



# TEST REPORT

98, Gyoyukwon-ro, Gwacheon-si, Gyeonggi-do, 13810, Korea

TEL 82-2-3667-9134

FAX 82-2-3667-9140

Report No. : TAK-2023-017764

Receipt Date : Jan.31.2023

Customer : Choi He Sun

Test Date : Feb.21.2023

GRS Korea Co.,Ltd.

Na Dong B110 Ho, 117, Hwanggeum-ro, Yangchon-eup, Gimpo-si, Gyeonggi-do, Korea

Sample : Polypropylene adhesive (XPO - ONE)

Testing Date : Jan.31.2023 ~ Feb.21.2023

Testing Environment : Temperature (20 ± 5)°C, Relative humidity (40 ± 20) %

Test method : Refer to following pages

Test result : Refer to following pages

Attachment : Flow chart and Sample pictures

USAGE : QUALITY CONTROL

- NOTE : 1. The test results on this test report are only limited to the samples and sample names provided by the customer and KTR does not guarantee the quality of all products of the customer, and you can confirm the authenticity of the test report online ([www.ktr.or.kr](http://www.ktr.or.kr)) or by using the QR code.
2. This test report shall not be used for public relation, advertisement, lawsuit and any other purposes outside the scope of its defined usage.
3. Only original copy (including certified copy) of the test report is valid - electronic copy (hard and/or soft) is for your reference only.

*Yong-hyeon Lee*

Prepared by Yong-hyeon Lee

Tel : 02-2092-3682

*Park Jung-ae*

Reviewed by Park Jung-ae

Technical Manager

Tel : 1577-0091(ARS ①→④)

Feb.21.2023

**Korea Testing & Research Institute**

President

*Kim Hyun cheol*



QR Code to verify Genuineness



# TEST REPORT

Report No. : TAK-2023-017764

Sample : Polypropylene adhesive (XPO - ONE)

## TEST RESULT

| Test itmes       | Unit  | Sample | Results      | MDL | Test Methods                                     |
|------------------|-------|--------|--------------|-----|--------------------------------------------------|
| Pb               | mg/kg | -      | Not detected | 10  | IEC 62321-5 Ed.1.0:2013(Apply Correspondingly)   |
| Cd               | mg/kg | -      | Not detected | 1   | IEC 62321-5 Ed.1.0:2013(Apply Correspondingly)   |
| Hg               | mg/kg | -      | Not detected | 1   | IEC 62321-4 Ed.1.1:2017(Apply Correspondingly)   |
| Cr <sup>6+</sup> | mg/kg | -      | Not detected | 8   | IEC 62321-7-2 Ed.1.0:2017(Apply Correspondingly) |
| Total-PBBs       | mg/kg | -      | Not detected | -   | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Mono-BB          | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Di-BB            | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Tri-BB           | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Tetra-BB         | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Penta-BB         | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Hexa-BB          | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Hepta-BB         | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Octa-BB          | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Nona-BB          | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Deca-BB          | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Total-PBDEs      | mg/kg | -      | Not detected | -   | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Mono-BDE         | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Di-BDE           | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Tri-BDE          | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Tetra-BDE        | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Penta-BDE        | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Hexa-BDE         | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Hepta-BDE        | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Octa-BDE         | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Nona-BDE         | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |
| Deca-BDE         | mg/kg | -      | Not detected | 10  | IEC 62321-6 Ed.1.0:2015(Apply Correspondingly)   |



## TEST REPORT

Report No. : TAK-2023-017764

Sample : Polypropylene adhesive (XPO - ONE)

## TEST RESULT

| Test itmes | Unit | Sample | Results | MDL | Test Methods |
|------------|------|--------|---------|-----|--------------|
|------------|------|--------|---------|-----|--------------|

Notes : mg/kg = ppm (parts per million)

N.D = Not detected( &lt;MDL)

MDL = Method detection limit

- Method Detection Limit -

Hg : 1 mg/kg

Pb : 10 mg/kg

Cd : 1 mg/kg

Cr<sup>6+</sup> : 8 mg/kg

Mono-BB, Di-BB, Tri-BB, Tetra-BB, Penta-BB, Hexa-BB, Hepta-BB, Octa-BB, Nona-BB, Deca-BB : each 10 mg/kg

Mono-BDE, Di-BDE, Tri-BDE, Tetra-BDE, Penta-BDE, Hexa-BDE, Hepta-BDE, Octa-BDE, Nona-BDE, Deca-BDE : each 10 mg/kg



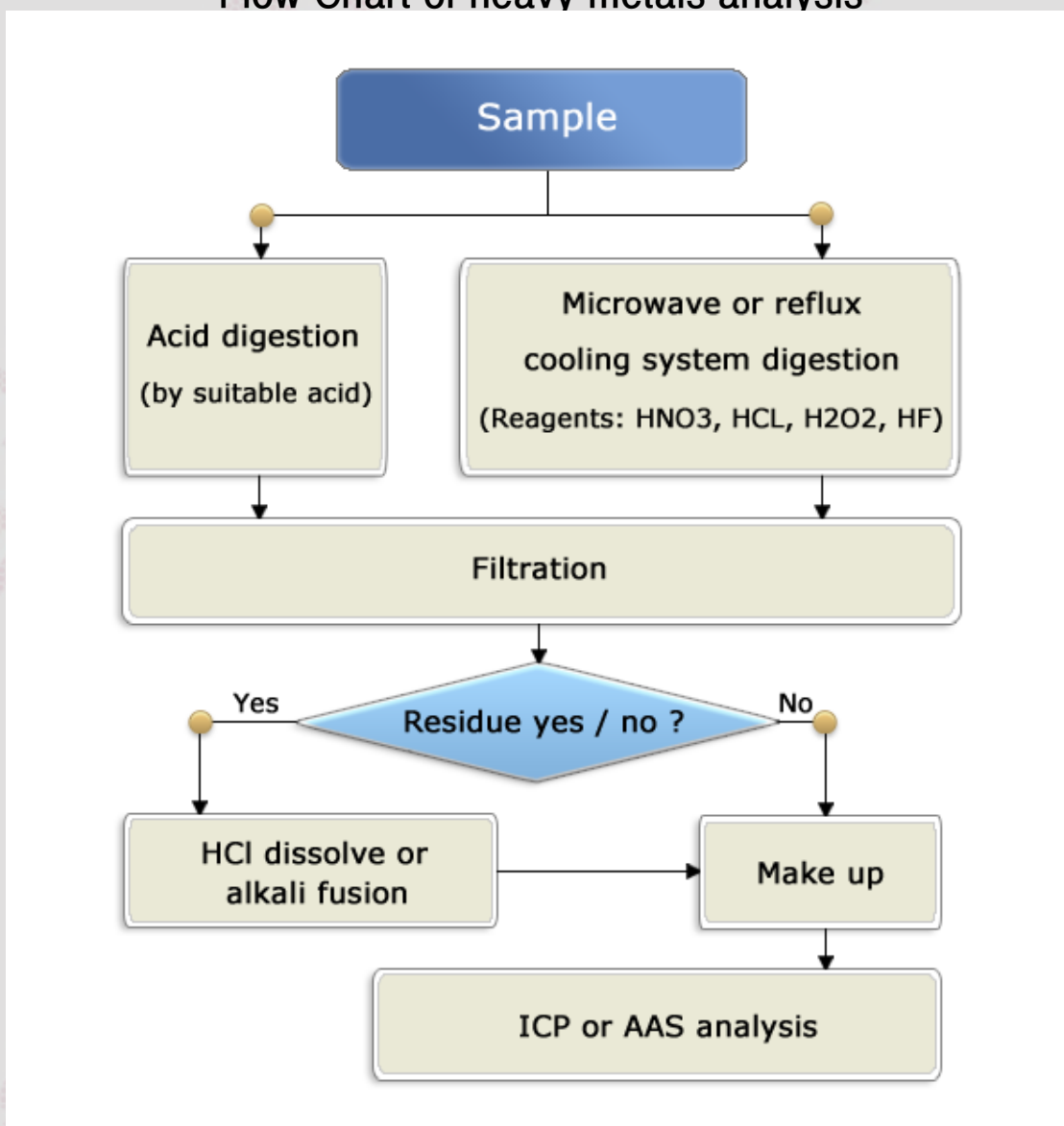
# TEST REPORT

Report No. : TAK-2023-017764

Sample : Polypropylene adhesive (XPO - ONE)

Pb, Cd, Hg : Tested by Kim Eun Ji(Tel : 02-2092-3684)

## Flow Chart of heavy metals analysis



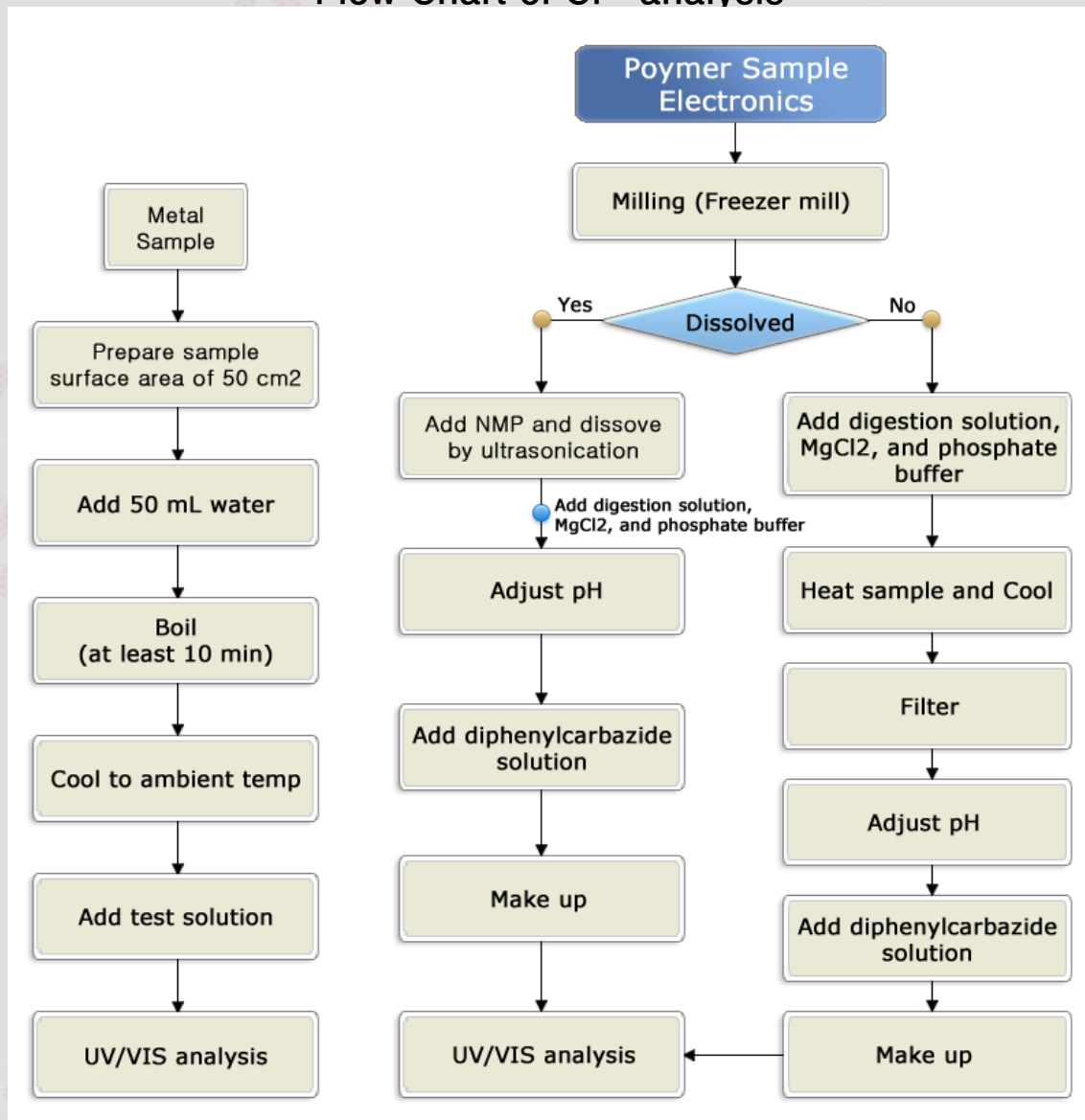
# TEST REPORT

Report No. : TAK-2023-017764

Sample : Polypropylene adhesive (XPO - ONE)

Cr<sup>6+</sup> : Tested by Kim Eun Ji(Tel : 02-2092-3684)

## Flow Chart of Cr<sup>6+</sup> analysis



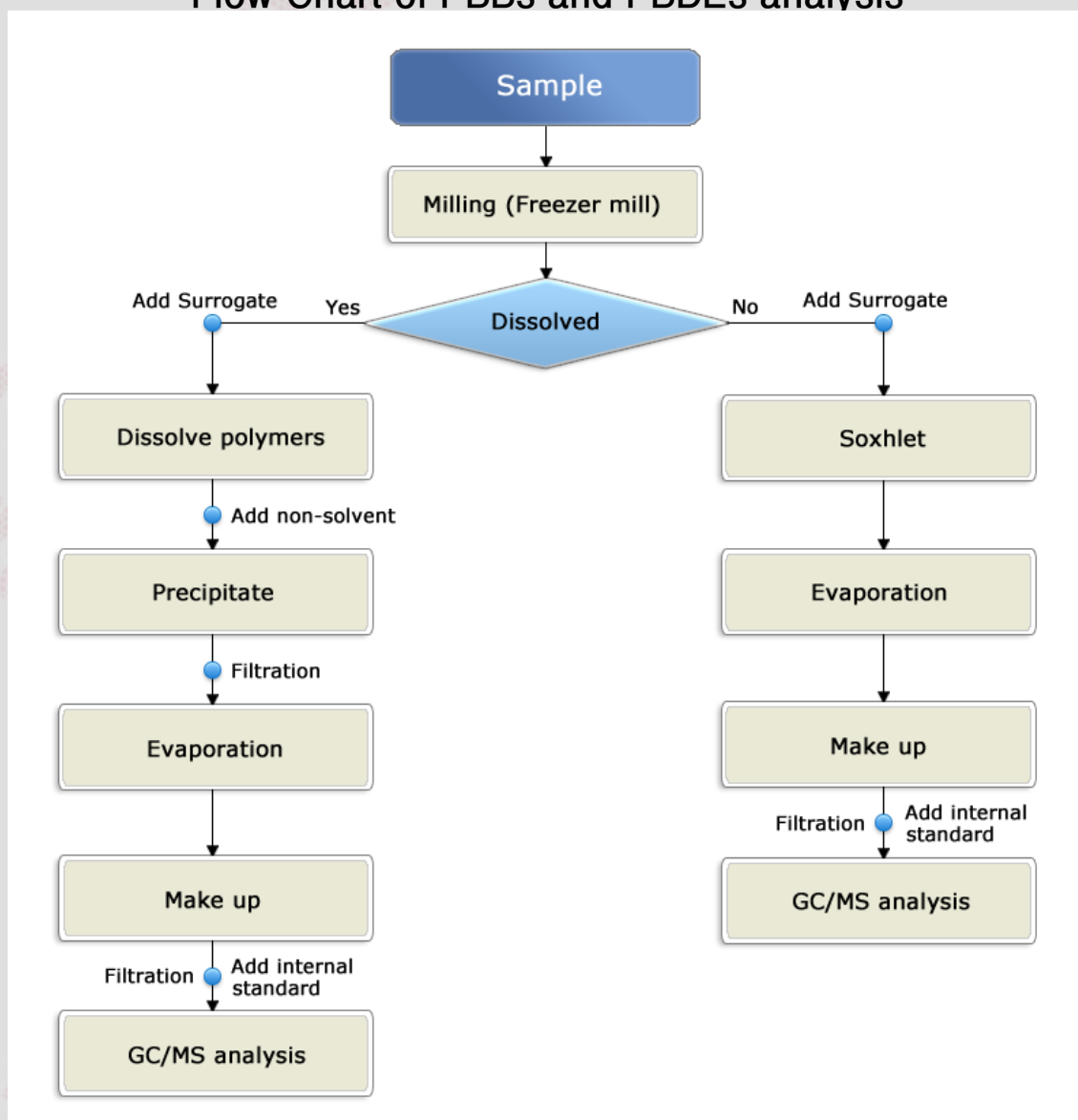
# TEST REPORT

Report No. : TAK-2023-017764

Sample : Polypropylene adhesive (XPO - ONE)

PBBs, PBDEs : Tested by Yong-hyeon Lee(Tel : 02-2092-3682)

## Flow Chart of PBBs and PBDEs analysis



Report No. : TAK-2023-017764

Sample : Polypropylene adhesive (XPO - ONE)

---

## Sample



- End of Report -