

TEST REPORT (시 험 성 적 서)

신청기관 (인) : 금호석유화학

APPLICANT : Kumho Petrochemical

주소 (한글) : 울산광역시 남구 처용로 260-257 ADDRESS (ENGL.) : 260-257, Cheoyong-ro, Nam-gu,

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발행면수 (PAGE):1 of 5

시험성적서 번호 (REPORT NO.):RT23R-S0331-005-K

발행일자 (DATE) : 2023. 01. 26.

시료 명세 :시료에 대한 상세한 정보는 아래와 같음 (SAMPLE DESCRIPTION) (The following submitted sample(s) said to be

(SAMPLE DESCRIPTION) (The following submitted sample(s) said to be) 제품명/형식 : SAN 350 F

(NAME/TYPE OF PRODUCT) (SAN 350 F)

재질 : SAN (NAME OF MATERIAL) (SAN)

시료고유번호 : RT23R-S0331-005 (SAMPLE ID NO.) (RT23R-S0331-005)

제품 생산자/공급자 : 금호석유화학 (MANUFACTURER/VENDOR) (Kumho Petrochemical)

시료접수일자 : 2023. 01. 13. (SAMPLE RECEIVED) (Jan. 13, 2023)

시험일자 : 2023. 01. 13. ~ 2023. 01. 26. (TESTING DATE) : Jan. 13, 2023 ~ Jan. 26, 2023)

시험방법 : 이 시험성적서의 다음 페이지 첨부

(TEST METHOD) (Please see the following page)

시험결과 : 이 시험성적서의 다음 페이지 첨부

(TEST RESULT) (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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Authenticity check

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(시 험 성 적 서)

발행면수 (PAGE): 2 of 5

시험성적서 번호 (REPORT NO.): RT23R-S0331-005-K 발행일자 (DATE): 2023. 01. 26.

시료고유번호 (SAMPLE ID NO.) : RT23R-S0331-005

시료명 (SAMPLE DESCRIPTION) : SAN 350 F (SAN 350 F)

(UNIT)	시험항목	<i>,</i> 단위	분석방법	검출한계	시험결과
답 (Lead, Pb)	(TEST ITEM)	(UNIT)	(TEST METHOD)	(MDL)	(RESULT)
당 (Lead, Pb)	카드뮴 (Cadmium, Cd)	mg/kg		0.5	N.D.
유는 (Mercury, Hg)	납 (Lead, Pb)	mg/kg	, ,	5	N.D.
6가 크롬 (Hexavalent Chromium, Cr ⁶⁺) mg/kg lec 62321-7-2 Edition 1.0 : 2017, by alkaline/toluene digestion and determined by UV-VIS Spectrophotometer 폴리브롬화비페닐 (Polybrominated Biphenyls, PBBs) 모노브로모비페닐 (MonoBB) mg/kg 타라이브로모비페닐 (TriBB) mg/kg 테트라브로모비페닐 (TertaBB) mg/kg 테트라브로모비페닐 (PentaBB) mg/kg 해사브로모비페닐 (HexaBB) mg/kg 로바르로모비페닐 (HexaBB) mg/kg 육타브로모비페닐 (HeptaBB) mg/kg 대카브로모비페닐 (NonaBB) mg/kg 대카브로모비페닐 (NonaBB) mg/kg 로비를화디페닐에테르 (Polybrominated Diphenyl Ethers, PBDEs) 모노브로모디페닐에테르 (MonoBDE) mg/kg 타브로모디페닐에테르 (TriBDE) mg/kg 테타브로모디페닐에테르 (TriBDE) mg/kg 테타브로모디페닐에테르 (TertaBDE) mg/kg 테타브로모디페닐에테르 (HexaBDE) mg/kg 리바르로모디페닐에테르 (HexaBDE) mg/kg 테타브로모디페닐에테르 (HexaBDE) mg/kg 리바르로모디페닐에테르 (HexaBDE) mg/kg	수은 (Mercury, Hg)	mg/kg	IEC 62321-4 : 2013/AMD1 : 2017, by acid digestion and	2	N.D.
모노브로모비페닐 (MonoBB) mg/kg 다이브로모비페닐 (TriBB) mg/kg 트라이브로모비페닐 (TriBB) mg/kg 테트라브로모비페닐 (TertaBB) mg/kg 테트라브로모비페닐 (PentaBB) mg/kg 행사브로모비페닐 (HexaBB) mg/kg 헬타브로모비페닐 (HetxaBB) mg/kg 플라브로모비페닐 (OctaBB) mg/kg 노나브로모비페닐 (NonaBB) mg/kg 플리브롬화디페닐에테르 (Polybrominated Diphenyl Ethers, PBDEs) 모노브로모디페닐에테르 (MonoBDE) mg/kg 플라이브로모디페닐에테르 (DiBDE) mg/kg 트라이브로모디페닐에테르 (TriBDE) mg/kg 테트라브로모디페닐에테르 (TetraBDE) mg/kg 테트라르모디페닐에테르 (PentaBDE) mg/kg 테트라르모디페닐에테르 (HexaBDE) mg/kg 테타브로모디페닐에테르 (HexaBDE) mg/kg 행사브로모디페닐에테르 (HeptaBDE) mg/kg 행나브로모디페닐에테르 (HeptaBDE) mg/kg 행타브로모디페닐에테르 (HeptaBDE) mg/kg 행나브로모디페닐에테르 (NonaBDE) mg/kg 행나브로모디페닐에테르 (NonaBDE) mg/kg 행나브로모디페닐에테르 (NonaBDE) mg/kg 행사브로모디페닐에테르 (NonaBDE) mg/kg 행사보드 (NonaBDE) mg/kg 기사고 (NonaBDE)	6가 크롬 (Hexavalent Chromium, Cr ⁶⁺)	mg/kg	IEC 62321-7-2 Edition 1.0 : 2017, by alkaline/toluene digestion and determined by UV-VIS	8	N.D.
다이브로모비페닐 (DiBB) mg/kg 트라이브로모비페닐 (TriBB) mg/kg 테트라브로모비페닐 (TertaBB) mg/kg 테트라브로모비페닐 (PentaBB) mg/kg 행사브로모비페닐 (HexaBB) mg/kg 행타브로모비페닐 (HeptaBB) mg/kg 행타브로모비페닐 (OctaBB) mg/kg 우타브로모비페닐 (NonaBB) mg/kg 보나브로모비페닐 (DecaBB) mg/kg 플리브롬화디페닐에테르 (Polybrominated Diphenyl Ethers, PBDEs) 모노브로모디페닐에테르 (MonoBDE) mg/kg 토라이브로모디페닐에테르 (DiBDE) mg/kg 트라이브로모디페닐에테르 (TriBDE) mg/kg 테트라브로모디페닐에테르 (TetraBDE) mg/kg 테트라브로모디페닐에테르 (PentaBDE) mg/kg 행사브로모디페닐에테르 (HexaBDE) mg/kg 행사브로모디페닐에테르 (HexaBDE) mg/kg 행타브로모디페닐에테르 (HeptaBDE) mg/kg 학의보로모디페닐에테르 (HeptaBDE) mg/kg 등 N.D. 보다브로모디페닐에테르 (NonaBDE) mg/kg 등 N.D. 보다브로모디페닐에테르 (NonaBDE) mg/kg 등 N.D. 보다브로모디페닐에테르 (NonaBDE) mg/kg 등 N.D. 보다브로모디페닐에테르 (NonaBDE	· · ·	yls, PBBs)			
트라이브로모비페닐 (TriBB) mg/kg 테트라브로모비페닐 (PentaBB) mg/kg 팬타브로모비페닐 (PentaBB) mg/kg 핵사브로모비페닐 (HexaBB) mg/kg 핵사브로모비페닐 (HeptaBB) mg/kg 합타브로모비페닐 (HeptaBB) mg/kg 오타브로모비페닐 (NonaBB) mg/kg 노나브로모비페닐 (NonaBB) mg/kg 대카브로모비페닐 (NonaBB) mg/kg 대카브로모비페닐 (PetaBB) mg/kg 대카브로모비페닐 (NonaBB) mg/kg 프리브롬화디페닐에테르 (Polybrominated Diphenyl Ethers, PBDEs) 모노브로모디페닐에테르 (MonoBDE) mg/kg 다이브로모디페닐에테르 (TriBDE) mg/kg 테트라브로모디페닐에테르 (TriBDE) mg/kg 베타브로모디페닐에테르 (PentaBDE) mg/kg 행사브로모디페닐에테르 (HexaBDE) mg/kg 행사브로모디페닐에테르 (HexaBDE) mg/kg 행타브로모디페닐에테르 (HeptaBDE) mg/kg 카니크 5 N.D. 학사브로모디페닐에테르 (HeptaBDE) mg/kg 학사브로모디페닐에테르 (NonaBDE) mg/kg 학사브로모디페닐에테르 (NonaBDE) mg/kg 학사브로모디페닐에테르 (NonaBDE) mg/kg 카니크 5 N.D.		mg/kg		5	N.D.
H트라브로모비페닐 (TertaBB) mg/kg		mg/kg		5	N.D.
전타브로모비페닐 (PentaBB)		mg/kg		5	N.D.
행사브로모비페닐 (HexaBB) mg/kg by solvent extraction and determined by GC/MS 5 N.D. 형타브로모비페닐 (OctaBB) mg/kg 5 N.D. 오타브로모비페닐 (NonaBB) mg/kg 5 N.D. 보나브로모비페닐 (DecaBB) mg/kg 5 N.D. 플리브롬화디페닐에테르 (Polybrominated Diphenyl Ethers, PBDEs) 5 N.D. 모노브로모디페닐에테르 (MonoBDE) mg/kg 5 N.D. 다이브로모디페닐에테르 (DiBDE) mg/kg 5 N.D. 트라이브로모디페닐에테르 (TriBDE) mg/kg 5 N.D. 테트라브로모디페닐에테르 (PentaBDE) mg/kg 5 N.D. 행사브로모디페닐에테르 (HexaBDE) mg/kg 5 N.D. 행타브로모디페닐에테르 (HeptaBDE) mg/kg 5 N.D. 옥타브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D. 우타브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D.	테트라브로모비페닐 (TertaBB)	mg/kg	With reference to	5	N.D.
행타브로모비페닐 (HeptaBB) mg/kg determined by GC/MS 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) ************************************		mg/kg	IEC 62321-6 Edition 1.0 : 2015,	5	N.D.
지 등 한 등 한 등 한 등 한 등 한 등 한 등 한 등 한 등 한 등		mg/kg	•	5	N.D.
노나브로모비페닐 (NonaBB) mg/kg 5 N.D. 데카브로모비페닐 (DecaBB) mg/kg 5 N.D. 폴리브롬화디페닐에테르 (Polybrominated Diphenyl Ethers, PBDEs) USA S N.D. 모노브로모디페닐에테르 (MonoBDE) mg/kg 5 N.D. 다이브로모디페닐에테르 (DiBDE) mg/kg 5 N.D. 트라이브로모디페닐에테르 (TriBDE) mg/kg 5 N.D. 테트라브로모디페닐에테르 (PentaBDE) mg/kg With reference to 5 N.D. 테타브로모디페닐에테르 (HexaBDE) mg/kg by solvent extraction and determined by GC/MS 5 N.D. 역타브로모디페닐에테르 (HeptaBDE) mg/kg 5 N.D. 우타브로모디페닐에테르 (OctaBDE) mg/kg 5 N.D. 노나브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D.	헵타브로모비페닐 (HeptaBB)	mg/kg	determined by GC/MS	5	N.D.
제카브로모비페닐 (DecaBB) mg/kg 5 N.D. M.D. M.D	옥타브로모비페닐 (OctaBB)	mg/kg		5	N.D.
폴리브롬화디페닐에테르 (Polybrominated Diphenyl Ethers, PBDEs) 모노브로모디페닐에테르 (MonoBDE) mg/kg 다이브로모디페닐에테르 (DiBDE) mg/kg 트라이브로모디페닐에테르 (TriBDE) mg/kg 테트라브로모디페닐에테르 (TetraBDE) mg/kg 덴타브로모디페닐에테르 (PentaBDE) mg/kg 헬차브로모디페닐에테르 (HexaBDE) mg/kg 의타브로모디페닐에테르 (HexaBDE) mg/kg 의타브로모디페닐에테르 (HeptaBDE) mg/kg 목타브로모디페닐에테르 (OctaBDE) mg/kg 노나브로모디페닐에테르 (NonaBDE) mg/kg	노나브로모비페닐 (NonaBB)	mg/kg		5	N.D.
모노브로모디페닐에테르 (MonoBDE) mg/kg 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. 헬사브로모디페닐에테르 (HexaBDE) mg/kg by solvent extraction and determined by GC/MS 5 N.D. 역타브로모디페닐에테르 (HeptaBDE) mg/kg 5 N.D. 우타브로모디페닐에테르 (OctaBDE) mg/kg 5 N.D. 노나브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D.	데카브로모비페닐 (DecaBB)	mg/kg		5	N.D.
다이브로모디페닐에테르 (DiBDE) mg/kg 트라이브로모디페닐에테르 (TriBDE) mg/kg 테트라브로모디페닐에테르 (TetraBDE) mg/kg 펜타브로모디페닐에테르 (PentaBDE) mg/kg 헥사브로모디페닐에테르 (HexaBDE) mg/kg 헬타브로모디페닐에테르 (HeptaBDE) mg/kg 옥타브로모디페닐에테르 (OctaBDE) mg/kg 노나브로모디페닐에테르 (NonaBDE) mg/kg 노나브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D. 5 N.D. 5 N.D. 6 N.D. 6 N.D. 5 N.D.	폴리브롬화디페닐에테르 (Polybrominated	Diphenyl Ether	rs, PBDEs)		
트라이브로모디페닐에테르 (TriBDE) mg/kg 테트라브로모디페닐에테르 (TetraBDE) mg/kg 펜타브로모디페닐에테르 (PentaBDE) mg/kg 헥사브로모디페닐에테르 (HexaBDE) mg/kg 헵타브로모디페닐에테르 (HeptaBDE) mg/kg 옥타브로모디페닐에테르 (OctaBDE) mg/kg 노나브로모디페닐에테르 (NonaBDE) mg/kg 노나브로모디페닐에테르 (NonaBDE) mg/kg	모노브로모디페닐에테르 (MonoBDE)	mg/kg		5	N.D.
테트라브로모디페닐에테르 (TetraBDE) mg/kg With reference to IEC 62321-6 Edition 1.0 : 2015, 항 N.D. 에서브로모디페닐에테르 (HexaBDE) mg/kg 행타브로모디페닐에테르 (HeptaBDE) mg/kg 의타브로모디페닐에테르 (HeptaBDE) mg/kg 옥타브로모디페닐에테르 (OctaBDE) mg/kg 노나브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D.	다이브로모디페닐에테르 (DiBDE)	mg/kg		5	N.D.
펜타브로모디페닐에테르 (PentaBDE) mg/kg IEC 62321-6 Edition 1.0 : 2015, by solvent extraction and determined by GC/MS 5 N.D. 헬타브로모디페닐에테르 (HeptaBDE) mg/kg 5 N.D. 옥타브로모디페닐에테르 (OctaBDE) mg/kg 5 N.D. 노나브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D.	트라이브로모디페닐에테르 (TriBDE)	mg/kg		5	N.D.
펜타브로모디페닐에테르 (PentaBDE) mg/kg IEC 62321-6 Edition 1.0 : 2015, by solvent extraction and determined by GC/MS 5 N.D. 헬타브로모디페닐에테르 (HeptaBDE) mg/kg 5 N.D. 옥타브로모디페닐에테르 (OctaBDE) mg/kg 5 N.D. 노나브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D.	테트라브로모디페닐에테르 (TetraBDE)	mg/kg	With reference to	5	N.D.
헵타브로모디페닐에테르 (HeptaBDE) mg/kg determined by GC/MS 5 N.D. 옥타브로모디페닐에테르 (OctaBDE) mg/kg 5 N.D. 노나브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D.	펜타브로모디페닐에테르 (PentaBDE)	mg/kg		5	N.D.
옵다므로모디페들에데트 (Reptable) iiig/kg 5 N.D. 옥타브로모디페들에테르 (OctaBDE) mg/kg 5 N.D. 노나브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D.	헥사브로모디페닐에테르 (HexaBDE)	mg/kg		5	N.D.
노나브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D.	헵타브로모디페닐에테르 (HeptaBDE)	mg/kg	determined by GC/MS	5	N.D.
노나브로모디페닐에테르 (NonaBDE) mg/kg 5 N.D.	옥타브로모디페닐에테르 (OctaBDE)	mg/kg		5	N.D.
데카브로모디페닐에테르 (DecaBDE) mg/kg 5 N.D.		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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(시 험 성 적 서)

발행면수 (PAGE):3 of 5

시험성적서 번호 (REPORT NO.): RT23R-S0331-005-K 발행일자 (DATE): 2023. 01. 26.

시료고유번호 (SAMPLE ID NO.) : RT23R-S0331-005

시료명 (SAMPLE DESCRIPTION) : SAN 350 F

(3/11/3301)					
시험항목	CAS번호	단위	분석방법	검출한계	시험결과
(TEST ITEM)	(CAS NO.)	(UNIT)	(TEST METHOD)	(MDL)	(RESULT)
디부틸프탈레이트 (Dibutyl phthalate, DBP)	84-74-2	mg/kg	With reference to IEC 62321-8 Edition 1.0 : 2017,	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	by solvent extraction and determined by GC/MS	50	N.D.
디이소부틸프탈레이트 (Diisobutyl phthalate, DIBP)	84-69-5	mg/kg	CONVIS	50	N.D.

Tested by : Hayan Park

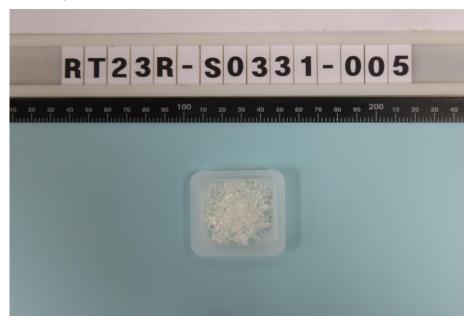
Notes: mg/kg = ppm = parts per million (함량 표시 : 백만분의 일)

< = 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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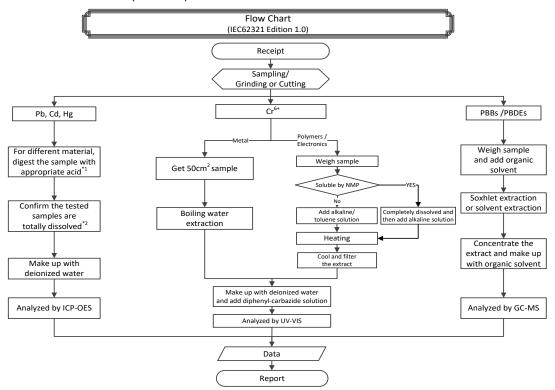
(시 험 성 적 서)

발행면수 (PAGE): 4 of 5

발행일자 (DATE): 2023. 01. 26. 시험성적서 번호 (REPORT NO.): RT23R-S0331-005-K

시료고유번호 (SAMPLE ID NO.) : RT23R-S0331-005 시료명 (SAMPLE DESCRIPTION) : SAN 350 F

(SAN 350 F)



Remarks:
*1: List of appropriate acid:

. List of appropriate acid .					
	Material	Acid added for digestion			
	Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H3BO ₃			
	Metals	HNO₃, HCl, HF			
	Electronics	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄			

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

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(시 험 성 적 서)

발행면수 (PAGE):5 of 5

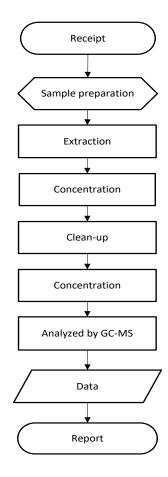
발행일자 (DATE): 2023. 01. 26.

시험성적서 번호 (REPORT NO.): RT23R-S0331-005-K 시료고유번호 (SAMPLE ID NO.) : RT23R-S0331-005

시료명 (SAMPLE DESCRIPTION) : SAN 350 F

(SAN 350 F)

Flow Chart (Phthalates)



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

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