

**TEST REPORT**  
**(시험 성적서)**

신청기관 (인) : 금호석유화학  
APPLICANT : Kumho Petrochemical

주소 (한글) : 울산광역시 남구 처용로 260-257  
ADDRESS (ENGL.) : 260-257, Cheoyong-ro, Nam-gu  
Ulsan 44785, Korea

발행면수 (PAGE) : 1 of 5

발행일자 (DATE) : 2018. 01. 22.

시험성적서 번호 (REPORT NO.) : RT18R-U0099-012-K

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

제품명/형식 (NAME/TYPE OF PRODUCT) : GP 125  
(GP 125)

재질 (NAME OF MATERIAL) : GPPS  
(GPPS)

시료고유번호 (SAMPLE ID NO.) : RT18R-U0099-012  
(RT18R-U0099-012)

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

시료접수일자 (SAMPLE RECEIVED) : 2018. 01. 16.  
(Jan. 16, 2018)

시험일자 (TESTING DATE) : 2018. 01. 16. ~ 2018. 01. 22.  
(Jan. 16, 2018 ~ Jan. 22, 2018)

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 relate only to the object tested.)  
2. 이 시험성적서는 승인없이 복사 사용을 금함.  
(This report shall not be reproduced except in full without the written approval of the testing laboratory.)

승인자 (Approved by)



이용용 / 기술책임자  
(E.Y.Lee / Lab. Technical Manager)

권한자 (Authorized by)



유환우 / 소장  
(H.W.Yoo / Lab. General Manager)



Authenticity check

Intertek Testing Services Korea Ltd.  
Seoul Office: Tel : 02-6090-9550 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://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**  
**(시험 성적서)**

발행면수 (PAGE) : 2 of 5

시험성적서 번호 (REPORT NO.) : RT18R-U0099-012-K

발행일자 (DATE) : 2018. 01. 22.

시료고유번호 (SAMPLE ID NO.) : RT18R-U0099-012

시료명 (SAMPLE DESCRIPTION) : GP 125  
(GP 125)

| 시험항목<br>(TEST ITEM)   | 단위<br>(UNIT) | 분석방법<br>(TEST METHOD)  | 검출한계<br>(MDL) | 시험결과<br>(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 <sup>6+</sup> )<br>(For non-metal) | 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.             |
| <b>폴리브롬화비페닐 (Polybrominated Biphenyls, PBBs)</b>                  |              |  |               |                  |
| 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.             |
| <b>폴리브롬화디페닐에테르 (Polybrominated Diphenyl Ethers, PBDEs)</b>        |              |  |               |                  |
| 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 : JH Jin, BJ Ha

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)

Intertek Testing Services Korea Ltd.

Seoul Office: Tel : 02-6090-9550 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://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**  
**(시험 성적서)**

발행면수 (PAGE) : 3 of 5

시험성적서 번호 (REPORT NO.) : RT18R-U0099-012-K

발행일자 (DATE) : 2018. 01. 22.

시료고유번호 (SAMPLE ID NO.) : RT18R-U0099-012

시료명 (SAMPLE DESCRIPTION) : GP 125  
(GP 125)

| 시험항목<br>(TEST ITEM)                  | CAS번호<br>(CAS NO.) | 단위<br>(UNIT) | 분석방법<br>(TEST METHOD)  | 검출한계<br>(MDL) | 시험결과<br>(RESULT) |
|--------------------------------------|--------------------|--------------|--|---------------|------------------|
| 프탈레이트 (Phthalates)                   |                    |              |  |               |                  |
| Dibutyl phthalate<br>(DBP)           | 84-74-2            | mg/kg        | With reference to<br>IEC 62321-8<br>Edition 1.0 : 2017,<br>by solvent extraction<br>and determined<br>by GC/MS | 50            | N.D.             |
| Di(2-ethylhexyl) phthalate<br>(DEHP) | 117-81-7           | mg/kg        |  | 50            | N.D.             |
| Benzyl butyl phthalate<br>(BBP)      | 85-68-7            | mg/kg        |  | 50            | N.D.             |
| Diisobutyl phthalate<br>(DIBP)       | 84-69-5            | mg/kg        |  | 50            | N.D.             |

Tested by : JH Jin

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)



Intertek Testing Services Korea Ltd.

Seoul Office: Tel : 02-6090-9550 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://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

## (시험 성적서)

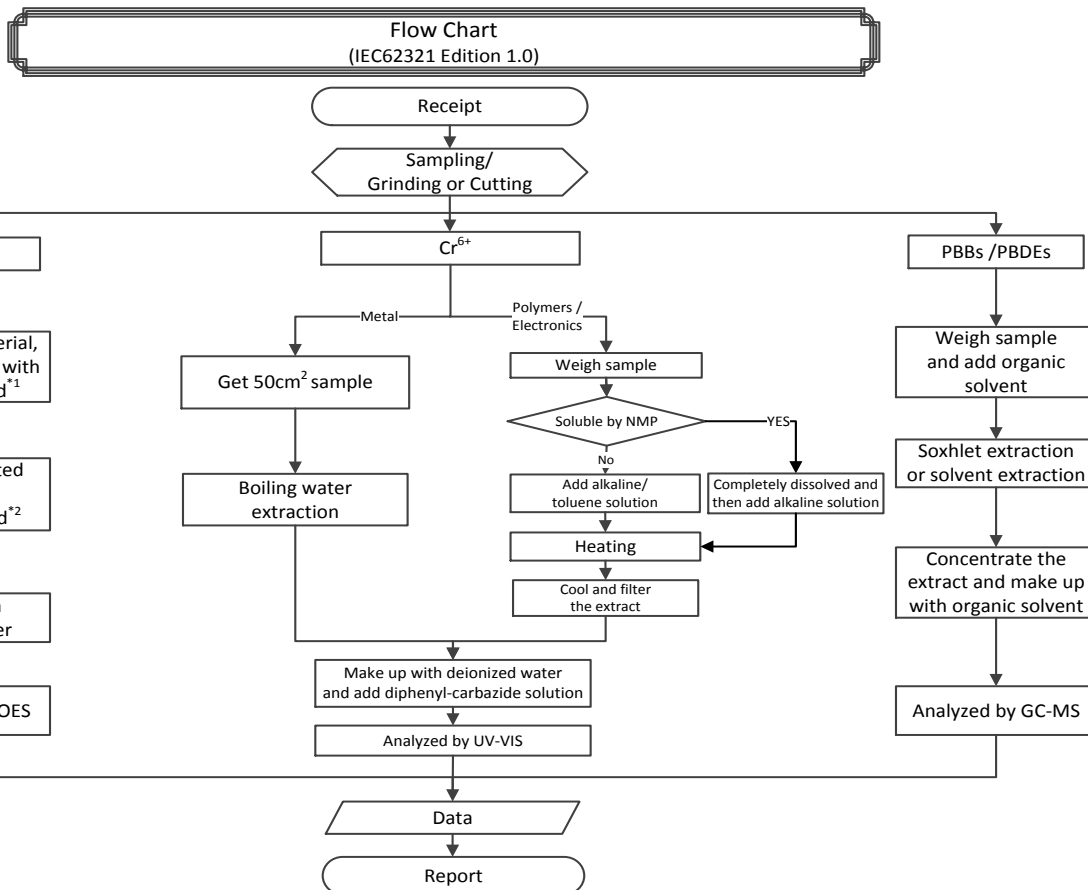
발행면수 (PAGE) : 4 of 5

시험성적서 번호 (REPORT NO.) : RT18R-U0099-012-K

발행일자 (DATE) : 2018. 01. 22.

시료고유번호 (SAMPLE ID NO.) : RT18R-U0099-012

시료명 (SAMPLE DESCRIPTION) : GP 125  
(GP 125)



**Remarks :**

\*1 : List of appropriate acid :

| Material    | Acid added for digestion   |
|-------------|--|
| Polymers    | HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub> |
| Metals      | HNO <sub>3</sub> , HCl, HF   |
| Electronics | HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>                   |

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

Intertek Testing Services Korea Ltd.

Seoul Office: Tel : 02-6090-9550 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://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

## (시험 성적서)

발행면수 (PAGE) : 5 of 5

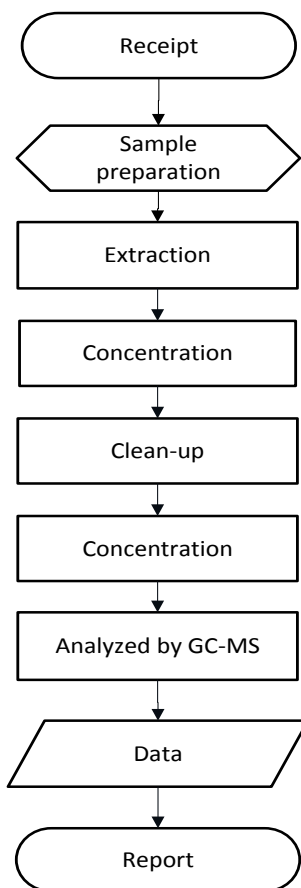
시험성적서 번호 (REPORT NO.) : RT18R-U0099-012-K

발행일자 (DATE) : 2018. 01. 22.

시료고유번호 (SAMPLE ID NO.) : RT18R-U0099-012

시료명 (SAMPLE DESCRIPTION) : GP 125  
(GP 125)

### Flow Chart (Phthalates)



\*\*\*\*\* 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.

Intertek Testing Services Korea Ltd.

Seoul Office: Tel : 02-6090-9550 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://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.