

## TEST REPORT

APPLICANT : SAMSUNG ELECTRONICS CO., LTD.  
ADDRESS : 114, Samseong-ro,  
Pyeongtaek-si, Gyeonggi-do, Korea

PAGE: 1 of 9

REPORT NO. RT26R-S0586-006-E1

DATE: Jan. 30, 2026

SAMPLE DESCRIPTION : The following submitted sample(s) said to be:-

NAME/TYPE OF PRODUCT : 12inch Bump (Cu solder)  
NAME OF MATERIAL : Wafer (Patterned)  
SAMPLE ID NO. : RT26R-S0586-006  
MANUFACTURER/VENDOR : SAMSUNG ELECTRONICS CO., LTD.

SAMPLE RECEIVED : Jan. 21, 2026  
TESTING DATE : Jan. 21, 2026 ~ Jan. 30, 2026

TEST METHOD(S) : Please see the following page(s).  
TEST RESULT(S) : Please see the following page(s).

\* Note 1 : The test results presented in this report refer only to the object tested.

\* Note 2 : This report shall not be reproduced except in full without the written approval of the testing laboratory.

Approved by,



Nikkie Lee / Lab. Technical Manager

Authorized by,



Jade Jang / Lab. General Manager



Authenticity check

Intertek Testing Services Korea Ltd.

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Seoul Lab. Address : 7, Ahasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea



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## TEST REPORT

REPORT NO. RT26R-S0586-006-E1

PAGE: 2 of 9  
DATE: Jan. 30, 2026

SAMPLE ID NO. : RT26R-S0586-006  
SAMPLE DESCRIPTION : 12inch Bump (Cu solder)

| TEST ITEM                               | UNIT  | TEST METHOD                                                                                                                  | MDL | RESULT |
|-----------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------|-----|--------|
| Cadmium (Cd)                            | mg/kg | With reference to IEC 62321-5 Edition 1.0 : 2013, by acid digestion and determined by ICP-OES                                | 0.5 | N.D.   |
| Lead (Pb)                               | mg/kg |                                                                                                                              | 5   | N.D.   |
| Mercury (Hg)                            | mg/kg | With reference to IEC 62321-4:2013+AMD1:2017 CSV, by acid digestion and determined by ICP-OES                                | 2   | N.D.   |
| Hexavalent Chromium (Cr <sup>6+</sup> ) | mg/kg | With reference to IEC 62321-7-2 Edition 1.0 : 2017, by alkaline/toluene digestion and determined by UV-VIS Spectrophotometer | 8   | N.D.   |
| Polybrominated Biphenyl (PBBs)          |       |                                                                                                                              |     |        |
| Monobromobiphenyl                       | mg/kg | With reference to IEC 62321-6 Edition 1.0 : 2015, by solvent extraction and determined by GC/MS                              | 5   | N.D.   |
| Dibromobiphenyl                         | mg/kg |                                                                                                                              | 5   | N.D.   |
| Tribromobiphenyl                        | mg/kg |                                                                                                                              | 5   | N.D.   |
| Tetrabromobiphenyl                      | mg/kg |                                                                                                                              | 5   | N.D.   |
| Pentabromobiphenyl                      | mg/kg |                                                                                                                              | 5   | N.D.   |
| Hexabromobiphenyl                       | mg/kg |                                                                                                                              | 5   | N.D.   |
| Heptabromobiphenyl                      | mg/kg |                                                                                                                              | 5   | N.D.   |
| Octabromobiphenyl                       | mg/kg |                                                                                                                              | 5   | N.D.   |
| Nonabromobiphenyl                       | mg/kg |                                                                                                                              | 5   | N.D.   |
| Decabromobiphenyl                       | mg/kg |                                                                                                                              | 5   | N.D.   |
| Polybrominated Diphenyl Ether (PBDEs)   |       |                                                                                                                              |     |        |
| Monobromodiphenyl ether                 | mg/kg | With reference to IEC 62321-6 Edition 1.0 : 2015, by solvent extraction and determined by GC/MS                              | 5   | N.D.   |
| Dibromodiphenyl ether                   | mg/kg |                                                                                                                              | 5   | N.D.   |
| Tribromodiphenyl ether                  | mg/kg |                                                                                                                              | 5   | N.D.   |
| Tetrabromodiphenyl ether                | mg/kg |                                                                                                                              | 5   | N.D.   |
| Pentabromodiphenyl ether                | mg/kg |                                                                                                                              | 5   | N.D.   |
| Hexabromodiphenyl ether                 | mg/kg |                                                                                                                              | 5   | N.D.   |
| Heptabromodiphenyl ether                | mg/kg |                                                                                                                              | 5   | N.D.   |
| Octabromodiphenyl ether                 | mg/kg |                                                                                                                              | 5   | N.D.   |
| Nonabromodiphenyl ether                 | mg/kg |                                                                                                                              | 5   | N.D.   |
| Decabromodiphenyl ether                 | mg/kg |                                                                                                                              | 5   | N.D.   |

Tested by : Jooyeon Lee, Chano Kim, Hayan Park

Notes : mg/kg = ppm = parts per million  
< = Less than  
N.D. = Not detected ( <MDL )  
MDL = Method detection limit

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DATE: Jan. 30, 2026

REPORT NO. RT26R-S0586-006-E1

SAMPLE ID NO. : RT26R-S0586-006

SAMPLE DESCRIPTION : 12inch Bump (Cu solder)

| TEST ITEM                        | UNIT  | TEST METHOD                                                                                        | MDL   | RESULT |
|----------------------------------|-------|----------------------------------------------------------------------------------------------------|-------|--------|
| Bromine (Br)                     | mg/kg | With reference to EN 14582, by oxygen combustion with bomb and determined by IC                    | 30    | N.D.   |
| Chlorine (Cl)                    | mg/kg | With reference to EN 14582, by oxygen combustion with bomb and determined by IC                    | 30    | N.D.   |
| Fluorine (F)                     | mg/kg | With reference to EN 14582, by oxygen combustion with bomb and determined by IC                    | 30    | N.D.   |
| Iodine (I)                       | mg/kg | With reference to EN 14582, by oxygen combustion with bomb and determined by IC                    | 30    | N.D.   |
| Arsenic (As)                     | mg/kg | With reference to US EPA 3052, by acid digestion and determined by ICP-OES                         | 2     | N.D.   |
| Beryllium (Be)                   | mg/kg | With reference to US EPA 3052, by acid digestion and determined by ICP-OES                         | 2     | N.D.   |
| Antimony (Sb)                    | mg/kg | With reference to US EPA 3052, by acid digestion and determined by ICP-OES                         | 2     | N.D.   |
| Perfluorooctanoic acid (PFOA)    | mg/kg | With reference to US EPA 3550C/8321B, by ultrasonic extraction and determined by LC/MS or LC/MS/MS | 0.025 | N.D.   |
| Perfluorooctane sulfonate (PFOS) | mg/kg | With reference to US EPA 3550C/8321B, by ultrasonic extraction and determined by LC/MS or LC/MS/MS | 0.025 | N.D.   |

Tested by : Chano Kim, Jooyeon Lee, Hayan Park

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PAGE: 4 of 9  
DATE: Jan. 30, 2026

REPORT NO. RT26R-S0586-006-E1

SAMPLE ID NO. : RT26R-S0586-006

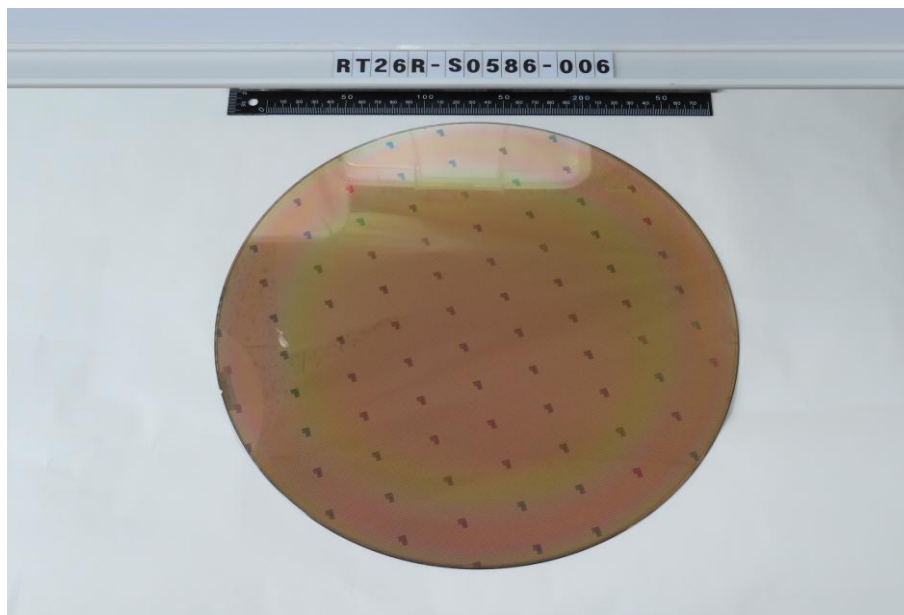
SAMPLE DESCRIPTION : 12inch Bump (Cu solder)

| TEST ITEM                         | CAS NO.  | UNIT  | TEST METHOD                                                                                     | MDL | RESULT |
|-----------------------------------|----------|-------|-------------------------------------------------------------------------------------------------|-----|--------|
| Dibutyl phthalate (DBP)           | 84-74-2  | mg/kg | With reference to IEC 62321-8 Edition 1.0 : 2017, by solvent extraction and determined by GC/MS | 50  | N.D.   |
| Di(2-ethylhexyl) phthalate (DEHP) | 117-81-7 | mg/kg |                                                                                                 | 50  | N.D.   |
| Benzyl butyl phthalate (BBP)      | 85-68-7  | mg/kg |                                                                                                 | 50  | N.D.   |
| Diisobutyl phthalate (DIBP)       | 84-69-5  | mg/kg |                                                                                                 | 50  | N.D.   |

Tested by : Hayan Park

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\* View of sample as received;-



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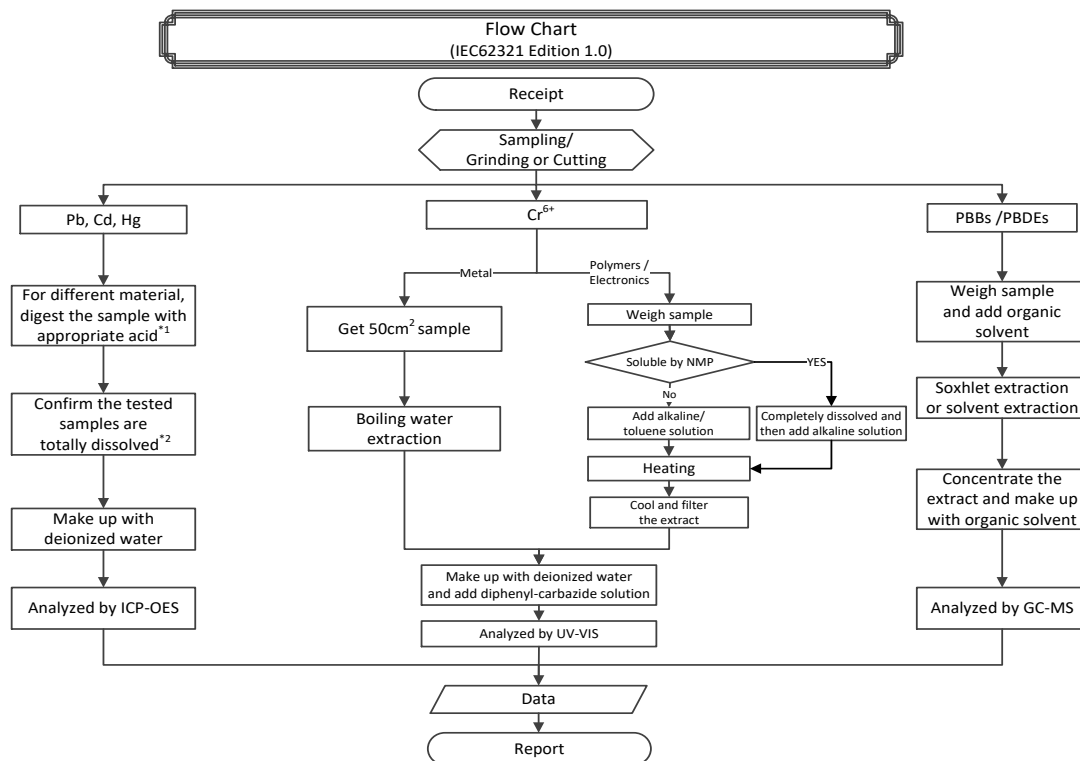
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DATE: Jan. 30, 2026

SAMPLE ID NO. : RT26R-S0586-006

SAMPLE DESCRIPTION : 12inch Bump (Cu solder)



**Remarks :**

\*1 : List of appropriate acid :

| Material    | Acid added for digestion                                                                   |
|-------------|--------------------------------------------------------------------------------------------|
| Polymers    | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals      | HNO <sub>3</sub> , HCl, HF                                                                 |
| Electronics | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

\*2 : The samples were dissolved totally by pre-conditioning method according to above flow chart.

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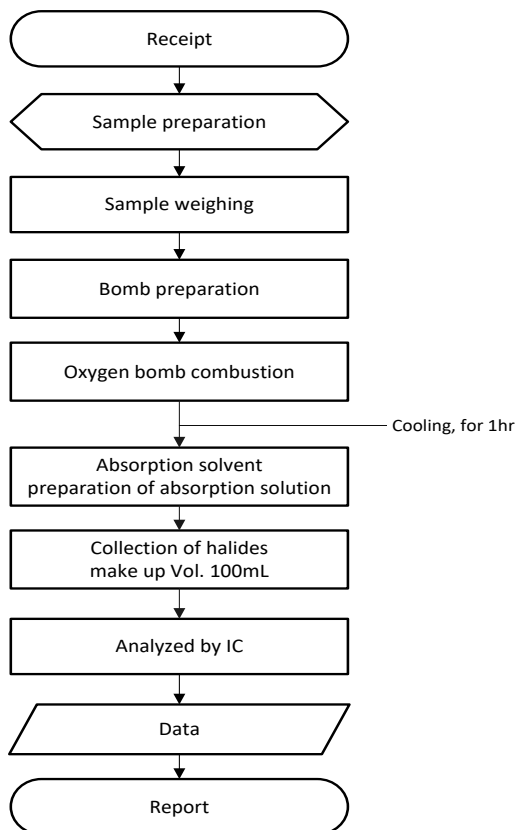
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SAMPLE ID NO. : RT26R-S0586-006

SAMPLE DESCRIPTION : 12inch Bump (Cu solder)

### Flow Chart (EN14582)



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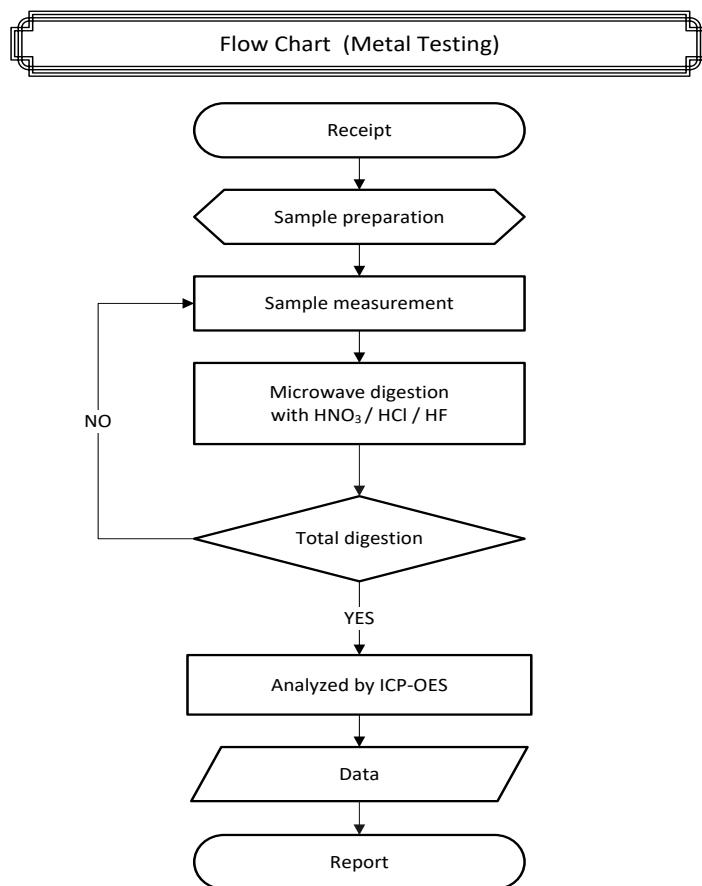
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DATE: Jan. 30, 2026

SAMPLE ID NO. : RT26R-S0586-006

SAMPLE DESCRIPTION : 12inch Bump (Cu solder)



\*\* Remarks : The samples were dissolved totally by pre-conditioning method according to above flow chart.

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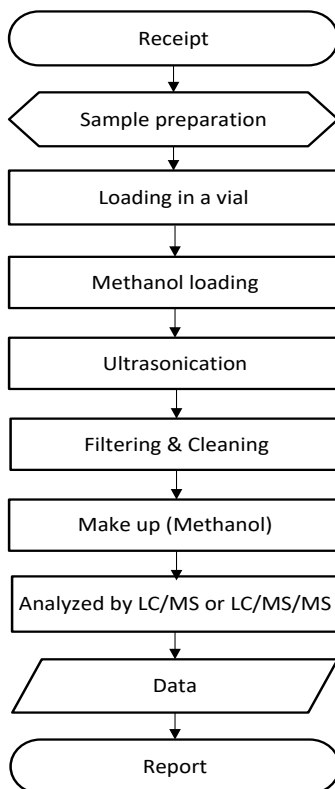
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SAMPLE ID NO. : RT26R-S0586-006

SAMPLE DESCRIPTION : 12inch Bump (Cu solder)

### Flow Chart (PFOS, PFOA)



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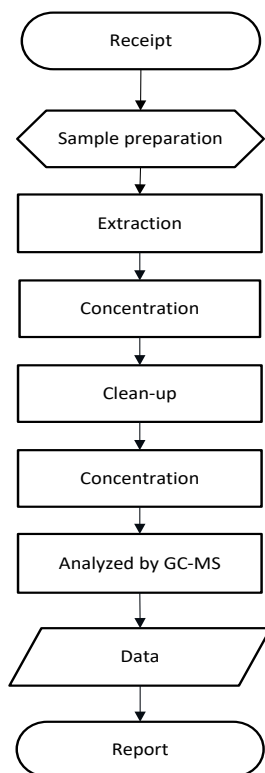
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REPORT NO. RT26R-S0586-006-E1

SAMPLE ID NO. : RT26R-S0586-006

SAMPLE DESCRIPTION : 12inch Bump (Cu solder)

### Flow Chart (Phthalates)



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

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