TEST REPORT

Tower Partners Semiconductor Co.,Ltd.(TPSCo)

800 HIGASHIYAMA UOZU-CITY TOYAMA JAPAN

SAMPLE NAME : Manufactured silicon wafer(200mm ,at Tonami)

CLIENT REF.NO :

THE ABOVE SAMPLE(S) AND INFORMATION WERE PROVIDED BY THE APPLICANT.
上記のサンプル並びに情報は顧客により提供されました。

SAMPLE RECEIVED : 2023/03/03
サンプル受領日

TESTING DATE : 2023/03/03TO 2023/03/13
分析期間

TEST REQUESTED : SELECTED TEST(S) AS REQUESTED BY CLIENT.
分析項目 分析項目は顧客の要求によります。

TEST METHOD(S) : WITH REFERENCE TO LATEST EDITION OF IEC62321FOR RoHS 10 SUBSTANCES.
分析方法 OTHER CHEMICALS WERE TESTED BY EACH APPROPRIATE METHOD.
RoHS10物質の分析は最新版のIEC62321を参照しました。
それ以外の化学物質についてはそれぞれに最適な方法で分析を行いました。

TEST RESULT(S) : PLEASE REFER TO THE NEXT PAGE(S).
分析結果 以下のページをご参照願います。

丸山 文隆

Fumitaka Maruyama / Quality Officer
Central Chemical Laboratory
SGS Japan Inc.

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TEST RESULT(S)

ITEM(S)	UNIT	RESULT	METHOD	INST./PLACE	MDL
CADMIUM(Cd)	mg/kg	N.D.	IEC62321-5:2013	ICP-OES	2
LEAD(Pb)	mg/kg	N.D.	IEC62321-5:2013	ICP-OES	2
MERCURY(Hg)	mg/kg	N.D.	IEC62321-4:2013+AMD1:2017	ICP-OES	2
CHROMIUM VI(Cr(VI))	mg/kg	N.D.	IEC62321-7-2:2017	UV-VIS*	8
Polybrominated biphenyls(PBBs)					
Monobromobiphenyl	mg/kg	N.D.	IEC62321-6:2015	GC/MS*	5
Dibromobiphenyl	mg/kg	N.D.			5
Tribromobiphenyl	mg/kg	N.D.			5
Tetrabromobiphenyl	mg/kg	N.D.			5
Pentabromobiphenyl	mg/kg	N.D.			5
Hexabromobiphenyl	mg/kg	N.D.			5
Heptabromobiphenyl	mg/kg	N.D.			5
Octabromobiphenyl	mg/kg	N.D.			5
Nonabromobiphenyl	mg/kg	N.D.			5
Decabromobiphenyl	mg/kg	N.D.			5
Polybrominated diphenyl ethers(PBDEs)					
Monobromodiphenyl ether	mg/kg	N.D.	IEC62321-6:2015	GC/MS*	5
Dibromodiphenyl ether	mg/kg	N.D.			5
Tribromodiphenyl ether	mg/kg	N.D.			5
Tetrabromodiphenyl ether	mg/kg	N.D.			5
Pentabromodiphenyl ether	mg/kg	N.D.			5
Hexabromodiphenyl ether	mg/kg	N.D.			5
Heptabromodiphenyl ether	mg/kg	N.D.			5
Octabromodiphenyl ether	mg/kg	N.D.			5
Nonabromodiphenyl ether	mg/kg	N.D.			5
Decabromodiphenyl ether	mg/kg	N.D.			5
ANTIMONY(Sb)	mg/kg	N.D.	EPA3052	ICP-OES	2
ARSENIC(As)	mg/kg	N.D.	EPA3052	ICP-OES	10
BERYLLIUM(Be)	mg/kg	N.D.	EPA3052	ICP-OES	10
HALOGEN					
FLUORINE(F)	mg/kg	N.D.	BS EN14582:2016/ Combustion	IC*	50
CHLORINE(Cl)	mg/kg	N.D.	BS EN14582:2016/ Combustion	IC*	50
BROMINE(Br)	mg/kg	N.D.	BS EN14582:2016/ Combustion	IC*	50
IODINE(I)	mg/kg	N.D.	BS EN14582:2016/ Combustion	IC*	50
HEXABROMOCYCLODODECANE(HBCDD)	mg/kg	N.D.	IEC62321-9:2021	GC/MS*	20
PHTHALATES					
DISOBUTYL PHTHALATE(DIBP)	mg/kg	N.D.	IEC62321-8:2017	GC/MS*	50

NOTES: mg/kg = ppm, N.D. = Not Detected, INST. = INSTRUMENT, MDL = Method Detection Limit

REMARK: Tested the sample which was hard to be disjointed mechanically.
Deviation was found in sample composition.
* = The test has been conducted in association with SGS Taiwan Ltd.

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ITEM(S)	UNIT	RESULT	METHOD	INST./PLACE	MDL
DIBUTYL PHTHALATE(DBP)	mg/kg	N.D.	IEC62321-8:2017	GC/MS*	50
BUTYLBENZYL PHTHALATE(BBP)	mg/kg	N.D.	IEC62321-8:2017	GC/MS*	50
DI(2-ETHYLHEXYL) PHTHALATE(DEHP)	mg/kg	N.D.	IEC62321-8:2017	GC/MS*	50
PERFLUOROOCTANE SULFONATES(PFOS)	mg/kg	N.D.	EPA3550C	LC/MS/MS*	10
PERFLUOROOCTANOIC ACID(PFOA)	mg/kg	N.D.	EPA3550C	LC/MS/MS*	10

NOTES: mg/kg = ppm, N.D. = Not Detected, INST. = INSTRUMENT, MDL = Method Detection Limit

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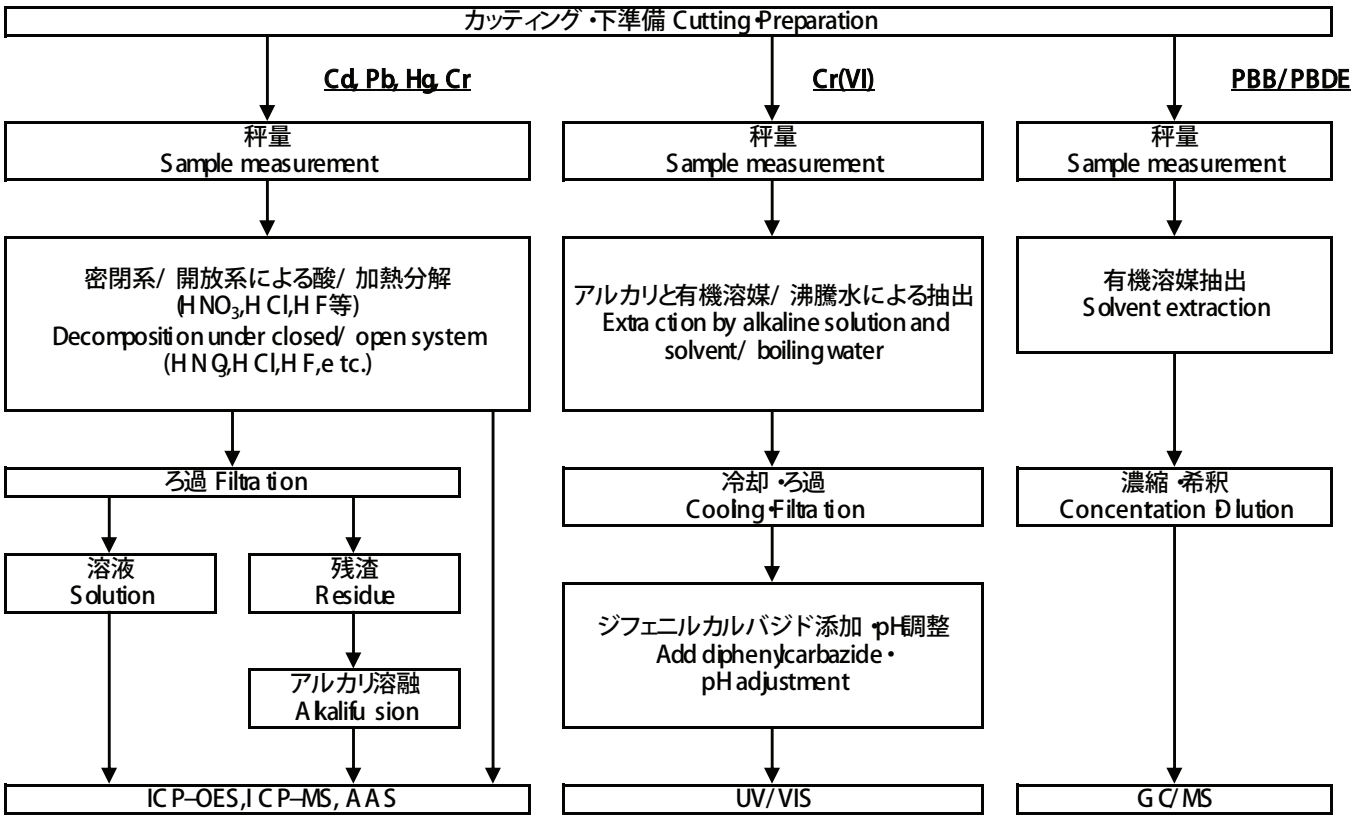
分析フローチャートMEASUREMENT FLOW CHART

酸分解前処理において試料を完全分解しています。
The sample was dissolved/ decomposed totally by acid pre-conditioning method according to below flow chart.



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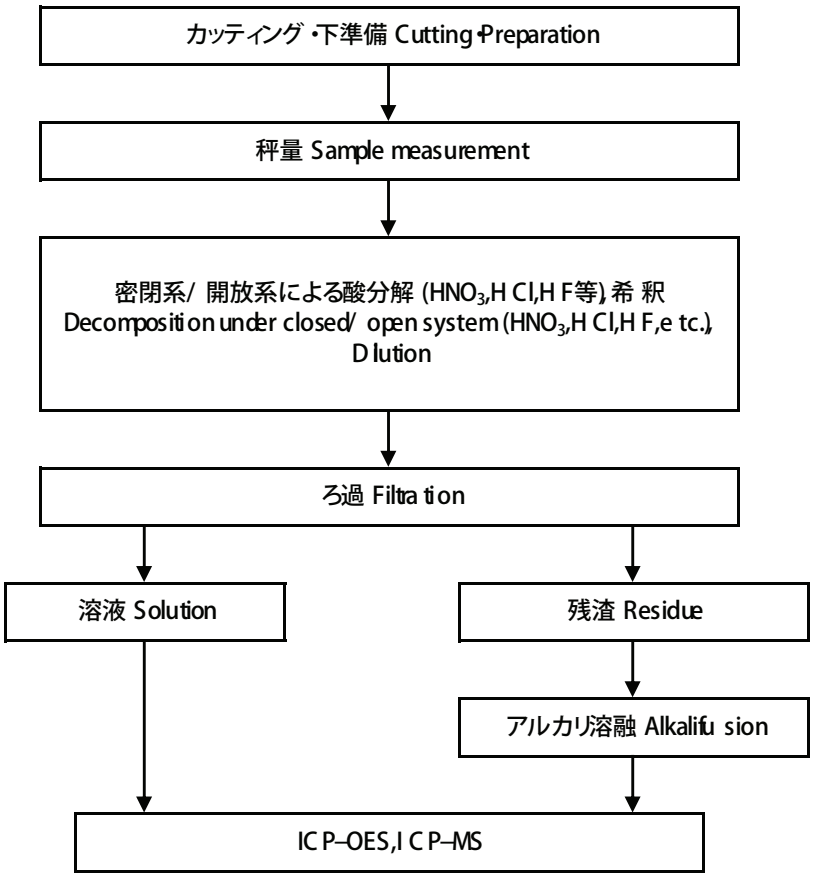
分析フローチャートMEASUREMENT FLOW CHART

酸分解前処理において試料を完全分解しています。
The sample was dissolved/ decomposed totally by acid pre-conditioning method according to below flow chart.

無機分析
INORGANIC ANALYSIS



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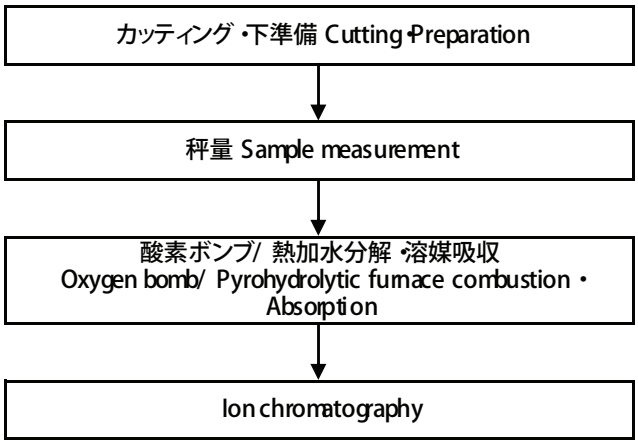
分析フローチャートMEASUREMENT FLOW CHART

ハロゲン HALOGEN



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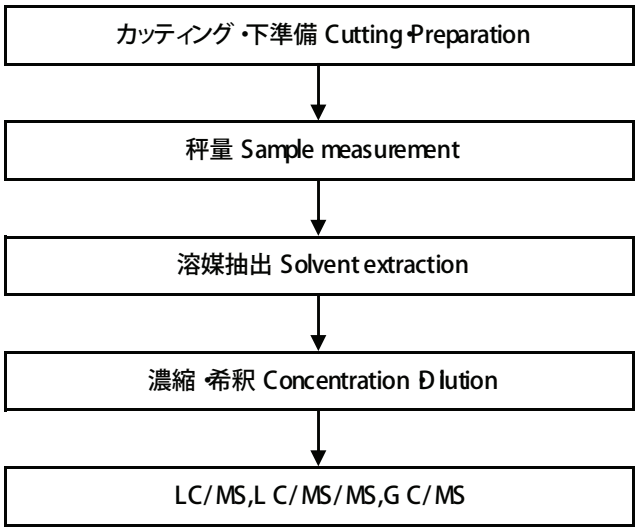
分析フローチャートMEASUREMENT FLOW CHART

PERFLUORINATED COMPOUNDs(PFCs)



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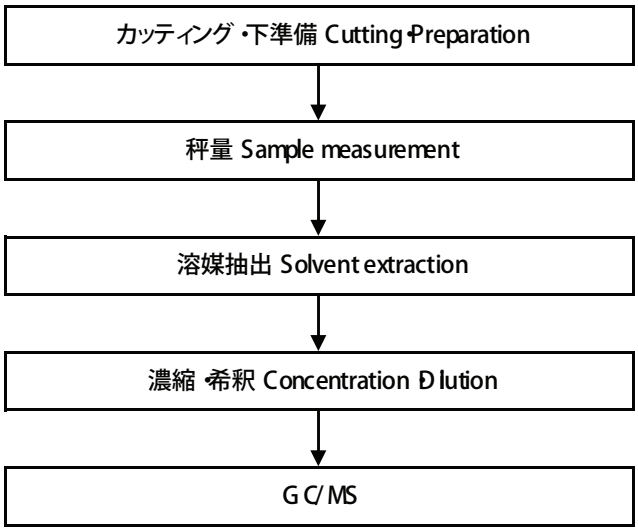
フタル酸エステル
PHTHALATES



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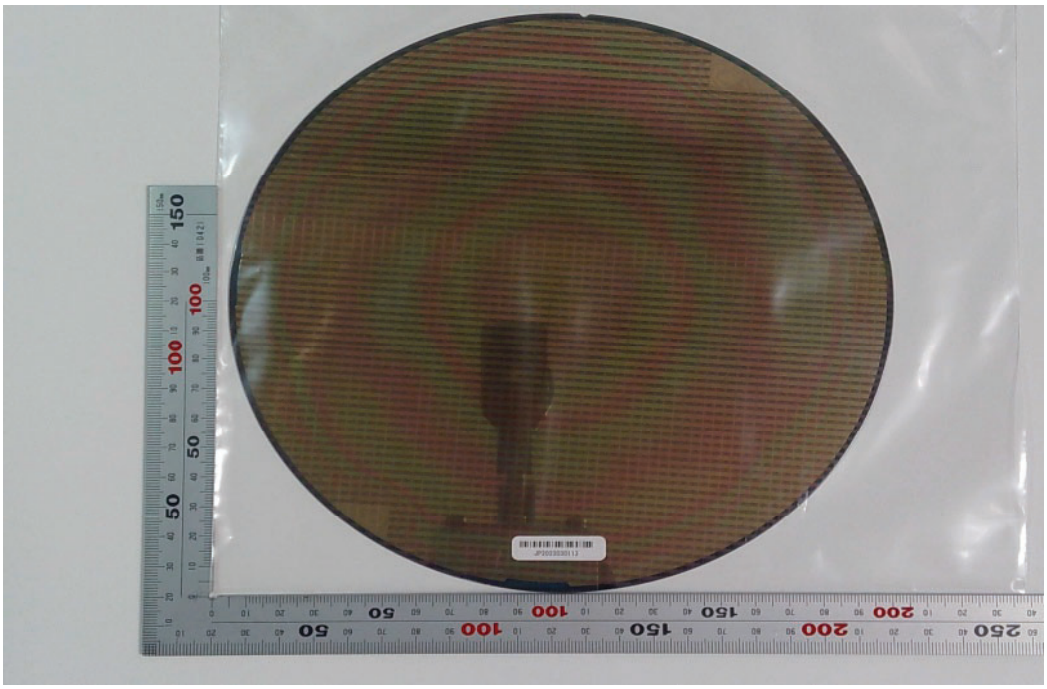
SAMPLE IMAGE

JP/2023/030113



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