

TEST REPORT (시험 성적서)

신청기관 (인) : 삼양화인테크놀로지
APPLICANT : Samyang Fine Technology

주소 (한글) : 전라북도 군산시 자유무역1길 63
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발행면수 (PAGE) : 1 of 5
발행일자 (DATE) : 2020. 07. 17.

시험성적서 번호 (REPORT NO.) : RT20R-S3898-001-K1

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

제품명/형식 : Ion Exchange Resin
(NAME/TYPE OF PRODUCT) (Ion Exchange Resin)

시료고유번호 : RT20R-S3898-001
(SAMPLE ID NO.) (RT20R-S3898-001)

품번 : TRILITE MC-08
(ITEM NO.) (TRILITE MC-08)

제품 생산자/공급자 : 삼양화인테크놀로지
(MANUFACTURER/VENDOR) (Samyang Fine Technology)

시료접수일자 : 2020. 07. 13.
(SAMPLE RECEIVED) (Jul. 13, 2020)

시험일자 : 2020. 07. 13. ~ 2020. 07. 17.
(TESTING DATE) (Jul. 13, 2020 ~ Jul. 17, 2020)

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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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)

권한자 (Authorized by)




장준용/기술책임자
(Jade Jang / Lab. Technical Manager)

박병옥/소장
(Bo Park / Lab. General Manager)



Authenticity check

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TEST REPORT (시험 성적서)

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발행일자 (DATE) : 2020. 07. 17.

시험성적서 번호 (REPORT NO.) : RT20R-S3898-001-K1

시료고유번호 (SAMPLE ID NO.) : RT20R-S3898-001

시료명 (SAMPLE DESCRIPTION) : Ion Exchange Resin
(Ion Exchange Resin)

| 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 Edition 1.0 : 2013, 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. |
| 폴리브로롬화비페닐 (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. |
| 폴리브로롬화디페닐에테르 (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, Seulgi Park, Jessica Kang

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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발행면수 (PAGE) : 3 of 5

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시험성적서 번호 (REPORT NO.) : RT20R-S3898-001-K1

시료고유번호 (SAMPLE ID NO.) : RT20R-S3898-001

시료명 (SAMPLE DESCRIPTION) : Ion Exchange Resin
(Ion Exchange Resin)

| 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 : Jessica Kang

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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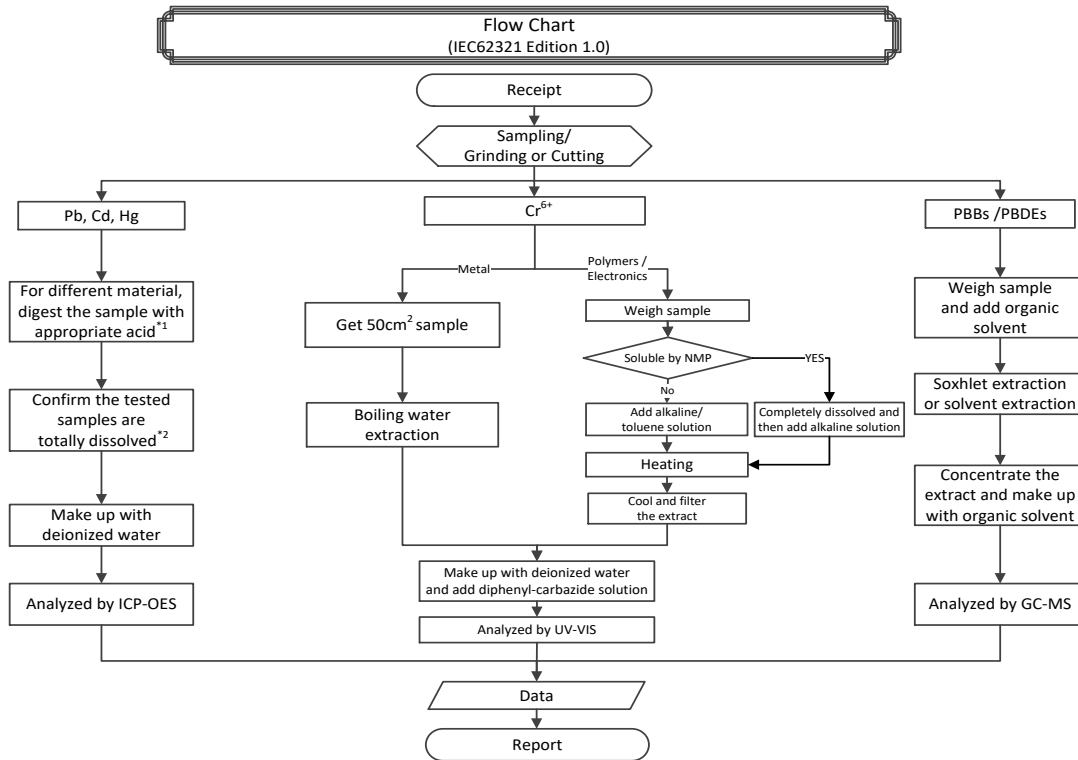
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시료고유번호 (SAMPLE ID NO.) : RT20R-S3898-001

시료명 (SAMPLE DESCRIPTION) : Ion Exchange Resin
(Ion Exchange Resin)



Remarks :

*1 : List of appropriate acid :

| Material | Acid added for digestion |
|-------------|--------------------------------------------------------------------------------------------|
| Polymers | HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃ |
| Metals | HNO ₃ , 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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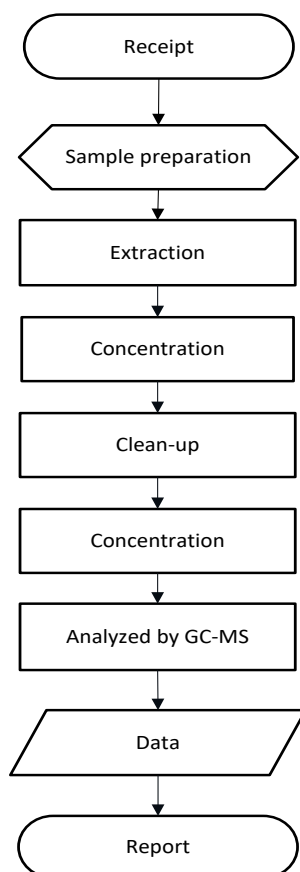
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시료고유번호 (SAMPLE ID NO.) : RT20R-S3898-001

시료명 (SAMPLE DESCRIPTION) : Ion Exchange Resin
(Ion Exchange Resin)

Flow Chart (Phthalates)



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

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