

# TEST REPORT

The report shall not be reproduced without written approval from Intertek  
The results relate only to the item tested.

Number: BKKH18010899

Applicant: SNP MACHINE GLAZED PAPER (PAPER)  
19 SAENG XUTO ROAD, THA PHA, BAN PONG, RATCHABURI  
ATTN: SURAWUT K.

Date: Aug 20, 2018

### Sample Submitted:

Quantity of sample: One (1) Bag  
Sample description: White paper  
Date sample received: August 14, 2018

### Client Information:

Sample Name: SNP MG paper  
Item No.: July 2018  
Supplier Name: SNP  
Country of Origin: THAILAND



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### Test conducted:

As requested by the applicant, for details please refer to attached page(s)  
Type of test: RoHS wet chemical analysis

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For and on behalf of :  
Intertek Testing Services (Thailand) Ltd.,  
Hardlines Laboratory

*Ladtaka W.*

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Ladtaka Wongwiboonporn  
Laboratory Manager  
Hardlines Department



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Test conducted:

(A) Test Result Summary:

Testing item	Result	LOD	LOQ
	Submitted samples		
Lead (Pb) Content (mg/kg)	ND	2	13
Cadmium (Cd) Content (mg/kg)	ND	1	5
Mercury (Hg) Content (mg/kg)	ND	3	13
Chromium (VI) (Cr <sup>6+</sup> ) Content (mg/kg) <sup>▲</sup>	ND	1	10
Polybrominated Biphenyls (PBBs) (mg/kg)			
Monobromobiphenyl (MonoBB)	ND	1	5
Dibromobiphenyl (DiBB)	ND	1	5
Tribromobiphenyl (TriBB)	ND	1	5
Tetrabromobiphenyl (TetraBB)	ND	1	5
Pentabromobiphenyl (PentaBB)	ND	1	5
Hexabromobiphenyl (HexaBB)	ND	1	5
Heptabromobiphenyl (HeptaBB)	ND	1	5
Octabromobiphenyl (OctaBB)	ND	1	5
Nonabromobiphenyl (NonaBB)	ND	1	5
Decabromobiphenyl (DecaBB)	ND	1	5
Sum. of Polybrominated Biphenyls (PBBs) (mg/kg)	ND	1	5
Polybrominated Diphenyl Ethers (PBDEs) (mg/kg)			
Monobromodiphenyl Ether (MonoBDE)	ND	1	5
Dibromodiphenyl Ether (DiBDE)	ND	1	5
Tribromodiphenyl Ether (TriBDE)	ND	1	5
Tetrabromodiphenyl Ether (TetraBDE)	ND	1	5
Pentabromodiphenyl Ether (PentaBDE)	ND	1	5
Hexabromodiphenyl Ether (HexaBDE)	ND	1	5
Heptabromodiphenyl Ether (HeptaBDE)	ND	1	5
Octabromodiphenyl Ether (OctaBDE)	ND	1	5
Nonabromodiphenyl Ether (NonaBDE)	ND	1	5
Decabromodiphenyl Ether (DecaBDE)	ND	1	5
Sum. of Polybrominated Diphenyl Ethers (PBDEs) (mg/kg)	ND	1	5
Phthalate Content (mg/kg) <sup>▲</sup>			
Diethyl hexyl phthalate (DEHP)	46	15	25
Benzyl butyl phthalate (BBP)	ND	15	25
Dibutyl phthalate (DBP)	<25	15	25
Di-isobutyl phthalate (DIBP)	ND	15	25

Remark: mg/kg = Milligram per kilogram based on weight of sample = ppm  
 LOD = Limit of detection  
 LOQ = Limit of quantitation  
 ND = Not detected (Less than LOD)  
 < = Less than  
 ▲ = Tested items are not included in the TISI Accreditation

Tested component: White paper

Testing period: August 14, 2018 to August 20, 2018

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Test conducted:

(B) RoHS Requirement:

Restricted substances	Limits
Lead (Pb)	0.1% (1000 mg/kg)
Cadmium (Cd)	0.01% (100 mg/kg)
Mercury (Hg)	0.1% (1000 mg/kg)
Chromium (VI) (Cr <sup>6+</sup> )	0.1% (1000 mg/kg)
Polybrominated Biphenyls (PBBs)	0.1% (1000 mg/kg)
Polybrominated Diphenyl Ethers (PBDEs)	0.1% (1000 mg/kg)
Diethyl hexyl phthalate (DEHP)	0.1% (1000 mg/kg)
Benzyl butyl phthalate (BBP)	0.1% (1000 mg/kg)
Dibutyl phthalate (DBP)	0.1% (1000 mg/kg)
Di-isobutyl phthalate (DIBP)	0.1% (1000 mg/kg)

The above limits were quoted from RoHS Directive (EU) 2015/863 for homogeneous material.

(C) Test method:

Testing item	Testing method
Lead (Pb) Content	With reference to IEC 62321-5 Edition 1.0 : 2013, by microwave digestion and determined by ICP-OES
Cadmium (Cd) Content	With reference to IEC 62321-5 Edition 1.0 : 2013, by microwave digestion and determined by ICP-OES
Mercury (Hg) Content	With reference to IEC 62321-4 Edition 1.0 : 2013, by microwave digestion and determined by ICP-OES
Chromium (VI) (Cr <sup>6+</sup> ) Content	With reference to IEC 62321-7-2 : 2017, by alkaline digestion and determined by UV-VIS spectrophotometer
Polybrominated Biphenyls (PBBs) & Polybrominated Diphenyl Ethers (PBDEs)	With reference to IEC 62321-6 Edition 1.0 : 2015, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary
Phthalate Content	With reference to IEC 62321-8 Edition 1.0 : 2017, by solvent extraction and determined by GC/MS

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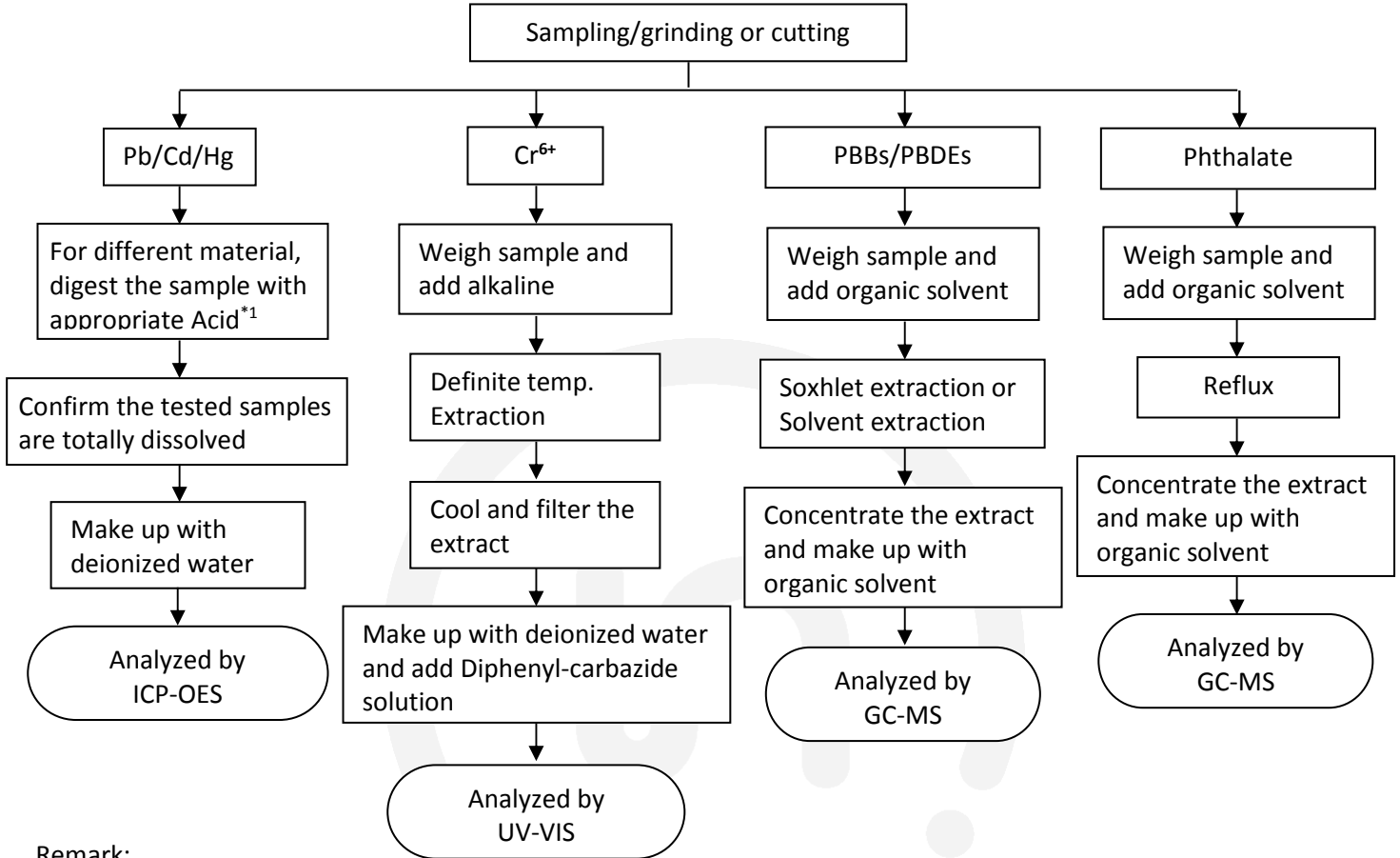
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Test conducted:

(D) Measurement Flowchart

Test for Pb/Cd/Hg/Chromium (VI)/PBBs/PBDEs/Phthalate Contents



Remark:

\*1: List of appropriate Acid:

Material	Acid added for digestion
Polymers	HNO <sub>3</sub> , HCl

\*\*\*\*\* E N D \*\*\*\*\*/NS/NK

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