

Test Report No.: SHAEC23011883701 **Date:** Aug 16, 2023 Page 1 of 8

Client Name: UNIROYAL ELECTRONICS INDUSTRY(KUNSHAN) CO.,LTD.

Client Address: 88 Longteng Road, Economic & Technical Development Zone, Kunshan City, Jiangsu,

CHINA

Sample Name: Chip Resistors

Buyer: Uniroyal Electronics Global Co.,Ltd

Manufacturer: Uniroyal Electronics Industry Co., Ltd Aeon Technology Corporation CO.,LTD.

Royal Electronic Factory (Thailand) Co.,Ltd. Royal Technology (Thailand)

Co.,Ltd. UNUS TECHNOLOGY CORPORATION

The above sample(s) and information were provided by the client.

SGS Job No.: SHP23-009597 Sample Receiving Date: Aug 07, 2023

Testing Period: Aug 07, 2023 ~ Aug 16, 2023

Test Requested: Select test(s) as requested by the client.

Test Method(s): Please refer to next page(s).
Test Result(s): Please refer to next page(s).

Test Requirement	Conclusion
Flame Retardants	See Results
European Regulation Persistent organic pollutants (POPs) (EU) 2019/1021 and its amendments	Pass
Regulation (EU) 2023/1608 amending Annex I to Regulation (EU) 2019/1021-PFHxS, its salts and PFHxS related compounds	Pass

Signed for and on behalf of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

Annie Liu

Annie Liu

Approved Signatory





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Cond

3rdBuilding,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t E&E (86–21) 61402553 f E&E (86–21)64953679 t HL (86–21) 61402594 f HL (86–21)61156899

www.sgsgroup.com.cn e sgs.china@sgs.com



Test Report No.: SHAEC23011883701 **Date**: Aug 16, 2023 Page 2 of 8

Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	SHA23-0118837-0001.C001	White/black/silver solid

Remarks:

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected (< MDL)
- (4) "-" = Not Regulated

Flame Retardants

Test Method: With reference to US EPA 3550C:2007 and US EPA 8270D:2014, analysis was performed

by GC-MS/HPLC-DAD-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1
Bis(hexachlorocyclopentadieno)cyclooct ane (Dechlorane Plus (DP))	13560-89-9 /135821-03-3 /135821-74-8	mg/kg	5	ND

European Regulation Persistent organic pollutants (POPs) (EU) 2019/1021 and its amendments

Test Method: SGS In-House method - Analyzed by Gas Chromatography - Mass Spectrometry (GC-MS),

Gas Chromatography - Electro Capture Detector (GC-ECD), High Performance Liquid Chromatography - Diode Array Detector - Mass Spectrometry (HPLC-DAD-MS) or Liquid

Chromatography - Mass /Mass Spectrometry (LC-MS/MS).

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
Tetrabromodiphenyl ether	40088-47-9	_	mg/kg	5	ND
, , , , , , , , , , , , , , , , , , , ,	and others		3 3		
Pentabromodiphenyl ether	32534-81-9	-	mg/kg	5	ND
	and others		0 0		
Hexabromodiphenyl ether	36483-60-0	-	mg/kg	5	ND
	and others				
Heptabromodiphenyl ether	68928-80-3	-	mg/kg	5	ND
Deschargediahend other (descRDE)	and others				ND
Decabromodiphenyl ether; (decaBDE)	1163-19-5	-	mg/kg	5	ND
Sum of PBDEs*	-	500	mg/kg	-	ND
Perfluorooctane sulfonates (PFOS) and its derivatives	-	1000	mg/kg	-	ND
Perfluorooctane sulfonates (PFOS) and its salts*	-	-	mg/kg	0.010	ND
N-ethylperfluoro-1-octanesulfonamide (N-EtFOSA)	4151-50-2	-	mg/kg	0.010	ND
N-methylperfluoro-1-octanesulfonamide (N-MeFOSA)	31506-32-8	-	mg/kg	0.010	ND
2-(N-ethylperfluoro-1- octanesulfonamido)-ethanol (N-EtFOSE)	1691-99-2	-	mg/kg	0.010	ND



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

Attention:To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, **Attention:**To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, ***Total Content to the content or the content or

or email: CN.Doccheck@sgs.com
3°Building,No.889 Yishan Road Xuhui District,Shanghai China 200233 t E&E (86-21) 61402553 f E&E (86-21)64953679 www.sgsgroup.com.cn
中国・上海・徐汇区宜山路889号3号楼 邮编: 200233 t HL (86-21) 61402594 f HL (86-21)61156899 e sgs.china@sgs.com



Test Report No.: SHAEC23011883701 **Date:** Aug 16, 2023 Page 3 of 8

1110 post 101. 011/120200	711000701	Dato.	, tag 10, 20	_0	i age o oi
Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
2-(N-methylperfluoro- 1- octanesulfonamido) -ethanol (N- MeFOSE)	24448-09-7	-	mg/kg	0.010	ND
Perfluorooctane sulfonamide (PFOSA)	754-91-6	-	mg/kg	0.010	ND
Hexachlorobenzene	118-74-1	10	mg/kg	5	ND
Pentachlorobenzene	608-93-5	Prohibite d	mg/kg	5	ND
Polychlorinated biphenyls (PCB)	1336-36-3 and others	Prohibite d	mg/kg	5	ND
Hexabromodiphenyl	36355-01-8	Prohibite d	mg/kg	5	ND
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α-HBCDD, β-HBCDD, γ-HBCDD)	134237-50-6, 134237-51-7, 134237-52-8, 25637-99-4, 3194-55-6	100	mg/kg	20	ND
Hexachlorobutadiene	87-68-3	Prohibite d	mg/kg	5	ND
Polychlorinated naphthalenes (PCN)	70776-03-3 and others	Prohibite d	mg/kg	5	ND
Alkanes C10-13,chloro(short chain- chlorinated paraffins) (SCCPs)	85535-84-8 and others	1500	mg/kg	50	ND
Perfluorooctanoic acid (PFOA) and its salts*	-	0.025	mg/kg	0.010	ND
PFOA-related substances	-	1.0	mg/kg	-	ND
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTS)	39108-34-4	-	mg/kg	0.010	ND
Methyl perfluorooctanoate (Me-PFOA)	376-27-2	-	mg/kg	0.1	ND
Ethyl perfluorooctanoate (Et-PFOA)	3108-24-5	-	mg/kg	0.1	ND
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH)	678-39-7	-	mg/kg	0.1	ND
1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)	27905-45-9	-	mg/kg	0.1	ND
1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)	1996-88-9	-	mg/kg	0.1	ND
Perfluoro-1-iodooctane (PFOI)	507-63-1	-	mg/kg	0.1	ND
Conclusion					Pass

Notes:

- Substances in Annex I of European Regulation POPs (EU) 2019/1021 are prohibited in preparations and constituents of articles unless otherwise specified.
- Exemptions: Tetrabromodiphenyl ether, pentabromodiphenyl ether, hexabromodiphenyl ether, heptabromodiphenyl ether and decabromodiphenyl ether are ≤ 10 mg/kg for substances, and Sum of tetra-, penta-, hexa-, hepta- and decaBDE ≤500 mg/kg for mixtures or articles, this restriction is subject to subject to review and assessment by the European by 16 July 2021.
- Exemption: Tetrabromodiphenyl ether, pentabromodiphenyl ether, hexabromodiphenyl ether, heptabromodiphenyl ether and decabromodiphenyl ether in electrical and electronic equipment within the scope of Directive 2011/65/EU are exempted.
- Exemption: Alkanes C10-13, chloro (short chain-chlorinated paraffins) (SCCPs) < 1.0% in preparation, <0.15% for articles. (4)
- Exemptions: Perfluorooctane sulfonates (PFOS) and its derivatives (acid, metal salt, halide, amide, and other derivatives



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="https://www.sgs.com/en/Terms-and-Conditions/Terms-and-Con

3rdBuilding,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国・上海・徐汇区宜山路889号3号楼 邮编: 200233



Test Report No.: SHAEC23011883701 **Date:** Aug 16, 2023 Page 4 of 8

including polymers) ≤ 10 mg/kg for preparations, < 0.1% (w/w) for articles and < 1µg/m² for textiles and coated materials.

- Exemptions: HBCDD,No more than 100 mg/kg as an unintentional trace contaminant in substances, mixtures, articles or flame-retarded parts of articles.
- Perfluorooctane sulfonates (PFOS) and its salts* including PFOS (CAS No. 1763-23-1), POSF(CAS No. 307-35-7), PFOS-K (CAS No. 2795-39-3), PFOS-NH₄ (CAS No. 29081-56-9), PFOS-N($C_{10}H_{21}$)₂(CH₃)₂ (CAS No. 251099-16-8), PFOS-NH₂($C_{2}H_{4}OH$)₂ (CAS No. 70225-14-8), PFOS-Li (CAS No. 29457-72-5), PFOS-N($C_{2}H_{5}$)₄ (CAS No. 56773-42-3) and PFOS-N($C_{2}H_{5}$)₄ (CAS No. 56773-42-3) Na (CAS No. 4021-47-0). The result of PFOS is used to represent PFOS and its derivatives.
- Perfluorooctanoic acid (PFOA) and its salts* including PFOA (CAS No. 335-67-1), APFO (CAS No. 3825-26-1), PFOA-Na (CAS No. 335-95-5), PFOA-K (CAS No. 2395-00-8), PFOA-Ag (CAS No. 335-93-3) and PFOA-F (CAS No. 335-66-0). The result of PFOA is used to represent PFOA and its salts.
- Sum of PBDEs* Means Sum of Tetrabromodiphenyl ether, Pentabromodiphenyl ether, Hexabromodiphenyl ether, Heptabromodiphenyl ether and Decabromodiphenyl ether.
- (10) The chemical analysis of substances is performed by means of currently available analytical techniques against substances laid down in Test Requested.
- (11) Detected substance(s) may come from one or more components in composite testing. Client is suggested to identify the component(s) and the exact concentration of the substance(s) by requesting further quantitative analysis from the laboratory.

Regulation (EU) 2023/1608 amending Annex I to Regulation (EU) 2019/1021-PFHxS, its salts and PFHxS related compounds

Test Method: With reference to CEN/TS 15968:2010, analysis was performed by LC-MS or LC-MS/MS and GC-MS.

Test Item(s)	CAS No.	Limit	Unit(s)	MDL	A1
PFHxS, its salts					
Perfluorohexanesulfonic acid (PFHxS), its salts#	355-46-4	0.025	mg/kg	0.010	ND
PFHxS-related compounds					
N-Methylperfluoro-1-hexane sulfonamide (N-Me-FHxSA)	68259-15-4	-	mg/kg	0.010	ND
Perfluorohexane sulfonamide (PFHxSA)	41997-13-1	-	mg/kg	0.010	ND
N-[3-(dimethylamino)propyl] tridecafluorohexanesulphonamide (N-AP-FHxSA)	50598-28-2	-	mg/kg	0.010	ND
2-[methyl[(tridecafluorohexyl) sulphonyl]amino]ethyl acrylate)) (N- MeFHSEA)	67584-57-0	-	mg/kg	0.500	ND
Sum of PFHxS-related compounds	-	1	mg/kg	-	ND
Conclusion			· -		Pass

Notes:

(1) Commission Delegated Regulation (EU) 2023/1608 of May 30, 2023, amending Annex I to Regulation (EU) 2019/1021 as regards the listing of perfluorohexane sulfonic acid (PFHxS), its salts and PFHxSrelated compounds. Official Journal of the EU. August 8, 2023

		Specific exemption on intermediate use or other specification	Effective Date	
PFHxS and its	Substances,	≤ 0.025 mg/kg	August 28, 2023	
salts	mixtures or articles			
PFHxS-related	Substances,	≤ 1 mg/kg (sum of all PFHxS-related	August 28, 2023	
compounds	mixtures or articles	compounds)		



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

**Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443,

3rd Building, No. 889 Yishan Road Xuhui District, Shanghai China 200233 中国・上海・徐汇区宜山路889号3号楼 邮编: 200233



Test Report Page 5 of 8 No.: SHAEC23011883701 **Date:** Aug 16, 2023

PFHxS, its salts	Concentrated	≤ 0.1 mg/kg (to be reviewed within three	August 28,	2023
and PFHxS-	firefighting foam	years after entry into force of this		
related	mixtures	amending regulation with a view to lower		
compounds		the limit)		

- (2) The tested perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds in this report comes from the "Listed under the POPs Regulation" of ECHA, please find more information via below weblink: List of substances proposed as POPs - ECHA (europa.eu)
- (3) # Substances refer to its salts/derivative listed in Appendix 1 Salts of listed PFAS is subjected to the detection of its parent PFAS

Appendix 1

PFHxS, its salts & derivatives	CAS No.
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4
1-Hexanesulfonic acid, 1,1,2,2,3,3, 4,4,5,5,6,6,6-tridecafluoro-, sodium salt	82382-12-5
(PFHxS-Na)	
Potassium perfluorohexane-1-sulphonate (PFHxS-K)	3871-99-6
Perfluorohexane Sulfonic acid, lithium salt (PFHxS-Li)	55120-77-9
Perfluorohexane Sulfonic acid, ammonium salt (PFHxS-NH ₄)	68259-08-5
Benzyltriphenylphosphanium tridecafluorohexane-1-sulfonate (PFHxS-BTPP)	1000597-52-3
N,N,N-Tributylbutan-1-aminium tridecafluorohexane-1-sulfonate	108427-54-9
Tetraethylammonium perfluorohexane sulfonate	108427-55-0
Tridecafluorohexane-1-sulfonic acid-pyrrolidine	1187817-57-7
4-{[4-(Diethylamino)phenyl][4-(ethylamino)naphthalen-1-yl]methylidene}-N,N-	1310480-24-0
diethylcyclohexa-2,5-dien-1-iminium tridecafluorohexane-1-sulfonate	
4-{[4-(Dimethylamino)phenyl][4-(ethylamino)naphthalen-1-yl]methylidene}-N,N-	1310480-27-3
dimethylcyclohexa-2,5-dien-1-iminium tridecafluorohexane-1-sulfonate	
4-{[4-(Dimethylamino)phenyl][4-(phenylamino)naphthalen-1-yl]methylidene}-	1310480-28-4
N,N-dimethylcyclohexa-2,5-dien-1-iminium tridecafluorohexane-1-sulfonate	
Beta-Cyclodextrin, compd. with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexane-1-	1329995-45-0
sulfonate	
Gamma-Cyclodextrin, compd. with 1,1,2,2,3,3,4,4,5,5,6,6,6-	1329995-69-8
tridecafluorohexane-1-sulfonate	
Triphenylsulfanium tridecafluorohexane-1-sulfonate (TPS-PFHxS)	144116-10-9
1-(Carboxymethyl)-4-(2-{4-[4-(2,2-diphenylethenyl)phenyl]-	1462414-59-0
1H,2H,3H,3aH,4H,8bH-cyclopenta[b]indol-7-yl}ethenyl)quinolin-1-ium	
tridecafluorohexane-1-sulfonate	
Diphenyliodanium tridecafluorohexane-1-sulfonate	153443-35-7
Tetramethylammonium perfluorohexane sulfonate (PFHxS-TMA)	189274-31-5
Tert-butylazanium;1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexane-1-sulfonate	202189-84-2
Bis(4-tert-butylphenyl)iodanium tridecafluorohexane-1-sulfonate	213740-81-9
Bis(4-methylphenyl)(phenyl)sulfanium tridecafluorohexane-1-sulfonate	341548-85-4
Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl-, salt with	421555-73-9
perfluorohexanesulfonic acid (1:2)	
Perfluorohexanesulfonic acid, Gallium(3+) salt (3:1) (PFHxS-Ga)	341035-71-0
Perfluorohexanesulfonic acid, Scandium(3+) salt (3:1) (PFHxS-Sc)	350836-93-0
Perfluorohexanesulfonic acid, Neodymium(3+) salt (3:1) (PFHxS-Nd)	41184-65-0
Perfluorohexanesulfonic acid, Yttrium(3+) salt (3:1) (PFHxS-Y)	41242-12-0



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Cond

3rdBuilding,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国・上海・徐汇区宜山路889号3号楼 邮编: 200233



Test Report No.: SHAEC23011883701 **Date:** Aug 16, 2023 Page 6 of 8

Cesium perfluorohexanesulfonate (PFHxS-Cs)	92011-17-1
Perfluorohexanesulfonic acid, Zinc salt (PFHxS-Zn)	70136-72-0
Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, perfluorohexanesulfonate (1:1)	421555-74-0
Tris(4-tert-butylphenyl)sulfanium tridecafluorohexane-1-sulfonate	425670-70-8
Tridecafluorohexanesulphonic acid, compound with 2,2'-iminodiethanol (1:1)	70225-16-0
Triethylammonium perfluorohexane sulfonate	72033-41-1
lodonium, bis[(1,1-dimethylethyl)phenyl]-, salt with perfluorohexanesulfonic acid (1:1)	866621-50-3
(4-Methylphenyl)diphenylsulfanium tridecafluorohexane-1-sulfonate	910606-39-2
{4-[(2-Methylprop-2-enoyl)oxy]phenyl}diphenylsulfanium tridecafluorohexane-1-sulfonate	911027-68-4
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)	928049-42-7
Perfluorohexylsulfonyl fluoride (PFHxS-F)	423-50-7
Perfluorohexylsulfonyl chloride (PFHxS-CI)	55591-23-6
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[3.3.1.13,7]dec-2-yl 2-methyl-2-propenoate, 3-hydroxytricyclo[3.3.1.13,7]dec-1-yl 2-methyl-2-propenoate and tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate	911027-69-5

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.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Cond

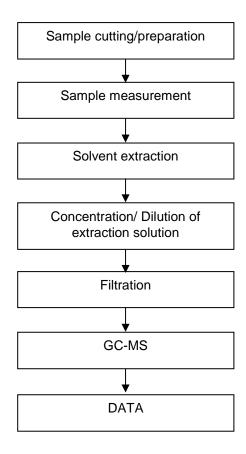
3rdBuilding,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国・上海・徐汇区宜山路889号3号楼 邮编: 200233



Test Report ATTACHMENTS

No.: SHAEC23011883701 **Date:** Aug 16, 2023 Page 7 of 8

Flame retardant Testing Flow Chart





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Cond

3rdBuilding,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国・上海・徐汇区宜山路889号3号楼 邮编: 200233



Test Report No.: SHAEC23011883701 **Date:** Aug 16, 2023 Page 8 of 8

Sample Photo:



SGS authenticate the photo on original report only *** End of Report ***



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <a href="http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Cond

3rdBuilding,No.889 Yishan Road Xuhui District,Shanghai China 200233 中国・上海・徐汇区宜山路889号3号楼 邮编: 200233