

TEST REPORT

APPLICANT : SAMSUNG ELECTRONICS Co., Ltd.
ADDRESS : 1, Samsungjeonja-ro,
Hwaseong-si, Gyeonggi-do, Korea

PAGE: 1 of 5

REPORT NO. RT23R-S0559-004-E2

DATE: Feb. 02, 2023

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

NAME/TYPE OF PRODUCT : 12inch wafer (No C/F, No Bump)
NAME OF MATERIAL : Wafer (Patterned)
SAMPLE ID NO. : RT23R-S0559-004
MANUFACTURER/VENDOR : SAMSUNG ELECTRONICS Co., Ltd.
NAME OF BUYER : SAMSUNG ELECTRONICS Co., Ltd.

SAMPLE RECEIVED : Jan. 26, 2023
TESTING DATE : Jan. 26, 2023 ~ Feb. 02, 2023

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,



Jade Jang / Lab. Technical Manager

Authorized by,



Bo Park / Lab. General Manager



Authenticity check

Intertek Testing Services Korea Ltd.
Seoul Office: Tel : 02-6090-9500 Fax : 02-3409-0025 Web Site : intertek.co.kr
Seoul Lab. Address : 7, Ahasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea
Ulsan Lab. Address : 34, Yongam-gil, Chongryang-myeon, Ulju-gun, Ulsan 44989 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.

TEST REPORT

PAGE: 2 of 5
DATE: Feb. 02, 2023

REPORT NO. RT23R-S0559-004-E2

SAMPLE ID NO. : RT23R-S0559-004
SAMPLE DESCRIPTION : 12inch wafer (No C/F, No Bump)

TEST ITEM	UNIT	TEST METHOD	MDL	RESULT
Beryllium (Be)	mg/kg	With reference to US EPA 3052, by acid digestion and determined by ICP-OES	2	N.D.
Cobalt (Co)	mg/kg	With reference to US EPA 3052, by acid digestion and determined by ICP-OES	2	N.D.
Indium (In)	mg/kg	With reference to US EPA 3052, by acid digestion and determined by ICP-OES	2	N.D.
Nickel (Ni)	mg/kg	With reference to US EPA 3052, by acid digestion and determined by ICP-OES	2	18
Phosphorus (P)	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.
Tin (Sn)	mg/kg	With reference to US EPA 3052, by acid digestion and determined by ICP-OES	2	N.D.
Tetrabromobisphenol-A (TBBP-A)	mg/kg	With reference to US EPA 3540C, by solvent extraction and determined by LC/MS/MS	5	N.D.
Medium-chain chlorinated paraffin (MCCP)	mg/kg	With reference to US EPA 3540C, by solvent extraction and determined by LC/MS/MS and/or GC/ECD	100	N.D.
N-Methyl-2-pyrrolidone (NMP)	mg/kg	With reference to US EPA 3550C, determined by GC/MS	5	N.D.

Tested by : Jooyeon Lee, Hayan Park

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

Intertek Testing Services Korea Ltd.
Seoul Office: Tel : 02-6090-9500 Fax : 02-3409-0025 Web Site : intertek.co.kr
Seoul Lab. Address : 7, Ahasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea
Ulsan Lab. Address : 34, Yongam-gil, Chongryang-myeon, Ulju-gun, Ulsan 44989 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.

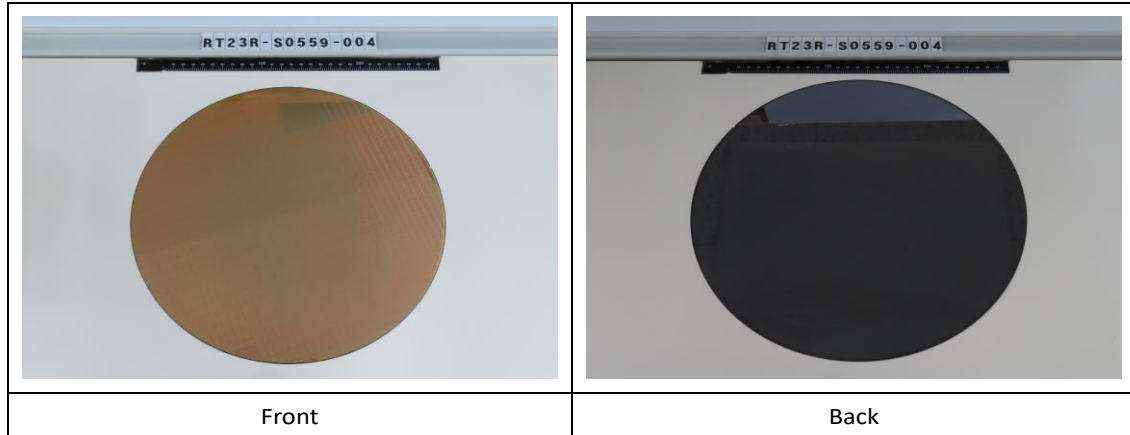
TEST REPORT

PAGE: 3 of 5
DATE: Feb. 02, 2023

REPORT NO. RT23R-S0559-004-E2

SAMPLE ID NO. : RT23R-S0559-004
SAMPLE DESCRIPTION : 12inch wafer (No C/F, No Bump)

* View of sample;-



Intertek Testing Services Korea Ltd.
Seoul Office: Tel : 02-6090-9500 Fax : 02-3409-0025 Web Site : intertek.co.kr
Seoul Lab. Address : 7, Ahasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea
Ulsan Lab. Address : 34, Yongam-gil, Chongryang-myeon, Ulju-gun, Ulsan 44989 Korea



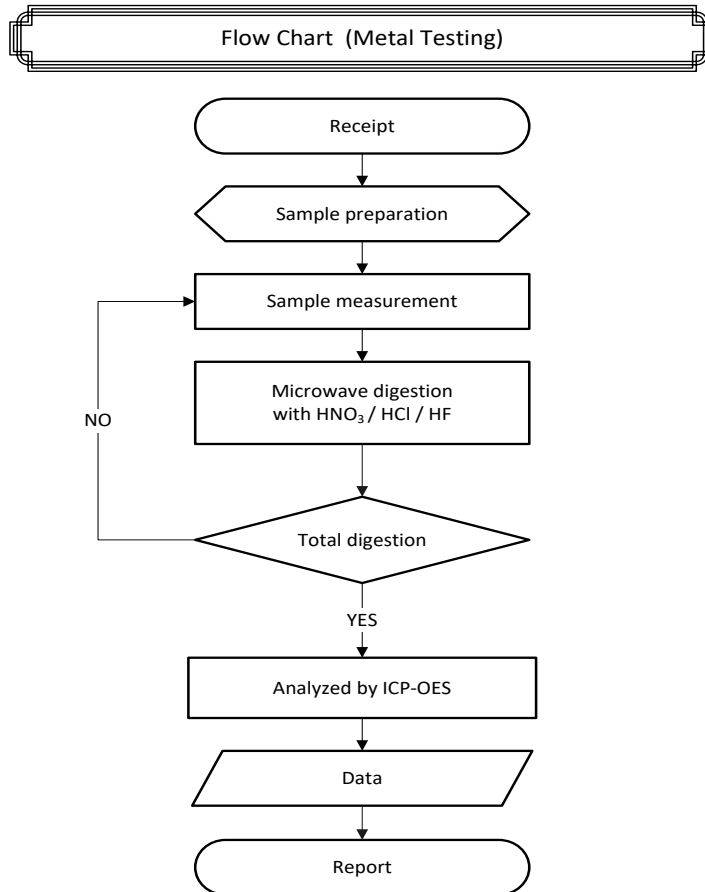
※ You can verify the forgery and authenticity by the barcode at the end of this document.

TEST REPORT

REPORT NO. RT23R-S0559-004-E2

SAMPLE ID NO. : RT23R-S0559-004

SAMPLE DESCRIPTION : 12inch wafer (No C/F, No Bump)



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



TEST REPORT

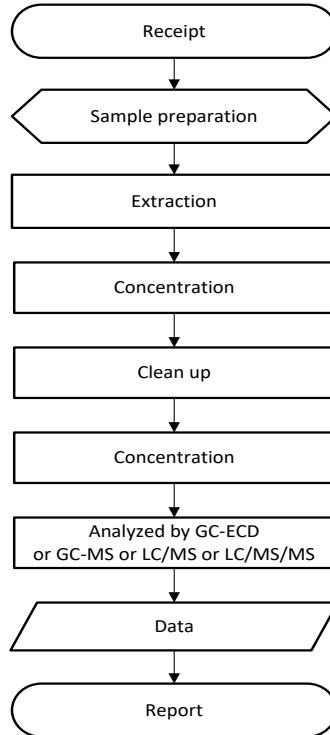
PAGE: 5 of 5
DATE: Feb. 02, 2023

REPORT NO. RT23R-S0559-004-E2

SAMPLE ID NO. : RT23R-S0559-004

SAMPLE DESCRIPTION : 12inch wafer (No C/F, No Bump)

Flow Chart (EPA 3540C)



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

Except where explicitly agreed in writing, all work and services performed by Intertek is subject to our standard Terms and Conditions which can be obtained at our website: <http://www.intertek.com/terms/>. Intertek's responsibility and liability are limited to the terms and conditions of the agreement.

This report is made solely on the basis of your instructions and / or information and materials supplied by you and provide no warranty on the tested sample(s) be truly representative of the sample source. The report is not intended to be a recommendation for any particular course of action, you are responsible for acting as you see fit on the basis of the report results. Intertek is under no obligation to refer to or report upon any facts or circumstances which are outside the specific instructions received and accepts no responsibility to any parties whatsoever, following the issue of the report, for any matters arising outside the agreed scope of the works. This report does not discharge or release you from your legal obligations and duties to any other person. You are the only one authorized to permit copying or distribution of this report (and then only in its entirety). Any such third parties to whom this report may be circulated rely on the content of the report solely at their own risk.

*This report shall not be reproduced, except in full.
This report is not related to the scope of Korea Laboratory Accreditation Scheme.*

Intertek Testing Services Korea Ltd.

Seoul Office: Tel : 02-6090-9500 Fax : 02-3409-0025 Web Site : intertek.co.kr

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

Ulsan Lab. Address : 34, Yongam-gil, Chongryang-myeon, Ulju-gun, Ulsan 44989 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.