TEST REPORT
(시 험 성 적 서)

신청기관 (인) : SK머티리얼즈퍼포먼스
APPLICANT : SK materials performance

주소 (한글) : 경기도 화성시 동탄산단2길 7-9
ADDRESS (ENGL.) : 7-9, Dongtansandan 2-gil,
Hwaseong-si, Gyeonggi-do, Korea

시험성적서 번호 (REPORT NO.) :RT25R-S4696-004-K 발행일자 (DATE) : 2025. 07. 10.

시료 명세 (SAMPLE DESCRIPTION)	:시료에 대한 상세한 정보는 아래와 같음 (The following submitted sample(s) said to be)
제품명/형식 (NAME/TYPE OF PRODUCT)	: Chemical compound (Chemical compound)
시료고유번호 (SAMPLE ID NO.)	: RT25R-S4696-004 (RT25R-S4696-004)
품번 (ITEM NO.)	: AP4200 (250529A1) (AP4200 (250529A1))
제품 생산자/공급자 (MANUFACTURER/VENDOR)	: SK머티리얼즈퍼포먼스 (SK materials performance)
시료접수일자 (SAMPLE RECEIVED)	: 2025. 07. 04. (Jul. 04, 2025)
시험일자 (TESTING DATE)	: 2025. 07. 04. ~ 2025. 07. 10. (Jul. 04, 2025 ~ Jul. 10, 2025)
시험방법 (TEST METHOD)	: 이 시험성적서의 다음 페이지 첨부 (Please see the following page)
시험결과 (TEST RESULT)	: 이 시험성적서의 다음 페이지 첨부 (Please see the following page)

비고 (Notes) :
1. 이 시험성적서는 제시된 시료 및 시료명으로 시험한 결과로서 유사 대상시료에 적용할 수 없음.
(The test results presented in this report refer only to the object tested.)
2. 이 시험성적서는 승인없이 복사 사용을 금함.
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3. 이 시험성적서의 품번은 고객의 요청 및 보증서에 의거하여 명기함.
(The item no. is assigned by client and indicated according to their requirement and guarantee letter.)

승인자 (Approved by)

이청수/기술책임자
(Nikkie Lee / Lab. Technical Manager)

권한자 (Authorized by)

장준용/소장
(Jade Jang / Lab. General Manager)

Authenticity check

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TEST REPORT
(시 험 성 적 서)

시험성적서 번호 (REPORT NO.) : RT25R-S4696-004-K
발행일자 (DATE) : 2025. 07. 10.

시료고유번호 (SAMPLE ID NO.) : RT25R-S4696-004
시료명 (SAMPLE DESCRIPTION) : Chemical compound
(Chemical compound)

시험항목 (TEST ITEM)	단위 (UNIT)	분석방법 (TEST METHOD)	검출한계 (MDL)	시험결과 (RESULT)
카드뮴 (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.
납 (Lead, Pb)	mg/kg		5	N.D.
수은 (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.
6가 크롬 (Hexavalent Chromium, Cr^{6+})	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.
폴리브롬화비페닐 (Polybrominated Biphenyls, PBBs)				
모노브로모비페닐 (MonoBB)	mg/kg	With reference to IEC 62321-6 Edition 1.0 : 2015, by solvent extraction and determined by GC/MS	5	N.D.
다이브로모비페닐 (DiBB)	mg/kg		5	N.D.
트라이브로모비페닐 (TriBB)	mg/kg		5	N.D.
테트라브로모비페닐 (TertaBB)	mg/kg		5	N.D.
펜타브로모비페닐 (PentaBB)	mg/kg		5	N.D.
헥사브로모비페닐 (HexaBB)	mg/kg		5	N.D.
헵타브로모비페닐 (HeptaBB)	mg/kg		5	N.D.
옥타브로모비페닐 (OctaBB)	mg/kg		5	N.D.
노나브로모비페닐 (NonaBB)	mg/kg		5	N.D.
데카브로모비페닐 (DecaBB)	mg/kg		5	N.D.
폴리브롬화디페닐에테르 (Polybrominated Diphenyl Ethers, PBDEs)				
모노브로모디페닐에테르 (MonoBDE)	mg/kg	With reference to IEC 62321-6 Edition 1.0 : 2015, by solvent extraction and determined by GC/MS	5	N.D.
다이브로모디페닐에테르 (DiBDE)	mg/kg		5	N.D.
트라이브로모디페닐에테르 (TriBDE)	mg/kg		5	N.D.
테트라브로모디페닐에테르 (TetraBDE)	mg/kg		5	N.D.
펜타브로모디페닐에테르 (PentaBDE)	mg/kg		5	N.D.
헥사브로모디페닐에테르 (HexaBDE)	mg/kg		5	N.D.
헵타브로모디페닐에테르 (HeptaBDE)	mg/kg		5	N.D.
옥타브로모디페닐에테르 (OctaBDE)	mg/kg		5	N.D.
노나브로모디페닐에테르 (NonaBDE)	mg/kg		5	N.D.
데카브로모디페닐에테르 (DecaBDE)	mg/kg		5	N.D.

Tested by : Jooyeon Lee, Chano Kim, Hayan Park

Notes : mg/kg = ppm = parts per million (함량 표시 : 백만분의 일)
< = Less than (결과 값 이하)
N.D. = Not detected (< MDL, 미검출 – 검출한계 이하)
MDL = Method detection limit (검출한계)

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TEST REPORT
(시 험 성 적 서)

시험성적서 번호 (REPORT NO.) : RT25R-S4696-004-K

발행일자 (DATE) : 2025. 07. 10.

시료고유번호 (SAMPLE ID NO.) : RT25R-S4696-004

시료명 (SAMPLE DESCRIPTION) : Chemical compound
(Chemical compound)

시험항목 (TEST ITEM)	단위 (UNIT)	분석방법 (TEST METHOD)	검출한계 (MDL)	시험결과 (RESULT)
브롬 (Bromine, Br)	mg/kg	With reference to EN 14582, by oxygen combustion with bomb and determined by IC	30	N.D.
염소 (Chlorine, Cl)	mg/kg	With reference to EN 14582, by oxygen combustion with bomb and determined by IC	30	178
플루오르 (Fluorine, F)	mg/kg	With reference to EN 14582, by oxygen combustion with bomb and determined by IC	30	N.D.
비소 (Arsenic, As)	mg/kg	With reference to US EPA 3052, by acid digestion and determined by ICP-OES	2	N.D.
베릴륨 (Beryllium, Be)	mg/kg	With reference to US EPA 3052, by acid digestion and determined by ICP-OES	2	N.D.
안티몬 (Antimony, Sb)	mg/kg	With reference to US EPA 3052, by acid digestion and determined by ICP-OES	2	N.D.
퍼플루오로옥타노익에시드 (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.
퍼플루오로옥탄설포네이트 (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

Notes : mg/kg = ppm = parts per million (함량 표시 : 백만분의 일)
< = Less than (결과 값 이하)
N.D. = Not detected (< MDL, 미검출 – 검출한계 이하)
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시료고유번호 (SAMPLE ID NO.) : RT25R-S4696-004

시료명 (SAMPLE DESCRIPTION) : Chemical compound
(Chemical compound)

시험항목 (TEST ITEM)	CAS번호 (CAS NO.)	단위 (UNIT)	분석방법 (TEST METHOD)	검출한계 (MDL)	시험결과 (RESULT)
디부틸프탈레이트 (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.
디에틸헥실프탈레이트 (Di-(2-ethylhexyl) phthalate, DEHP)	117-81-7	mg/kg		50	N.D.
벤질부틸프탈레이트 (Benzyl butyl phthalate, BBP)	85-68-7	mg/kg		50	N.D.
디이소부틸프탈레이트 (Diisobutyl phthalate, DIBP)	84-69-5	mg/kg		50	N.D.

Tested by : Hayan Park

Notes : mg/kg = ppm = parts per million (함량 표시 : 백만분의 일)
< = Less than (결과 값 이하)
N.D. = Not detected (< MDL, 미검출 – 검출한계 이하)
MDL = Method detection limit (검출한계)

* 시료 접수 시 시료 상태 :
(View of sample as received)

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TEST REPORT
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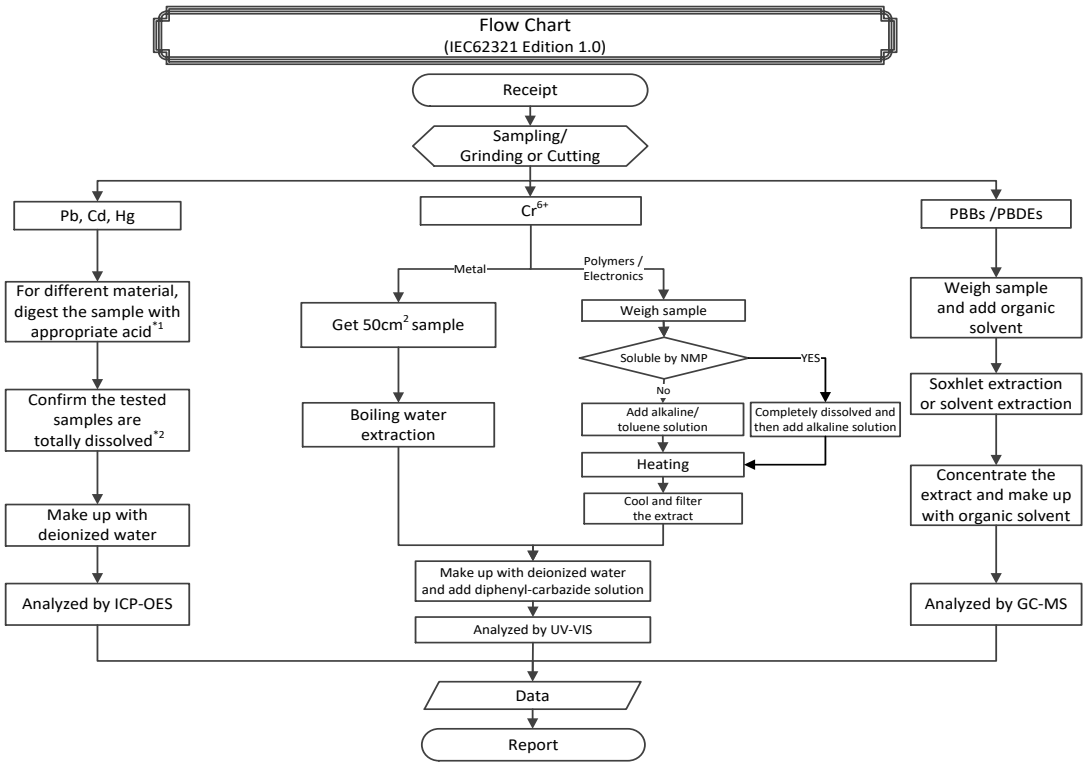
시험성적서 번호 (REPORT NO.) : RT25R-S4696-004-K

시료고유번호 (SAMPLE ID NO.) : RT25R-S4696-004

시료명 (SAMPLE DESCRIPTION) : Chemical compound

(Chemical compound)



Remarks :

*1 : List of appropriate acid :

Material	Acid added for digestion
Polymers	HNO_3, HCl, HF, H_2O_2, $H3BO_3$
Metals	HNO_3, HCl, HF
Electronics	HNO_3, HCl, H_2O_2, HBF_4

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

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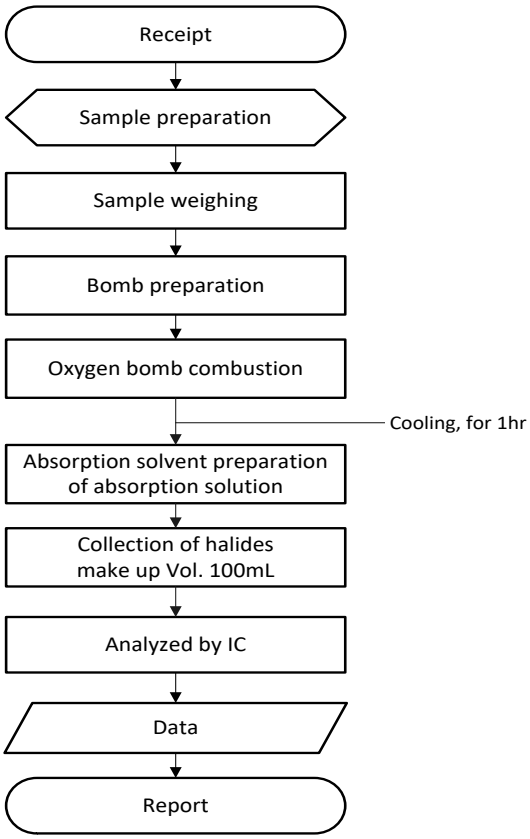
시료고유번호 (SAMPLE ID NO.) : RT25R-S4696-004
시료명 (SAMPLE DESCRIPTION) : Chemical compound
(Chemical compound)

Flow Chart (EN14582)



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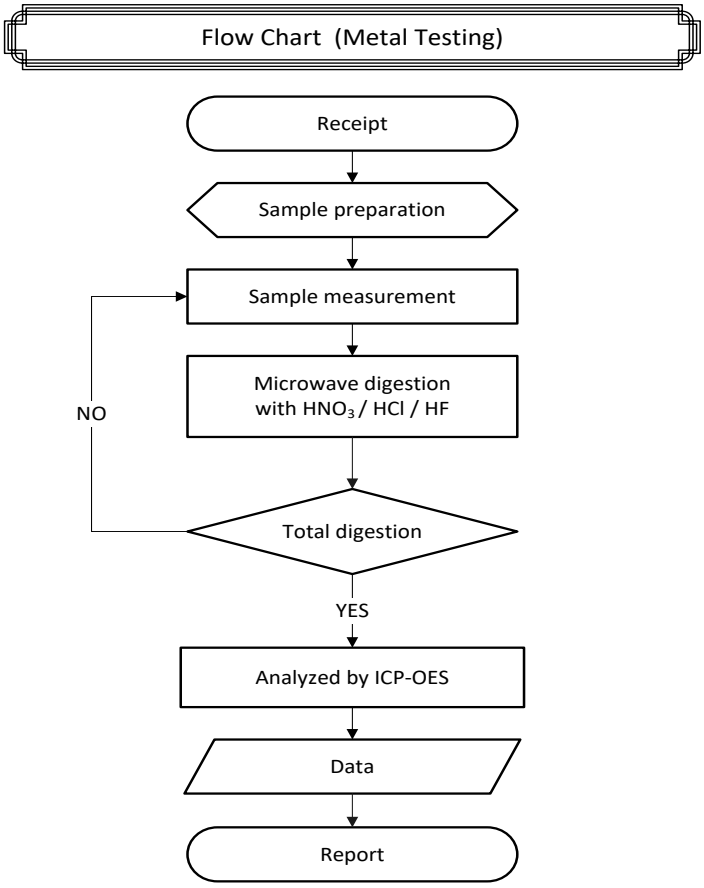
시료명 (SAMPLE DESCRIPTION) : Chemical compound

(Chemical compound)



** 비고 : 이 샘플은 위의 흐름도에 따른 전처리 방법에 의해 완전용해 되었음.

(The samples were dissolved totally by pre-conditioning method according to above flow chart.)

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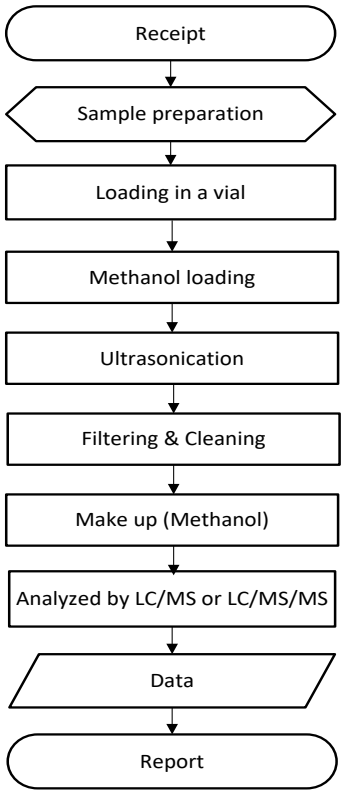
시료명 (SAMPLE DESCRIPTION) : Chemical compound
(Chemical compound)

Flow Chart (PFOS, PFOA)



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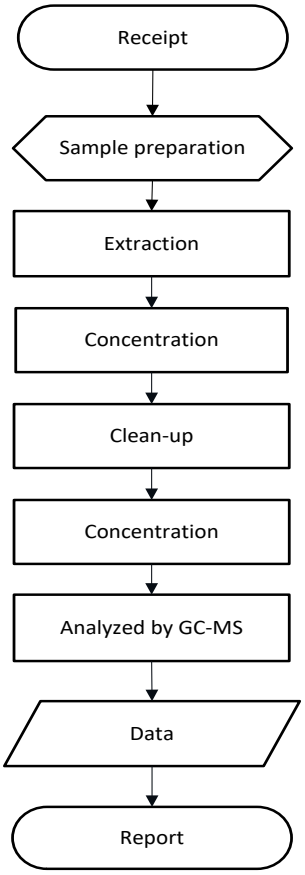
시료고유번호 (SAMPLE ID NO.) : RT25R-S4696-004
시료명 (SAMPLE DESCRIPTION) : Chemical compound
(Chemical compound)

Flow Chart (Phthalates)



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