TEST REPORT
(测试报告件)

申请公司(APPLICANT) : SAMSUNG ELECTRO-MECHANICS

公司住所(ADDRESS) : 150, Maeyeong-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, Korea

报告号(REPORT NO.) : RT23R-S4215-004-C 日期(DATE) : 2023 年 07 月 17 日

样品描述(SAMPLE DESCRIPTION) :

样品名称 (NAME/TYPE OF PRODUCT)	: MLCC C(C0G) TYPE
样品编号 (SAMPLE ID NO.)	: RT23R-S4215-004
生产商/贸易商 (MANUFACTURER/VENDOR)	: SAMSUNG ELECTRO-MECHANICS
样品收到日期 (SAMPLE RECEIVED)	: 2022年 10月14日
测试进行日期 (TESTING DATE)	: 2023年 07月03日至 2023年 07月07日
TEST TYPE	: Chemical Testing – Two hundred thirty-five (235) 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
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).

注1：检测结果只是针对来样所做的测试.
(Note 1 : The test results presented in this report relate only to the object tested.)

注2：未经测试实验室书面允许，报告不能被部分复制.
(Note 2 : This report shall not be reproduced except in full without the written approval of the testing laboratory.)

测试 (Approved by)：

Jade Jang / 测试负责人

批准 (Authorized by)：

Bo Park / 实验室经理

Authenticity check

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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.A.*
31	Disodium tetraborate, anhydrous*1		215-540-4	1330-43-4 12179-04-3	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	231-801-5 236-881-5	7738-94-5 13530-68-2	0.02	N.D.
		Dichromic acid			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.A.*
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-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	Pentacosafluorotridecanoic acid	276-745-2	72629-94-8	0.02	N.D.
87	Tricosafluorododecanoic acid	206-203-2	307-55-1	0.02	N.D.

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88	Henicosafluoroundecanoic acid	218-165-4	2058-94-8	0.02	N.D.
89	Heptacosafluorotetradecanoic 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 ($H_2Si_2O_5$), 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 cynamidate*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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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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145	Cadmium sulphide*3	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) *4	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*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-stannatetrad	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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TEST REPORT
(测试报告件)

报告号(REPORT NO.) : RT23R-S4215-004-C 日期(DATE) : 2023 年 07 月 17 日

样品编号(SAMPLE ID NO.) : RT23R-S4215-004

样品名称(SAMPLE DESCRIPTION) : MLCC C(C0G) TYPE

數字 (No.)	测试项目 (TEST ITEM)	EC No.	CAS No.	报告限界 (RL)(% (w/w))	结果 (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^{6,9}.0^{2,13}.0^{5,10}]octadeca-7,15-diene (“Dechlorane Plus”™) [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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TEST REPORT
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报告号(REPORT NO.) ：RT23R-S4215-004-C 日期(DATE) : 2023 年 07 月 17 日

样品编号(SAMPLE ID NO.) : RT23R-S4215-004

样品名称(SAMPLE DESCRIPTION) ：MLCC C(C0G) TYPE

數字 (No.)	测试项目 (TEST ITEM)	EC No.	CAS No.	报告限界 (RL)(% (w/w))	结果 (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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TEST REPORT
(测试报告件)

报告号(REPORT NO.) : RT23R-S4215-004-C 日期(DATE) : 2023 年 07 月 17 日

样品编号(SAMPLE ID NO.) : RT23R-S4215-004

样品名称(SAMPLE DESCRIPTION) : MLCC C(C0G) TYPE

數字 (No.)	测试项目 (TEST ITEM)	EC No.	CAS No.	报告限界 (RL)(% (w/w))	结果 (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 ≥ 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	Dioctyltin 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.

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TEST REPORT
(测试报告件)

报告号(REPORT NO.) ：RT23R-S4215-004-C 日期(DATE) : 2023 年 07 月 17 日

样品编号(SAMPLE ID NO.) : RT23R-S4215-004

样品名称(SAMPLE DESCRIPTION) ：MLCC C(C0G) TYPE

數字 (No.)	测试项目 (TEST ITEM)	EC No.	CAS No.	报告限界 (RL)(% (w/w))	结果 (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*1	237-560-2	13840-56-7	0.02	N.D.
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(5.2.1.0'2,6)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-diylbisoxy]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*1	237-222-4	13701-59-2	0.02	N.A.*
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.

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TEST REPORT
(测试报告件)

报告号(REPORT NO.) : RT23R-S4215-004-C 日期(DATE) : 2023 年 07 月 17 日

样品编号(SAMPLE ID NO.) : RT23R-S4215-004

样品名称(SAMPLE DESCRIPTION) : MLCC C(C0G) TYPE

數字 (No.)	测试项目 (TEST ITEM)	EC No.	CAS No.	报告限界 (RL)(% (w/w))	结果 (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-(1,1,1,2,3,3,3-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.

Tested by : Jooyeon Lee, Chano Kim, Hayan Park

注释 (Notes) : 1 % (w/w) = 10000 ppm = 10000 mg/kg
< = Less than
N.D. = Not detected (< RL)
RL = Reporting limit

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TEST REPORT
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样品编号(SAMPLE ID NO.) : RT23R-S4215-004

样品名称(SAMPLE DESCRIPTION) : MLCC C(C0G) TYPE

Remark :

*1 The concentration of the substance is calculated on the basis of the content of specific elements, such as B, Na, P, S and Ba.

*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 Cr^{6+}.

*6 The concentration of the substance is calculated on the basis of the content of specific elements, such as As, Ca, Cr, Cr^{6+}, 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.

N.A.* Not applicable for respective material type.
The submitted sample was found to contain significant amount of specific element(s) of SVHC.
Upon further test verification and also information provided from client, the possibility that the element(s)content originate from SVHC is very unlikely, even though their presence cannot be exclude entirely. It may be assumed that the detected element(s) have a non-SVHC source.

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 14 June 2023 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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TEST REPORT
(测试报告件)

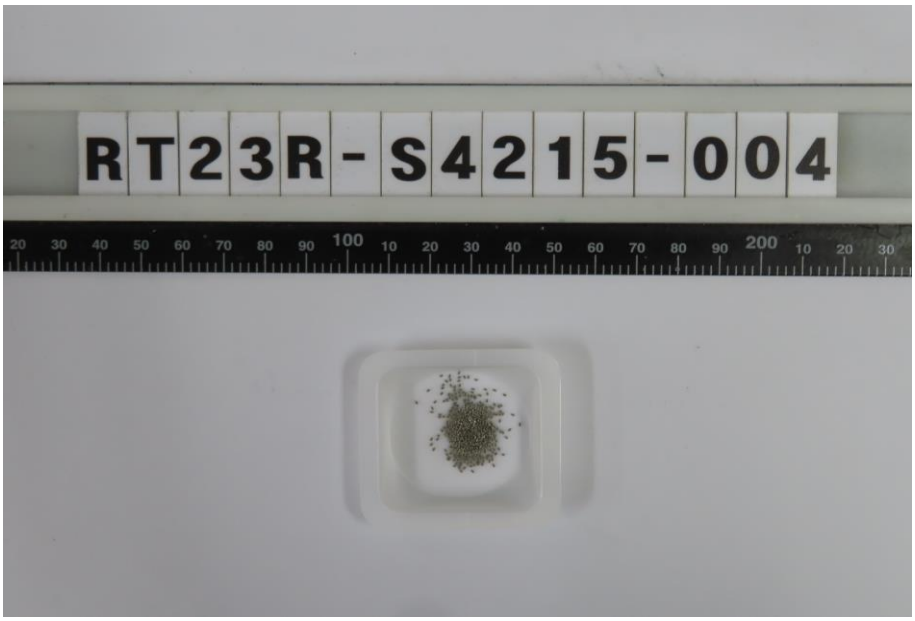
报告号(REPORT NO.) ：RT23R-S4215-004-C 日期(DATE) : 2023 年 07 月 17 日

样品编号(SAMPLE ID NO.) : RT23R-S4215-004

样品名称(SAMPLE DESCRIPTION) ：MLCC C(C0G) TYPE

* 样品相片; -

(View of sample as received;-)



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TEST REPORT
(测试报告件)

报告号(REPORT NO.) : RT23R-S4215-004-C 日期(DATE) : 2023 年 07 月 17 日

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样品名称(SAMPLE DESCRIPTION) : MLCC C(C0G) TYPE

* 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.

* Available information for general obligation and information requirements

- 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.

- 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.

- 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.

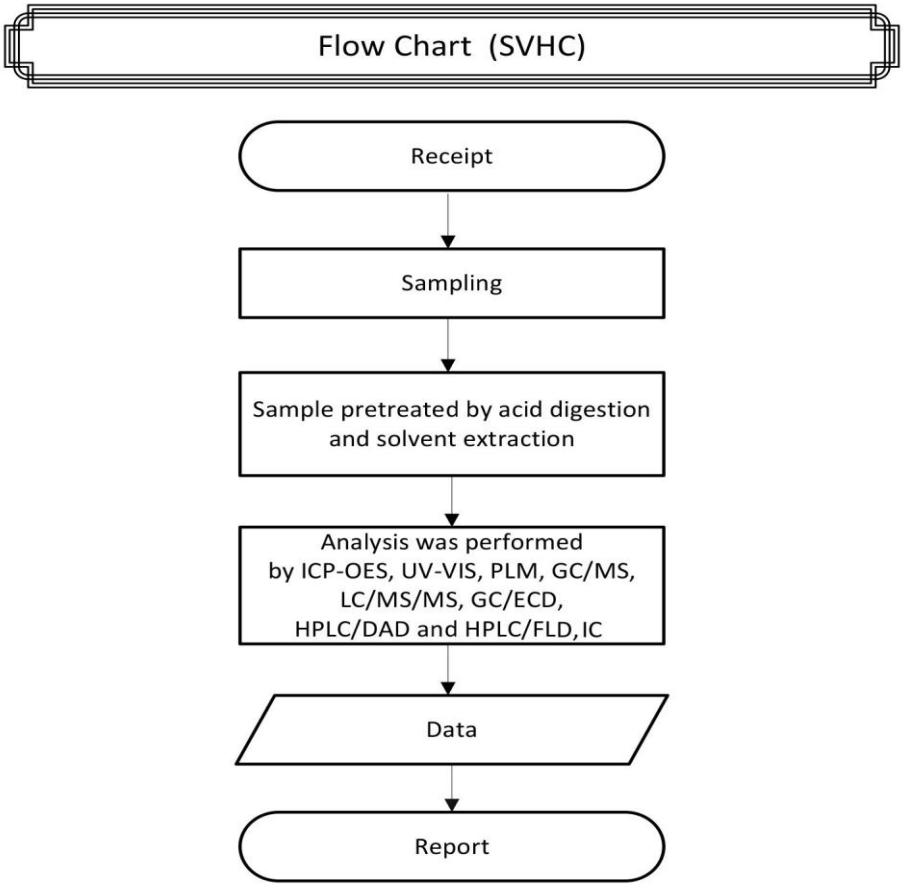
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报告号(REPORT NO.) ：RT23R-S4215-004-C 日期(DATE) : 2023 年 07 月 17 日

样品编号(SAMPLE ID NO.) : RT23R-S4215-004

样品名称(SAMPLE DESCRIPTION) ：MLCC C(C0G) TYPE



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