

Page: 1 of 14



Test Report

No.: ETR20B04458 Date: 02-Dec-2020

LAIRD TECHNOLOGIES 4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

The following sample(s) was/were submitted and identified by/on behalf of the applicant as:

Sample Submitted By :

Sample Name : THERMALLY CONDUCTIVE GAP FILLER

Style/Item No. : TFLEX HP34

Sample Receiving Date : 25-Nov-2020

Testing Period : 25-Nov-2020 to 02-Dec-2020

Test Requested : As specified by client, the sample(s) was/were tested with reference to Regulation

(EC) No 1907/2006 concerning the REACH.

(1) 209 Substances of Very High Concern (SVHC). Candidate list is published on

June 25, 2020

(2) 2 Substances of Very High Concern (SVHC). Proposed list is published on

September 01, 2020

Test Results : Please refer to following pages.

Summary : According to the ruling of the Court of Justice of the European Union on the

definition of an article under REACH, and the specified scope as well as analytical technique, the test results of the selected component article are $\leq 0.1\%$ (w/w) in the

submitted sample(s).





PIN CODE: EC42AAA8



No.: ETR20B04458 Date: 02-Dec-2020 Page: 2 of 14

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

Test Part Description

No.1 : GRAY LUMP

Test Method

With reference to RSTS-EE-SVHC-007, analysis was performed by ICP-OES, UV-VIS, GC/MS, LC/MS, GC/FPD, LC/DAD, LC/MS/MS.

Test Result(s) Unit: % (1) Candidate List of SVHC (2020/06/25)

No.	Substance Name	RL	Concentration
			No.1
1.	4,4'- Diaminodiphenylmethane (MDA) (CAS No.: 101-77-9)	0.05	n.d.
2.	5-tert-butyl-2,4,6-trinitro-m-xylene (Musk Xylene) (CAS No.: 81-15-2)	0.05	n.d.
3.	Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) (CAS No.: 85535-84-8)	0.05	n.d.
4.	Anthracene (CAS No.: 120-12-7)	0.05	n.d.
5.	Benzyl butyl phthalate (BBP) (CAS No.: 85-68-7)	0.05	n.d.
6.	Bis(tributyltin) oxide (TBTO)*** (CAS No.: 56-35-9)	-	n.d.
	Diarsenic pentaoxide*** (CAS No.: 1303-28-2)	-	n.d.
	Diarsenic trioxide*** (CAS No.: 1327-53-3)	-	n.d.
	Dibutyl phthalate (DBP) (CAS No.: 84-74-2)	0.05	n.d.
10.	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-	0.05	n.d.
	HBCDD, β- HBCDD, γ- HBCDD) (CAS No.: 25637-99-4 and 3194-55-6 (134237-51-7,		
	134237-50-6, 134237-52-8))		
	Lead hydrogen arsenate*** (CAS No.: 7784-40-9) (X S)	-	n.d.
	Sodium dichromate*** (CAS No.: 10588-01-9, 7789-12-0) (*)	-	n.d.
13.	Triethyl arsenate*** (CAS No.: 15606-95-8)	-	n.d.
14.	Bis (2-ethylhexyl)phthalate (DEHP) (CAS No.: 117-81-7)	0.05	n.d.
15.	2,4-Dinitrotoluene (CAS No.: 121-14-2)	0.05	n.d.
16.	Anthracene oil (CAS No.: 90640-80-5) (**)	0.05	n.d.
	Anthracene oil, anthracene paste (CAS No.: 90640-81-6) (**)	0.05	n.d.
	Anthracene oil, anthracene paste, anthracene fraction (CAS No.: 91995-15-2) (**)	0.05	n.d.
19.	Anthracene oil, anthracene paste, distn. Lights (CAS No.: 91995-17-4) (**)	0.05	n.d.
	Anthracene oil, anthracene-low (CAS No.: 90640-82-7) (**)	0.05	n.d.
21.	Diisobutyl phthalate (CAS No.: 84-69-5)	0.05	n.d.
	Lead chromate*** (CAS No.: 7758-97-6) (X P)	-	n.d.
23.	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)*** (CAS No.: 12656-	-	n.d.
	85-8) (※ P)		



No.: ETR20B04458 Date: 02-Dec-2020

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

No.	Substance Name	RL	Concentration
			No.1
24.	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*** (CAS No.: 1344-37-2) (※ P)	-	n.d.
25.	Pitch, coal tar, high-temp. (CAS No.: 65996-93-2) (**)	0.05	n.d.
26.	Tris(2-chloroethyl) phosphate (TCEP) (CAS No.: 115-96-8)	0.05	n.d.
27.	Acrylamide (CAS No.: 79-06-1)	0.05	n.d.
28.	Ammonium dichromate*** (CAS No.: 7789-09-5)	-	n.d.
29.	Boric acid*** (CAS No.: 10043-35-3, 11113-50-1)	-	n.d.
30.	Disodium tetraborate, anhydrous*** (CAS No.: 1303-96-4, 1330-43-4, 12179-04-3)	-	n.d.
31.	Potassium chromate*** (CAS No.: 7789-00-6)	-	n.d.
32.	Potassium dichromate*** (CAS No.: 7778-50-9)	-	n.d.
33.	Sodium chromate*** (CAS No.: 7775-11-3)	-	n.d.
34.	Tetraboron disodium heptaoxide, hydrate (CAS No.: 12267-73-1) (X H)	-	n.d.
35.	Trichloroethylene (CAS No.: 79-01-6)	0.05	n.d.
36.	2-Ethoxyethanol (CAS No.: 110-80-5)	0.05	n.d.
37.	2-Methoxyethanol (CAS No.: 109-86-4)	0.05	n.d.
38.	Acids generated from chromium trioxide and their oligomers: Chromic acid*** (CAS	-	n.d.
	No.: 7738-94-5)		
	Acids generated from chromium trioxide and their oligomers: Dichromic acid*** (CAS No.: 13530-68-2)	-	n.d.
	Acids generated from chromium trioxide and their oligomers: Oligomers of chromic	-	n.d.
	acid and dichromic acid (※ C)		
	Chromium trioxide ***(CAS No.: 1333-82-0)	-	n.d.
40.	Cobalt(II) carbonate*** (CAS No.: 513-79-1)	-	n.d.
	Cobalt(II) diacetate*** (CAS No.: 71-48-7)	-	n.d.
	Cobalt(II) dinitrate*** (CAS No.: 10141-05-6)	-	n.d.
43.	Cobalt(II) sulphate*** (CAS No.: 10124-43-3)	-	n.d.
44.	1,2,3-trichloropropane (CAS No.: 96-18-4)	0.05	n.d.
45.	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP) (CAS	0.05	n.d.
	No.: 71888-89-6)		
46.	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	0.05	n.d.
	(CAS No.: 68515-42-4)		
47.	1-Methyl-2-pyrrolidone (NMP) (CAS No.: 872-50-4)	0.05	n.d.
48.	2-ethoxyethyl acetate (CAS No.: 111-15-9)	0.05	n.d.
49.	Hydrazine (CAS No.: 7803-57-8, 302-01-2)	0.05	n.d.
50.	Strontium chromate*** (CAS No.: 7789-06-2)	_	n.d.
51.	Cobalt dichloride (CAS No.: 7646-79-9)	0.005	n.d.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com.tw/terms-of-service and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://www.sgs.com.tw/terms-of-service. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Page: 3 of 14



No.: ETR20B04458 Date: 02-Dec-2020 Page: 4 of 14

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

No.	Substance Name	RL	Concentration
			No.1
52.	1,2-Dichloroethane (CAS No.: 107-06-2)	0.05	n.d.
53.	2,2'-dichloro-4,4'-methylenedianiline (CAS No.: 101-14-4)	0.05	n.d.
54.	2-Methoxyaniline, o-Anisidine (CAS No.: 90-04-0)	0.05	n.d.
	4-(1,1,3,3-tetramethylbutyl)phenol (CAS No.: 140-66-9)	0.05	n.d.
56.	Aluminosilicate Refractory Ceramic Fibres Coxides of aluminium and silicon are the	0.05	n.d.
	main components present (in the fibres) within variable concentration ranges]		
57.	Arsenic acid*** (CAS No.: 7778-39-4)	1	n.d.
58.	Bis(2-methoxyethyl) ether (CAS No.: 111-96-6)	0.05	n.d.
59.	Bis(2-methoxyethyl) phthalate (CAS No.: 117-82-8)	0.05	n.d.
60.	Calcium arsenate*** (CAS No.: 7778-44-1)	1	n.d.
61.	Dichromium tris(chromate)*** (CAS No.: 24613-89-6)	-	n.d.
62.	Formaldehyde, oligomeric reaction products with aniline (technical MDA) (CAS No.:	0.05	n.d.
	25214-70-4)		
63.	Lead diazide, Lead azide*** (CAS No.: 13424-46-9)	1	n.d.
64.	Lead dipicrate*** (CAS No.: 6477-64-1)	1	n.d.
65.	Lead styphnate*** (CAS No.: 15245-44-0)	1	n.d.
66.	N,N-dimethylacetamide (DMAC) (CAS No.: 127-19-5)	0.05	n.d.
67.	Pentazinc chromate octahydroxide*** (CAS No.: 49663-84-5)	1	n.d.
	Phenolphthalein (CAS No.: 77-09-8)	0.05	n.d.
69.	Potassium hydroxyoctaoxodizincatedichromate*** (CAS No.: 11103-86-9)	ı	n.d.
	Trilead diarsenate*** (CAS No.: 3687-31-8) (X S)	ı	n.d.
71.	Zirconia Aluminosilicate Refractory Ceramic Fibres 【oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges 】	0.05	n.d.
72.	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with ≥ 0.1% of Michler's ketone or Michler's base] (CAS No.: 2580-56-5)	0.05	n.d.
	[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with ≥ 0.1% of Michler's ketone or Michler's base] (CAS No.: 548-62-9)	0.05	n.d.
	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme) (CAS No.: 112-49-2)	0.05	n.d.
	1, 2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME) (CAS No.: 110-71-4)	0.05	n.d.
	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC) (CAS No.: 2451-62-9)	0.05	n.d.
77.	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione (β- TGIC) (CAS No.: 59653-74-6) (※ T)	0.05	n.d.



No.: ETR20B04458 Date: 02-Dec-2020

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

No.	Substance Name	RL	Concentration
			No.1
78.	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with ≥ 0.1% of Michler's	0.05	n.d.
	ketone or Michler's base] (CAS No.: 561-41-1)		
	4,4'-bis(dimethylamino)benzophenone (Michler's ketone) (CAS No.: 90-94-8)	0.05	n.d.
80.	Diboron trioxide*** (CAS No.: 1303-86-2)	-	n.d.
81.	Formamide (CAS No.: 75-12-7)	0.05	n.d.
82.	Lead(II) bis(methanesulfonate)*** (CAS No.: 17570-76-2)	-	n.d.
	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base) (CAS No.: 101-61-1)	0.05	n.d.
84.	α,α -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with \geq 0.1% of Michler's ketone or Michler's base] (CAS No.: 6786-83-0)	0.05	n.d.
85.	[Phthalato(2-)]dioxotrilead*** (CAS No.: 69011-06-9)	-	n.d.
86.	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (CAS No.: 84777-06-0)	0.05	n.d.
87.	1,2-Diethoxyethane (CAS No.: 629-14-1)	0.05	n.d.
	1-bromopropane (n-propyl bromide) (CAS No.: 106-94-5)	0.05	n.d.
89.	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine (CAS No.: 143860-04-2)	0.05	n.d.
90.	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances	0.05	n.d.
	and UVCB substances, polymers and homologues]		
91.	4,4'-Methylenedi-o-toluidine (CAS No.: 838-88-0)	0.05	n.d.
92.	4,4'-Oxydianiline and its salts (CAS No.: 101-80-4)	0.05	n.d.
93.	4-Aminoazobenzene (CAS No.: 60-09-3)	0.05	n.d.
94.	2,4-Diaminotoluene (CAS No.: 95-80-7)	0.05	n.d.
95.	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]	0.05	n.d.
96.	6-methoxy-m-toluidine (p-cresidine) (CAS No.: 120-71-8)	0.05	n.d.
97.	Acetic acid, lead salt, basic*** (CAS No.: 51404-69-4)		n.d.
98.	Biphenyl-4-ylamine (CAS No.: 92-67-1)	0.05	n.d.
	Bis(pentabromophenyl) ether (decabromodiphenyl ether) (DecaBDE) (CAS No.: 1163-19-5)	0.05	n.d.
100.	Cyclohexane-1,2-dicarboxylic anhydride (HHPA), cis-cyclohexane-1,2- dicarboxylic anhydride, trans-cyclohexane-1,2- dicarboxylic anhydride (Hexahydrophthalic anhydride - HHPA) (CAS No.: 85-42-7, 13149-00-3, 14166-21-3)	0.05	n.d.
101.	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide)) (ADCA) (CAS No.: 123-77-3)	0.05	n.d.
102.	Dibutyltin dichloride (DBTC)*** (CAS No.: 683-18-1)	-	n.d.
103.	Diethyl sulphate (CAS No.: 64-67-5)	0.05	n.d.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com.tw/terms-of-service and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://www.sgs.com.tw/terms-of-service. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Page: 5 of 14



No.: ETR20B04458 Date: 02-Dec-2020 Page: 6 of 14

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

No.	Substance Name	RL	Concentration
			No.1
104.	Diisopentyl phthalate (CAS No.: 605-50-5)	0.05	n.d.
105.	Dimethyl sulphate (CAS No.: 77-78-1)	0.05	n.d.
106.	Dinoseb (6-sec-butyl-2,4-dinitrophenol) (CAS No.: 88-85-7)	0.05	n.d.
107.	Dioxobis(stearato)trilead*** (CAS No.: 12578-12-0)	-	n.d.
108.	Fatty acids, C16-18, lead salts*** (CAS No.: 91031-62-8)	-	n.d.
109.	Furan (CAS No.: 110-00-9)	0.05	n.d.
110.	Henicosafluoroundecanoic acid (CAS No.: 2058-94-8)	0.05	n.d.
111.	Heptacosafluorotetradecanoic acid (CAS No.: 376-06-7)	0.05	n.d.
112.	Hexahydromethylphthalic anhydride (CAS No.: 25550-51-0) Hexahydro-4-methylphthalic anhydride (CAS No.: 19438-60-9) Hexahydro-3-methylphthalic anhydride (CAS No.: 57110-29-9) Hexahydro-1-methylphthalic anhydride (CAS No.: 48122-14-1)	0.05	n.d.
113.	Lead bis(tetrafluoroborate)*** (CAS No.: 13814-96-5)	-	n.d.
	Lead cyanamidate*** (CAS No.: 20837-86-9)	-	n.d.
115.	Lead dinitrate*** (CAS No.: 10099-74-8)	-	n.d.
116.	Lead monoxide (lead oxide)*** (CAS No.: 1317-36-8)	-	n.d.
117.	Lead oxide sulfate*** (CAS No.: 12036-76-9)	-	n.d.
118.	Lead titanium trioxide*** (CAS No.: 12060-00-3)	-	n.d.
119.	Lead Titanium Zirconium Oxide*** (CAS No.: 12626-81-2)	-	n.d.
120.	Methoxyacetic acid (CAS No.: 625-45-6)	0.05	n.d.
121.	Methyloxirane (Propylene oxide) (CAS No.: 75-56-9)	0.05	n.d.
122.	N,N-dimethylformamide; dimethyl formamide (CAS No.: 68-12-2)	0.05	n.d.
123.	N-methylacetamide (CAS No.: 79-16-3)	0.05	n.d.
124.	n-pentyl-isopentylphthalate (CAS No.: 776297-69-9)	0.05	n.d.
125.	o-aminoazotoluene (CAS No.: 97-56-3)	0.05	n.d.
126.	Orange lead (lead tetroxide)*** (CAS No.: 1314-41-6)	-	n.d.
127.	o-Toluidine (CAS No.: 95-53-4)	0.05	n.d.
128.	Pentacosafluorotridecanoic acid (CAS No.: 72629-94-8)	0.05	n.d.
129.	Pentalead tetraoxide sulphate*** (CAS No.: 12065-90-6)	-	n.d.
130.	Pyrochlore, antimony lead yellow*** (CAS No.: 8012-00-8)	-	n.d.
131.	Silicic acid (H2Si2O5), barium salt (1:1), lead-doped (X B) (CAS No.: 68784-75-8)	0.05	n.d.
	Silicic acid, lead salt*** (CAS No.: 11120-22-2)	-	n.d.
133.	Sulfurous acid, lead salt, dibasic*** (CAS No.: 62229-08-7)	-	n.d.
134.	Tetraethyllead*** (CAS No.: 78-00-2)	-	n.d.
135.	Tetralead trioxide sulphate*** (CAS No.: 12202-17-4)	-	n.d.



No.: ETR20B04458 Date: 02-Dec-2020 Page: 7 of 14

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

No.	Substance Name	RL	Concentration
			No.1
136.	Tricosafluorododecanoic acid (CAS No.: 307-55-1)	0.05	n.d.
137.	Trilead bis(carbonate) dihydroxide (basic lead carbonate)*** (CAS No.: 1319-46-6)	-	n.d.
138.	Trilead dioxide phosphonate*** (CAS No.: 12141-20-7)	-	n.d.
139.	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or	0.05	n.d.
	branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol,		
	ethoxylated covering UVCB- and well-defined substances, polymers and homologues,		
	which include any of the individual isomers and/or combinations thereof]		
	Ammonium pentadecafluorooctanoate (APFO)*** (CAS No.: 3825-26-1)	-	n.d.
	Cadmium (Cd) (CAS No.: 7440-43-9)	0.005	n.d.
	Cadmium oxide*** (CAS No.: 1306-19-0)	-	n.d.
	Dipentyl phthalate (DPP) (CAS No.: 131-18-0)	0.05	n.d.
	Pentadecafluorooctanoic acid (PFOA) (CAS No.: 335-67-1)	0.05	n.d.
	Cadmium sulphide*** (CAS No.: 1306-23-6)	-	n.d.
	Dihexyl phthalate (CAS No.: 84-75-3)	0.05	n.d.
147.	Disodium 3,3'-[[1,1'-biphenyl]-4,4'-diylbis(azo)]bis(4-aminonaphthalene-1-	0.05	n.d.
	sulphonate) (C.I. Direct Red 28) (CAS No.: 573-58-0)		
148.	Disodium 4-amino-3-[[4'-[(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo] -5-hydroxy-	0.05	n.d.
	6-(phenylazo)naphthalene-2,7-disulphonate (C.I. Direct Black 38) (CAS No.: 1937-37-7)		
	Imidazolidine-2-thione (2-imidazoline-2-thiol) (CAS No.: 96-45-7)	0.05	n.d.
	Lead di(acetate)*** (CAS No.: 301-04-2)	-	n.d.
	Trixylyl phosphate (CAS No.: 25155-23-1)	0.05	n.d.
	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear (CAS No.: 68515-50-4)	0.05	n.d.
	Cadmium chloride*** (CAS No.: 10108-64-2)	-	n.d.
154.	Sodium perborate; perboric acid, sodium salt***	-	n.d.
	Sodium peroxometaborate*** (CAS No.: 7632-04-4)	-	n.d.
	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) (CAS No.: 25973-55-1)	0.05	n.d.
157.	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320) (CAS No.: 3846-71-7)	0.05	n.d.
158.	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate	-	n.d.
	(DOTE)*** (CAS No.: 15571-58-1)		
	Cadmium fluoride*** (CAS No.: 7790-79-6)	-	n.d.
	Cadmium sulphate*** (CAS No.: 10124-36-4, 31119-53-6)	-	n.d.
161.	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-	-	n.d.
	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 (reaction		
	mass of DOTE and MOTE)***		



No.: ETR20B04458 Date: 02-Dec-2020 Page: 8 of 14

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

No.	Substance Name	RL	Concentration
			No.1
162.	1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters or mixed decyl and hexyl and	0.05	n.d.
	octyl diesters with ≥ 0.3% of dihexyl phthalate (CAS No.: 68515-51-5, 68648-93-1)		
163.	5-sec-butyl-2-(2,4-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [1], 5-sec-	0.05	n.d.
	butyl-2-(4,6-dimethylcyclohex-3-en-1-yl)-5-methyl-1,3-dioxane [2] [covering any of		
	the individual isomers of [1] and [2] or any combination thereof]		
164.	1,3-propanesultone (CAS No.: 1120-71-4)	0.05	n.d.
165.	2,4-di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327) (CAS No.: 3864-99-1)	0.05	n.d.
166.	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350) (CAS No.:	0.05	n.d.
	36437-37-3)		
167.	Nitrobenzene (CAS No.: 98-95-3)	0.05	n.d.
168.	Perfluorononan-1-oic-acid and its sodium and ammonium salts (CAS No.: 375-95-1,	0.05	n.d.
	21049-39-8, 4149-60-4)		
169.	Benzo[def]chrysene (Benzo[a]pyrene) (CAS No.: 50-32-8)	0.05	n.d.
170.	4,4'-isopropylidenediphenol (Bisphenol A) (CAS No.: 80-05-7)	0.05	n.d.
171.	4-Heptylphenol, branched and linear (4-HPbl) [substances with a linear and/or	0.05	n.d.
	branched alkyl chain with a carbon number of 7 covalently bound predominantly in		
	position 4 to phenol, covering also UVCB- and well-defined substances which		
	include any of the individual isomers or a combination thereof]		
172.	Nonadecafluorodecanoic acid (PFDA) and its sodium and ammonium salts (CAS No.:	0.05	n.d.
	3108-42-7, 335-76-2, 3830-45-3)		
	p-(1,1-dimethylpropyl)phenol (CAS No.: 80-46-6)	0.05	n.d.
	Perfluorohexane-1-sulphonic acid and its salts (PFHxS) (CAS No.: 355-46-4)	0.05	n.d.
175.	1,6,7,8,9,14,15,16,17, 17,18,18 - Dodecachloropentacyclo	0.05	n.d.
	[12.2.1.16,9.02,13.05,10]octadeca-7,15-diene ("Dechlorane Plus"TM) [covering any of		
	its individual anti- and syn-isomers or any combination thereof]		
	Benz[a]anthracene (CAS No.: 56-55-3)	0.05	n.d.
	Cadmium nitrate*** (CAS No.: 10325-94-7)	-	n.d.
	Cadmium carbonate*** (CAS No.: 513-78-0)	-	n.d.
	Cadmium hydroxide*** (CAS No.: 21041-95-2)	-	n.d.
	Chrysene (CAS No.: 218-01-9)	0.05	n.d.
181.	Reaction products of 1,3,4-thiadiazolidine-2,5-dithione, formaldehyde and 4-	-	n.d.
	heptylphenol, branched and linear (RP-HP) [with ≥0.1% w/w 4-heptylphenol, branched		
	and linear] (X R)		
182.	Dicyclohexyl phthalate (DCHP) (CAS No.: 84-61-7)	0.05	n.d.



No.: ETR20B04458 Date: 02-Dec-2020 Page: 9 of 14

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

No.	Substance Name	RL	Concentration
			No.1
183.	Benzene-1,2,4-tricarboxylic acid 1,2 anhydride (trimellitic anhydride; TMA) (CAS No.: 552-30-7)	0.05	n.d.
184.	Benzo[ghi]perylene (CAS No.: 191-24-2)	0.05	n.d.
185.	Octamethylcyclotetrasiloxane (D4) (CAS No.: 556-67-2)	0.05	n.d.
186.	Decamethylcyclopentasiloxane (D5) (CAS No.: 541-02-6)	0.05	n.d.
187.	Dodecamethylcyclohexasiloxane (D6) (CAS No.: 540-97-6)	0.05	n.d.
188.	Disodium octaborate*** (CAS No.: 12008-41-2)	-	n.d.
189.	Ethylenediamine (CAS No.: 107-15-3)	0.05	n.d.
190.	Lead (Pb) (CAS No.: 7439-92-1) (●)	0.005	n.d.
191.	Terphenyl, hydrogenated (CAS No.: 61788-32-7)	0.05	n.d.
192.	2,2-bis(4'-hydroxyphenyl)-4-methylpentane (CAS No.: 6807-17-6)	0.05	n.d.
193.	Benzo[k]fluoranthene (CAS No.: 207-08-9)	0.05	n.d.
194.	Fluoranthene (CAS No.: 206-44-0)	0.05	n.d.
195.	Phenanthrene (CAS No.: 85-01-8)	0.05	n.d.
196.	Pyrene (CAS No.: 129-00-0)	0.05	n.d.
197.	1,7,7-trimethyl-3-(phenylmethylene) bicyclo[2.2.1]heptan-2-one (3-benzylidene camphor) (CAS No.: 15087-24-8)	0.05	n.d.
198.	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides (covering any of their individual isomers and combinations thereof)	0.05	n.d.
199.	2-methoxyethyl acetate (CAS No.: 110-49-6)	0.05	n.d.
200.	4-tert-butylphenol (CAS No.: 98-54-4)	0.05	n.d.
201.	Tris(4-nonylphenyl, branched and linear) phosphite (TNPP) with ≥ 0.1% w/w of 4-nonylphenol, branched and linear (4-NP)	0.05	n.d.
202.	Diisohexyl phthalate (CAS No.: 71850-09-4)	0.05	n.d.
	2-benzyl-2-dimethylamino-4'-morpholinobutyrophenone (CAS No.: 119313-12-1)	0.05	n.d.
	2-methyl-1-(4-methylthiophenyl)-2-morpholinopropan-1-one (CAS No.: 71868-10-5)	0.05	n.d.
	Perfluorobutane sulfonic acid (PFBS) and its salts	0.05	n.d.
206.	1-vinylimidazole (CAS No.: 1072-63-5)	0.05	n.d.
207.	2-methylimidazole (CAS No.: 693-98-1)	0.05	n.d.
	Butyl 4-hydroxybenzoate (CAS No.: 94-26-8)	0.05	n.d.
209.	Dibutylbis(pentane-2,4-dionato-O,O')tin*** (CAS No.: 22673-19-4)	-	n.d.



Page: 10 of 14 No.: ETR20B04458 Date: 02-Dec-2020

LAIRD TECHNOLOGIES 4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

(2) SVHC proposed list (2020/09/01)

No.	Substance Name	RL	Concentration
			No.1
1.	Bis(2-(2-methoxyethoxy)ethyl) ether (CAS No.: 143-24-8)	0.05	n.d.
	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***	-	n.d.

Remark:

- 1. (1) Candidate List of SVHC (2020/06/25)
 - https://echa.europa.eu/web/guest/candidate-list-table
 - (2) Proposed list of SVHC (2020/09/01)
 - https://echa.europa.eu/substances-of-very-high-concern-identification
- 2. In accordance with Regulation (EC) No 1907/2006, any producer or importer of articles shall notify ECHA, in accordance with paragraph 2 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1) of the Regulation,
 - if (a) the substance is present in those articles in quantities totaling over one tonne per producer or importer per year; and (b) the substance is present in those articles above a concentration of 0.1% weight by weight (w/w).
- 3. Article 33 of Regulation (EC) No 1907/2006 requires supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1% weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance.
- 4. If a SVHC is found over 0.1% (w/w) and/or the specific concentration limit which is set in Regulation (EC) No 1272/2008 and its amendments, client is suggested to prepare a Safety Data Sheet (SDS) against the SVHC to comply with the supply chain communication obligation under Regulation (EC) No 1907/2006, in which:
 - (I) a substance that is classified as hazardous under the CLP Regulation (EC) No 1272/2008.
 - (II) mixture that is classified as hazardous under the CLP Regulation (EC) No 1272/2008, when it contains a substance with concentration equal to, or greater than the classification limit as set in Regulation (EC) No. 1272/2008; or
 - (III) a mixture is not classified as hazardous under the CLP Regulation (EC) No 1272/2008, but contains either:
 - (a) a substance posing human health or environmental hazards in an individual concentration of ≥ 1 % by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures) or ≥ 0.2 % by volume for gaseous mixtures; or
 - (b) a substance that is PBT, or vPvB in an individual concentration of ≥ 0.1 % by weight for mixtures that are solid or liquids (i.e., non-gaseous mixtures); or
 - (c) a substance on the SVHC candidate list (for reasons other than those listed above), in an individual concentration of \geq
 - 0.1 % by weight for non-gaseous mixtures; or
 - (d) a substance for which there are Europe-wide workplace exposure limits
- 5. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.



No.: ETR20B04458 Date: 02-Dec-2020 Page: 11 of 14

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

Note:

- 1. mg/kg = ppm ; 0.1wt% = 1000ppm
- 2. RL = Reporting Limit
- 3. n.d. = Not Detected (Less than RL)
- 4. "-" = Not Regulated
- 5. (*): conc. of Sodium dichromate dihydrate (CAS No.: 7789-12-0) = conc. of sodium dichromate x 1.1375
- 6. (**): The concentrations of above-mentioned mixtures are evaluated per the gained composition rate between the selected marks and the mixtures.
- 7. F Parameter Conversion Table/Classification: https://eecloud.sgs.com/Region_TW/DocDownload.aspx#otherDoc
- 8. (X P): Regarding the compound containing Cr(VI) and lead, lead and Cr(VI) are tested and respectively used for the calculation of the independent concentration of the compound containing Cr(VI) and lead. The minimum value of the two independently calculated concentrations is used as the final concentration for the report.
- 9. (X C): Oligomers of chromic acid and dichromic acid: since the oligomers are made of the unknown amount of chromic acid or dichromic acid that results in no fixed molecular weight, therefore the monomer of chromic acid or dichromic acid is relevant and considered.
- 10. (X H): Tetraboron disodium heptaoxide, hydrate: Only anhydrous form of disodium tetraborate is relevant and considered according to ECHA explanation (Ref no.: INC 000000032519).
- 11. ***: The substance was calculated by the test results of MonooctylTin, Dioctyl Tin, Tributyl Tin, Dibutyl Tin, PFOA or element (Ex. Arsenic, Lead, Cr(VI), Boron, Cobalt, Barium, Cadmium respectively).

The test result is given as:	Unit: %	
Substance Name	RL	Concentration
		No.1
Tributyl Tin (TBT)	0.05	n.d.
Arsenic (As) (X E)	0.005	n.d.
Hexavalent chromium Cr(VI)	0.005	n.d.
Boron (B) (X E)	0.005	n.d.
Cobalt (Co)	0.005	n.d.
Dibutyl Tin (DBT)	0.035	n.d.
Barium (Ba)	0.005	n.d.
Dioctyl Tin (DOT)	0.0225	n.d.
MonooctylTin (MOT)	0.0140	n.d.
Lead (Pb)	0.005	n.d.
Cadmium (Cd)	0.005	n.d.

12. (X S): Regarding the compound containing arsenic and lead, lead and arsenic are tested and respectively used for the calculation of the independent concentration of the compound containing arsenic and lead. The minimum value of the two independently calculated concentrations is used as the final concentration for the report.



No.: ETR20B04458 Date: 02-Dec-2020 Page: 12 of 14

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

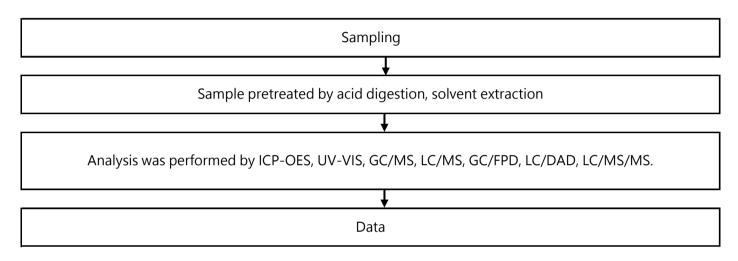
- 13. (\times T): TGIC is a mixture and also contains β -TGIC. According to the ECHA's technical dossier the ratio of β -TGIC to TGIC is around 1 to 10. Therefore β -TGIC is issued based on the above-mentioned ratio.
- 14. (X B): Only if both qualitative results of lead and silicon are positive, the test result of the compound will be calculated based on the concentration of barium.
- 15. (X): RP-HP can't be identified directly and test result can't be calculated based on specific element(s) or compound. RP-HP is identified as SVHC because of 4-HPbl, therefore 4-HPbl is analysed instead of RP-HP.
- 16. (●): Since lead has a wide application, it is unlikely to determine if the detected lead comes from the lead ion, lead element or/ and lead compounds. Therefore the detected total lead is used on behalf of lead.
- 17. (X E): The extracted soluble Boron / Arsenic are detected by ICP-OES.
- 18. The statement of compliance conformity is based on comparison of testing results and limits.



No.: ETR20B04458 Date: 02-Dec-2020

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

Analytical flow chart of SVHC



This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com.tw/terms-of-service and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://www.sgs.com.tw/terms-of-service. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Page: 13 of 14



No.: ETR20B04458 Date: 02-Dec-2020

LAIRD TECHNOLOGIES
4707 DETROIT AVENUE, CLEVELAND, OHIO, U.S.A. 44102-2216

* The tested sample / part is marked by an arrow if it's shown on the photo. *

ETR20B04458



** End of Report **

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at https://www.sgs.com.tw/terms-of-service and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at https://www.sgs.com.tw/terms-of-service. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Page: 14 of 14