



Test Report

Report No. A224049478810100101

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Company Name FOSHAN BLUE ROCKET ELECTRONICS CO.,LTD.

shown on Report

Address NO.45 GUXIN ROAD, CHANCHENG DISTRICT, FOSHAN, GUANGDONG, P.R.C
CHINA.

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

Sample Name	SOT-23 Semiconductor Device
Part No.	SOT-23
Sample Received Date	Aug. 15, 2024
Testing Period	Aug. 15, 2024 to Aug. 20, 2024

Test Conducted:

As requested by the applicant. For details refer to next page(s)



Approved by

Date

Aug. 20, 2024

Hill Zheng
Technical Manager

No. R158927326

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Executive Summary:**TEST REQUEST****CONCLUSION**

<u>TEST REQUEST</u>	<u>CONCLUSION</u>
Regulation (EU) 2019/1021 on persistent organic pollutants (POPs)	
- Polybrominated Diphenyl Ethers (PBDEs)	See test result(s)
- Perfluorooctane sulfonic acid (PFOS) and its derivatives	PASS
- Hexabromocyclododecane (HBCDD)	PASS
- Short Chain Chlorinated Paraffins (SCCPs)	PASS
- DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl)ethane)	PASS
- Chlordane	PASS
- Hexachlorocyclohexanes, including Lindane	PASS
- Dieldrin	PASS
- Endrin	PASS
- Heptachlor	PASS
- Endosulfan	PASS
- Chlordecone	PASS
- Aldrin	PASS
- Mirex	PASS
- Toxaphene	PASS
- Pentachlorobenzene	PASS
- Hexachlorobenzene	PASS
- Hexabromobiphenyl	PASS
- Polychlorinated Biphenyls(PCBs)	PASS
- Polychlorinated Naphthalenes (PCNs)	PASS
- Hexachlorobutadiene (HCBD)	PASS
- Pentachlorophenol and its salts and esters	PASS
- Perfluorooctanoic acid (PFOA) and its salts & related substances	PASS
- Dicofol	PASS
- Perfluorohexane-1-sulphonic acid (PFHxS) and its salts & related substances	PASS

***** For further details, please refer to the following page(s) *****

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Regulation (EU) 2019/1021 on persistent organic pollutants (POPs)

▼ Polybrominated Diphenyl Ethers (PBDEs)

Test Method: IEC 62321-6:2015; Test Equipment: GC-MS

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)
	001	
Tetrabromodiphenyl ether	N.D.	5
Pentabromodiphenyl ether	N.D.	5
Hexabromodiphenyl ether	N.D.	5
Heptabromodiphenyl ether	N.D.	5
Decabromodiphenyl ether	N.D.	5

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Perfluorooctane sulfonic acid (PFOS) and its derivatives[#]

Test Method: CEN/TS 15968:2010; Test Equipment: LC-MS-MS & GC-MS

No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
1	Perfluorooctanesulfonic acid (PFOS)	1763-23-1	N.D.	0.010	--
2	Sodium perfluorooctane sulfonate (PFOS-Na)*	4021-47-0	N.D.	0.010	--
3	Perfluorooctanesulfonic acid, potassium salt (PFOS-K)*	2795-39-3	N.D.	0.020	--
4	Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)*	29457-72-5	N.D.	0.010	--
5	1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, magnesium salt (2:1) (PFOS-Mg)*	91036-71-4	N.D.	0.020	--
6	Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH ₄)*	29081-56-9	N.D.	0.010	--
7	Perfluorooctane sulfonate diethanolamine salt (PFOS-NH(OH) ₂)*	70225-14-8	N.D.	0.020	--
8	Perfluorooctanesulfonic acid, tetraethylammonium salt (PFOS-N(C ₂ H ₅) ₄)*	56773-42-3	N.D.	0.020	--
9	Tetrabutylammonium perfluorooctanesulfonate (PFOS-NH(C ₁₆ H ₃₆))*	111873-33-7	N.D.	0.015	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
10	Didecyl dimethyl ammonium perfluorooctane sulfonate (PFOS-DDA)*	251099-16-8	N.D.	0.020	--
11	Perfluoro-1-octanesulfonyl fluoride (PFOSF)*	307-35-7	N.D.	0.010	--
12	Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluorooctanesulfonate*	71463-74-6	N.D.	0.020	--
13	Tetramethylammonium perfluorooctane sulfonate (PFOS-C ₄ H ₁₂ N)*	56773-44-5	N.D.	0.010	--
14	Perfluorooctanesulfonic acid diethylamine salt (PFOS-C ₄ H ₁₁ N)*	2205029-08-7	N.D.	0.010	--
15	Triethylammonium perfluorooctane sulfonate (PFOS-C ₆ H ₁₅ N)*	54439-46-2	N.D.	0.010	--
16	N,N-Dibutyl-N-methylbutan-1-aminium heptafluorooctane-1-sulfonate (PFOS-C ₁₃ H ₃₀ N)*	124472-68-0	N.D.	0.015	--
17	N,N,N-Tripropylpentan-1-aminium heptafluorooctane-1-sulfonate (PFOS-C ₁₄ H ₃₂ N)*	56773-56-9	N.D.	0.015	--
18	Tetrabutylphosphonium perfluorooctane sulfonate (PFOS-C ₁₆ H ₃₆ P)*	2185049-59-4	N.D.	0.015	--
19	Heptyldimethyl{2-[(2-methylprop-2-enoyl)oxy]ethyl}azanium heptafluorooctane-1-sulfonate (PFOS-C ₁₅ H ₃₀ NO ₂)*	1203998-97-3	N.D.	0.015	--
20	Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, salt with perfluoro-1-octanesulfonic acid (1:1) (PFOS-C ₂₀ H ₂₆ I)*	213740-80-8	N.D.	0.020	--
21	Diphenyl(2,4,6-trimethylphenyl)sulfonium perfluoro-1-octanesulfonate (PFOS-C ₂₁ H ₂₁ S)*	258341-99-0	N.D.	0.020	--
22	1-Hexadecylpyridinium perfluoro-1-octanesulfonate (PFOS-C ₂₁ H ₃₈ N)*	334529-63-4	N.D.	0.020	--
23	Perfluorooctane sulfonic anhydride (PFOSAN)*	423-92-7	N.D.	0.020	--
24	N-Ethylperfluoro-1-octanesulfonamide (N-Et-FOSA)	4151-50-2	N.D.	0.050	--
25	N-Methylperfluoro-1-octanesulfonamide (N-Me-FOSA)	31506-32-8	N.D.	0.050	--
26	2-(N-Ethylperfluoro-1-octanesulfonamido)-ethanol (N-Et-FOSE)	1691-99-2	N.D.	0.050	--
27	2-(N-Methylperfluoro-1-octanesulfonamido)-ethanol (N-Me-FOSE)	24448-09-7	N.D.	0.050	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
28	Perfluorooctane sulfonamide (PFOSA)	754-91-6	N.D.	0.010	--
29	Perfluorooctanesulfonamide lithium salt (1:1) (PFOSA-Li)*	76752-79-9	N.D.	0.010	--
30	Perfluorooctanesulfonamide Sodium salt (1:1) (PFOSA-Na)*	76752-78-8	N.D.	0.010	--
31	Perfluorooctanesulfonamide Potassium salt (1:1) (PFOSA-K)*	76752-70-0	N.D.	0.010	--
32	Perfluorooctanesulfonamide Ammonium salt (1:1) (PFOSA-NH ₄)*	76752-72-2	N.D.	0.010	--
33	Heptadecafluorooctane-1-sulphonamide, compound with triethylamine (1:1) (PFOSA-C ₆ H ₁₅ N)*	76752-82-4	N.D.	0.010	--
34	Glycine, N-[(heptadecafluorooctyl)sulfonyl]- (FOSAA)	2806-24-8	N.D.	0.010	--
35	N-[(Perfluorooctyl)sulfonyl]glycine potassium salt (1:1) (FOSAA-K)*	75260-69-4	N.D.	0.010	--
36	N-[(Perfluorooctyl)sulfonyl]glycine sodium salt (1:1) (FOSAA-Na)*	115716-87-5	N.D.	0.010	--
37	N-[(Perfluorooctyl)sulfonyl]glycinate (FOSAA (anion))*	909405-47-6	N.D.	0.010	--
38	N-Methyl perfluorooctanesulfonamidoacetic acid (N-Me-FOSAA)	2355-31-9	N.D.	0.050	--
39	Potassium N-((heptadecafluorooctyl)sulphonyl)-N-methylglycinate (N-Me-FOSAA-K)*	70281-93-5	N.D.	0.050	--
40	2-(N-Methylperfluorooctanesulfonamido)acetate (N-Me-FOSAA (anion))*	909405-48-7	N.D.	0.050	--
41	N-ethyl-N-[(heptadecafluorooctyl)sulphonyl]glycine (N-Et-FOSAA)	2991-50-6	N.D.	0.050	--
42	Glycine, N-ethyl-N-[(heptadecafluorooctyl)sulfonyl]-, potassium salt (N-Et-FOSAA-K)*	2991-51-7	N.D.	0.050	--
43	Sodium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-Na)*	3871-50-9	N.D.	0.050	--
44	Ammonium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-NH ₄)*	2991-52-8	N.D.	0.050	--
45	2-(N-Ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA (anion))*	909405-49-8	N.D.	0.050	--
46	Bis[2-[N-ethyl(heptadecafluorooctane sulphonyl)amino]ethyl]hydrogen phosphate (EtFOSEdiPAPs)	2965-52-8	N.D.	0.050	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
47	Total	--	N.D.	--	1000

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- *Result(s) shown of the substance(s) is/ are converted from the result(s) of certain compound(s).
- According to Regulation (EU) 2019/1021 on persistent organic pollutants (POPs), Perfluorooctane sulfonic acid (PFOS) and its derivatives are defined as a class of chemicals. There is not an official list in the regulation. The conclusion is based on the tested chemicals.

▼ **Hexabromocyclododecane (HBCDD) #**

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
		001		
Hexabromocyclododecane (HBCDD)	25637-99-4	N.D.	5	100
	3194-55-6			
	134237-50-6			
	134237-51-7			
	134237-52-8			

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- 'Hexabromocyclododecane (HBCDD)' means: Hexabromocyclododecane (HBCDD), 1,2,5,6,9,10-hexabromocyclododecane and its main diastereoisomers: α -HBCDD, β -HBCDD, γ -HBCDD

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▼ Short Chain Chlorinated Paraffins (SCCPs)

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS(NCI)

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
	001		
Short Chain Chlorinated Paraffins (SCCPs)	N.D.	100	1500

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ DDT (1,1,1-trichloro-2,2-bis (4-chlorophenyl)ethane)

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
	001		
DDT (1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane)	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Chlordane#

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
	001		
Chlordane	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

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▼ **Hexachlorocyclohexanes, including Lindane[#]**

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
	001		
Hexachlorocyclohexanes, including Lindane	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ **Dieldrin[#]**

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
	001		
Dieldrin	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ **Endrin[#]**

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u> (mg/kg)	<u>Limit</u> (mg/kg)
	001		
Endrin	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

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▼ Heptachlor[#]

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Heptachlor	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Endosulfan[#]

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Endosulfan	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Chlordecone[#]

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Chlordecone	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

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▼ Aldrin[#]

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Aldrin	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Mirex

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Mirex	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Toxaphene[#]

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Toxaphene	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

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▼ Pentachlorobenzene[#]

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Pentachlorobenzene	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Hexachlorobenzene[#]

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Hexachlorobenzene	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Hexabromobiphenyl

Test Method: IEC 62321-6:2015; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Hexabromobiphenyl	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

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▼ Polychlorinated Biphenyls(PCBs)

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Polychlorinated Biphenyls (PCBs)	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Polychlorinated Naphthalenes (PCNs)

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Polychlorinated Naphthalenes (PCNs)	N.D.	5	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Hexachlorobutadiene (HCBd)

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL</u>	<u>Limit</u>
	001	(mg/kg)	(mg/kg)
Hexachlorobutadiene (HCBd)	N.D.	20	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

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▼ Pentachlorophenol and its salts and esters[#]

Test Method: Refer to ISO 17070:2015; Test Equipment: GC-MS

<u>Tested Item(s)</u>	<u>Result (mg/kg)</u>	<u>MDL (mg/kg)</u>	<u>Limit (mg/kg)</u>
	001		
Pentachlorophenol and its salts and esters	N.D.	1	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- The test result of Pentachlorophenol and its salts and esters is calculated by Pentachlorophenol.

▼ Perfluorooctanoic acid (PFOA) and its salts & related substances[#]

Test Method: CEN/TS 15968:2010; Test Equipment: LC-MS-MS & GC-MS

<u>No.</u>	<u>Tested Item(s)</u>	<u>CAS No.</u>	<u>Result (mg/kg)</u>	<u>MDL (mg/kg)</u>	<u>Limit (mg/kg)</u>
			001		
1	Perfluorooctanoic acid (PFOA)	335-67-1	N.D.	0.010	--
2	Ammonium pentadecafluorooctanoate (APFO)*	3825-26-1	N.D.	0.010	--
3	Sodium perfluorooctanoate (PFOA-Na)*	335-95-5	N.D.	0.020	--
4	Potassium perfluorooctanoate (PFOA-K)*	2395-00-8	N.D.	0.020	--
5	Silver perfluorooctanoate (PFOA-Ag)*	335-93-3	N.D.	0.020	--
6	Perfluorooctanoyl fluoride (PFOA-F)*	335-66-0	N.D.	0.010	--
7	Lithium perfluorooctanoate (PFOA-Li)*	17125-58-5	N.D.	0.010	--
8	Cesium perfluorooctanoate (PFOA-Cs)*	17125-60-9	N.D.	0.020	--
9	Cobalt perfluorooctanoate (PFOA-Co)*	35965-01-6	N.D.	0.025	--
10	Chromium(III) perfluorooctanoate (PFOA-Cr)*	68141-02-6	N.D.	0.025	--
11	N,N,N-Triethylethanaminium perfluorooctanoate (PFOA-NH(C ₂ H ₅) ₃)*	98241-25-9	N.D.	0.015	--
12	Tetrapropylammonium perfluorooctanoate (PFOA-NH(C ₃ H ₇) ₄)*	277749-00-5	N.D.	0.015	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
13	Perfluorooctanoate N,N,N-Trimethylmethanaminium (PFOA-NH(C ₄ H ₁₁))*	32609-65-7	N.D.	0.015	--
14	Pentadecafluorooctanoic acid-piperazine (2/1) (PFOA-NH(C ₄ H ₁₀ N))*	423-52-9	N.D.	0.015	--
15	Potassium pentadecafluorooctanoate-water (1/1/2) (PFOA-K(H ₂ O) ₂)*	98065-31-7	N.D.	0.010	--
16	Perfluorooctanoic acid compd. with ethanamine (1:1) (PFOA-C ₂ H ₇ N)*	1376936-03-6	N.D.	0.010	--
17	Pentadecafluorooctanoic acid-pyridine (1/1) (PFOA-C ₅ H ₅ N)*	95658-47-2	N.D.	0.010	--
18	Pentadecafluorooctanoic acid-1-phenylpiperazine (1:1) (PFOA-C ₁₀ H ₁₄ N ₂)*	1514-68-7	N.D.	0.015	--
19	N,N,N-Trimethyloctan-1-aminium pentadecafluorooctanoate (PFOA-C ₁₁ H ₂₆ N)*	927835-01-6	N.D.	0.015	--
20	Pentadecafluorooctanoate (anion) (PFOA (anion))*	45285-51-6	N.D.	0.010	--
21	Perfluorooctanoic acid (PFOA) and its salts	-	N.D.	--	0.025
22	Perfluorooctanoic Anhydride (PFOAA)*	33496-48-9	N.D.	0.020	1
23	Methyl perfluorooctanoate (Me-PFOA)	376-27-2	N.D.	0.010	1
24	Ethyl perfluorooctanoate (Et-PFOA)	3108-24-5	N.D.	0.010	1
25	Perfluorooctyl iodide (PFOI)	507-63-1	N.D.	0.200	1
26	1H,1H,2H,2H-perfluoro-1-decanol (8:2 FTOH)	678-39-7	N.D.	0.200	1
27	1H,1H,2H,2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4	N.D.	0.200	1
28	1H,1H,2H,2H-Perfluorodecanesulfonic Acid Sodium (8:2 FTS-Na)*	27619-96-1	N.D.	0.200	1
29	Potassium 2-(perfluorooctyl)ethane-1-sulfonate (8:2 FTS-K)*	438237-73-1	N.D.	0.200	1
30	8:2 Fluorotelomer sulfonate ammonium salt (8:2 FTS-NH ₄)*	149724-40-3	N.D.	0.200	1
31	2-(Perfluorooctyl)ethane-1-sulfonate (8:2 FTS (anion))*	481071-78-7	N.D.	0.200	1
32	1,1,2,2-Tetrahydroperfluorodecyl acrylate (8:2 FTAC)	27905-45-9	N.D.	0.200	1

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
33	2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester (8:2 FTMA)	1996-88-9	N.D.	0.200	1
34	1H,1H,2H,2H-Perfluorodecyltriethoxysilane (PFSI)	101947-16-4	N.D.	0.200	1
35	Decane, 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8- heptadecafluoro-10-iodo- (8:2 FTI)	2043-53-0	N.D.	0.200	1
36	8:2 Fluorotelomer phosphate diester (8:2diPAP)	678-41-1	N.D.	0.200	1
37	Sodium bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2diPAP-Na)*	114519-85-6	N.D.	0.200	1
38	Ammonium bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2diPAP-NH ₄)*	93776-20-6	N.D.	0.200	1
39	Bis(2-hydroxyethyl)ammonium bis((perfluorooctyl)ethyl) hydrogen phosphate (8:2diPAP-C ₄ H ₁₁ NO ₂)*	57677-97-1	N.D.	0.200	1
40	8:2 Fluorotelomer phosphate diester ion (1-) (8:2diPAP (anion))*	1411713-91-1	N.D.	0.200	1
41	Tetrabutylphosphonium 2H,2H-Perfluorodecanoate (H ₂ PFDA-P(C ₄ H ₉) ₄)	882489-14-7	N.D.	0.010	1
42	2H,2H,3H,3H-Perfluoroundecanoic acid (H ₄ PFUnA)	34598-33-9	N.D.	0.010	1
43	Potassium 3-(perfluorooctyl)propanoate (H ₄ PFUnA-K)*	83310-58-1	N.D.	0.020	1
44	Lithium 3-(perfluorooctyl)propanoate (H ₄ PFUnA-Li)*	67304-23-8	N.D.	0.010	1
45	2H,2H-Perfluorodecanoate (H ₂ PFDA)	27854-31-5	N.D.	0.010	1
46	1-Decene,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluoro-(PFOE)	21652-58-4	N.D.	0.200	1
47	Perfluorooctylethyltrichlorosilane (FDTs)	78560-44-8	N.D.	0.200	1
48	Perfluorooctylethyltrimethoxysilane (FDTMOS)	83048-65-1	N.D.	0.200	1
49	Bis[2-(perfluorodecyl)ethyl] Phosphate (10:2 diPAP)	1895-26-7	N.D.	0.200	1
50	3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl dihydrogen phosphate (8:2 monoPAPS)	57678-03-2	N.D.	0.200	1
51	2H-Perfluoro-2-decenoic acid (8:2 FTUCA)	70887-84-2	N.D.	0.010	1

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
52	Alcohols, C8-14, gamma-omega-perfluoro (C8-14-PFEtOH)	68391-08-2	N.D.	0.200	1
53	1H,1H,2H,2H-Perfluorodecyl acetate (8:2FTOAc)	37858-04-1	N.D.	0.200	1
54	Perfluorooctanoic acid (PFOA) related substances	-	N.D.	--	1

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- *Result(s) shown of the substance(s) is/ are converted from the result(s) of certain compound(s).
- According to Regulation (EU) 2019/1021 on persistent organic pollutants (POPs), Perfluorooctanoic acid (PFOA) and its salts & related substances are defined as a class of chemicals. There is not an official list in the regulation. The conclusion is based on the tested chemicals.

▼ Dicofo[#]

Test Method: Refer to US EPA 3550C:2007 & US EPA 8270E:2018; Test Equipment: GC-MS

Tested Item(s)	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
	001		
Dicofo	N.D.	0.05	N.D.

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million

▼ Perfluorohexane-1-sulphonic acid (PFHxS) and its salts & related substances[#]

Test Method: CEN/TS 15968:2010; Test Equipment: LC-MS-MS & GC-MS

No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
1	Perfluorohexanesulfonic acid (PFHxS)	355-46-4	N.D.	0.010	--
2	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6- tridecafluoro-, sodium salt (PFHxS-Na)*	82382-12-5	N.D.	0.020	--
3	Potassium perfluorohexane-1-sulphonate (PFHxS-K)*	3871-99-6	N.D.	0.020	--
4	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, lithium salt(1:1) (PFHxS-Li)*	55120-77-9	N.D.	0.010	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
5	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, zinc salt (PFHxS-Zn)*	70136-72-0	N.D.	0.025	--
6	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, gallium salt (9CI) (PFHxS-Ga)*	341035-71-0	N.D.	0.010	--
7	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, scandium(3+) salt (3:1) (PFHxS-Sc)*	350836-93-0	N.D.	0.010	--
8	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, neodymium(3+) salt (3:1) (PFHxS-Nd)*	41184-65-0	N.D.	0.010	--
9	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, yttrium(3+) salt (3:1) (PFHxS-Y)*	41242-12-0	N.D.	0.010	--
10	Cesium Perfluorohexanesulfonate (PFHxS-Cs)*	92011-17-1	N.D.	0.020	--
11	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, ammonium salt (1:1) (PFHxS-NH ₄)*	68259-08-5	N.D.	0.010	--
12	1,1,2,2,3,3,4,4,5,5,6,6,6-Tridecafluorohexane-1-sulphonyl chloride (PFHxS-Cl)*	55591-23-6	N.D.	0.020	--
13	Perfluorohexylsulfonate (PFHxS(anion))*	108427-53-8	N.D.	0.010	--
14	Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:2) (PFHxS-S ₃ (C ₆ H ₅) ₄ (C ₆ H ₄) ₂)*	421555-73-9	N.D.	0.020	--
15	Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic (PFHxS-I(C ₆ H ₄) ₂ (C ₅ H ₁₁) ₂)*	421555-74-0	N.D.	0.020	--
16	Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S(C ₆ H ₄) ₃ (C ₄ H ₉) ₃)*	425670-70-8	N.D.	0.020	--
17	1-Hexanesulfonic acid,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with N,N-diethylethanamine (1:1) (PFHxS-N(C ₂ H ₅) ₃)*	72033-41-1	N.D.	0.020	--
18	Iodonium, bis[(1,1-dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) (9CI) (PFHxS-I(C ₆ H ₄) ₂ (C ₄ H ₉) ₂)*	866621-50-3	N.D.	0.020	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL	Limit
			001	(mg/kg)	(mg/kg)
19	Sulfonium, (4-methylphenyl)diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S(C ₆ H ₅) ₂ C ₇ H ₇)*	910606-39-2	N.D.	0.020	--
20	Sulfonium, [4-[(2-methyl-1-oxo-2-propen-1-yl)oxy]phenyl]diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S(C ₆ H ₅) ₂ C ₁₀ H ₉ O ₂)*	911027-68-4	N.D.	0.020	--
21	Sulfonium, [4-[(2-methyl-1-oxo-2-propenyl)oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1), polymer with 2-ethyltricyclo[3.3.1.1 ^{3,7}]dec-2-yl 2-methyl-2-propenoate, 3-hydroxytricyclo[3.3.1.1 ^{3,7}]dec-1-yl 2-methyl-2-propenoate and tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate*	911027-69-5	N.D.	0.020	--
22	Dibenzo[k,n][1,4,7,10,13]tetraoxathiacyclopentadecinium, 19-[4-(1,1-dimethylethyl)phenyl]-6,7,9,10,12,13-hexahydro-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-SC ₂₈ H ₃₁ O ₄)*	928049-42-7	N.D.	0.020	--
23	Phosponium, triphenyl(phenylmethyl)-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-P(C ₆ H ₅) ₃ C ₇ H ₇)*	1000597-52-3	N.D.	0.020	--
24	1-Butanaminium, N,N,N-tributyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (PFHxS-N(C ₄ H ₉) ₄)*	108427-54-9	N.D.	0.020	--
25	Ethanaminium, N,N,N-triethyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) (PFHxS-N(C ₂ H ₅) ₄)*	108427-55-0	N.D.	0.020	--
26	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with pyrrolidine (1:1) (PFHxS-NC ₄ H ₉)*	1187817-57-7	N.D.	0.020	--
27	Sulfonium, triphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S(C ₆ H ₅) ₃)*	144116-10-9	N.D.	0.020	--
28	Quinolinium, 1-(carboxymethyl)-4-[2-[4-[4-(2,2-diphenylethenyl)phenyl]-1,2,3,3a,4,8b-hexahydrocyclopent[b]indol-7-yl]ethenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-C ₄₄ H ₃₇ N ₂ O ₂)*	1462414-59-0	N.D.	0.020	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL (mg/kg)	Limit (mg/kg)
			001		
29	Iodonium, diphenyl-,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-I(C ₆ H ₅) ₂)*	153443-35-7	N.D.	0.020	--
30	Methanaminium,N,N,N-trimethyl-,salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) (PFHxS-N(CH ₃) ₄)*	189274-31-5	N.D.	0.020	--
31	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with 2-methyl-2-propanamine (1:1) (PFHxS-NH ₂ (CH ₃) ₃)*	202189-84-2	N.D.	0.020	--
32	Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-I(C ₆ H ₄) ₂ (C ₄ H ₉) ₂)*	213740-81-9	N.D.	0.020	--
33	Sulfonium, bis(4-methylphenyl)phenyl-,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-S(C ₇ H ₇) ₂ C ₆ H ₅)*	341548-85-4	N.D.	0.020	--
34	Ethanaminium, N-[4-[[4-(diethylamino)phenyl][4-(ethylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-ethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-(NC ₁₀ H ₁₄) ₃ C ₅ H ₄)*	1310480-24-0	N.D.	0.020	--
35	Methanaminium, N-[4-[[4-(dimethylamino)phenyl][4-(ethylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-(NC ₈ H ₁₀) ₂ C ₁₃ H ₁₂)*	1310480-27-3	N.D.	0.020	--
36	Methanaminium, N-[4-[[4-(dimethylamino)phenyl][4-(phenylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1) (PFHxS-(NC ₈ H ₁₀) ₂ C ₁₇ H ₁₂)*	1310480-28-4	N.D.	0.020	--
37	Beta-Cyclodextrin, compd. with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid ion(1-)(1:1) (PFHxS-C ₄₂ H ₇₀ O ₃₅)*	1329995-45-0	N.D.	0.020	--
38	Gamma-Cyclodextrin, compd. with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid ion(1-)(1:1) (PFHxS-C ₄₈ H ₈₀ O ₄₀)*	1329995-69-8	N.D.	0.020	--

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No.	Tested Item(s)	CAS No.	Result (mg/kg)	MDL	Limit
			001	(mg/kg)	(mg/kg)
39	Tridecafluorohexanesulphonic acid, compound with 2,2'-iminodiethanol (1:1) (PFHxS-NH(C ₂ H ₅ O) ₂)*	70225-16-0	N.D.	0.020	--
40	Perfluorohexane-1-sulphonic acid (PFHxS) and its salts	--	N.D.	--	0.025
41	1-Hexanesulfonyl fluoride,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro- (PFHxSF)*	423-50-7	N.D.	0.010	--
42	1-Hexane-sulfonamide,1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro- (FHxSA)	41997-13-1	N.D.	0.010	--
43	N-methylperfluorohexanesulfonamide (MeFHxSA)	68259-15-4	N.D.	0.100	--
44	Perfluorohexane-1-sulphonic acid (PFHxS) related substances	--	N.D.	--	1

Remark:

- MDL = Method Detection Limit
- N.D. = Not Detected (<MDL)
- mg/kg = ppm = parts per million
- *Result(s) shown of the substance(s) is/ are converted from the result(s) of certain compound(s).

Sample/Part Description

No.	CTI Sample ID	Description
1	001	Black body with brown printing(Tested as a whole)

Note:

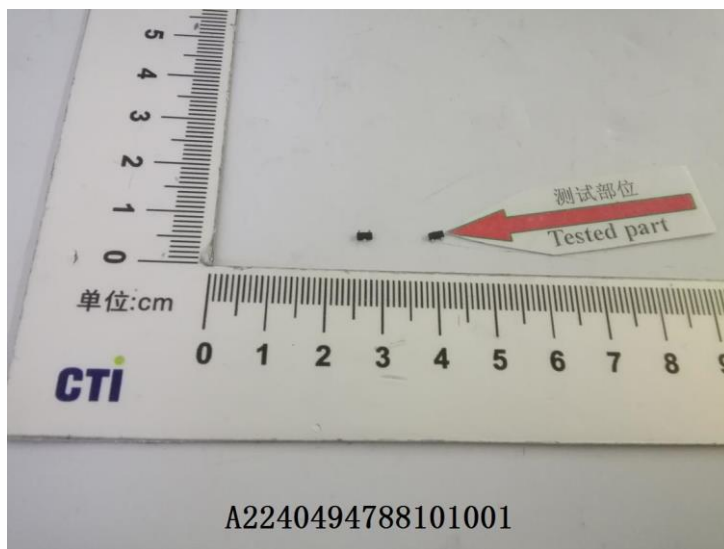
- The sample(s) was tested as a whole, because it's impossible to disassemble or separate it by current equipment and technology. The result(s) shown on this report may be different from the content of any homogeneous material.
- “#” indicates the item(s)/method(s) is (are) not in CNAS accreditation scope.
- The test result(s) is(are) presented in reference to the result(s) that reported in A2240494788101001.

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Photo(s) of the sample(s)



Statement:

1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Unless otherwise stated, the decision rule for conformity reporting is based on Binary Statement for Simple Acceptance Rule ($w=0$) stated in ILAC-G8:09/2019 / CNAS-GL015:2022;
5. Without written approval of CTI, this report can't be reproduced except in full;
6. In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

*** End of Report ***

Appendix

Client Reference Information

SOT-323,SOD-123,SOD-323,SOD-123FL,SOT-89,SOP-8,SOP-7,ESOP-8,SOT-363,SOT-223,SOT23-6,
SOT23-5,SOT23-3,SOT-523,SOD-523,TO-92,TO-92LM, TO-126F,TO-126,TO-277,TO-252,
TO-251,TO-263,TO-262,TO-220,TO-220F,TO-220FL, TO-3P,TO-3PH,TO-3PN,TSOT23-6,
PDFN3×3,PDFN5×6, DFN8×8, DFN1×1,DFN2×2,DFN3×3,DFN1006,DFN1.6×1.2,
DFN3×2,DFN5×4,QFN3×3,QFN4×4,UMSB,SMC,GBU,SMA,GBJ,SMB ,MBS,SMBF ,KBP,
SMAF ,MBF,ABS,ABF,UMB

Client Reference Photo (Non-tested sample)



Statement:

1. The Appendix Information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.
2. The Appendix Information is/are the supplement(s) for the Report A2240494788101001.