









**Test Report No.** Date: 15-Mar-2024 Page 1 of 11 5832773

Client: Prepack Thailand Co., Ltd.

30/145,Moo1,

Khok Kham, Muang Samutsakhon, Samut Sakorn 74000 Thailand

The following sample(s) was/were submitted and identified by client as:

Sample Name : LLDPE Sample Description Plastic bag

Material Type PE

Manufacturer/Vendor : PREPACK THAILAND CO.,LTD.

Country of Origin Thailand

The following sample(s) was/were identified by SGS as:

SGS Sample No. : 6137636

Sample Condition : Sample is contained in a plastic bag.

**Quantity Submitted** : 1 bag.

Sample Receiving Date : 8-Mar-2024

**Testing Period** : 11-Mar-2024 to 15-Mar-2024

## Signed for and on behalf of SGS (Thailand) Ltd.



# **Anchalee Wunnaphuek**

## **Acting - RSTS Lab Manager**

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Test Requested : In accordance with the EU RoHS Directive 2011/65/EU (Annex II) [amended by

Directive (EU) 2015/863] .Selected test (s) as requested by client.

Test Method : (1) IEC 62321-5 edition 1.0 : 2013 for Lead content, Analyzed by ICP-OES. Microwave digestion method

> (2) IEC 62321-5 edition 1.0: 2013 for Cadmium content, Analyzed by ICP-OES. Microwave digestion method

> (3) IEC 62321-4, edition 1.1: 2017 for Mercury Content, Analyzed by ICP-OES. Microwave digestion method

(4) IEC 62321-7-2 edition 1.0: 2017, determination of Hexavalent Chromium For Insoluble polymer by Colorimetric Method using UV-Vis.and/or with reference to IEC 62321-5:2013, determination of Chromium by ICP-OES.

(5) IEC 62321-6 edition 1.0: 2015 for PBBs/PBDEs content, Analyzed by GC/MS.

(6) IEC 62321-8 edition 1.0: 2017 for Phthalates content, Analyzed was performed by GC/MS.

Test Results Please refer to next page.

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NSC-TISI-TIS 17025 Testing 0452 SGS (Thailand) Limited

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TEST RESULTS

5832773

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Test results by chemical method (Unit: mg/kg)

	· ·			
Test Item (s):	Method (Refer to)	Result (1)	MDL	RoHS Limit
Lead (Pb)	(1)	n.d.	2	1000
Cadmium (Cd)	(2)	n.d.	2	100
Mercury (Hg)	(3)	n.d.	2	1000
Hexavalent Chromium (Cr(VI))	(4)	n.d.	8	1000

Test Part Description

Result (1) mixing ratio of clear plastic + white plastic (1:1) by weight as per client's request

### Note

- (a) mg/kg = ppm; 0.1wt% = 1000 ppm
- (b) n.d. = Not Detected (<MDL)
- (c) MDL = Method Detection Limit
- (d) The result of Hexavalent Chromium (Cr(VI)) is "ND" as the result of Chromium (Cr) is "ND", and confirmation test of Hexavalent Chromium (Cr(VI)) is not required.
- (e) If the Chromium (Cr) content is greater than the MDL of Hexavalent Chromium (Cr(VI)), confirmation test of Hexavalent Chromium (Cr(VI)) is required.
- (f) Test done on client submitted sample
- (g) Test was conducted on composite sample as per client's request and the test result is the overall result of a composite sample. Therefore, no reference can be made to the result of each component in the composite sample.

The composite result indicated that submitted samples may have the probability of one or more components exceeding the requirement, it is recommended to test on individual basis.

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Test results by chemical method (Unit: mg/kg)

Test Item (s):	Method (Refer to)	Result (1)	MDL	RoHS Limit
Polybrominated biphenyls (PBB)	(5)	n.d.	-	1000
Monobromobiphenyl		n.d.	5	-
Dibromobiphenyl		n.d.	5	-
Tribromobiphenyl		n.d.	5	-
Tetrabromobiphenyl		n.d.	5	-
Pentabromobiphenyl		n.d.	5	-
Hexabromobiphenyl		n.d.	5	-
Heptabromobiphenyl		n.d.	5	-
Octabromobiphenyl		n.d.	5	-
Nonabromobiphenyl		n.d.	5	-
Decabromobiphenyl		n.d.	5	-

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Test results by chemical method (Unit: mg/kg)

Test Item (s):	Method (Refer to)	Result (1)	MDL	RoHS Limit
Polybrominated diphenyl ethers (PBDE)	(5)	n.d.	-	1000
Monobromodiphenyl ether		n.d.	5	-
Dibromodiphenyl ether		n.d.	5	-
Tribromodiphenyl ether		n.d.	5	-
Tetrabromodiphenyl ether		n.d.	5	-
Pentabromodiphenyl ether		n.d.	5	-
Hexabromodiphenyl ether		n.d.	5	-
Heptabromodiphenyl ether		n.d.	5	-
Octabromodiphenyl ether		n.d.	5	-
Nonabromodiphenyl ether		n.d.	5	-
Decabromodiphenyl ether		n.d.	5	-

**Test Part Description** 

Result (1) mixing ratio of clear plastic + white plastic (1:1) by weight as per client's request

- (a) mg/kg = ppm; 0.1 wt% = 1000 ppm
- (b) n.d. = Not Detected
- (c) MDL = Method Detection Limit
- (d) "-" = Not regulated
- (e) Test done on client submitted sample
- (f) Test was conducted on composite sample as per client's request and the test result is the overall result of a composite sample. Therefore, no reference can be made to the result of each component in the composite sample.

The composite result indicated that submitted samples may have the probability of one or more components exceeding the requirement, it is recommended to test on individual basis.

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**TEST RESULTS** 

Phthalates Content for RoHS Directive 2011/65/EU Annex II [amended by Directive (EU) 2015/863], Analysis was performed by GC/MS

Analysis	Method (Refer to)	Result (1) (mg/kg)	MDL	RoHS Limit (mg/kg)
DBP (Di-butyl phthalate) (CAS No.: 84-74-2)	(6)	n.d.	50	1000
BBP (Benzyl butyl phthalate) (CAS No.: 85-68-7)	(6)	n.d.	50	1000
DEHP (Di-2-ethylhexyl phthalate) (CAS No.: 117-81-7)	(6)	n.d.	50	1000
DIBP (Di-isobutyl phthalate) (CAS No.: 84-69-5)	(6)	n.d.	50	1000

**Test Part Description** 

Result (1) mixing ratio of clear plastic + white plastic (1:1) by weight as per client's request

### Note:

(a) mg/kg = ppm; 0.1 wt% = 1000 ppm

- (b) n.d. = Not Detected
- (c) MDL = Method Detection Limit
- (d) Test done on client submitted sample
- (e) Test was conducted on composite sample as per client's request and the test result is the overall result of a composite sample. Therefore, no reference can be made to the result of each component in the composite

The composite result indicated that submitted samples may have the probability of one or more components exceeding the requirement, it is recommended to test on individual basis.

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) IEC 62321 series is equivalent to EN 62321 series.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021

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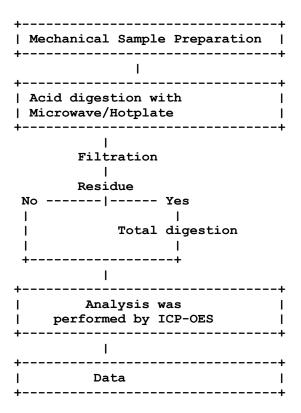
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Flow chart of Pb,Cd,Hg Testing

(Test method : IEC 62321)



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Flow chart of Hexavalent Chromium Testing

(Test method : IEC 62321)

1
Insoluble polymer
Adding extraction solution
Heating to 150-160 degree C   For Extraction
Filtration aqueous phase   and pH adjustment
Adding 1,5-diphenylcarbazide   for color development
Analysis was   performed by UV-Vis
Data
T

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Flow chart of PBBs, PBDEs Testing

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## Flow chart of Phthalates Testing

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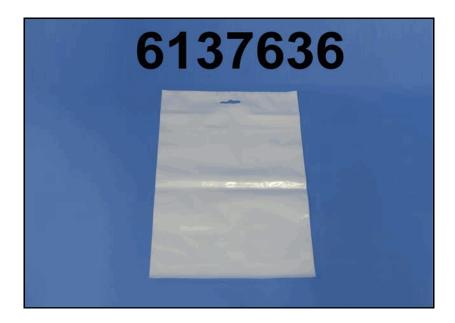






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## **SAMPLE/ATTACHMENT PICTURE**



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

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