

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 16
발행일자 (DATE) : 2020. 07. 17.

시험성적서 번호 (REPORT NO.) : RT20R-S3898-006-K2

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-S3898-006
(SAMPLE ID NO.) (RT20R-S3898-006)

품번 : TRILITE MA-12
(ITEM NO.) (TRILITE MA-12)

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)

시험유형 : 화학시험 - REACH관련하여 ECHA에서 공지한 209종의 고 위험성 우려물질
(TEST TYPE) : Chemical Testing - Two hundred nine (209) 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 모두 0.1 % 이하로 검출됨
(SUMMARY OF 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).
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.)
 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)



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(Ion Exchange Resin)

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*2	231-589-4	7646-79-9	0.02	N.D.
5	Diarsenic pentaoxide*6	215-116-9	1303-28-2	0.02	N.D.
6	Diarsenic trioxide*6	215-481-4	1327-53-3	0.02	N.D.
7	Sodium dichromate*6	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*4	232-064-2	7784-40-9	0.02	N.D.
14	triethyl arsenate*6	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*8	292-602-7	90640-80-5	0.02	N.D.
17	Anthracene oil, anthracene paste, distn, light*8	295-278-5	91995-17-4	0.02	N.D.
18	Anthracene oil, anthracene paste, anthracene fraction*8	295-275-9	91995-15-2	0.02	N.D.
19	Anthracene oil, anthracene-low*8	292-604-8	90640-82-7	0.02	N.D.
20	Anthracene oil, anthracene-paste*8	292-603-2	90640-81-6	0.02	N.D.
21	Coal tar pitch, hightemperature*9	266-028-2	65996-93-2	0.02	N.D.
22	Acrylamide	201-173-7	79-06-01	0.02	N.D.
23	2,4-Dinitrotoluene	204-450-0	121-14-2	0.02	N.D.

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24	Diisobutyl phthalate	201-553-2	84-69-5	0.02	N.D.
25	Lead chromate*5	231-846-0	7758-97-6	0.02	N.D.
26	Lead chromate molybdate sulphate red (C.I. pigment red 104) *5	235-759-9	12656-85-8	0.02	N.D.
27	Lead sulfochromate yellow (C.I. pigment yellow 34) *5	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	79-01-06	0.02	N.D.
30	Boric acid*1	233-139-2 234-343-4	10043-35-3 11113-50-1	0.02	N.D.
31	Disodium tetraborate, anhydrous*1	215-540-4	1330-43-4 12179-04-3 1303-96-4	0.02	N.D.
32	Tetraboron disodium heptaoxide, hydrate*1	235-541-3	12267-73-1	0.02	N.D.
33	Sodium chromate*6	231-889-5	7775-11-03	0.02	N.D.
34	Potassium chromate*6	232-140-5	7789-00-6	0.02	N.D.
35	Ammonium dichromate*6	232-143-1	7789-09-5	0.02	N.D.
36	Potassium dichromate*6	231-906-6	7778-50-9	0.02	N.D.
37	Cobalt(II) sulphate*2	233-334-2	10124-43-3	0.02	N.D.
38	Cobalt(II) dinitrate*2	233-402-1	10141-05-6	0.02	N.D.
39	Cobalt(II) carbonate*2	208-169-4	513-79-1	0.02	N.D.
40	Cobalt(II) diacetate*2	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*6	215-607-8	1333-82-0	0.02	N.D.
44	Acids generated from chromium Trioxide and their oligomers*6	Chromic acid	231-801-5	0.02	N.D.
		Dichromic acid	236-881-5	0.02	N.D.

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45	2-ethoxyethyl acetate	203-839-2	111-15-9	0.02	N.D.
46	Strontium chromate* ⁶	232-142-6	7789-06-02	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* ⁷	-	-	0.02	N.D.
53	Calcium arsenate* ⁶	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* ⁷	-	-	0.02	N.D.
56	Potassium hydroxyoctaoxodizincatedichromate* ⁶	234-329-8	11103-86-9	0.02	N.D.
57	Lead dipicrate* ⁴	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* ⁶	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* ⁴	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* ⁶	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* ⁴	236-542-1	13424-46-9	0.02	N.D.

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68	Phenolphthalein	201-004-7	77-09-08	0.02	N.D.
69	Dichromium tris(chromate) *6	246-356-2	24613-89-6	0.02	N.D.
70	Lead styphnate*4	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	α,α -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 (β -TGIC)	423-400-0	59653-74-6	0.02	N.D.
75	Diboron trioxide*1	215-125-8	1303-86-2	0.02	N.D.
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)*4	401-750-5	17570-76-2	0.02	N.D.
79	Formamide	200-842-0	75-12-07	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-triazine-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.

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88	Henicosfluoroundecanoic acid	218-165-4	2058-94-8	0.02	N.D.
89	Heptacosfluorotetradecanoic 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)* ⁴	215-267-0	1317-36-8	0.02	N.D.
99	Orange lead (Lead tetroxide)* ⁴	215-235-6	1314-41-6	0.02	N.D.

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100	Lead bis(tetrafluoroborate)* ⁴	237-486-0	13814-96-5	0.02	N.D.
101	Trileadbis(carbonate)dihydroxide* ⁴	215-290-6	1319-46-6	0.02	N.D.
102	Lead titanium trioxide* ⁴	235-038-9	12060-00-3	0.02	N.D.
103	Lead titanium zirconium oxide* ⁴	235-727-4	12626-81-2	0.02	N.D.
104	Silicic acid, lead salt* ⁴	234-363-3	11120-22-2	0.02	N.D.
105	Silicic acid (H ₂ Si ₂ O ₅), barium salt (1:1), lead-doped* ⁴	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* ⁴	257-175-3	51404-69-4	0.02	N.D.
113	Lead oxide sulfate* ⁴	234-853-7	12036-76-9	0.02	N.D.
114	[Phthalato(2-)]dioxotrilead* ⁴	273-688-5	69011-06-9	0.02	N.D.
115	Dioxobis(stearato)trilead* ⁴	235-702-8	12578-12-0	0.02	N.D.
116	Fatty acids, C16-18, lead salts* ⁴	292-966-7	91031-62-8	0.02	N.D.
117	Lead cyanamide* ⁴	244-073-9	20837-86-9	0.02	N.D.
118	Lead dinitrate* ⁴	233-245-9	10099-74-8	0.02	N.D.
119	Pentalead tetraoxide sulphate* ⁴	235-067-7	12065-90-6	0.02	N.D.
120	Pyrochlore, antimony lead yellow* ⁴	232-382-1	8012-00-8	0.02	N.D.
121	Sulfurous acid, lead salt, dibasic* ⁴	263-467-1	62229-08-7	0.02	N.D.

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TEST REPORT (시험 성적서)

발행면수 (PAGE) : 8 of 16

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시험성적서 번호 (REPORT NO.) : RT20R-S3898-006-K2

시료고유번호 (SAMPLE ID NO.) : RT20R-S3898-006

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

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
122	Tetraethyllead* ⁴	201-075-4	78-00-2	0.02	N.D.
123	Tetralead trioxide sulphate* ⁴	235-380-9	12202-17-4	0.02	N.D.
124	Trilead dioxide phosphonate* ⁴	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	o-aminoazotoluene [(4-o-tolylazo-o-toluidine)]	202-591-2	97-56-3	0.02	N.D.
137	o-toluidine	202-429-0	95-53-4	0.02	N.D.
138	N-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* ³	215-146-2	1306-19-0	0.02	N.D.

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(Ion Exchange Resin)

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
145	Cadmium sulphide* ³	215-147-8	1306-23-6	0.02	N.D.
146	Diethyl 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) * ⁴	206-104-4	301-04-2	0.02	N.D.
151	Triethyl phosphate	246-677-8	25155-23-1	0.02	N.D.
152	1,2-Benzenedicarboxylic acid, diethyl ester, branched and linear	271-093-5	68515-50-4	0.02	N.D.
153	Cadmium chloride* ³	233-296-7	10108-64-2	0.02	N.D.
154	Sodium perborate; perboric acid, sodium salt* ¹	239-172-9; 234-390-0	-	0.02	N.D.
155	Sodium peroxometaborate* ¹	231-556-4	7632-04-4	0.02	N.D.
156	Cadmium fluoride* ³	232-222-0	7790-79-6	0.02	N.D.
157	Cadmium sulfate* ³	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.

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시료고유번호 (SAMPLE ID NO.) : RT20R-S3898-006

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

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 $\geq 0.3\%$ 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 ^{6,9} .0 ^{2,13} .0 ^{5,10}]octadeca-7,15-diene ("Dechlorane Plus" TM) [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.

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시험성적서 번호 (REPORT NO.) : RT20R-S3898-006-K2

시료고유번호 (SAMPLE ID NO.) : RT20R-S3898-006

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

번호 (No.)	시험항목 (TEST ITEM)	EC No.	CAS No.	검출한계(RL) (% (w/w))	시험결과 (RESULT) (% (w/w))
178	Cadmium carbonate*3	208-168-9	513-78-0	0.02	N.D.
179	Cadmium hydroxide*3	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*1	234-541-0	12008-41-2	0.02	N.D.
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.

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

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.

Tested by : Jooyeon Lee, Seulgi Park, Hyojoo Kim, Jessica Kang

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

< = Less than

N.D. = Not detected (< RL)

RL = Reporting limit

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시료고유번호 (SAMPLE ID NO.) : RT20R-S3898-006

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

- Remark :
- *1 The concentration of the substance is calculated on the basis of the content of specific elements, such as B, Na.
 - *2 The concentration of the substance is calculated on the basis of the content of specific elements, such as Co, Cl.
 - *3 The concentration of the substance is calculated on the basis of the content of specific elements, such as Cd, Cl.
 - *4 The concentration of the substance is calculated on the basis of the content of specific elements, such as Pb, As, B, Ti and Zr.
 - *5 The concentration of the substance is calculated on the basis of the content of specific elements, such as Pb, Cr and Cr⁶⁺.
 - *6 The concentration of the substance is calculated on the basis of the content of specific elements, such as As, Ca, Cr, Cr⁶⁺, K, Na, Sr and Zn.
 - *7 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.
 - *8 The concentration of the various anthracene oils is based on screening test result of anthracene.
 - *9 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 25 June 2020 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)

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시료명 (SAMPLE DESCRIPTION) : Ion Exchange Resin
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* 시료 접수 시 시료 상태 :
(View of sample as received)



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시료명 (SAMPLE DESCRIPTION) : Ion Exchange Resin

(Ion Exchange Resin)

* 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.

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TEST REPORT (시험 성적서)

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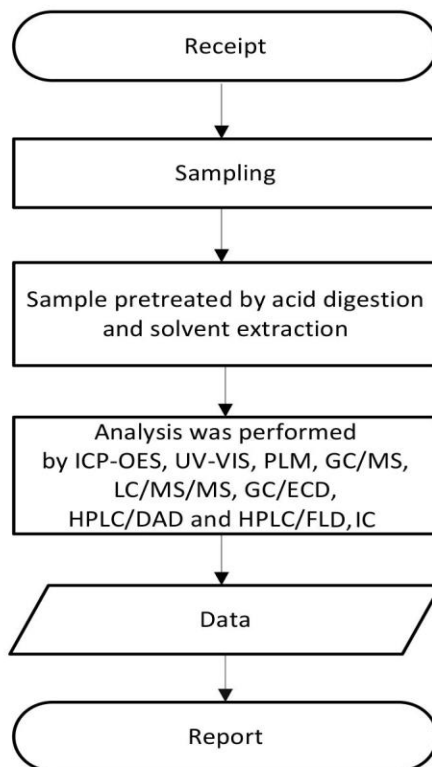
발행일자 (DATE) : 2020. 07. 17.

시험성적서 번호 (REPORT NO.) : RT20R-S3898-006-K2

시료고유번호 (SAMPLE ID NO.) : RT20R-S3898-006

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

Flow Chart (SVHC)



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

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