

TEST REPORT (시험 성적서)

신청기관 (인) : (주)두산전자
APPLICANT : Doosan Corporation Electro-Materials
주소 (한글) : 충청북도 증평군 증평읍 두산로 40
ADDRESS (ENGL.) : 40, Doosan-ro, Jeungpyeong-eup,
Jeungpyeong-gun, Chungcheongbuk-do, Korea

발행면수 (PAGE) : 1 of 10
발행일자 (DATE) : 2024. 12. 06.

시험성적서 번호 (REPORT NO.) : RT24R-S8163-001-K4

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

제품명/형식 (NAME/TYPE OF PRODUCT) : DS-7409HG (KNE)
(DS-7409HG (KNE))

시료고유번호 (SAMPLE ID NO.) : RT24R-S8163-001
(RT24R-S8163-001)

제품 생산자/공급자 (MANUFACTURER/VENDOR) : (주)두산전자
(Doosan Corporation Electro-Materials)

시료접수일자 (SAMPLE RECEIVED) : 2024. 12. 02.
(Dec. 02, 2024)

시험일자 (TESTING DATE) : 2024. 12. 02. ~ 2024. 12. 06.
(Dec. 02, 2024 ~ Dec. 06, 2024)

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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승인자 (Approved by)



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

권한자 (Authorized by)



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



Authenticity check



TEST REPORT (시험 성적서)

발행면수 (PAGE) : 2 of 10

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시료고유번호 (SAMPLE ID NO.) : RT24R-S8163-001

시료명 (SAMPLE DESCRIPTION) : DS-7409HG (KNE)
(DS-7409HG (KNE))

시험항목 (TEST ITEM)	단위 (UNIT)	분석방법 (TEST METHOD)	검출한계 (MDL)	시험결과 (RESULT)
비소 (Arsenic, As)	mg/kg	With reference to US EPA 3052, by acid digestion and determined by ICP-OES	2	N.D.
폴리염화비닐 (Polyvinyl chloride, PVC)	-	With reference to KS K 0210-1, and determined by FT-IR	N.A.	Negative
헥사브로모시클로도데칸 (Hexabromocyclododecane, HBCDD)	mg/kg	With reference to IEC 62321-9 : 2021, by solvent extraction and determined by LC/MS and GC/MS	10	N.D.
단쇄 염화 파라핀 (Short-chain chlorinated paraffin, SCCP)	mg/kg	With reference to US EPA 3540C, by solvent extraction and determined by LC/MS/MS and/or GC/ECD	50	N.D.
중간사슬 염화 파라핀 (Medium-chain chlorinated paraffin, MCCP)	mg/kg	With reference to US EPA 3540C, by solvent extraction and determined by LC/MS/MS and/or GC/ECD	50	N.D.
폴리염화바이페닐 (Polychlorinated biphenyls, PCBs)	mg/kg	With reference to US EPA 3540C/8082, by solvent extraction and determined by GC/MS	5	N.D.
폴리염화페닐 (Polychlorinated terphenyls, PCTs)	mg/kg	With reference to US EPA 3540C, by solvent extraction and determined by GC/MS	5	N.D.
폴리염화나프탈렌 (Polychlorinated naphthalenes, PCNs)	mg/kg	With reference to US EPA 3540C, by solvent extraction and determined by GC/MS	5	N.D.
테트라브로모비스페놀-에이 (Tetrabromobisphenol-A, TBBP-A)	mg/kg	With reference to US EPA 3540C, by solvent extraction and determined by LC/MS/MS	5	N.D.

Tested by : 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)

MDL = Method detection limit (검출한계)

N.A. = Not applicable (해당없음)

Negative = Undetectable (동종물질 불검출)

Positive = Detectable (동종물질 검출)

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Seoul Lab. Address : 7, Ahasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea



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발행면수 (PAGE) : 3 of 10

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시료고유번호 (SAMPLE ID NO.) : RT24R-S8163-001

시료명 (SAMPLE DESCRIPTION) : DS-7409HG (KNE)
(DS-7409HG (KNE))

시험항목 (TEST ITEM)	단위 (UNIT)	분석방법 (TEST METHOD)	검출한계 (MDL)	시험결과 (RESULT)
트리부틸주석화합물 (Tributyltin, TBT)	mg/kg	With reference to ISO 17353, by solvent extraction and determined by GC/MS	1	N.D.
트리페닐주석화합물 (Triphenyltin, TPhT)	mg/kg	With reference to ISO 17353, by solvent extraction and determined by GC/MS	1	N.D.
트리부틸틴옥사이드 (Tributyltin-Oxide, TBTO)	mg/kg	With reference to ISO 17353, by solvent extraction and determined by GC/MS	1	N.D.
모노부틸주석화합물 (Monobutyltin, MBT)	mg/kg	With reference to ISO 17353, by solvent extraction and determined by GC/MS	1	N.D.
디부틸주석화합물 (Dibutyltin, DBT)	mg/kg	With reference to ISO 17353, by solvent extraction and determined by GC/MS	1	N.D.
디옥틸주석화합물 (Diocetyl tin, DOT)	mg/kg	With reference to ISO 17353, by solvent extraction and determined by GC/MS	1	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)

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시료명 (SAMPLE DESCRIPTION) : DS-7409HG (KNE)
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* 시료 접수 시 시료 상태 :
(View of sample as received)



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TEST REPORT (시험 성적서)

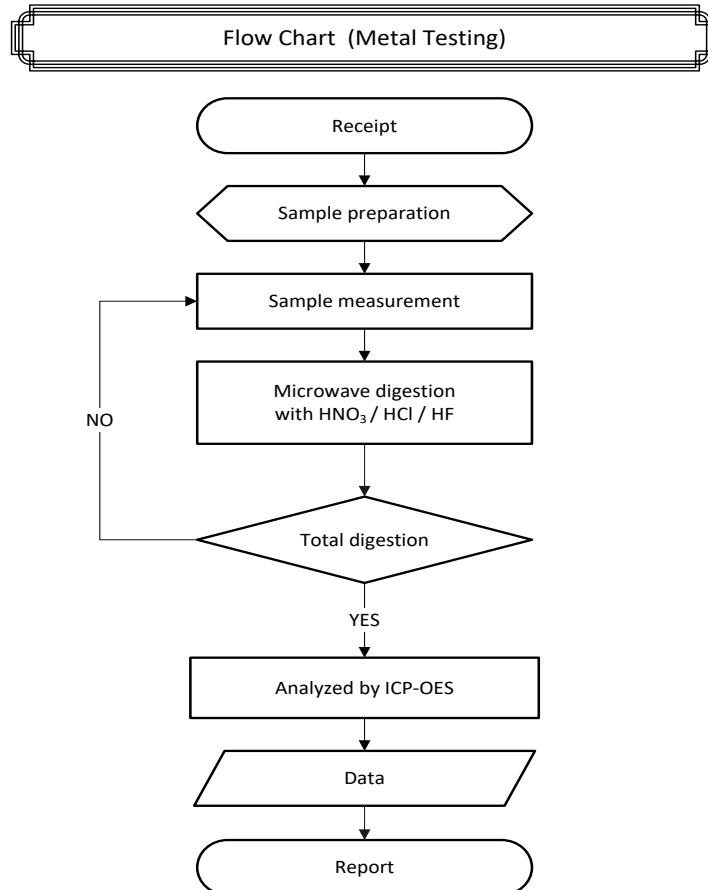
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시료고유번호 (SAMPLE ID NO.) : RT24R-S8163-001

시료명 (SAMPLE DESCRIPTION) : DS-7409HG (KNE)
(DS-7409HG (KNE))



** 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.)



TEST REPORT (시험 성적서)

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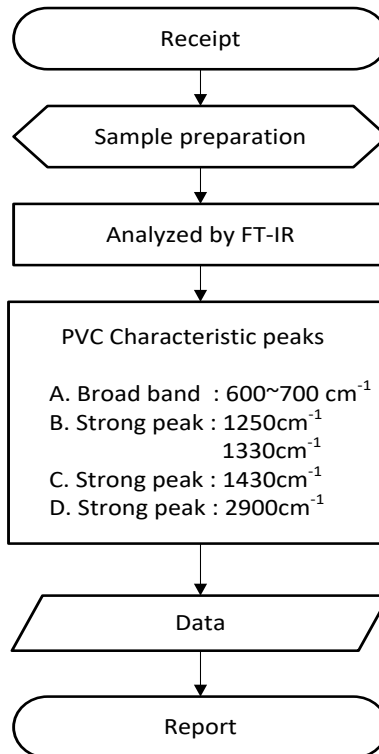
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시료고유번호 (SAMPLE ID NO.) : RT24R-S8163-001

시료명 (SAMPLE DESCRIPTION) : DS-7409HG (KNE)
(DS-7409HG (KNE))

Flow Chart (PVC)



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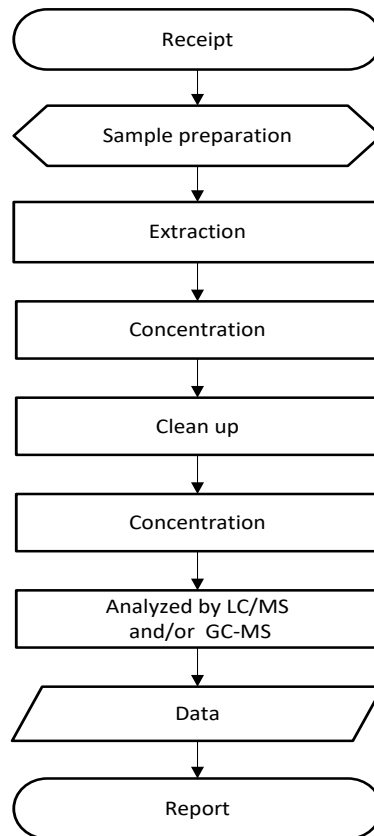
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시료명 (SAMPLE DESCRIPTION) : DS-7409HG (KNE)
(DS-7409HG (KNE))

Flow Chart (HBCDD)



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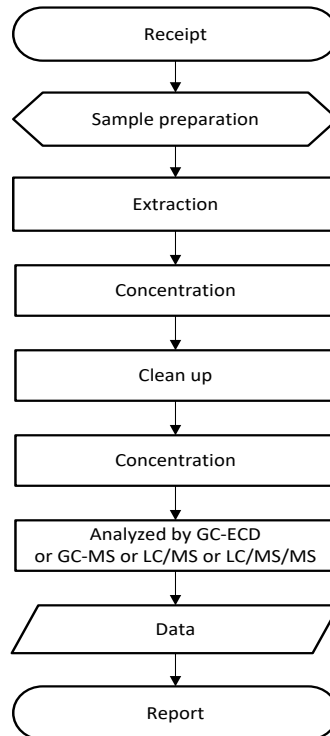
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Flow Chart (EPA 3540C)



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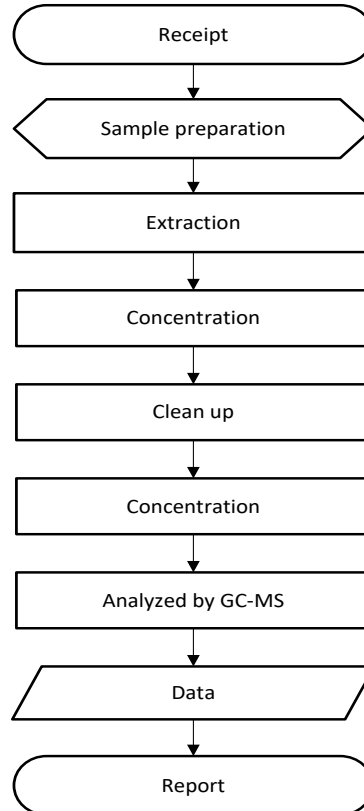
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Flow Chart (PCB, PCT, PCN)



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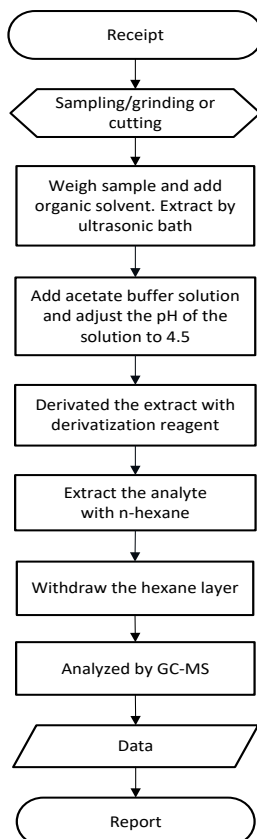
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Flow Chart (Organotin Compounds)



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

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