbenzene and etc.)  
 Formaldehyde - Aldehydes and Ketones  
 Phosphine - Arsine, etc.  
 DMF - Sulfur Oxide, Carbon Oxide, Ammonia, Amine or Hydrazine
- (6) TVOC was calculated by Toluene equivalent.
- (7) The results shown in this test report refer only to the sample(s) tested unless otherwise stated.  
 This test report is not related to Korea Laboratory Accreditation Scheme .

Picture of Sample as Received:



**AYAA22-48289.001**

\*\*\* End of Report \*\*\*

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