Test Report -Products



Report No.: 168390390a 001 Page 1 of 33

Client: STIEBEL ELTRON GMBH & CO. KG

Contact Information: Dr.-Stiebel-Strabe 33 D-37603 Holzminden

Test item(s): 198 materials

Identification/ HAND DRYER

Model No(s): ULTRONIC PLUS, ULTRONIC PREMIUM

Sample obtaining method: Sending by customer

Condition at delivery: Test item complete and undamaged.

Sample Receiving date: 2022-09-20, 2022-09-29, 2022-10-21

Testing Period: 2022-09-21 to 2022-10-26

Place of testing: Chemical laboratory Shenzhen

Test Specification: Test result:

 Cadmium, Lead, Chromium (VI), Mercury, Polybrominated biphenyls (PBB) PASS and Polybrominated diphenyl ethers (PBDE), ROHS Phthalates (BBP, DBP,

According to RoHS(recast): Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU Annex II and its amendment Directive (EU) 2015/863

Other information:

DEHP. DIBP)

Country of Origin: China

For and on behalf of

2022-11-02

TÜV Rheinland (Shenzhen) Co., Ltd.

Alvin Huang / Senior Project Engineer

Date Name/Position

Sample information is provided by customer. Test result is drawn according to the kind and extent of tests performed.

This test report relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

Decision Rule" document announced in our website (https://www.tuv.com/landingpage/en/qm-gcn/) describes the statement of conformity and its rule of enforcement for test results are applicable throughout this test report.



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Material List:

Item: HAND DRYER

ULTRONIC PLUS, ULTRONIC PREMIUM

Material No.	Material	Color	Location
M001	Plastic	White	Refer to photo
M002	Plastic	Transparent	Refer to photo
M003	Plastic	Black	Refer to photo
M004	Foam	Black/ Transparent	Refer to photo
M005	Metal	Silvery	Refer to photo
M006	Metal	Coppery	Refer to photo
M007	Metal	Golden	Refer to photo
M008	Metal	Silvery	Refer to photo
M009	Plastic	Black	Refer to photo
M010	Metal	Silvery	Refer to photo
M011	Plastic	Black	Refer to photo
M012	Metal	Silvery white	Refer to photo
M013	PCB board	Green	Refer to photo
M014	Glue	White	Refer to photo
M015	Electronic components	Black	Refer to photo
M016	Solder	Silvery	Refer to photo
M017	Electronic components	Deep blue	Refer to photo
M018	Electronic components	Blue	Refer to photo
M019	Metal	Silvery	Refer to photo
M020	Electronic components	Black	Refer to photo
M021	Electronic components	Black	Refer to photo
M022	Magnet	Black	Refer to photo
M023	Electronic components	Black	Refer to photo
M024	Electronic components	Black	Refer to photo
M025	Plastic	White	Refer to photo
M026	Electronic components	Brown	Refer to photo
M027	Metal	Silvery	Refer to photo
M028	Electronic components	Black/ White	Refer to photo



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M029	Electronic components	Reddish brown	Refer to photo
M030	Electronic components	Black	Refer to photo
M031	Electronic components	Black	Refer to photo
M032	Electronic components	Black	Refer to photo
M033	Electronic components	Black	Refer to photo
M034	Magnet	Grey black	Refer to photo
M035	Metal	Coppery	Refer to photo
M036	Plastic + printing	Black/ White	Refer to photo
M037	Electronic components	Black	Refer to photo
M038	Electronic components	White/ Black	Refer to photo
M039	Plastic + printing	Blue/ White	Refer to photo
M040	Plastic	White	Refer to photo
M041	Metal	Golden	Refer to photo
M042	Glue	Black	Refer to photo
M043	Electronic components	Black	Refer to photo
M044	Electronic components	Black	Refer to photo
M045	Plastic	Grey	Refer to photo
M046	Glue	Black	Refer to photo
M047	Plastic	Black	Refer to photo
M048	Plastic	Maroon	Refer to photo
M049	Plastic	Black	Refer to photo
M050	Metal	Coppery	Refer to photo
M051	Magnet	Deep green	Refer to photo
M052	Plastic	Black	Refer to photo
M053	Metal	Silvery	Refer to photo
M054	Plastic + printing	Black/ White	Refer to photo
M055	Plastic	Black	Refer to photo
M056	PCB board	Green/ Brown	Refer to photo
M057	Solder	Silvery	Refer to photo
M058	Electronic components	Black/ Grey	Refer to photo
M059	Electronic components	Black	Refer to photo
M060	Plastic	Black	Refer to photo



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M061	Plastic + adhesive	Light yellow/ Transparent	Refer to photo
M062	Metal	Coppery	Refer to photo
M063	Magnet	Black	Refer to photo
M064	Electronic components	Blue	Refer to photo
M065	Electronic components	Khaki/ Red	Refer to photo
M066	Electronic components	Reddish brown	Refer to photo
M067	Metal	Silvery	Refer to photo
M068	Plastic	White	Refer to photo
M069	Metal	Silvery	Refer to photo
M070	Plastic + printing	White/ Blue	Refer to photo
M071	Electronic components	Black	Refer to photo
M072	PCB board	Green	Refer to photo
M073	Electronic components	Greenish yellow	Refer to photo
M074	Electronic components	Transparent	Refer to photo
M075	Solder	Silvery	Refer to photo
M076	Solder	Silvery	Refer to photo
M077	PCB board	Green	Refer to photo
M078	Electronic components	Black	Refer to photo
M079	Plastic	Transparent	Refer to photo
M080	Glue	White	Refer to photo
M081	Plastic	Black	Refer to photo
M082	PCB board	Green	Refer to photo
M083	Solder	Silvery	Refer to photo
M084	Plastic	Transparent	Refer to photo
M085	Plastic	Transparent	Refer to photo
M086	Plastic	Black	Refer to photo
M087	Plastic + printing	Red/ Black	Refer to photo
M088	Plastic + printing	Black/ Grey	Refer to photo
M089	Plastic + printing	White/ Grey	Refer to photo
M090	Plastic	Black	Refer to photo
M091	Metal	Golden	Refer to photo
M092	Metal	Silvery	Refer to photo



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M093	Glass	Transparent	Refer to photo
M094	Metal	Silvery	Refer to photo
M095	Coating	Black	Refer to photo
M096	Metal	Silvery grey	Refer to photo
M098	Plastic + printing	White/ Grey	Refer to photo
M099	Metal	Silvery grey	Refer to photo
M100	Component(s)	Silvery/ Grey	Refer to photo
M101	Metal	Golden	Refer to photo
M102	Metal	Golden	Refer to photo
M103	Metal	Silvery	Refer to photo
M104	Electronic components	Silvery	Refer to photo
M105	Plastic	Red	Refer to photo
M106	Metal	Silvery	Refer to photo
M107	Metal	Silvery	Refer to photo
M108	Metal	Metallic purple	Refer to photo
M109	Metal	Coppery/ Silvery	Refer to photo
M110	Metal	Coppery	Refer to photo
M111	Metal	Golden	Refer to photo
M112	Plastic	Black	Refer to photo
M113	Metal	Silvery	Refer to photo
M114	Plastic	Transparent	Refer to photo
M115	Metal	Coppery	Refer to photo
M116	Plastic	Yellow/ Green	Refer to photo
M117	Plastic	Blue	Refer to photo
M118	Plastic	Brown	Refer to photo
M119-1	Plastic	Black	Refer to photo(retest M119)
M120	Plastic	Blue	Refer to photo
M121	Metal	Silvery	Refer to photo
M122	Plastic + printing	Brown/ White	Refer to photo
M123	Metal	Dark silvery	Refer to photo
M124	Paper + plastic	Dark green/ Transparent	Refer to photo
M125	Plastic	White	Refer to photo



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M126	Plastic + adhesive	Transparent	Refer to photo
M127	Plastic + adhesive	Blue/ Transparent	Refer to photo
M128	Paper	Brown	Refer to photo
M129	Metal	Coppery	Refer to photo
M130	Solder	Silvery	Refer to photo
M131	Plastic + printing	White/ Grey	Refer to photo
M132	Plastic + printing	Fushcia/ Black	Refer to photo
M133	Plastic + printing	White/ Grey	Refer to photo
M134	Plastic + printing	Pink/ Black	Refer to photo
M135	Plastic	Transparent	Refer to photo
M136	Metal	Silvery	Refer to photo
M137	Plastic	Black	Refer to photo
M138	Carbon fibre	Black	Refer to photo
M139	Plastic	Black	Refer to photo
M140	Plastic + printing + adhesive	Silvery/ Black/ Transparent	Refer to photo
M141	Glue	Bright black	Refer to photo
M142	Plastic	Black	Refer to photo
M143	Plastic	Black	Refer to photo
M144	Metal	Silvery	Refer to photo
M145	Plastic	Black	Refer to photo
M146	Textile	Greenish yellow	Refer to photo
M147	Textile	White	Refer to photo
M148	Glue	Creamy	Refer to photo
M149	Plastic	Matt-black	Refer to photo
M150	Metal	Silvery grey	Refer to photo
M151	Metal	Silvery	Refer to photo
M152	Plastic	Black	Refer to photo
M153	Metal	Silvery	Refer to photo
M154	Metal	Silvery grey	Refer to photo
M155	Metal	Silvery blue	Refer to photo
M156	Metal	Silvery blue	Refer to photo
M157	Metal	Silvery	Refer to photo



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M158	Metal	Silvery	Refer to photo
M159	Metal	Silvery	Refer to photo
M160	Magnet	Silvery	Refer to photo
M161	Metal	Golden	Refer to photo
M162	Metal	Silvery	Refer to photo
M163	Metal	Pale golden	Refer to photo
M164	Metal	Silvery	Refer to photo
M165	Metal	Silvery	Refer to photo
M166	Plastic	Brown	Refer to photo
M167	Plastic	Black	Refer to photo
M168	Metal	Silvery	Refer to photo
M169	Metal	Deep coppery	Refer to photo
M170	Plastic	Black	Refer to photo
M171	Glue	Black	Refer to photo
M172	Plastic	White	Refer to photo
M173	Plastic + Textile	Transparent/ White	Refer to photo
M174	Electronic components	Silvery	Refer to photo
M175	Plastic	Transparent	Refer to photo
M176	Plastic	Wine red	Refer to photo
M177	Plastic	Blue	Refer to photo
M178	Plastic	Yellow	Refer to photo
M179	Metal	Silvery	Refer to photo
M180	Metal	Silvery blue	Refer to photo
M181	Metal	Silvery white	Refer to photo
M182	Metal	Silvery	Refer to photo
M183	Metal	Silvery	Refer to photo
M184	Plastic	Black	Refer to photo
M185	PCB board	Green	Refer to photo
M186	Solder	Silvery	Refer to photo
M187	Electronic components	White/ Black	Refer to photo
M188	Electronic components	Khaki	Refer to photo
M189	Electronic components	Blue	Refer to photo



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M190	Electronic components	Black/ Grey	Refer to photo
M191	Glue	Transparent	Refer to photo
M192	Electronic components	Black	Refer to photo
M193	Plastic + printing	Green/ Golden	Refer to photo
M194	Metal	Silvery	Refer to photo
M195	Plastic	Black	Refer to photo
M196	Plastic + adhesive	Light yellow/ Transparent	Refer to photo
M197	Plastic	Black	Refer to photo
M198	Magnet	Black	Refer to photo
M199	Metal	Coppery	Refer to photo



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1.Screening Test by XRF spectroscopy

Test Method: Cadmium, Lead, Mercury, Chromium, Bromine

-- With reference to IEC 62321-3-1:2013

Test Result:

Material No.	Cd	Cr	Pb	Hg	Br
M001	BL	BL	BL	BL	BL
M002	BL	BL	BL	BL	BL
M003	BL	BL	BL	BL	BL
M004	BL	BL	BL	BL	BL
M005	BL	BL	BL	BL	n.a.
M006	BL	BL	d.(*1)	BL	n.a.
M007	BL	BL	d.(*1)	BL	n.a.
M008	BL	d.(*1)	BL	BL	n.a.
M009	BL	BL	BL	BL	d.(*1)
M010	BL	BL	d.(*1)	BL	n.a.
M011	BL	BL	BL	BL	d.(*1)
M012	BL	BL	BL	BL	n.a.
M013	BL	BL	BL	BL	d.(*1)
M014	BL	BL	BL	BL	BL
M015	BL	BL	d.(*1)	BL	BL
M016	BL	BL	BL	BL	n.a.
M017	BL	BL	BL	BL	BL
M018	BL	BL	BL	BL	BL
M019	BL	BL	BL	BL	n.a.
M020	BL	BL	d.(*1)	BL	BL
M021	BL	BL	BL	BL	BL
M022	BL	d.(*1)	BL	BL	n.a.
M023	BL	BL	BL	BL	BL
M024	BL	BL	BL	BL	BL
M025	BL	BL	BL	BL	BL
M026	BL	BL	BL	BL	BL
M027	BL	BL	BL	BL	n.a.
M028	BL	BL	BL	BL	BL
M029	BL	BL	BL	BL	BL
M030	BL	BL	d.(*1)	BL	d.(*1)
M031	BL	BL	BL	BL	BL
M032	BL	BL	BL	BL	BL
M033	BL	BL	BL	BL	BL
M034	BL	BL	BL	BL	n.a.
M035	BL	BL	BL	BL	n.a.
M036	BL	BL	BL	BL	d.(*1)
M037	BL	BL	BL	BL	BL



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M038	BL	d.(*1)	d.(*1)	BL	BL
M039	BL	BL	BL	BL	d.(*1)
M040	BL	BL	BL	BL	d.(*1)
M041	BL	BL	BL	BL	n.a.
M042	BL	BL	BL	BL	d.(*1)
M043	BL	BL	BL	BL	BL
M044	BL	BL	BL	BL	BL
M045	BL	BL	BL	BL	d.(*1)
M046	BL	BL	BL	BL	d.(*1)
M047	BL	BL	BL	BL	d.(*1)
M048	BL	BL	BL	BL	BL
M049	BL	BL	BL	BL	BL
M050	BL	BL	BL	BL	n.a.
M051	BL	BL	BL	BL	n.a.
M052	BL	BL	BL	BL	BL
M053	BL	BL	BL	BL	n.a.
M054	BL	BL	BL	BL	BL
M055	BL	BL	BL	BL	BL
M056	BL	BL	BL	BL	d.(*1)
M057	BL	BL	BL	BL	n.a.
M058	BL	BL	d.(*1)	BL	d.(*1)
M059	d.(*1)	BL	d.(*1)	BL	BL
M060	BL	BL	BL	BL	BL
M061	BL	BL	BL	BL	BL
M062	BL	BL	BL	BL	n.a.
M063	BL	BL	BL	BL	n.a.
M064	BL	BL	BL	BL	d.(*1)
M065	BL	BL	BL	BL	BL
M066	BL	BL	BL	BL	BL
M067	BL	BL	BL	BL	n.a.
M068	BL	BL	BL	BL	BL
M069	BL	BL	BL	BL	n.a.
M070	BL	BL	BL	BL	BL
M071	BL	BL	BL	BL	BL
M072	BL	BL	BL	BL	d.(*1)
M073	BL	BL	BL	BL	BL
M074	BL	BL	BL	BL	BL
M075	BL	BL	BL	BL	n.a.
M076	BL	BL	BL	BL	n.a.
M077	BL	BL	BL	BL	d.(*1)
M078	BL	BL	BL	BL	BL
M079	BL	BL	BL	BL	BL
M080	BL	BL	BL	BL	BL
			1		1



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M081 BL BL BL BL BL BL M082 BL BL BL BL BL M083 BL BL BL BL BL M084 BL BL BL BL BL M084 BL BL BL BL BL M085 BL BL BL BL BL M086 BL BL BL BL BL BL BL B						
M083 BL BL BL BL BL Cd.(*1)	M081	BL	BL	BL	BL	BL
M084 BL BL BL BL BL d.(*1)	M082	BL	BL	BL	BL	d.(*1)
M085 BL BL BL BL BL d.(*1)	M083	BL	BL	BL	BL	n.a.
M086 BL BL BL BL BL BL BL B	M084	BL	BL	BL	BL	d.(*1)
M087 BL BL BL BL BL BL BL M088 BL BL BL BL BL BL BL	M085	BL	BL	BL	BL	d.(*1)
M088 BL B	M086	BL	BL	BL	BL	d.(*1)
M089 BL BL BL BL BL BL BL M090 BL BL BL BL BL BL BL M091 BL BL BL BL BL BL BL M092 BL BL BL BL BL BL BL M093 BL BL BL BL BL BL BL M094 BL BL BL BL BL BL BL B	M087	BL	BL	BL	BL	BL
M090 BL BL BL BL BL BL BL BL MD M	M088	BL	BL	BL	BL	BL
M091 BL BL BL BL BL n.a. M092 BL BL BL BL BL n.a. M093 BL BL BL BL BL n.a. M094 BL BL BL BL BL n.a. M095 BL	M089	BL	BL	BL	BL	BL
M092 BL BL BL BL BL n.a. M093 BL BL BL BL BL n.a. M094 BL	M090	BL	BL	BL	BL	BL
M093 BL BL BL BL BL n.a. M094 BL BL BL BL BL n.a. M095 BL	M091	BL	BL	BL	BL	n.a.
M094 BL B	M092	BL	BL	BL	BL	n.a.
M095 BL DL n.a. Mo98 BL <	M093	BL	BL	BL	BL	n.a.
M096 BL B	M094	BL	BL	BL	BL	n.a.
M098 BL DL D	M095	BL	BL	BL	BL	BL
M099 BL B	M096	BL	BL	BL	BL	n.a.
M100 BL n.a. M101 BL BL BL BL BL n.a.	M098	BL	BL	BL	BL	BL
M101 BL BL BL BL BL n.a. M102 BL BL BL BL n.a. M103 BL d.(*1) BL BL n.a. M104 BL BL BL BL BL n.a. M104 BL BL BL BL BL n.a. n.a. M106 BL BL BL BL BL n.a.	M099	BL	BL	BL	BL	n.a.
M102 BL BL BL BL n.a. M103 BL d.(*1) BL BL n.a. M104 BL BL BL BL n.a. M106 BL BL BL BL n.a. M107 BL BL BL BL n.a. M108 BL BL BL BL n.a. M109 BL BL BL BL n.a. M110 BL BL BL BL n.a. M110 BL BL BL BL n.a. M111 BL BL BL BL BL M112 BL BL BL BL BL M113 BL BL BL BL BL M114 BL BL BL BL BL M115 BL BL BL BL BL M116 BL <td>M100</td> <td>BL</td> <td>BL</td> <td>BL</td> <td>BL</td> <td>BL</td>	M100	BL	BL	BL	BL	BL
M103 BL d.(*1) BL BL n.a. M104 BL BL BL BL n.a. M106 BL BL BL BL n.a. M107 BL BL BL BL n.a. M108 BL BL BL BL n.a. M109 BL BL BL BL n.a. M110 BL BL BL BL n.a. M110 BL BL BL BL n.a. M111 BL BL BL BL n.a. M111 BL BL BL BL BL M112 BL BL BL BL BL BL M113 BL	M101	BL	BL	BL	BL	n.a.
M104 BL BL BL BL n.a. M106 BL BL BL BL n.a. M107 BL BL BL BL n.a. M108 BL BL BL BL n.a. M109 BL BL BL BL n.a. M110 BL BL BL BL n.a. M111 BL BL BL BL n.a. M111 BL BL BL BL BL M112 BL BL BL BL BL M113 BL BL BL BL BL M114 BL BL BL BL BL M114 BL BL BL BL BL M115 BL BL BL BL BL M115 BL BL BL BL BL BL M116	M102	BL	BL	BL	BL	n.a.
M106 BL BL BL BL BL n.a. M107 BL BL BL BL n.a. M108 BL BL BL BL n.a. M109 BL BL BL BL BL n.a. M110 BL BL BL BL n.a. n.a. M111 BL BL BL BL BL n.a. M112 BL BL BL BL BL BL M112 BL	M103	BL	d.(*1)	BL	BL	n.a.
M107 BL BL BL BL n.a. M108 BL BL BL BL n.a. M109 BL BL BL BL n.a. M110 BL BL BL BL n.a. M111 BL BL BL BL n.a. M111 BL BL BL BL BL BL M112 BL BL <td>M104</td> <td>BL</td> <td>BL</td> <td>BL</td> <td>BL</td> <td>n.a.</td>	M104	BL	BL	BL	BL	n.a.
M108 BL BL BL BL n.a. M109 BL BL BL BL n.a. M110 BL BL BL BL n.a. M111 BL BL BL BL BL n.a. M112 BL BL BL BL BL BL M113 BL BL BL BL BL BL M114 BL	M106	BL	BL	BL	BL	n.a.
M109 BL BL BL BL n.a. M110 BL BL BL BL n.a. M111 BL BL BL BL n.a. M112 BL BL BL BL BL BL M113 BL	M107	BL	BL	BL	BL	n.a.
M110 BL BL BL BL n.a. M111 BL BL BL BL n.a. M112 BL BL BL BL BL M113 BL BL BL BL BL BL M114 BL	M108	BL	BL	BL	BL	n.a.
M111 BL BL BL BL n.a. M112 BL BL <t< td=""><td>M109</td><td>BL</td><td>BL</td><td>BL</td><td>BL</td><td>n.a.</td></t<>	M109	BL	BL	BL	BL	n.a.
M112 BL DR D	M110	BL	BL	BL	BL	n.a.
M113 BL BL BL BL n.a. M114 BL BL BL BL BL M115 BL BL BL BL BL BL M116 BL BL BL BL BL BL M117 BL BL BL BL BL BL M118 BL BL BL BL BL BL M120 BL BL BL BL BL BL BL A.(*1) BL	M111	BL	BL	BL	BL	n.a.
M114 BL DL D	M112	BL	BL	BL	BL	BL
M115 BL BL BL BL BL n.a. M116 BL BL <t< td=""><td>M113</td><td>BL</td><td>BL</td><td>BL</td><td>BL</td><td>n.a.</td></t<>	M113	BL	BL	BL	BL	n.a.
M116 BL B	M114	BL	BL	BL	BL	BL
M117 BL B	M115	BL	BL	BL	BL	n.a.
M118 BL d.(*1) M120 BL BL BL BL BL n.a. M121 BL BL BL BL BL BL M122 BL C.(*1) BL BL BL BL BL BL BL C.(*1) BL BL BL BL BL C.(*1) BL BL C.(*1) BL C.(*1) C.(*1) C.(*1) C.(*1) C.(*1) C.(*2) C.(*2) C.(*2) C.(*2) C.(*2) C.(*2) C.(*2) C.(*2) C.(*	M116	BL	BL	BL	BL	BL
M120 BL BL BL BL d.(*1) M121 BL BL BL BL n.a. M122 BL BL BL BL BL M123 BL d.(*1) BL BL n.a. M124 BL BL BL BL BL M125 BL BL BL BL BL d.(*1)	M117	BL	BL	BL	BL	BL
M121 BL BL BL BL n.a. M122 BL BL BL BL BL M123 BL d.(*1) BL BL n.a. M124 BL BL BL BL BL M125 BL BL BL BL BL d.(*1)	M118	BL	BL	BL	BL	BL
M122 BL BL BL BL BL BL BL BL n.a. M123 BL d.(*1) BL BL BL BL d.(*1) BL	M120	BL	BL	BL	BL	d.(*1)
M123 BL d.(*1) BL BL n.a. M124 BL BL BL BL BL M125 BL BL BL BL d.(*1)	M121	BL	BL	BL	BL	n.a.
M124 BL BL BL BL BL BL BL d.(*1) M125 BL BL BL BL d.(*1)	M122	BL	BL	BL	BL	BL
M125 BL BL BL d.(*1)	M123	BL	d.(*1)	BL	BL	n.a.
	M124	BL	BL	BL	BL	BL
M126 BL BL BL BL	M125	BL	BL	BL	BL	d.(*1)
	M126	BL	BL	BL	BL	BL



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M127 BL B						
M129 BL B	M127	BL	BL	BL	BL	BL
M131 BL B	M128	BL	BL	BL	BL	BL
M132 BL B	M129	BL	BL	BL	BL	n.a.
M133 BL BL BL BL BL BL GL.(*1) M134 BL	M131	BL	BL	BL	BL	BL
M134 BL B	M132	BL	BL	BL	BL	BL
M135 BL BL BL BL BL BL BL ML M	M133	BL	BL	BL	BL	BL
M136 BL BL BL BL DL D	M134	BL	BL	BL	BL	d.(*1)
M137 BL B	M135	BL	BL	BL	BL	BL
M138 BL B	M136	BL	BL	BL	BL	n.a.
M139 BL B	M137	BL	BL	BL	BL	d.(*1)
M140 BL B	M138	BL	BL	BL	BL	BL
M141 BL B	M139	BL	BL	BL	BL	BL
M142 BL BL BL BL BL BL BL BL ML M	M140	BL	BL	BL	BL	BL
M143 BL BL BL BL d.(*1) M144 BL BL BL BL n.a. M145 BL BL BL BL BL d.(*1) M146 BL	M141	BL	BL	BL	BL	BL
M144 BL BL BL BL n.a. M145 BL BL BL BL BL d.(*1) M146 BL	M142	BL	BL	BL	BL	BL
M145 BL BL BL BL BL d.(*1) M146 BL AL	M143	BL	BL	BL	BL	d.(*1)
M146 BL B	M144	BL	BL	BL	BL	n.a.
M147 BL B	M145	BL	BL	BL	BL	d.(*1)
M148 BL B	M146	BL	BL	BL	BL	BL
M149 BL BL BL BL BL BL BL BL BL ML M	M147	BL	BL	BL	BL	BL
M150 BL BL BL BL n.a. M151 BL BL BL BL n.a. M152 BL BL BL BL BL BL M153 BL BL BL BL BL n.a. M154 BL BL BL BL n.a. M155 BL BL BL BL n.a. M155 BL BL BL BL n.a. M156 BL BL BL BL n.a. M157 BL BL BL BL n.a. M157 BL BL BL BL n.a. M158 BL BL BL BL n.a. M159 BL BL BL BL n.a. M160 BL BL BL BL n.a. M161 BL BL BL BL n.a.	M148	BL	BL	BL	BL	BL
M151 BL DL D	M149	BL	BL	BL	BL	BL
M152 BL R.a. M.a. <	M150	BL	BL	BL	BL	n.a.
M153 BL BL BL BL n.a. M154 BL BL BL BL n.a. M155 BL BL BL BL n.a. M156 BL BL BL BL BL n.a. M157 BL BL BL BL BL n.a. M157 BL BL BL BL n.a. M158 BL BL BL BL n.a. M159 BL BL BL BL n.a. M160 BL BL BL BL n.a. M161 BL BL BL BL n.a. M161 BL BL BL BL n.a. M162 BL BL BL BL n.a. M163 BL BL BL BL n.a. M164 BL BL BL BL BL n.	M151	BL	BL	BL	BL	n.a.
M154 BL BL BL BL BL n.a. M155 BL BL BL BL n.a. M156 BL BL BL BL BL n.a. M157 BL BL BL BL BL n.a. M157 BL BL BL BL n.a. M158 BL BL BL BL n.a. M159 BL BL BL BL n.a. M160 BL BL BL BL n.a. M160 BL BL BL BL n.a. M161 BL BL BL BL n.a. M161 BL BL BL BL n.a. M162 BL BL BL BL n.a. M163 BL BL BL BL n.a. M164 BL BL BL BL BL	M152	BL	BL	BL	BL	BL
M155 BL BL BL BL n.a. M156 BL d.(*1) BL BL n.a. M157 BL BL BL BL n.a. M158 BL BL BL BL n.a. M159 BL d.(*1) BL BL n.a. M160 BL BL BL BL n.a. M161 BL BL BL BL n.a. M161 BL BL BL n.a. M162 BL d.(*1) BL BL n.a. M163 BL BL BL BL n.a. M164 BL d.(*1) BL BL n.a. M165 BL BL BL BL BL M166 BL BL BL BL BL M167 BL BL BL BL BL BL M169	M153	BL	BL	BL	BL	n.a.
M156 BL d.(*1) BL BL n.a. M157 BL BL BL BL BL n.a. M158 BL BL BL BL n.a. M159 BL BL BL BL BL n.a. M160 BL BL BL BL n.a. M161 BL BL BL BL n.a. M161 BL BL BL BL n.a. M162 BL BL BL BL n.a. M163 BL BL BL BL n.a. M164 BL BL BL BL n.a. M165 BL d.(*1) BL BL BL n.a. M166 BL BL BL BL BL BL M167 BL BL BL BL BL BL BL BL n.a. <t< td=""><td>M154</td><td>BL</td><td>BL</td><td>BL</td><td>BL</td><td>n.a.</td></t<>	M154	BL	BL	BL	BL	n.a.
M157 BL BL BL BL BL n.a. M158 BL BL BL BL n.a. M159 BL d.(*1) BL BL n.a. M160 BL BL BL BL n.a. M161 BL BL BL BL n.a. M162 BL BL BL BL n.a. M163 BL BL BL BL n.a. M164 BL BL BL BL n.a. M165 BL d.(*1) BL BL n.a. M166 BL BL BL BL BL M167 BL BL BL BL BL M168 BL BL BL BL n.a. M169 BL BL BL BL n.a.	M155	BL	BL	BL	BL	n.a.
M158 BL BL BL BL n.a. M159 BL d.(*1) BL BL n.a. M160 BL BL BL BL n.a. M161 BL BL BL n.a. M162 BL d.(*1) BL BL n.a. M163 BL BL BL BL n.a. M164 BL d.(*1) BL BL n.a. M165 BL d.(*1) BL BL n.a. M166 BL BL BL BL BL M167 BL BL BL BL BL M168 BL BL BL BL n.a. M169 BL BL BL BL n.a.	M156	BL	d.(*1)	BL	BL	n.a.
M159 BL d.(*1) BL BL n.a. M160 BL BL BL BL n.a. M161 BL BL d.(*1) BL n.a. M162 BL d.(*1) BL BL n.a. M163 BL BL BL BL n.a. M164 BL d.(*1) BL BL n.a. M165 BL d.(*1) BL BL BL BL M166 BL BL BL BL BL BL M167 BL BL BL BL BL BL M168 BL BL BL BL n.a. M169 BL BL BL BL n.a.	M157	BL	BL	BL	BL	n.a.
M160 BL BL BL BL n.a. M161 BL BL d.(*1) BL n.a. M162 BL d.(*1) BL BL n.a. M163 BL BL BL BL n.a. M164 BL d.(*1) BL BL n.a. M165 BL d.(*1) BL BL n.a. M166 BL BL BL BL BL M167 BL BL BL BL BL M168 BL BL BL BL n.a. M169 BL BL BL BL n.a.	M158	BL	BL	BL	BL	n.a.
M161 BL BL d.(*1) BL n.a. M162 BL d.(*1) BL BL n.a. M163 BL BL BL BL n.a. M164 BL d.(*1) BL BL n.a. M165 BL d.(*1) BL BL BL BL M166 BL BL BL BL BL BL M167 BL BL BL BL BL BL M168 BL d.(*1) BL BL n.a. M169 BL BL BL BL n.a.	M159	BL	d.(*1)	BL	BL	n.a.
M162 BL d.(*1) BL BL n.a. M163 BL BL BL BL n.a. M164 BL d.(*1) BL BL n.a. M165 BL d.(*1) BL BL BL n.a. M166 BL BL BL BL BL M167 BL BL BL BL BL M168 BL d.(*1) BL BL n.a. M169 BL BL BL BL n.a.	M160	BL	BL	BL	BL	n.a.
M163 BL BL BL BL n.a. M164 BL d.(*1) BL BL n.a. M165 BL d.(*1) BL BL n.a. M166 BL BL BL BL BL M167 BL BL BL BL BL M168 BL d.(*1) BL BL n.a. M169 BL BL BL BL n.a.	M161	BL	BL	d.(*1)	BL	n.a.
M164 BL d.(*1) BL BL n.a. M165 BL d.(*1) BL BL n.a. M166 BL BL BL BL BL M167 BL BL BL BL BL M168 BL d.(*1) BL BL n.a. M169 BL BL BL BL n.a.	M162	BL	d.(*1)	BL	BL	n.a.
M165 BL d.(*1) BL BL n.a. M166 BL DL	M163	BL	BL	BL	BL	n.a.
M166 BL DL D	M164	BL	d.(*1)	BL	BL	n.a.
M167 BL BL BL BL BL M168 BL d.(*1) BL BL n.a. M169 BL BL BL BL n.a.	M165	BL	d.(*1)	BL	BL	n.a.
M168 BL d.(*1) BL BL n.a. M169 BL BL BL n.a.	M166	BL	BL	BL	BL	BL
M169 BL BL BL n.a.	M167	BL	BL	BL	BL	BL
	M168	BL	d.(*1)	BL	BL	n.a.
M170 BL BL BL d.(*1)	M169	BL	BL	BL	BL	n.a.
	M170	BL	BL	BL	BL	d.(*1)



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M171	BL	BL	BL	BL	BL
M172	BL	BL	BL	BL	BL
M173	BL	BL	BL	BL	BL
M174	BL	BL	BL	BL	n.a.
M175	BL	BL	BL	BL	BL
M176	BL	BL	BL	BL	BL
M177	BL	BL	BL	BL	BL
M178	BL	BL	BL	BL	BL
M179	BL	BL	BL	BL	n.a.
M180	BL	d.(*1)	BL	BL	n.a.
M181	BL	BL	BL	BL	n.a.
M182	BL	BL	BL	BL	n.a.
M183	BL	d.(*1)	BL	BL	n.a.
M184	BL	BL	BL	BL	d.(*1)
M185	BL	BL	BL	BL	d.(*1)
M186	BL	BL	BL	BL	n.a.
M187	BL	d.(*1)	d.(*1)	BL	BL
M188	BL	BL	BL	BL	d.(*1)
M189	BL	BL	d.(*1)	BL	BL
M190	BL	BL	d.(*1)	BL	BL
M191	BL	BL	BL	BL	BL
M192	BL	BL	BL	BL	d.(*1)
M193	BL	BL	BL	BL	BL
M194	BL	BL	BL	BL	n.a.
M195	BL	BL	BL	BL	BL
M196	BL	BL	BL	BL	BL
M197	BL	BL	BL	BL	BL
M198	BL	BL	BL	BL	n.a.
M199	BL	BL	BL	BL	n.a.
M105	BL	BL	BL	BL	d.(*1)
M119-1	BL	BL	BL	BL	BL
M130	BL	BL	BL	BL	n.a.

Abbreviation: Pb = Lead

Cd Cadmium = Hg Mercury = Cr Chromium Br **Bromine** Not appliable n.a. Below limit BLOver limit OL Detected d.



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Remark:

- (*1) The screening result was detected in the inconclusive region or over limits, thus the further wet chemistry tests are suggested.
- (*2) Component(s)/ materials(s) with an area of less than 2 mm x 2 mm will not be selected for testing according to RoHS Directive 2011/65/EU due to technical reason. For the test sample does not have detail materials information provided by client, visually identical materials (e.g. wire insulation, solder points, etc.) will be considered as the same material. Solder points on a printing circuit board will be examined several times based on optical anomalies or discoloration of the solder point(s) unless the solder point(s) is obviously generated automatically during production. All other materials will be sampled and tested at one test point representatively.
- (*3) The Chromium (Cr) and Bromine (Br) in the above result table indicate the total chromium and total bromine by means of XRF screening. PBBs, or PBDEs content shall be further confirmed with reference to IEC 62321-6:2015. Chromium (VI) shall be further confirmed with reference to IEC 62321-7-1:2015, IEC 62321-7-2:2017 or EN ISO 17075-1:2017.

XRF Screening limits for different matrices :

	Concentration (%)						
Material	Cd	Cr	Pb	Hg	Br		
Polymeric	BL≤0.006 <x<0.014≤ OL</x<0.014≤ 	BL≤0.064 <x< th=""><th>BL≤0.067<x<0.133≤ OL</x<0.133≤ </th><th>BL≤0.066<x< 0.134≤OL</x< </th><th>BL≤0.029<x< th=""></x<></th></x<>	BL≤0.067 <x<0.133≤ OL</x<0.133≤ 	BL≤0.066 <x< 0.134≤OL</x< 	BL≤0.029 <x< th=""></x<>		
Metallic	BL≤0.006 <x<0.014≤ OL</x<0.014≤ 	BL≤0.064 <x< th=""><th>BL≤0.067<x<0.133≤ OL</x<0.133≤ </th><th>BL≤0.066<x< 0.134≤OL</x< </th><th>n.a.</th></x<>	BL≤0.067 <x<0.133≤ OL</x<0.133≤ 	BL≤0.066 <x< 0.134≤OL</x< 	n.a.		
Composite materials	BL≤0.004 <x<0.016≤ OL</x<0.016≤ 	BL≤0.044 <x< th=""><th>BL≤0.047<x<0.153≤ OL</x<0.153≤ </th><th>BL≤0.046<x< 0.154≤OL</x< </th><th>BL≤0.024<x< th=""></x<></th></x<>	BL≤0.047 <x<0.153≤ OL</x<0.153≤ 	BL≤0.046 <x< 0.154≤OL</x< 	BL≤0.024 <x< th=""></x<>		

Remark: The symbol "X" marks the region where further investigation is necessary.



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Cadmium, Lead, Chromium (VI), Mercury, Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE)

Test Method: Total Cadmium, Lead, Mercury, Chromium

- Ref. to IEC 62321-4:2013+AMD1:2017 and IEC 62321-5:2013

Chromium (VI)

- For Metal material - Ref. to IEC 62321-7-1:2015

- For Plastic or Electronic material - Ref. to IEC 62321-7-2:2017

- For Leather material - Ref. to EN ISO 17075-1:2017

PBBs, PBDEs - Ref. to IEC 62321-6:2015

Test Result:

	Cd	Cr(VI)	Pb	Hg	PBBs (*)	PBDEs (*)
Maximum Permissible Limit (%)	0.01	0.1	0.1	0.1	0.1	0.1

	(%)							
Material No.	Cd	Cr^	Pb	Hg	PBBs (*)	PBDEs (*)		
waterial No.	RL (%)							
	0.001	0.001	0.001	0.001	0.01	0.01		
M006	n.a.	n.a.	2.63(*4)	n.a.	n.a.	n.a.		
M007	n.a.	n.a.	2.91(*4)	n.a.	n.a.	n.a.		
M009	n.a.	n.a.	n.a.	n.a.	< RL	< RL		
M010	n.a.	n.a.	3.01(*4)	n.a.	n.a.	n.a.		
M011	n.a.	n.a.	n.a.	n.a.	< RL	DecaBDE:0 .0238; others: <rl< td=""></rl<>		
M013	n.a.	n.a.	n.a.	n.a.	< RL	< RL		
M015	n.a.	n.a.	1.10(*5)	n.a.	n.a.	n.a.		
M020	n.a.	n.a.	2.89(*5)	n.a.	n.a.	n.a.		
M030	n.a.	n.a.	2.59(*5)	n.a.	< RL	< RL		
M036	n.a.	n.a.	n.a.	n.a.	< RL	< RL		
M038	n.a.	n.a.	0.0690	n.a.	n.a.	n.a.		
M039	n.a.	n.a.	n.a.	n.a.	< RL	< RL		
M040	n.a.	n.a.	n.a.	n.a.	< RL	< RL		
M042	n.a.	n.a.	n.a.	n.a.	< RL	< RL		
M045	n.a.	n.a.	n.a.	n.a.	< RL	< RL		
M046	n.a.	n.a.	n.a.	n.a.	< RL	< RL		
M047	n.a.	n.a.	n.a.	n.a.	< RL	< RL		



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M056	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M058	n.a.	n.a.	1.72(*5)	n.a.	< RL	< RL
M059	< RL	n.a.	0.834(*5)	n.a.	n.a.	n.a.
M064	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M072	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M077	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M082	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M084	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M085	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M086	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M105	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M120	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M125	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M134	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M137	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M143	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M145	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M161	n.a.	n.a.	1.86(*4)	n.a.	n.a.	n.a.
M170	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M184	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M185	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M187	n.a.	n.a.	0.115(*5)	n.a.	n.a.	n.a.
M188	n.a.	n.a.	n.a.	n.a.	< RL	< RL
M189	n.a.	n.a.	1.99(*5)	n.a.	n.a.	n.a.
M190	n.a.	n.a.	1.89(*5)	n.a.	n.a.	n.a.
M192	n.a.	n.a.	n.a.	n.a.	< RL	< RL



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Material No.	Hexavalent Chromium Content (μg/cm²) (*1) RL: 0.10 μg/cm²		
M008	Negative		
M022	Negative		
M103	Negative		
M123	Negative		
M156	Negative		
M159	Negative		
M162	Negative		
M164	Negative		
M165	Negative		
M168	Negative		
M180	Negative		
M183	Negative		
Material No.	Hexavalent Chromium Content (%) (*2) RL: 0.01%		

Material No.	Hexavalent Chromium Content (%) (*2) RL: 0.01%		
M038	< RL		
M187	< RL		

Abbreviation: Pb = Lead

Cd = Cadmium
Hg = Mercury
Cr = Chromium
Cr (VI) = Chromium (VI)

PBBs = Total Polybrominated Biphenyls PBDEs = Total Polybrominated Diphenyl Ethers

< = Less thanRL = Reporting Limitn.a. = Not Applicable

^ = The total Chromium have been determined

% = Percentage



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Remark:

(*) The reporting limit for each individual PBBs and individual PBDEs are :

	Reporting Limit (%)					
	Bromobiphenyl	0.01				
	Dibromobiphenyl	0.01				
	Tribromobiphenyl	0.01				
	Tetrabromobiphenyl	0.01				
PBBs	Pentabromobiphenyl	0.01				
	Hexabromobiphenyl	0.01				
	Heptabromobiphenly	0.01				
	Octabromobiphenyl	0.01				
	Nonabromobiphenyl	0.01				
	Decabromobiphenyl	0.01				
	Bromodiphenylether	0.01				
	Dibromodiphenyl ether	0.01				
	Tribromodiphenyl ether	0.01				
	Tetrabromodiphenyl ether	0.01				
PBDEs	Pentabromodiphenyl ether	0.01				
	Hexabromodiphenyl ether	0.01				
	Heptabromodiphenyl ether	0.01				
	Octabromodiphenyl ether	0.01				
	Nonabromodiphenyl ether	0.01				
	Decabromodiphenyl ether	0.01				

(*1) The total chromium content in Metal sample was found to be exceeded the maximum permissible limit (0.1%). Thus, the Chromium (VI) content in surface layer have been confirmed with reference to IEC 62321-7-1:2015 Annex.

	Chromium (VI) concentration	Qualitative result
Negative	<0.1µg/cm²	The sample is negative (-ve) for Cr(VI). The Cr(VI) concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coating
Inconclusive	≥0.1µg/cm² and ≤0.13 µg/cm²	The result is considered to be inconclusive. Unavoidable coating variations may influence the determination. Recommendation: if additional samples are available, perform a total of 3 trials to increase sampling surface area. Use the averaged result of the 3 trails for the final determination.
Positive	>0.13 μg/cm²	The sample is positive (+ve) for Cr(VI). Concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).

^(*2) The total chromium content in plastic sample or electronic sample was found to be exceeded the maximum permissible limit (0.1%). Thus, the Chromium (VI) content have been confirmed with reference to IEC 62321-7-2:2017



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- (*4) According to (EU) 2018/741 and Annex III of directive 2011/65/EU, 6(c), as a copper alloy containing up to 4% lead by weight are exempted from requirement. This exemption applies to testing sample No.: M006, M007, M010, M161.
- (*5) According to (EU) 2018/736 and Annex III of directive 2011/65/EU, 7(c)-I, Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound is exempted from requirement. This exemption applies to testing sample No.: M015, M020, M030, M058, M059, M187, M189, M190.



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BBP, DBP, DEHP, DIBP content

Test Method: Ref. to IEC 62321-8:2017

Test Result:

	BBP	DBP	DEHP	DIBP
Maximum permissible Limit (%)	0.1	0.1	0.1	0.1

	Metavial No.		(°	%)			
		BBP	DBP	DEHP	DIBP		
Test No.	Material No.	RL (%)					
		0.005	0.005	0.005	0.005		
T001	M001 + M002 + M003	< RL	< RL	< RL	< RL		
T002	M009 + M011 + M013	< RL	< RL	< RL	< RL		
T003	M025 + M039 + M040	< RL	< RL	< RL	< RL		
T004	M042 + M045 + M046	< RL	< RL	< RL	< RL		
T005	M047 + M048 + M049	< RL	< RL	< RL	< RL		
T006	M052 + M054 + M056	< RL	< RL	< RL	< RL		
T007	M060 + M068 + M072	< RL	< RL	< RL	< RL		
T008	M077 + M079 + M082	< RL	< RL	< RL	< RL		
T009	M084 + M085 + M086	< RL	< RL	< RL	< RL		
T010	M105 + M112 + M120	< RL	< RL	< RL	< RL		
T011	M124 + M125 + M137	< RL	< RL	< RL	< RL		
T012	M139 + M141 + M142	< RL	< RL	< RL	< RL		
T013	M143 + M145 + M152	< RL	< RL	< RL	< RL		
T014	M166 + M170 + M171	< RL	< RL	< RL	< RL		
T015	M014 + M036 + M055	< RL	< RL	< RL	< RL		
T016	M061 + M070 + M080	< RL	< RL	< RL	< RL		
T017	M081 + M087 + M088	< RL	< RL	< RL	< RL		
T021	M122 + M126 + M127	< RL	< RL	< RL	< RL		
T022	M131 + M132 + M133	< RL	< RL	< RL	< RL		
T023	M134 + M135 + M140	< RL	< RL	< RL	< RL		
T024	M148 + M149 + M167	< RL	< RL	< RL	< RL		



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T025	M172 + M176 + M177	< RL	< RL	< RL	< RL
T026	M004 + M175 + M178	< RL	< RL	< RL	< RL
T027	M173 + M184	< RL	< RL	< RL	< RL
T028	M095	< RL	< RL	< RL	< RL
T029	M089	< RL	0.012	< RL	< RL
T030	M090	< RL	0.010	< RL	< RL
T032	M098	< RL	< RL	< RL	< RL
T033	M114	< RL	< RL	< RL	< RL
T034	M116	< RL	0.070	< RL	< RL
T035	M117	< RL	0.041	< RL	< RL
T036	M118	< RL	0.012	< RL	< RL
T038	M185 + M191 + M193	< RL	< RL	< RL	< RL
T039	M195 + M196 + M197	< RL	< RL	< RL	< RL
T040	M119-1	< RL	< RL	< RL	< RL

Abbreviation: BBP= Benzylbutyl phthalate DBP= Dibutyl phthalate

DEHP= Bis(2-ethylhexyl) phthalate

DIBP= Diisobutyl phthalate

< = less than

RL = Reporting Limit N.A. = Not Applicable

%= percentage

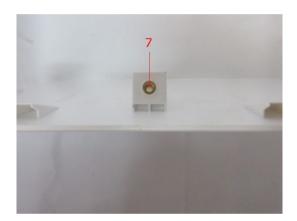


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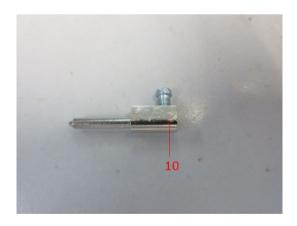






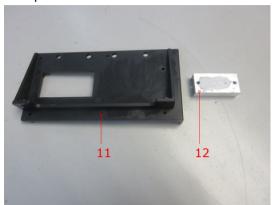


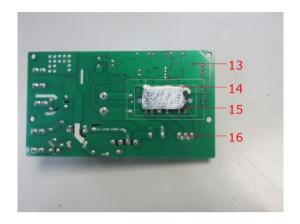


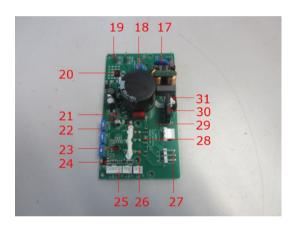




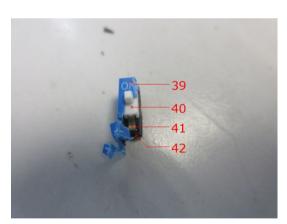
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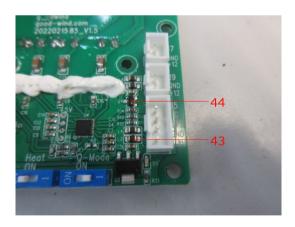






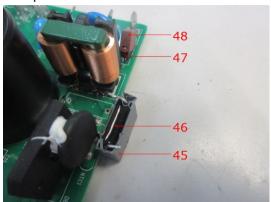


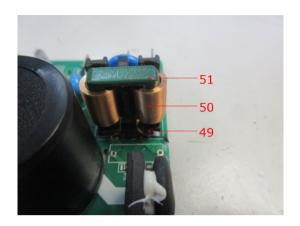




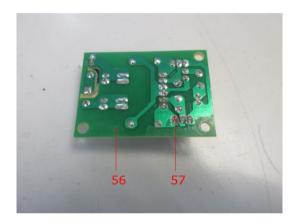


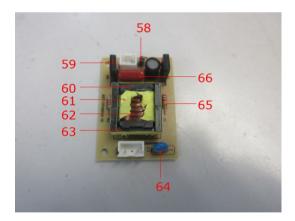
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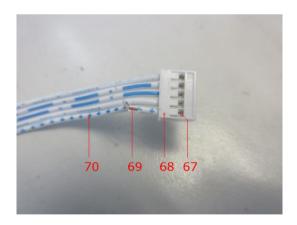






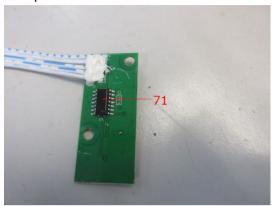


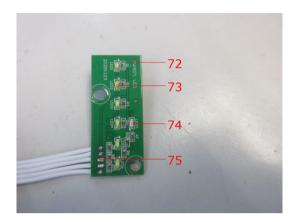


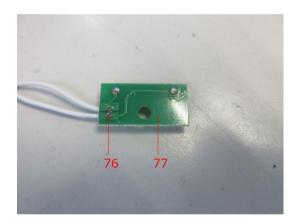


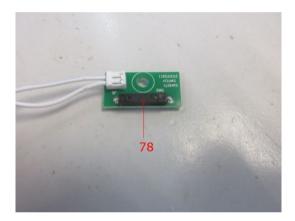


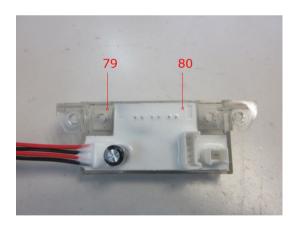
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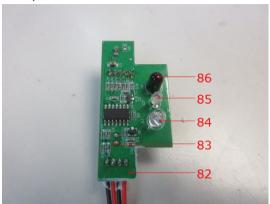


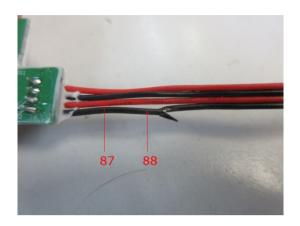


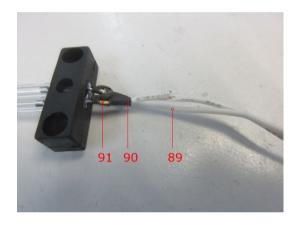


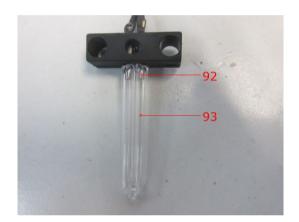


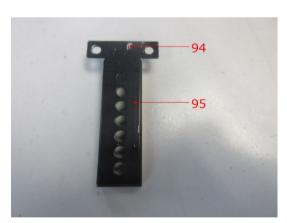
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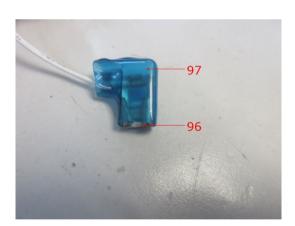






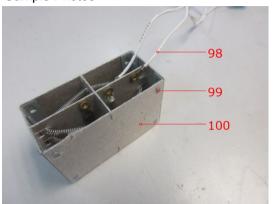


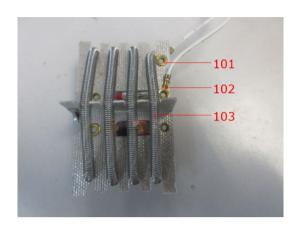


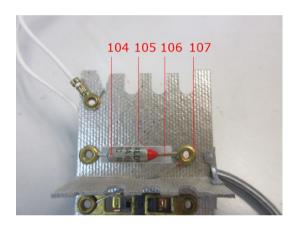


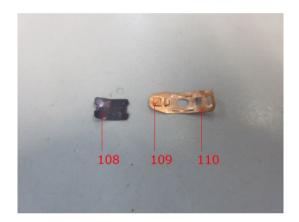


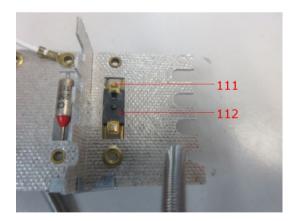
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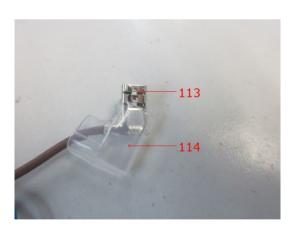






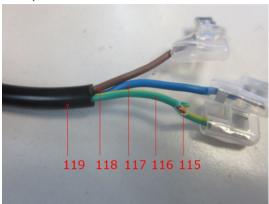




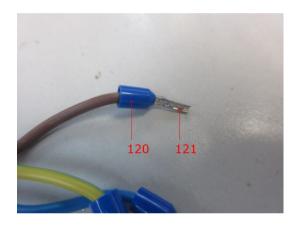


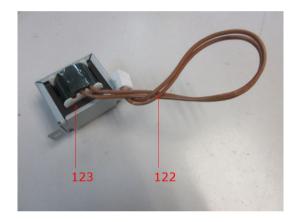


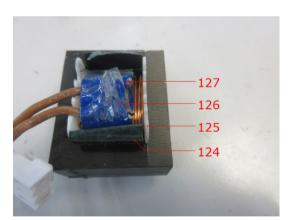
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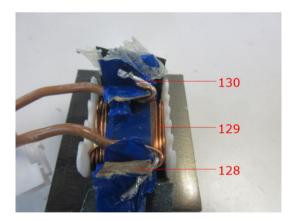






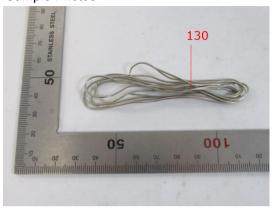




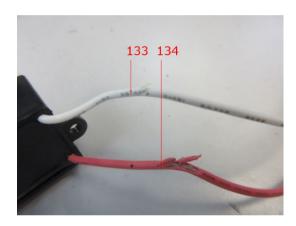


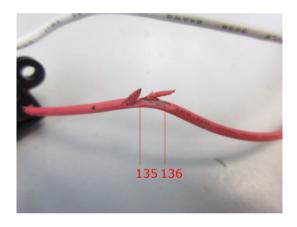


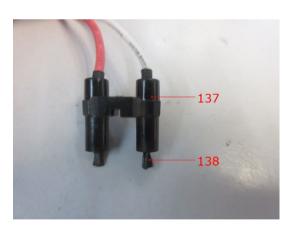
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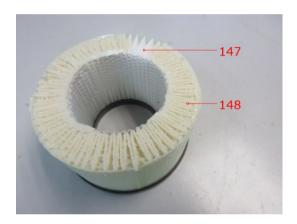




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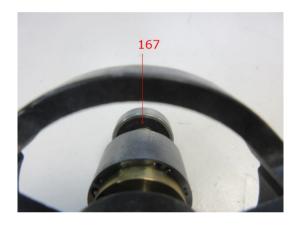


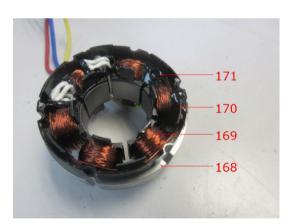
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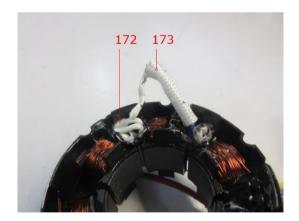






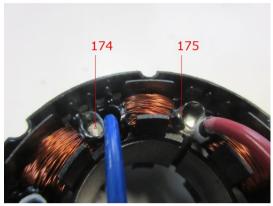


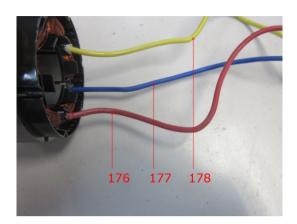


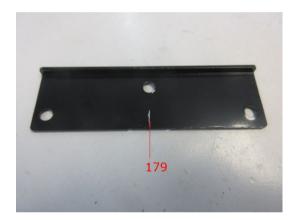




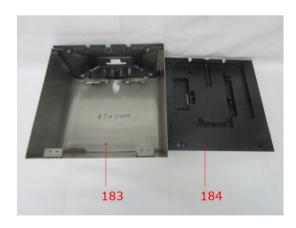
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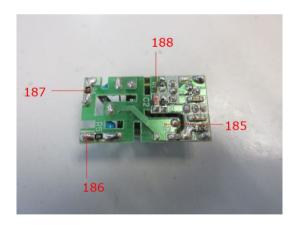






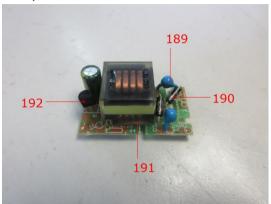




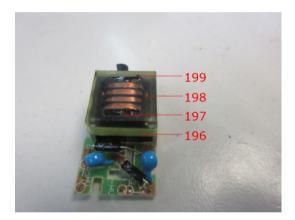


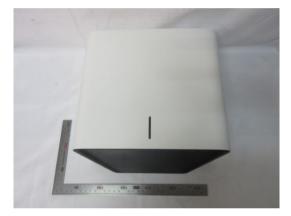


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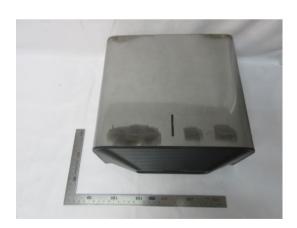








Product



Product



General Terms and Conditions of Business of TÜV Rheinland in Greater China

These General Terms and Conditions of Business of TÜV Rheinland in Greater China ("GTCB") is made between the client and one or more member entities of TÜV Rheinland. In Greater China as applicable as the case may be ("TÜV Rheinland"). The Greater China have forester china have who concludes the contract not for the purpose of a daily use; the incorporated or unincorporated entity duly organized, validly existing and capable to form legally binding contracts under the applicable law. The following terms and conditions apply to agreed services including consultancy services, information, deliveries and similar services as well as an callary services and other secondary have serviced and the secondary and the contracts when the contracts when the contracts when the contract of the

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surgescurs provised winn the scope of contract performance. Any standard terms and conditions of the client of any statute shall not apply and shall hereby be expressly and conditions of the client of any statute shall not apply and shall hereby be the contract of the client of the client shall form part of in the contract of an originity business relationship with the client, this CTGS shall also apply to future contracts with the client without TUV Rheinland having to refer to them separately in each individual case.

Unless otherwise agreed, all quotations submitted by TÜV Rheinland can be changed by TÜV Rheinland without notice prior to its acceptance and confirmation by the other party.

Coming into effect and duration of contracts

The contract shall come into effect for the agreed terms upon the quotation letter of TÜV Rheinland or a separate contractual document being signed by both contracting parties, or upon Rheinland or a separate contractual document being signed by both contracting parties, or upon Rheinland without receiving a quotation from TÜV Rheinland (quotation), TÜV Rheinland is in its soile discretion, enterfield to accept the order by giving written notice of such acceptance (including notice sent via effectivoir means) or by performing the requested services. The contract lare material sport her comprise the contract in accordance with article 3.1 and shall continue for the term agreed in the contract. It is contract term will be extended by if the contract produce for an extension of the contract term, the contract term will be extended by notice prior to the end of the contractual term. 3.1

Scope of services

The scope and type of the services to be provided by TÜV Rheinland shall be specified in the contractually agreed service scope of TÜV Rheinland shall be written confirmation of ode by TÜV Rheinland shall be sourced in TÜV Rheinland shall be the written confirmation of ode by TÜV Rheinland shall be the service description (e.g. checking the correctness and functionality of parts, products, processes, installations, organizations not listed in the service description, as well as the intended use and application of auch) are not owed. In particular, no responsibility is assumed for the orphit, urities this is expressly stated in the order.

The agreed services shall be performed in compliance with the regulations in force at the time the contract is entered inthe off to description, in its sold description, the method and nature of the assessment unless otherwise agreed in writing or if mandatory provisions require a specific procedure to be followed.

sment unless otherwise suprecent memory and the transfer of the transfer of the work there shall be no simultaneous assumption of any guarantee of the trees (proper quality) and working order of either tested or examined parts nor of the chress (proper quality) and working order of either tested or examined parts nor of the lation as a whole and its upstream and/or downstream processes, organisations, use and lation as a whole in accordance with regulations, nor of the systems on which the installation is based, or a construction of the proper part of the systems of the proper part of the part of the proper part of the proper part of the proper part of the proper part of the part

with regulatoris, unless these decisions are level present youtened by the children in the case of interpection work. (TV) Rheinland shall not be responsible for the accuracy or checking of the safety programmes or safety regulations on which the inspections are based. If the contract of the safety programmes or safety regulations on which the inspections are based. If mandatory legal regulations and standards or official regularements for the agreed sarvice scope change after conclusion of the contract, with a written notice to the client, TVV Rheinland shall be entitled to additional remuneration for resulting additional repenses. greed exclusionly with the client. A contract of third parties with the services of TVV Rheinland, as well as making available of and justifying ordindence in the work results (test reports, test results, test reports, test) is not part of the agreed services. This also applies if the client passes on work results - in 1 full or in samulation.

or and justifying confidence in the work results (test reports, test results, expert reports, etc.) is not until or his not roll the agreed services. This side applies if the client passes on work results - in hill or in The client understands and agrees that in order to perform the contract with TUV Reinland, the client may need to sign one or more contractal agreements with amore third party(es) and establish legal relationships with that those third party(es) according to such certain the contractal party of the contractal provided by the contractal party of the contractal

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Performance periods/dates of performance are based on estimates of the work involved which are prepared in line with the details provided by the client. They shall only be binding flowing confirmed as binding by TUV Rheinland in writing. It is investigated to the client of the provided of the periods of performance have been agreed, these periods shall not commence until the Arclies 5.1 and 5.2 also apply, even without express approval by the client, to all extensions of agreed periods/dates of performance not caused by TUV Rheinland. TUV Rheinlands in our responsible for a delay in performance, in periods if the client has not approved to the periods of the period of the periods of the periods of the periods of the period of the periods of the periods of the period 5.6

performance. If the client is obliged to comply with legal, officially prescribed and/or by the accreditor prescribed deadlines, it is the client's responsibility to agree on performance dates with TUV Rhentland, which enable the client to comply with the legal and/or officially prescribed deadlines. TUV within specifically stating that ensuring the deadlines is the contractual obligation of TUV Rhentland.

The client's obligation to cooperate

The client shall guarantee that all cooperation required on its part, its agents or third parties will be provided in good time and at no cost to TÜV Rheinland.

Design documents, supplies, auxiliary staff, etc. necessary for performance of the services shall be made available free of charge by the client. Moreover, collaborative action of the client must be undertaken in accordance with legal provisions, standards, safety regulations and accident prevention instructions. And the client represents and warrants that:

It has required statutory qualifications;

It doesn't have any illegal and dishonest behaviours or is not included in the list of Enterprises with Serious Illegal and Dishonest Acts of People's Republic of China.

If the client breaches the aforesaid representations and warranties, TÜV Rheinland is entitled to i) immediately terminate the contract/order without prior notice; and ii) withdraw the issued testing report/certificates if any.

It he scope of performance is not laid down in writing when the order is placed, invoicing shall be based on costs actually incurred. If no price is agreed in writing, invoicing shall be made in accordance with the price last of TVD Rheinland wild at the time of performance. Unless otherwise agreed, work shall be invoiced according to the progress of the work. If he execution of an order extends over more than one month and the value of the contract or the agreed fixed price exceeds £2,500.00 or equivalent value in local currency. TÜV Rheinland may demand payment on account or in instaliments.

7.2 7.3

8.3

Payment terms

All invoice amounts shall be due for payment within 30 days of the invoice date without deduction in receipt of the invoice. No discounts and rebates shall be granted. In receipt of the invoice, not expected the invoice and control of TDV Rhenfland as indicated on the invoice, stating the invoice and client numbers. In cases of default of payment, TDV Rhenland shall be entitled to claim default interest at the applicable short term loan interest rate publicly amounced by a reputable commercial bank in the bountry where TDV Rhenland short serves the right to claim further damages.

The provisions set to separe the transport of the invoice despite being granted a reasonable grace period. TDV Rhenland shall be entitled to cancel the controlate, whicheve the certificate, dain damages for non-performance and refuse to continue performance of the contract. The provisions set forth in article & shall also apply in cases involving returned cheques, cessastion of payment, commencement of insolvency proceedings against the client's assets or 8.4

ses in which the commencement of insolvency proceedings has been dismissed due to lack of

ons to the invoices of TÜV Rheinland shall be submitted in writing within two weeks of

Objections to the invoices of TUV Knewnerus aprecipations are receiped of the invoices of TUV Knewnerus aprecipation and the control of the invoices. TUV Kneinland shall be entitled to demand set less eat the beginning of a month if overheads and/or purchase costs have increased. In this case, TUV Kneinland shall notify the client in writing of the rise in fees. This notification shall be issued one morth prior to the date on which the rise in fees shall come into effect (period of notice of changes in fees). If the rise in fees remains under 5% exceeds 5% per contractual very the client shall be entitled to beminate the contract by the end of the period of notice of changes in fees, if the contract in otterminated, the changed fees shall be deemed to have been agreed upon by the time of the expiry of the notice period.

Only legally established and undisputed claims may be offset against claims by TÜV Rheinland. TÜV Rheinland shall have the right at all times to setoff any amount due or payable by the client, including but not limited to setoff against any fees paid by the client under any contracts, agreement and/or orders/quotations reached with TÜV Rheinland.

Any part of the work result ordered which is complete in itself may be presented by TÜV Rheinland for acceptance as an instalment. The client shall be obliged to accept it immediately. If acceptance is required or contractually agreed in an individual case, this shall be deemed to have basen place leve (2) weeks after competent and hardwork or of the work, unless that have been place leve (2) weeks after competent and hardwork or of the work, unless that Sherindand with the place hading at least one fundamental breach of contract by TÜV.

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is not entitled to refuse acceptance due to insignificant breach of contract by TÜV

Rheidrad.

If acceptance is excluded according to the nature of the work performance of TÜV Rheinland, he completion of the work shall take its place.

During the Follow-Audit stage, if the client was unable to make use of the time windows provided for within the scope of a certification procedure for auditing/performance by TÜV Rheinland and the certificate is therefore to be withdraw (e.g. performance of surrellinear equality, or if the client cancels or postpones a confirmed audit date within two (2) weeks before the agreed date, TÜV Rheinland is entitled to immediately chaige a fump—sum compensation of 10% of the coder the confirmance of the complex of t

Rheinland has incurred no damage whatsoever or only a cursorenauy www. www.np.
loader as the client has undertaken in the contract to accept services, TUV Rheinland shall also
be entitled to Antege lump-sum damages in the amount of 10% of the order amount as
compensation for expenses if the service is not called within one year after the order has been
placed. The client reserves the right to prove that the TUV Rheinland has incurred no damage
whatsoever or only a considerably lower damage than the above mentioned lump sum.

Confidentiality

For the purpose of these terms and conditions, "confidential information" means all know-how, trade secrets, documents, images, drawings, expentise, information, dats, test resulfs, reports, rade secrets, documents, images, drawings, expentise, information, dats, test resulfs, reports, rade secrets, documents, images, drawings, expentise, information, dats, test resulfs, reports, rade and result of the control of the con

10.4

the receiving party afready possessed this information prior to disclosure by the disclosing party, the the receiving party developed it itself, irrespective of disclosure by the disclosing party, shall not be deemed to constitute 'confidential information' as defined in this confidentially clause. All confidential information shall remain the property of the disclosing party. The receiving party hereby agrees to immediately (i) return all confidential information, including all copies, to the disclosing party, and/or (ii) or nequeste by the disclosing party. The receiving party hereby agrees to immediately (i) return all confidential information, including all copies, to the disclosing party in writing, at any time if so requised by the disclosing party but at the latest and without special request after termination or expiry of the contract. This does not extend to include reports and certificates prepared for the client solely for the purpose of hillling the obligations under the contract, which shall remains with the client. However, TOV Rheinland is entitled to make preparing these reports and certificates in order to evidence the correctness of its results and for general documentation purposes required by laws, regulations and the requirements of working procedures of TOV Rheinland.

Copyrights and rights of use, publications

10.6

10.7

Copyrights and rights of use, publications
TÜV Rheindand ball retain all exclusive copyrights in the reports, expert reports/ciprions, test reports/re

on of work results.

Any publication or duplication of the work results for advertising purposes or any further use of the work results beyond the scope regulated in clause 11.2, and any guidation of the introduction of Besides, the client resurses that the afforceast use shall comply with relevant applicable less, regulations and relevant rules (including but not limited to specific applicable testing and certification rules, recules a crosp given approval according to clause 11.5 at any line without TV Phinistand may recule a crosp given approval according to clause 11.5 at any line without the contraction of the work results immediately at his own expense and, as far as possible, to windraw publications. The consent of TVV Rheinland to publication or duplication of the work results does not entitle the client to use the corporate logo, corporate design or testification and of TVV Rheinland.

Liability of TÜV Rheinland

Trespective of the signal brain, in the fullest extent permitted by applicable law, in the over of a breach of a contractual abdigations or toot, the liability of TÜV Rheinland for all damages, losses and reimburnement of expenses and the contractual abdigations or toot, the liability of TÜV Rheinland for all damages, losses and reimburnement of expenses and the limited to; (i) in the case of a contract with a fixed overall lee, three times the overall feet for the entire contract, (ii) in the case of a contract with a fixed overall lee, three times the overall feet for the entire contract, (ii) in the case of a contract with a fixed overall lee, three times the overall feet for the entire contract, (iii) in the case of a framework agreement that provides for the possibility of placing individual orders, three times of the feet for the individual order under which the damages or losses have occurred, according to the freedom of the feet of the contractual order and the contractual orders and the contractual orders and the contractual orders are contractually and the contractual orders and the contractual orders and the contractual orders and the contractual orders are contractually and the contractual orders and the

breach (researche) retreached versions and the personnel made available by the client to support TUV Rheinland in the personnel made available by the client to support TUV Rheinland in the performance of its services under the contract, unless such personnel made available is regarded as vicarious agent of TUV Rheinland ITUV Rheinland is not liable for the acts of the personnel made available by the client under the foregoing provision, the client shall indemently TUV Rheinland against any clients made by third prices arising from a Client shall indemently TUV Rheinland against any clients made by their other astings from a Client shall indement the Client shall be client to the Client shall be client shall be client to the Client shall be client s 12.5

When passing on the services provided by TÜV Rheinland or parts thereof to third parties in Greater China or other regions, the client must comply with the respectively applicable regulations of national and infermional export control law. When the provise that there are no obstacles to performance do a contract with the client is subject to the provise that there are no obstacles to performance due to national or international foreign trade legislations or embarges and/or sanctions, in the event of a violation, TÜV thereinand shall be entitled to terminate the contract with immediate effect and the client shall compensate for the losses incord freed by TÜV.

Data protection notice

The client understands and agrees that TUV Rheinland processes personal data (including but not initiated to personal information) of the client and its related parties (including but not limited to personal information) of the client and its related parties (including but not limited to the supplier of the client) for the purpose of fulfilling this contract. The client confirms that it has process the personal data that the client confirms that it has process the personal data that the client collected or processed by tested and transferred to TUV Rheinland. For certain services, we may also process sensitive personal data. TUV Rheinland will use and process the data in accordance with the relevant legal basis. If any personal data has to be disclosed or transferred to any third party or any overseas party outside of the district in which the data is accordance with the privacy and personal data security related laws and regulations in China and the local country. TUV Rheinland will take measures to avoid any leadings, abuse, manipulation, diamage or unauthorized access of personal data. The personal data will be detend the following injection, right of processing limitation, right of objection, right of destination, right of processing limitation, right of objection, right of destination data by TUV Rheinland as the proconductivity. For thresh details on the processing of personal data by TUV Rheinland by e-mail at distriprotection Sturcem or by past a thresh following address: TUV Rheinland by e-mail at distriprotection Sturcem or by past a thresh following address: TUV Rheinland by e-mail at distriprotection Sturcem or by past a thresh following address: TUV Rheinland by e-mail at distriprotection Officer of TUV.

Retention of test material and documentation

The test samples submitted by the client to TÜV Rheinland for testing will be scrapped following testing or will be returned to the client at the client's expense. The only exceptions are test samples, which are placed in storage on the basis of statutory regulations or of another samples, which are placed in storage on the basis of statutory regulations or of another client in the second second of the client in the properties of the client in the state and the samples are standing a test sample into storage will be disclosed to the client in the quotation. If reference samples or documentations are given to the client to be placed in storage at their premises, the reference samples or documentations are given to the client to be placed in storage at their premises, the reference samples or documentations are given to the client to be placed in storage at their premises, the reference samples or documentations are given to the client to be placed in storage at their premises, the reference sensities of charge. If the client, in response to such a request, its recognition and popularity damage resulting from the respective testing and certification that is brought forward by the client against TÜV Rheinland shall be voided.

The retention period for the documentation shall be 10 (ten) years after the expiry of the test mark certification or shall meet the applicable legal requirements for EUEC certificatios of conformity.

The costs of the handower and dispatch of the test samples for storage on the client's permises are borne by the client. TUV Rheinland will be islable for the loss of test samples or reference samples from the laboratories or warehouses of TÜV Rheinrand only in case of gross negligence.

15.4

Termination of the contract

Neveltistanding clause 3.3 of the GTCB, TUV Rheinland and the client are entitled to terminate the contract in its entirety or, in the case of services combined in one contract, each of the combined parts of the contract individually and independently of the continuation of the remaining encices with six (6) months motion to the end of the contractually agreed term. The notice period shall be abortered to air (6) weeks in case TUV Rheinland is prevented from performing the proposition of the contract which includes but not limited to the following:

For good causes, TUV Rheinland any consider prings a written notice to the client to terminate the contract which includes but not limited to the following:

the client does not immediately rowly TUV Rheinland of changes in the conditions within the client never one of the contract which includes out one till indicate the client never of the contract which includes out one till indicate the client never of the contract which includes one of the contract which includes the contract which includes a contract which includes a contract which includes a contract which includes a contract with the payment claims of TUV Rheinland under the contract are considerably endangened and TUV Rheinland includes a considerably replaced and the contract with the client.

If TUV Rheinland, for reasons beyond its control, is temporatily or finally not able or entitled to interference, acanicion, loss of accordingtion or notification, or other.

In the event of termination with written notice by TUV Rheinland for good cause, TUV Rheinland state entitled to lump-sum claims for damages gasts the client the conditions of a claim for damages casts. This can entitle to terminate the contract with written notice the client to the unit line and contract which

16.2

17.2.

within the scope of a certification procedure and the certificate therefore has to be withdrawn (for oxemple during the performance of monitoring audiols). Clause 163 applies accordingly.

Force Majeure

Force Majeure

Hardship
The Parties are bound to perform their contractual duties even if events have rendered performance more onerous than could reasonably have been anticipated at the time of the conclusion of the

(b)

more onerous than could reasonably have been anticipated at the time of the conclusion of the Contract.

Companyage of the file clause, where a Party proves that:

The continued performance of its contractual distins has become excessively control. The continued performance of its contractual distins has become excessively control. The continued performance of its contractual extensionably have been expected to have taken into account at the time of the conclusion of the contract, and that it could not reasonably have avoided or overcome the event or its consequences, the Parties are bound, within a reasonable time of the invocation of this Clause, to negotiate alternative contractual terms which neasonably allow to evercome the consequences of the event.

Where Clause 18.2 applies, but where the Parties have been unable to agree alternative contractual terms as provided in that paragraph, the Parties have been unable to agree alternative contractual terms as provided in that paragraph, the Parties have been unable to agree alternative contractual terms as provided in that paragraph, the Parties have been unable to agree alternative contractual terms as provided in that paragraph, the Parties have been unable to agree alternative contractual terms as provided in that paragraph, the Parties have been unable to agree alternative contractual terms of the contractual terms of 18.3.

Partial invalidity, written form, place of jurisdiction and dispute resolution

Partial invalidity, written form, place of jurisdiction and dispute resolution.

All amendments and supplements must be in writing in order to be effective. This also applies to amendments and supplements to this clause 17.1.

Should one or several of the provisions under the contract and/or these terms and conditions be or become ineffective, the contracting parties shall replace the invalid provision with a legally valid provision that grain esclosus to the contract of the invalid provision in significant commercial terms, and conditions shall be chosen following the rules as below:

If TUV Rheinland in question is legally registered and existing in the People's Republic of China, the contracting parties hereby agree that the contract and these terms and conditions shall be governed by the lates of the People's Republic of China.

ITUV Rheinland in question is legally registered and existing in Talwan, the contracting parameterly agree that the contract and these terms and conditions shall be governed by the laws of Talwan.

ITUV Rheinland in question is legally registered and existing in Hong Kong, the contracting it TUV Rheinland is the contract and these terms and conditions shall be governed by the laws of Hong Kong.

Any dispute in connection with the contract and these terms and conditions or the execution thereof shall be settled friendly through negotiations.

Unless otherwise stepulated in the contract, if no settlement or no agreement in respect of the Unless otherwise stepulated in the contract, and the contract of the stepulate of the contract, the dispute shall be submitted in the case of TUV Rheinland in question being legally registered and existing in the People's Republic of China, to China thermational Economic and Trade Arbitration Commission (CET AG) to be satisfied by arbitration under the Arbitration Russ of CETAC in lock when the arbitration is being. Shangkai, Shanthen or Changeing as appropriately chosen by the claiming party, in the case of TUV Rheinland to ingestion being legally registered and existing in Talwan, to Chinese Arbitration Association. Taple to be arbitrated in accordance with its then current Rules in the case of TUV Rheinland to large legally registered and existing in Talwan, to Chinese Arbitration Shangeign and the stage of the Russian of the Case of TUV Rheinland to large legally registered and existing in Talwan, to Chinese Arbitration Association. Taple to be arbitrated in accordance with its then current Rules in the case of TUV Rheinland to large legally registered and existing in Talwan, to Chinese Arbitration Association. Taple to be settled by arbitration under the HKAG Administered rules. The arbitration shall take place in Hong Kong.