

**TEST REPORT****(시험성적서)**

신청기관 (인) : (주)한샘디지텍  
APPLICANT : Hansaem Digitec

주소 (한글) : 인천광역시 서구 석남로 15  
ADDRESS (ENGL.) : 15, Seongnam-ro, Seo-gu,  
Incheon, Korea

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

발행면수 (PAGE) : 1 of 18

발행일자 (DATE) : 2025. 01. 17.

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

제품명/형식 : HANSAEM DIGITEC PCB-REACH  
(NAME/TYPE OF PRODUCT) (HANSAEM DIGITEC PCB-REACH)

재질 : PCB  
(NAME OF MATERIAL) (PCB)

시료고유번호 : RT25R-S0267-004  
(SAMPLE ID NO.) (RT25R-S0267-004)

제품 생산자/공급자 : (주)한샘디지텍  
(MANUFACTURER/VENDOR) (Hansaem Digitec)

제출처 : SEC  
(NAME OF BUYER) (SEC)

시료접수일자 : 2025. 01. 09.  
(SAMPLE RECEIVED) (Jan. 09, 2025)

시험일자 : 2025. 01. 09. ~ 2025. 01. 17.  
(TESTING DATE) (Jan. 09, 2025 ~ Jan. 17, 2025)

시험유형 : 화학시험 - REACH관련하여 ECHA에서 공지한 242종의 고 위험성 우려물질  
(TEST TYPE) : Chemical Testing – Two hundred forty-two (242) substances of very high concern (SVHC) based  
on the SVHC Candidate List announced by European Chemicals Agency (ECHA) regarding Regulation  
(EC) No 1907/2006 concerning REACH

시험결과요약 : ECHA에서 공표한 고 위험성 우려물질 중에 9개 물질을 제외하고 모두 0.1% 이하로  
(SUMMARY OF 검출됨  
TEST RESULT(S)) : According to specified test processes in this report, contents of all substances of very high concern  
(SVHC) in Candidate List published by ECHA are less than 0.1% (w/w) in submitted sample(s)  
excepting nine(9) substances. For more details, please see the following page(s).

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.  
(This report shall not be reproduced except in full without the written approval of the testing laboratory.)

승인자 (Approved by)

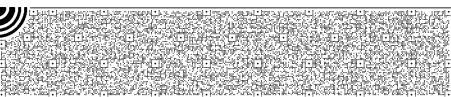
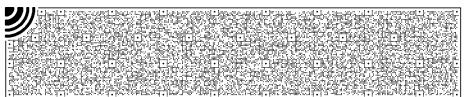
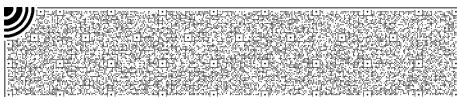
이청수/기술책임자  
(Nikkie Lee / Lab. Technical Manager)

권한자 (Authorized by)

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



Authenticity  
check



# TEST REPORT (시험성적서)

발행면수 (PAGE) : 2 of 18  
발행일자 (DATE) : 2025. 01. 17.

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

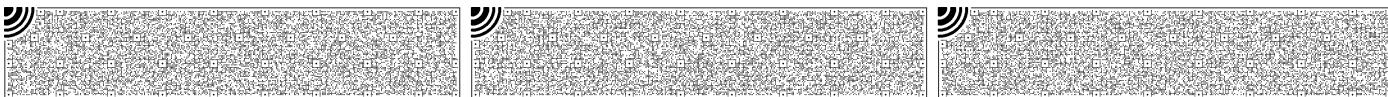
시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
1	Anthracene	204-371-1	120-12-7	0.02	N.D.
2	4,4'-diaminodiphenylmethane	202-974-4	101-77-9	0.02	N.D.
3	Dibutyl phthalate(DBP)	201-557-4	84-74-2	0.02	N.D.
4	Cobalt dichloride* <sup>2</sup>	231-589-4	7646-79-9	0.02	N.D.
5	Diarsenic pentaoxide* <sup>6</sup>	215-116-9	1303-28-2	0.02	N.D.
6	Diarsenic trioxide* <sup>6</sup>	215-481-4	1327-53-3	0.02	N.D.
7	Sodium dichromate* <sup>6</sup>	234-190-3	7789-12-0 10588-01-9	0.02	N.D.
8	5-tert-butyl-2,4,6-trinitro-m-xylene(musk xylene)	201-329-4	81-15-2	0.02	N.D.
9	Bis(2-thyl(hexyl)phthalate)(DEHP)	204-211-0	117-81-7	0.02	N.D.
10	Hexabromocyclododecane(HBCDD)	247-148-4 221-695-9	25637-99-4	0.02	N.D.
11	Short chain chlorinated paraffins(SCCPs)	287-476-5	85535-84-8	0.02	N.D.
12	Bis(tributyltin)oxide(TBTO)	200-268-0	56-35-9	0.02	N.D.
13	Lead hydrogen arsenate* <sup>4</sup>	232-064-2	7784-40-9	0.02	N.D.
14	Triethyl arsenate* <sup>6</sup>	427-700-2	15606-95-8	0.02	N.D.
15	Benzyl butyl phthalate(BBP)	201-622-7	85-68-7	0.02	N.D.
16	Anthracene oil* <sup>8</sup>	292-602-7	90640-80-5	0.02	N.D.
17	Anthracene oil, anthracene paste, distn, light* <sup>8</sup>	295-278-5	91995-17-4	0.02	N.D.
18	Anthracene oil, anthracene paste, anthracene fraction* <sup>8</sup>	295-275-9	91995-15-2	0.02	N.D.
19	Anthracene oil, anthracene-low* <sup>8</sup>	292-604-8	90640-82-7	0.02	N.D.
20	Anthracene oil, anthracene-paste* <sup>8</sup>	292-603-2	90640-81-6	0.02	N.D.
21	Coal tar pitch, hightemperature* <sup>9</sup>	266-028-2	65996-93-2	0.02	N.D.
22	Acrylamide	201-173-7	79-06-1	0.02	N.D.
23	2,4-Dinitrotoluene	204-450-0	121-14-2	0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.

# TEST REPORT

## (시 험 성 적 서)

발행면수 (PAGE) : 3 of 18

발행일자 (DATE) : 2025. 01. 17.

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

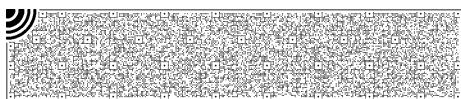
시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
24	Diisobutyl phthalate	201-553-2	84-69-5	0.02	N.D.
25	Lead chromate <sup>*5</sup>	231-846-0	7758-97-6	0.02	N.D.
26	Lead chromate molybdate sulphate red (C.I. pigment red 104) <sup>*5</sup>	235-759-9	12656-85-8	0.02	N.D.
27	Lead sulfochromate yellow (C.I. pigment yellow 34) <sup>*5</sup>	215-693-7	1344-37-2	0.02	N.D.
28	Tris(2-chloroethyl)phosphate	204-118-5	115-96-8	0.02	N.D.
29	Trichloroethylene	201-167-4	79-01-6	0.02	N.D.
30	Boric acid <sup>*1</sup>	233-139-2 234-343-4	10043-35-3 11113-50-1	0.02	5.29
31	Disodium tetraborate, anhydrous <sup>*1</sup>	215-540-4	1330-43-4 12179-04-3 1303-96-4	0.02	0.40
32	Tetraboron disodium heptaoxide, hydrate <sup>*1</sup>	235-541-3	12267-73-1	0.02	0.43
33	Sodium chromate <sup>*6</sup>	231-889-5	7775-11-3	0.02	N.D.
34	Potassium chromate <sup>*6</sup>	232-140-5	7789-00-6	0.02	N.D.
35	Ammonium dichromate <sup>*6</sup>	232-143-1	7789-09-5	0.02	N.D.
36	Potassium dichromate <sup>*6</sup>	231-906-6	7778-50-9	0.02	N.D.
37	Cobalt(II) sulphate <sup>*2</sup>	233-334-2	10124-43-3	0.02	N.D.
38	Cobalt(II) dinitrate <sup>*2</sup>	233-402-1	10141-05-6	0.02	N.D.
39	Cobalt(II) carbonate <sup>*2</sup>	208-169-4	513-79-1	0.02	N.D.
40	Cobalt(II) diacetate <sup>*2</sup>	200-755-8	71-48-7	0.02	N.D.
41	2-Methoxyethanol	203-713-7	109-86-4	0.02	N.D.
42	2-Ethoxyethanol	203-804-1	110-80-5	0.02	N.D.
43	Chromium trioxide <sup>*6</sup>	215-607-8	1333-82-0	0.02	N.D.
44	Acids generated from chromium Trioxide and their oligomers <sup>*6</sup>	Chromic acid	231-801-5 236-881-5	0.02	N.D.
		Dichromic acid		0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.

**TEST REPORT**
**(시 험 성 적 서)**

발행면수 (PAGE) : 4 of 18

발행일자 (DATE) : 2025. 01. 17.

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

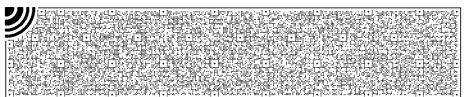
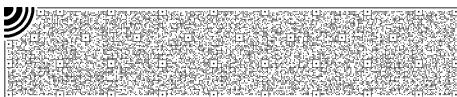
시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
45	2-ethoxyethyl acetate	203-839-2	111-15-9	0.02	N.D.
46	Strontium chromate <sup>*6</sup>	232-142-6	7789-06-2	0.02	N.D.
47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters(DHNUP)	271-084-6	68515-42-4	0.02	N.D.
48	Hydrazine	206-114-9	302-01-2 7803-57-8	0.02	N.D.
49	1-methyl-2-pyrrolidone	212-828-1	872-50-4	0.02	N.D.
50	1,2,3-trichloropropane	202-486-1	96-18-4	0.02	N.D.
51	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters(DIHP)	276-158-1	71888-89-6	0.02	N.D.
52	Zirconia Aluminosilicate Refractory Ceramic Fibres <sup>*7</sup>	-	-	0.02	N.D.
53	Calcium arsenate <sup>*6</sup>	231-904-5	7778-44-1	0.02	N.D.
54	Bis(2-methoxyethyl) ether	203-924-4	111-96-6	0.02	N.D.
55	Aluminosilicate Refractory Ceramic Fibres <sup>*7</sup>	-	-	0.02	N.D.
56	Potassium hydroxyoctaoxodizincatedichromate <sup>*6</sup>	234-329-8	11103-86-9	0.02	N.D.
57	Lead dipicrate <sup>*4</sup>	229-335-2	6477-64-1	0.02	N.D.
58	N,N-dimethylacetamide	204-826-4	127-19-5	0.02	N.D.
59	Arsenic acid <sup>*6</sup>	231-901-9	7778-39-4	0.02	N.D.
60	2-Methoxyaniline; o-Anisidine	201-963-1	90-04-0	0.02	N.D.
61	Trilead diarsenate <sup>*4</sup>	222-979-5	3687-31-8	0.02	N.D.
62	1,2-dichloroethane	203-458-1	107-06-2	0.02	N.D.
63	Pentazinc chromate octahydroxide <sup>*6</sup>	256-418-0	49663-84-5	0.02	N.D.
64	Formaldehyde, oligomeric reaction products with aniline	500-036-1	25214-70-4	0.02	N.D.
65	Bis(2-methoxyethyl) phthalate	204-212-6	117-82-8	0.02	N.D.
66	4-(1,1,3,3-tetramethylbutyl)phenol	205-426-2	140-66-9	0.02	N.D.
67	Lead diazide, Lead azide <sup>*4</sup>	236-542-1	13424-46-9	0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)

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



※ You can verify the forgery and authenticity by the barcode at the end of this document.

**TEST REPORT**
**(시 험 성 적 서)**

발행면수 (PAGE) : 5 of 18

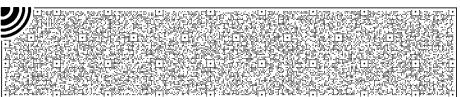
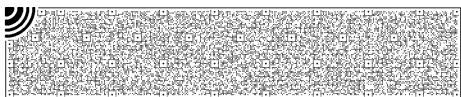
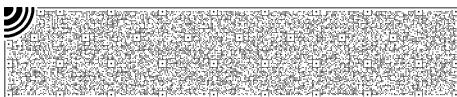
발행일자 (DATE) : 2025. 01. 17.

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
68	Phenolphthalein	201-004-7	77-09-8	0.02	N.D.
69	Dichromium tris(chromate) <sup>*6</sup>	246-356-2	24613-89-6	0.02	N.D.
70	Lead styphnate <sup>*4</sup>	239-290-0	15245-44-0	0.02	N.D.
71	2,2'-dichloro-4,4'-methylenedianiline	202-918-9	101-14-4	0.02	N.D.
72	$\alpha,\alpha$ -Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol	229-851-8	6786-83-0	0.02	N.D.
73	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	202-959-2	101-61-1	0.02	N.D.
74	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione ( $\beta$ -TGIC)	423-400-0	59653-74-6	0.02	N.D.
75	Diboron trioxide <sup>*1</sup>	215-125-8	1303-86-2	0.02	2.98
76	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	203-977-3	112-49-2	0.02	N.D.
77	4,4'-bis(dimethylamino)-4''-(methylamino) trityl alcohol	209-218-2	561-41-1	0.02	N.D.
78	Lead(II) bis(methanesulfonate) <sup>*4</sup>	401-750-5	17570-76-2	0.02	N.D.
79	Formamide	200-842-0	75-12-7	0.02	N.D.
80	[4-[4,4'-bis(dimethylamino) benzhydrylidene] cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride	208-953-6	548-62-9	0.02	N.D.
81	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	203-794-9	110-71-4	0.02	N.D.
82	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl] methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride	219-943-6	2580-56-5	0.02	N.D.
83	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	219-514-3	2451-62-9	0.02	N.D.
84	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	202-027-5	90-94-8	0.02	N.D.
85	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	214-604-9	1163-19-5	0.02	N.D.
86	Pentacosfluorotridecanoic acid	276-745-2	72629-94-8	0.02	N.D.
87	Tricosfluorododecanoic acid	206-203-2	307-55-1	0.02	N.D.



**TEST REPORT**
**(시 험 성 적 서)**

발행면수 (PAGE) : 6 of 18

발행일자 (DATE) : 2025. 01. 17.

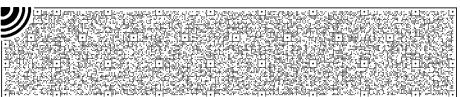
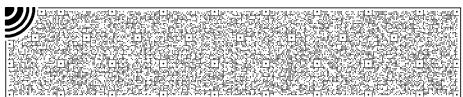
시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
88	Henicosafluoroundecanoic acid	218-165-4	2058-94-8	0.02	N.D.
89	Heptacosafaurotetradecanoic acid	206-803-4	376-06-7	0.02	N.D.
90	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	204-650-8	123-77-3	0.02	N.D.
91	Cyclohexane-1,2-dicarboxylic anhydride [1]cis-cyclohexane-1,2-dicarboxylic anhydride [2]trans-cyclohexane-1,2-dicarboxylic anhydride [3][The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis-and trans-isomers [1] are covered by this entry]	201-604-9 236-086-3 238-009-9	85-42-7, 13149-00-3 14166-21-3	0.02	N.D.
92	Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	247-094-1 243-072-0 256-356-4 260-566-1	25550-51-0 19438-60-9 48122-14-1 57110-29-9	0.02	N.D.
93	4-Nonylphenol, branched and linear[substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	-	-	0.02	N.D.
94	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]	-	-	0.02	N.D.
95	Methoxyacetic acid	210-894-6	625-45-6	0.02	N.D.
96	N,N-dimethylformamide	200-679-5	68-12-2	0.02	N.D.
97	Dibutyltin dichloride (DBTC)	211-670-0	683-18-1	0.02	N.D.
98	Lead monoxide (Lead oxide)* <sup>4</sup>	215-267-0	1317-36-8	0.02	N.D.
99	Orange lead (Lead tetroxide)* <sup>4</sup>	215-235-6	1314-41-6	0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea


※ You can verify the forgery and authenticity by the barcode at the end of this document.

# TEST REPORT

## (시험성적서)

발행면수 (PAGE) : 7 of 18  
 발행일자 (DATE) : 2025. 01. 17.

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

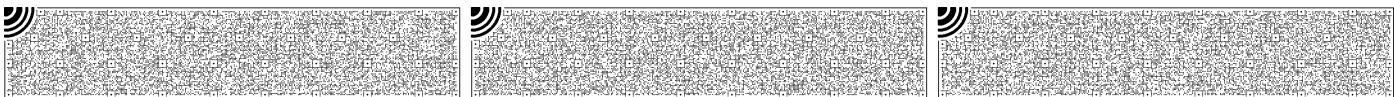
시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
 (HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
100	Lead bis(tetrafluoroborate) <sup>*4</sup>	237-486-0	13814-96-5	0.02	N.D.
101	Trileadbis(carbonate)dihydroxide <sup>*4</sup>	215-290-6	1319-46-6	0.02	N.D.
102	Lead titanium trioxide <sup>*4</sup>	235-038-9	12060-00-3	0.02	N.D.
103	Lead titanium zirconium oxide <sup>*4</sup>	235-727-4	12626-81-2	0.02	N.D.
104	Silicic acid, lead salt <sup>*4</sup>	234-363-3	11120-22-2	0.02	N.D.
105	Silicic acid ( $H_2Si_2O_5$ ), barium salt (1:1), lead-doped <sup>*4</sup>	272-271-5	68784-75-8	0.02	N.D.
106	1-bromopropane (n-propyl bromide)	203-445-0	106-94-5	0.02	N.D.
107	Methyloxirane (Propylene oxide)	200-879-2	75-56-9	0.02	N.D.
108	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	284-032-2	84777-06-0	0.02	N.D.
109	Diisopentylphthalate (DIPP)	210-088-4	605-50-5	0.02	N.D.
110	N-pentyl-isopentylphthalate	-	776297-69-9	0.02	N.D.
111	1,2-diethoxyethane	211-076-1	629-14-1	0.02	N.D.
112	Acetic acid, lead salt, basic <sup>*4</sup>	257-175-3	51404-69-4	0.02	N.D.
113	Lead oxide sulfate <sup>*4</sup>	234-853-7	12036-76-9	0.02	N.D.
114	[Phthalato(2-)]dioxotrilead <sup>*4</sup>	273-688-5	69011-06-9	0.02	N.D.
115	Dioxobis(stearato)trilead <sup>*4</sup>	235-702-8	12578-12-0	0.02	N.D.
116	Fatty acids, C16-18, lead salts <sup>*4</sup>	292-966-7	91031-62-8	0.02	N.D.
117	Lead cynamidate <sup>*4</sup>	244-073-9	20837-86-9	0.02	N.D.
118	Lead dinitrate <sup>*4</sup>	233-245-9	10099-74-8	0.02	N.D.
119	Pentalead tetraoxide sulphate <sup>*4</sup>	235-067-7	12065-90-6	0.02	N.D.
120	Pyrochlore, antimony lead yellow <sup>*4</sup>	232-382-1	8012-00-8	0.02	N.D.
121	Sulfurous acid, lead salt, dibasic <sup>*4</sup>	263-467-1	62229-08-7	0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
 Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.

**TEST REPORT**
**(시 험 성 적 서)**

발행면수 (PAGE) : 8 of 18

발행일자 (DATE) : 2025. 01. 17.

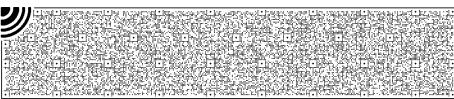
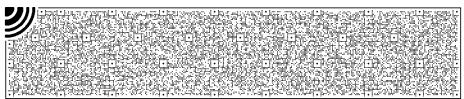
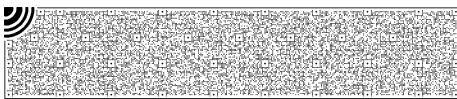
시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
122	Tetraethyllead* <sup>4</sup>	201-075-4	78-00-2	0.02	N.D.
123	Tetralead trioxide sulphate* <sup>4</sup>	235-380-9	12202-17-4	0.02	N.D.
124	Trilead dioxide phosphonate* <sup>4</sup>	235-252-2	12141-20-7	0.02	N.D.
125	Furan	203-727-3	110-00-9	0.02	N.D.
126	Diethyl sulphate	200-589-6	64-67-5	0.02	N.D.
127	Dimethyl sulphate	201-058-1	77-78-1	0.02	N.D.
128	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	421-150-7	143860-04-2	0.02	N.D.
129	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	201-861-7	88-85-7	0.02	N.D.
130	4,4'-methylenedi-o-toluidine	212-658-8	838-88-0	0.02	N.D.
131	4,4'-oxydianiline and its salts	202-977-0	101-80-4	0.02	N.D.
132	4-aminoazobenzene	200-453-6	60-09-3	0.02	N.D.
133	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	202-453-1	95-80-7	0.02	N.D.
134	6-methoxy-m-toluidine (p-cresidine)	204-419-1	120-71-8	0.02	N.D.
135	Biphenyl-4-ylamine	202-177-1	92-67-1	0.02	N.D.
136	<i>o</i> -aminoazotoluene [(4- <i>o</i> -tolylazo- <i>o</i> -toluidine)]	202-591-2	97-56-3	0.02	N.D.
137	<i>o</i> -toluidine	202-429-0	95-53-4	0.02	N.D.
138	<i>N</i> -methylacetamide	201-182-6	79-16-3	0.02	N.D.
139	Cadmium	231-152-8	7440-43-9	0.02	N.D.
140	Ammonium pentadecafluorooctanoate (APFO)	223-320-4	3825-26-1	0.02	N.D.
141	Pentadecafluorooctanoic acid (PFOA)	206-397-9	335-67-1	0.02	N.D.
142	Dipentyl phthalate (DPP)	205-017-9	131-18-0	0.02	N.D.
143	4-Nonylphenol, branched and linear, ethoxylated	-	-	0.02	N.D.
144	Cadmium oxide* <sup>3</sup>	215-146-2	1306-19-0	0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea


※ You can verify the forgery and authenticity by the barcode at the end of this document.

# TEST REPORT (시험성적서)

발행면수 (PAGE) : 9 of 18  
발행일자 (DATE) : 2025. 01. 17.

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

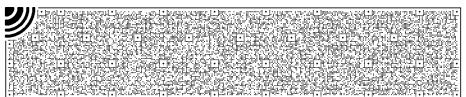
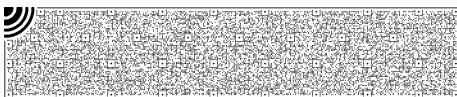
시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
145	Cadmium sulphide* <sup>3</sup>	215-147-8	1306-23-6	0.02	N.D.
146	Dihexyl phthalate	201-559-5	84-75-3	0.02	N.D.
147	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-sulphonate)(C.I. Direct Red 28)	209-358-4	573-58-0	0.02	N.D.
148	Disodium 4-amino-3-[[4'-(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate(C.I. Direct Black 38)	217-710-3	1937-37-7	0.02	N.D.
149	Imidazolidine-2-thione; 2-imidazoline-2-thiol	202-506-9	96-45-7	0.02	N.D.
150	Lead di(acetate)* <sup>4</sup>	206-104-4	301-04-2	0.02	N.D.
151	Trixylyl phosphate	246-677-8	25155-23-1	0.02	N.D.
152	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	271-093-5	68515-50-4	0.02	N.D.
153	Cadmium chloride* <sup>3</sup>	233-296-7	10108-64-2	0.02	N.D.
154	Sodium perborate; perboric acid, sodium salt* <sup>1</sup>	239-172-9; 234-390-0	-	0.02	0.39
155	Sodium peroxometaborate* <sup>1</sup>	231-556-4	7632-04-4	0.02	0.32
156	Cadmium fluoride* <sup>3</sup>	232-222-0	7790-79-6	0.02	N.D.
157	Cadmium sulfate* <sup>3</sup>	233-331-6	10124-36-4 31119-53-6	0.02	N.D.
158	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	223-346-6	3846-71-7	0.02	N.D.
159	2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	247-384-8	25973-55-1	0.02	N.D.
160	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate	239-622-4	15571-58-1	0.02	N.D.
161	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate	-	-	0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.

# TEST REPORT (시험성적서)

발행면수 (PAGE) : 10 of 18  
발행일자 (DATE) : 2025. 01. 17.

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

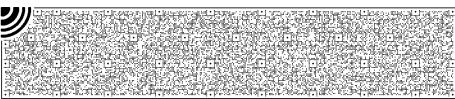
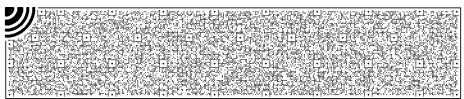
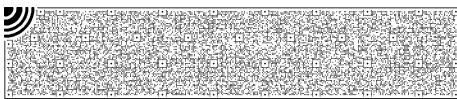
시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
162	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with ≥ 0.3% of dihexyl phthalate	271-094-0 272-013-1	68515-51-5 68648-93-1	0.02	N.D.
163	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of the individual stereoisomers of [1] and [2] or any combination thereof]	-	-	0.02	N.D.
164	1,3-propanesultone	214-317-9	1120-71-4	0.02	N.D.
165	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	223-383-8	3864-99-1	0.02	N.D.
166	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	253-037-1	36437-37-3	0.02	N.D.
167	Nitrobenzene	202-716-0	98-95-3	0.02	N.D.
168	Perfluorononan-1-oic acid (2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-heptadecafluorononanoic acid and its sodium and ammonium salts)	206-801-3	375-95-1 21049-39-8 4149-60-4	0.02	N.D.
169	Benzo[def]chrysene (Benzo[a]pyrene)	200-028-5	50-32-8	0.02	N.D.
170	4,4'-isopropylidenediphenol (Bisphenol-A)	201-245-8	80-05-7	0.02	N.D.
171	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts	206-400-3 221-470-5	3108-42-7 335-76-2 3830-45-3	0.02	N.D.
172	P-(1,1-dimethylpropyl)phenol	201-280-9	80-46-6	0.02	N.D.
173	4-Heptylphenol, branched and linear	-	-	0.02	N.D.
174	Perfluorohexane-1-sulphonic acid and its salts (PFHxS)	206-587-1	355-46-4	0.02	N.D.
175	1,6,7,8,9,14,15,16,17,17,18,18-Dodecachloropentacyclo[12.2.1.1 <sup>6,9</sup> .0 <sup>2,13</sup> .0 <sup>5,10</sup> ]octadeca-7,15-diene ("Dechlorane Plus" <sup>TM</sup> ) [covering any of its individual anti- and syn-isomers or any combination thereof]	236-948-9	13560-89-9	0.02	N.D.
176	Benz[a]anthracene	200-280-6	56-55-3 1718-53-2	0.02	N.D.
177	Cadmium nitrate *3	233-710-6	10325-94-7	0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.

# TEST REPORT (시험성적서)

발행면수 (PAGE) : 11 of 18  
발행일자 (DATE) : 2025. 01. 17.

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

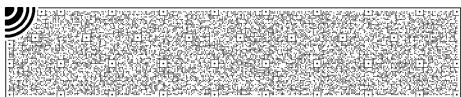
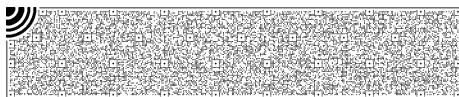
시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
178	Cadmium carbonate* <sup>3</sup>	208-168-9	513-78-0	0.02	N.D.
179	Cadmium hydroxide* <sup>3</sup>	244-168-5	21041-95-2	0.02	N.D.
180	Chrysene	205-923-4	218-01-9	0.02	N.D.
181	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched and linear]	-	-	0.02	N.D.
182	Benzo[ghi]perylene	205-883-8	191-24-2	0.02	N.D.
183	Decamethyl-cyclopentasiloxane (D5)	208-764-9	541-02-6	0.02	N.D.
184	Disodium octaborate* <sup>1</sup>	234-541-0	12008-41-2	0.02	0.67
185	Dodecamethyl-cyclohexasiloxane (D6)	208-762-8	540-97-6	0.02	N.D.
186	Ethylenediamine (EDA)	203-468-6	107-15-3	0.02	N.D.
187	Lead	231-100-4	7439-92-1	0.02	N.D.
188	Octamethyl-cyclotetrasiloxane (D4)	209-136-7	556-67-2	0.02	N.D.
189	Terphenyl hydrogenated	262-967-7	61788-32-7	0.02	N.D.
190	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride; TMA)	209-008-0	552-30-7	0.02	N.D.
191	Dicyclohexyl phthalate (DCHP)	201-545-9	84-61-7	0.02	N.D.
192	2,2-bis(4'-hydroxyphenyl)-4-methylpentane	401-720-1	6807-17-6	0.02	N.D.
193	Fluoranthene	205-912-4	206-44-0	0.02	N.D.
194	Benzo[k]fluoranthene	205-916-6	207-08-9	0.02	N.D.
195	Pyrene	204-927-3	129-00-0	0.02	N.D.
196	Phenanthrene	201-581-5	85-01-8	0.02	N.D.
197	1,7,7-trimethyl-3-(phenylmethylene)bicyclo[2.2.1]heptan-2-one	239-139-9	15087-24-8	0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.

# TEST REPORT (시험성적서)

발행면수 (PAGE) : 12 of 18  
발행일자 (DATE) : 2025. 01. 17.

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

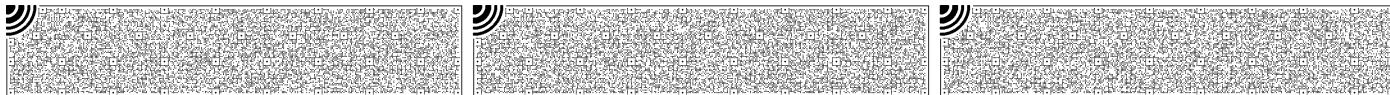
시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
198	4-tert-butylphenol	202-679-0	98-54-4	0.02	N.D.
199	2-methoxyethyl acetate	203-772-9	110-49-6	0.02	N.D.
200	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with $\geq 0.1\%$ w/w of 4-nonylphenol, branched and linear (4-NP)	-	-	0.02	N.D.
201	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	-	-	0.02	N.D.
202	2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone	404-360-3	119313-12-1	0.02	N.D.
203	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one	400-600-6	71868-10-5	0.02	N.D.
204	Diisohexyl phthalate	276-090-2	71850-09-4	0.02	N.D.
205	Perfluorobutane sulfonic acid (PFBS) and its salts	-	-	0.02	N.D.
206	1-vinylimidazole	214-012-0	1072-63-5	0.02	N.D.
207	2-methylimidazole	211-765-7	693-98-1	0.02	N.D.
208	Dibutylbis(pentane-2,4-dionato-O,O')tin	245-152-0	22673-19-4	0.02	N.D.
209	Butyl 4-hydroxybenzoate	202-318-7	94-26-8	0.02	N.D.
210	Bis(2-(2-methoxyethoxy)ethyl) ether	205-594-7	143-24-8	0.02	N.D.
211	Diocetyltin dilaurate, stannane, dioctyl-, bis(coco acyloxy) derivs., and any other stannane, dioctyl-, bis(fatty acyloxy) derivs. wherein C12 is the predominant carbon number of the fatty acyloxy moiety	-	-	0.02	N.D.
212	1,4-dioxane	204-661-8	123-91-1	0.02	N.D.
213	2,2-bis(bromomethyl)propane1,3-diol (BMP) 2,2-dimethylpropan-1-ol, tribromo derivative/3-bromo-2,2-bis(bromomethyl)-1-propanol (TBNPA) 2,3-dibromo-1-propanol (2,3-DBPA)	221-967-7 253-057-0 202-480-9	3296-90-0 36483-57-5 1522-92-5 96-13-9	0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.

**TEST REPORT**
**(시 험 성 적 서)**

발행면수 (PAGE) : 13 of 18

발행일자 (DATE) : 2025. 01. 17.

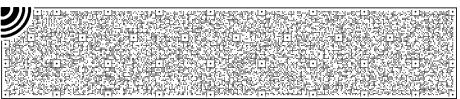
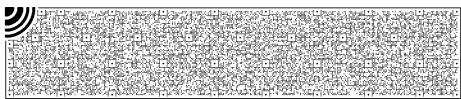
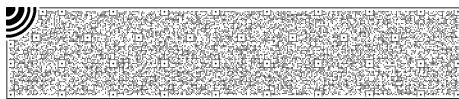
시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
214	2-(4-tert-butylbenzyl)propionaldehyde and its individual stereoisomers	-	-	0.02	N.D.
215	4,4'-(1-methylpropylidene)bisphenol; (bisphenol B)	201-025-1	77-40-7	0.02	N.D.
216	Glutaral	203-856-5	111-30-8	0.02	N.D.
217	Medium-chain chlorinated paraffins (MCCP) [UVCB substances consisting of more than or equal to 80% linear chloroalkanes with carbon chain lengths within the range from C14 to C17]	-	-	0.02	N.D.
218	Orthoboric acid, sodium salt* <sup>1</sup>	237-560-2	13840-56-7	0.02	0.17
219	Phenol, alkylation products (mainly in para position) with C12-rich branched or linear alkyl chains from oligomerisation, covering any individual isomers and/or combinations thereof (PDDP)	-	-	0.02	N.D.
220	(±)-1,7,7-trimethyl-3-[(4-methylphenyl)methylene]bicyclo[2.2.1]heptan-2-one covering any of the individual isomers and/or combinations thereof (4-MBC)	-	-	0.02	N.D.
221	6,6'-di-tert-butyl-2,2'-methylenedi-p-cresol	204-327-1	119-47-1	0.02	N.D.
222	S-(tricyclo(5.2.1.0 <sup>2,6</sup> )deca-3-en-8(or 9)-yl O-(isopropyl or isobutyl or 2-ethylhexyl) O-(isopropyl or isobutyl or 2-ethylhexyl) phosphorodithioate	401-850-9	255881-94-8	0.02	N.D.
223	Tris(2-methoxyethoxy)vinylsilane	213-934-0	1067-53-4	0.02	N.D.
224	N-(hydroxymethyl)acrylamide	213-103-2	924-42-5	0.02	N.D.
225	1,1'-[ethane-1,2-diylbisoxyl]bis[2,4,6-tribromobenzene]	253-692-3	37853-59-1	0.02	N.D.
226	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol	201-236-9	79-94-7	0.02	N.D.
227	4,4'-sulphonyldiphenol	201-250-5	80-09-1	0.02	N.D.
228	Barium diboron tetraoxide* <sup>1</sup>	237-222-4	13701-59-2	0.02	1.11
229	bis(2-ethylhexyl) tetrabromophthalate covering any of the individual isomers and/or combinations thereof	-	-	0.02	N.D.
230	Isobutyl 4-hydroxybenzoate	224-208-8	4247-02-3	0.02	N.D.

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea


※ You can verify the forgery and authenticity by the barcode at the end of this document.

# TEST REPORT

## (시험성적서)

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

발행면수 (PAGE) : 14 of 18

발행일자 (DATE) : 2025. 01. 17.

시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
231	Melamine	203-615-4	108-78-1	0.02	N.D.
232	Perfluoroheptanoic acid and its salts	-	-	0.02	N.D.
233	reaction mass of 2,2,3,3,5,5,6,6-octafluoro-4-(1,1,1,2,3,3-heptafluoropropan-2-yl)morpholine and 2,2,3,3,5,5,6,6-octafluoro-4-(heptafluoropropyl)morpholine	473-390-7	-	0.02	N.D.
234	Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	278-355-8	75980-60-8	0.02	N.D.
235	Bis(4-chlorophenyl) sulphone	201-247-9	80-07-9	0.02	N.D.
236	Bumetizole	223-445-4	3896-11-5	0.02	N.D.
237	2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	221-573-5	3147-75-9	0.02	N.D.
238	2,4,6-tri-tert-butylphenol	211-989-5	732-26-3	0.02	N.D.
239	Oligomerisation and alkylation reaction products of 2-phenylpropene and phenol	700-960-7	-	0.02	N.D.
240	2-(dimethylamino)-2-[(4-methylphenyl)methyl]-1-[4-(morpholin-4-yl)phenyl]butan-1-one	438-340-0	119344-86-4	0.02	N.D.
241	Bis( $\alpha,\alpha$ -dimethylbenzyl) peroxide	201-279-3	80-43-3	0.02	N.D.
242	Triphenyl Phosphate (TPhP)	204-112-2	115-86-6	0.02	N.D.

Tested by : Jooyeon Lee, Chano Kim, Hayan Park

Notes : 1 % (w/w) = 10000 ppm = 10000 mg/kg

< = Less than

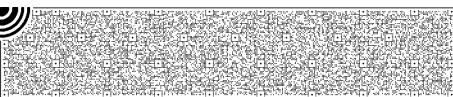
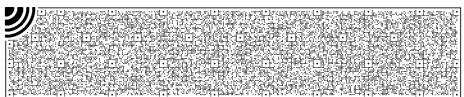
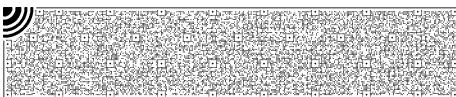
N.D. = Not detected (< RL)

RL = Reporting limit



Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea



※ You can verify the forgery and authenticity by the barcode at the end of this document.

**TEST REPORT****(시 험 성 적 서)**

발행면수 (PAGE) : 15 of 18

발행일자 (DATE) : 2025. 01. 17.

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

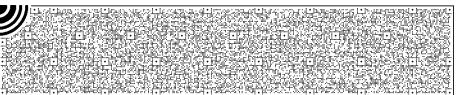
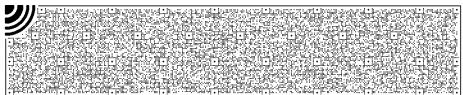
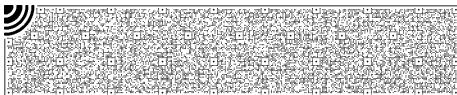
- Remark :
- \*<sup>1</sup> The concentration of the substance is calculated on the basis of the content of specific elements, such as B, Na, P, S and Ba.
  - \*<sup>2</sup> The concentration of the substance is calculated on the basis of the content of specific elements, such as Co, Cl.
  - \*<sup>3</sup> The concentration of the substance is calculated on the basis of the content of specific elements, such as Cd, Cl.
  - \*<sup>4</sup> The concentration of the substance is calculated on the basis of the content of specific elements, such as Pb, As, B, Ti and Zr.
  - \*<sup>5</sup> The concentration of the substance is calculated on the basis of the content of specific elements, such as Pb, Cr and Cr<sup>6+</sup>.
  - \*<sup>6</sup> The concentration of the substance is calculated on the basis of the content of specific elements, such as As, Ca, Cr, Cr<sup>6+</sup>, K, Na, Sr and Zn.
  - \*<sup>7</sup> The existence of RCFs would be checked using the PLM after screening test of inorganic elements such as Al, Zr and Si. If positive, the concentration of the substances would be calculated on the basis of the content of specific elements.
  - \*<sup>8</sup> The concentration of the various anthracene oils is based on screening test result of anthracene.
  - \*<sup>9</sup> The concentration of coal tar pitch, high temp. is calculated on sum total of 12 PAHs.

Definition under 67/548/EEC and Regulation (EC) No 1907/2006

Substances of very high concern (SVHC) are defined in Article 57 of Regulation (EC) No 1907/2006 (the REACH Regulation) and the candidate list published by European Chemicals Agency (ECHA) before and 07 Nov 2024 and the main categories of SVHCs are CMR, PBT and vPvB compounds. The Candidate List will be regularly updated by ECHA when more substances are identified as SVHC; (Referred to <http://echa.europa.eu/candidate-list-table>)

- C Carcinogenic - category 1 or 2 (Directive 67/548/EEC)
- M Mutagenic - category 1 or 2 (Directive 67/548/EEC)
- R toxic for Reproduction - category 1 or 2 (Directive 67/548/EEC)
- PBT Persistent, Bioaccumulative and Toxic -see Annex XIII
- vPvB very Persistent and very Bioaccumulative - see Annex XIII
- Substances of equivalent level of concern (like endocrine disruptors)

Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea

※ You can verify the forgery and authenticity by the barcode at the end of this document.

**TEST REPORT**  
**(시 험 성 적 서)**

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

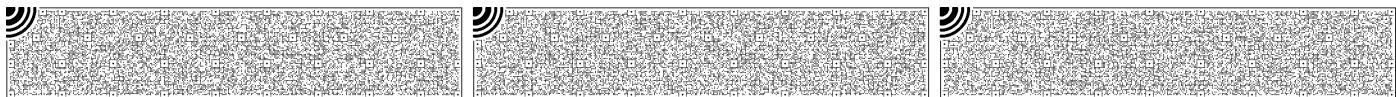
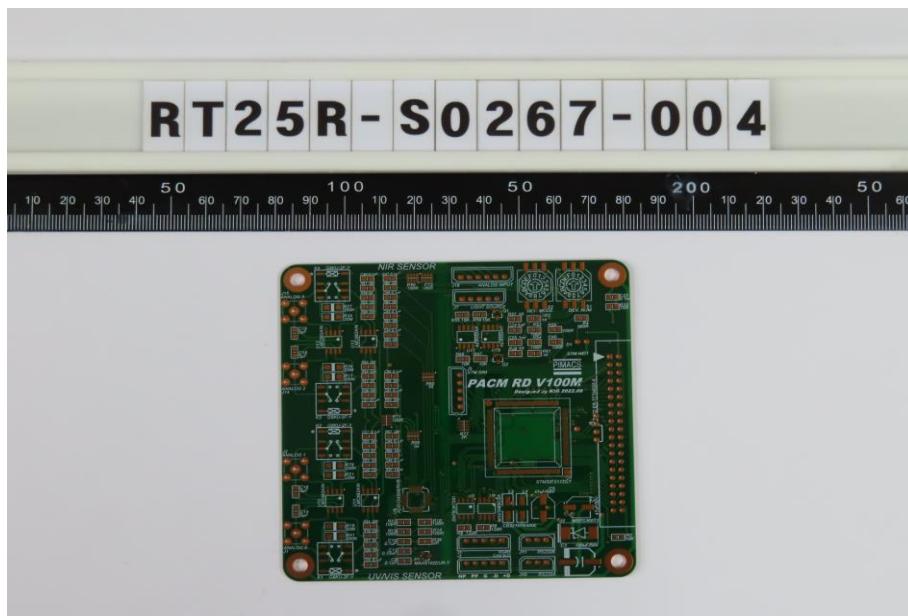
발행면수 (PAGE) : 16 of 18

발행일자 (DATE) : 2025. 01. 17.

시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)

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



# TEST REPORT

## (시험성적서)

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

발행면수 (PAGE) : 17 of 18

발행일자 (DATE) : 2025. 01. 17.

시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)\* REACH 규정에 따른 물질, 제제 및 완제품에 대한 정의  
(Definition of a substance, a preparation and an article according Article 3 of the REACH Regulation)

- a **substance** is a chemical element and its compounds in the natural state or obtained by any manufacturing process, including any additive necessary to preserve its stability and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition;
- a **preparation** is a mixture or solution composed of two or more substances;
- an **article** (product) is an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition.

\* 화학물질 안전자료 자료제공에 대한 의무 및 관련정보

(Available information for general obligation and information requirements)

- 물질 (Substances)

**Provide safety data sheet** ; As per Article 31 of the REACH Regulation (EC No. 1907/2006), suppliers of substances on the Candidate List have to provide their customers with a safety data sheet from the date of inclusion.

- 제제 (Preparations)

**Provide safety data sheet** ; As per Article 31 of the REACH Regulation (EC No. 1907/2006), supplier of preparation not classified as dangerous according to Directive 1999/45/EC must provide the recipients, at their request, with a safety data sheet if the preparation contains at least one of the tested substances at 0.1 % (w/w) or above for non gaseous preparation and at least 0.2 % by volume for gaseous preparations sheet from the date of inclusion.

- 완제품 (Articles)

**Notification** ; As per Article 7(2) of Regulation (EC) No 1907/2006 (REACH), EU and EEA producers or importers of articles have to notify ECHA if their article contains a substance on the Candidate List. This obligation applies if the substance is present above 0.1 % (w/w) and its quantities in the produced/imported articles are above 1 tonne in total per year per company. Notification is required beginning June 1, 2011.

**Safe use information** ; As per Article 33 of Regulation (EC) No 1907/2006 (REACH), EU or EEA suppliers of articles which contain substances on the Candidate List in a concentration above 0.1 % (w/w) have to provide sufficient information, available to them, to their customers or upon requests, to a consumer within 45 days of the receipt of the request. This information must ensure safe use of the article and as minimum contain the name of the substance. The effective date for the safe use information requirement is six months after the SVHC is placed on the Candidate List.

### Disclaimers :

This testing report for 15 new substances of very high concern (SVHC) in Candidate List announced by European Chemicals Agency (ECHA) is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in assessment report is sufficient for its/his/her purposes.

The quantitative screening results shown in this testing report will be in relation to various factors, including but not limited to, the weight or size of dismantled component and composite test approach, etc. If the contents of SVHC are out of the threshold, further identification is recommended to obtain the information of SVHC in each material.



Intertek Testing Services Korea Ltd.

Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea

※ You can verify the forgery and authenticity by the barcode at the end of this document.

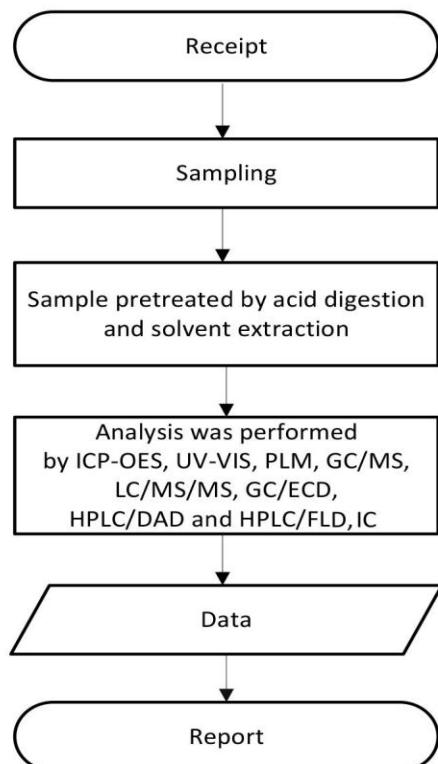
**TEST REPORT****(시 험 성 적 서)**

시험성적서 번호 (REPORT NO.) : RT25R-S0267-004-K3

발행면수 (PAGE) : 18 of 18

발행일자 (DATE) : 2025. 01. 17.

시료고유번호 (SAMPLE ID NO.) : RT25R-S0267-004

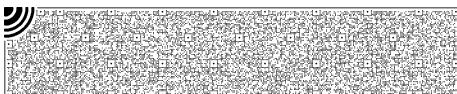
시료명 (SAMPLE DESCRIPTION) : HANSAEM DIGITEC PCB-REACH  
(HANSAEM DIGITEC PCB-REACH)**Flow Chart (SVHC)****\*\*\*\*\* End of Report \*\*\*\*\***

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.

This report is not related to the scope of Korea Laboratory Accreditation Scheme.

**Intertek Testing Services Korea Ltd.**Office: Tel : 031-8069-3708 Fax : 02-3409-0025 Web Site : [intertek.co.kr](http://intertek.co.kr)  
Seoul Lab. Address : 7, Achasan-ro 5-gil, Seongdong-gu, Seoul, 04793 Korea

※ You can verify the forgery and authenticity by the barcode at the end of this document.