



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 1 of 45

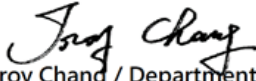
JX ADVANCED METALS CORPORATION, ISOHARA WORKS
187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

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

Sample Submitted By : NIKKO METALS TAIWAN CO., LTD.
Sample Name : LSI TARGET
Style/Item No. : Cu

Sample Receiving Date : 02-May-2025
Testing Period : 02-May-2025 to 13-May-2025

Test Requested : (1) As specified by client, with reference to RoHS 2011/65/EU Annex II and amending Directive (EU) 2015/863 to determine Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP contents in the submitted sample(s).
(2) As requested by the client, the risk of specific PFAS in the selected sample is evaluated. The total amounts of evaluated PFAS are 552 items, concluding 147 tested items and 405 listed items (see PFAS Remark).
(3) Please refer to next pages for the other item(s).
Test Results : Please refer to following pages.
Conclusion : (1) Based on the performed tests on submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP comply with the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.


Troy Chang / Department Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory - Taipei



PIN CODE: 9E2D8F24

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 2 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS
187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Part Description

No.1 : COPPER COLORED METAL

Test Result(s)

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Cadmium (Cd)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.	100
Lead (Pb)	With reference to IEC 62321-5: 2013, analysis was performed by ICP-OES.	mg/kg	2	n.d.	1000
Mercury (Hg)	With reference to IEC 62321-4: 2013+ AMD1: 2017, analysis was performed by ICP-OES.	mg/kg	2	n.d.	1000
Hexavalent Chromium Cr(VI) (#2)	With reference to IEC 62321-7-1: 2015, analysis was performed by UV-VIS.	µg/cm ²	0.1	n.d.	-
Monobromobiphenyl	With reference to IEC 62321-6: 2015, analysis was performed by GC/MS.	mg/kg	5	n.d.	-
Dibromobiphenyl		mg/kg	5	n.d.	-
Tribromobiphenyl		mg/kg	5	n.d.	-
Tetrabromobiphenyl		mg/kg	5	n.d.	-
Pentabromobiphenyl		mg/kg	5	n.d.	-
Hexabromobiphenyl		mg/kg	5	n.d.	-
Heptabromobiphenyl		mg/kg	5	n.d.	-
Octabromobiphenyl		mg/kg	5	n.d.	-
Nonabromobiphenyl		mg/kg	5	n.d.	-
Decabromobiphenyl		mg/kg	5	n.d.	-
Sum of PBBs		mg/kg	-	n.d.	1000
Monobromodiphenyl ether		mg/kg	5	n.d.	-
Dibromodiphenyl ether		mg/kg	5	n.d.	-
Tribromodiphenyl ether		mg/kg	5	n.d.	-
Tetrabromodiphenyl ether		mg/kg	5	n.d.	-
Pentabromodiphenyl ether		mg/kg	5	n.d.	-
Hexabromodiphenyl ether		mg/kg	5	n.d.	-
Heptabromodiphenyl ether		mg/kg	5	n.d.	-
Octabromodiphenyl ether		mg/kg	5	n.d.	-
Nonabromodiphenyl ether		mg/kg	5	n.d.	-
Decabromodiphenyl ether		mg/kg	5	n.d.	-
Sum of PBDEs		mg/kg	-	n.d.	1000

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 3 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Butyl benzyl phthalate (BBP)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Dibutyl phthalate (DBP)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Di-(2-ethylhexyl) phthalate (DEHP)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Diisobutyl phthalate (DIBP)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	1000
Diisodecyl phthalate (DIDP) (CAS No.: 26761-40-0, 68515-49-1)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	-
Diisononyl phthalate (DINP) (CAS No.: 28553-12-0, 68515-48-0)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	-
Di-n-octyl phthalate (DNOP) (CAS No.: 117-84-0)	With reference to IEC 62321-8: 2017, analysis was performed by GC/MS.	mg/kg	50	n.d.	-
Fluorine (F) (CAS No.: 14762-94-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
Chlorine (Cl) (CAS No.: 22537-15-1)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
Bromine (Br) (CAS No.: 10097-32-2)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
Iodine (I) (CAS No.: 14362-44-8)	With reference to BS EN 14582: 2016, analysis was performed by IC.	mg/kg	50	n.d.	-
Beryllium (Be) (CAS No.: 7440-41-7)	With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.	mg/kg	2	n.d.	-
Bismuth (Bi) (CAS No.: 7440-69-9)	With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.	mg/kg	2	n.d.	-
Phosphorus (P) (CAS No.: 7723-14-0)	With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.	mg/kg	2	n.d.	-
Antimony (Sb) (CAS No.: 7440-36-0)	With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.	mg/kg	2	n.d.	-
Selenium (Se) (CAS No.: 7782-49-2)	With reference to US EPA 3050B: 1996, analysis was performed by ICP-OES.	mg/kg	2	n.d.	-

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 4 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
PFAS					
PFHxA and its salts					
Perfluorohexane acid and its salts (PFHxA and its salts) (CAS No.: 307-24-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
PFHxA related compounds					
1H,1H,2H,2H-Perfluoro-1-octanol (6:2FTOH) (CAS No.: 647-42-7)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS and LC/MS/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorooctylacrylate (6:2FTA) (CAS No.: 17527-29-6)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorooctyl methacrylate (6:2 FTMAC) (CAS No.: 2144-53-8)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorooctanesulphonic acid and its salts (6:2 FTS and its salts) (CAS No.: 27619-97-2 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1,1,1,2,2,3,3,4,4,5,5,6,6-tridecafluoro-8-iodooctane (6:2 FTI) (CAS No.: 2043-57-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
Perfluorohexyl iodide (PFHxI) (CAS No.: 355-43-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
n-(4,4,5,5,6,6,7,7,8,8,9,9,9-tridecafluorononyl)iodoacetamide (CAS No.: 852527-50-5)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorooctyl triethoxysilane (POTS) (CAS No.: 51851-37-7)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 5 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
1H,1H,2H,2H-Perfluorooctyltrichlorosilane (CAS No.: 78560-45-9)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorooctyltrimethoxysilane (CAS No.: 85857-16-5)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.				
Mono[2-(perfluorohexyl)ethyl] Phosphate and its salts (6:2 monoPAP and its salts) (CAS No.: 57678-01-0 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
2-Iodo-1H,1H,1H,2H,3H,3H-perfluorononane (CAS No.: 38550-34-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
N-[3-(dimethylamino)propyl]-3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctanesulphonamide N-oxide (CAS No.: 80475-32-7)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
Thiocyanic acid, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl ester (CAS No.: 26650-09-9)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
2H,2H,3H,3H-Perfluorononanoic acid (6:3 FTCA) (CAS No.: 27854-30-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorooctanethiol (6:2 FTSH) (CAS No.: 34451-26-8)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
1H,1H,2H,2H-Perfluorooctyldimethylchlorosilane (6:2 FTSiMe ₂ Cl) (CAS No.: 102488-47-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
1-Iodo-1H,1H-Perfluoroheptane (6:1 FTI) (CAS No.: 212563-43-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 6 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
3-(Perfluorohexyl)propyl iodide (6:3 FTI) (CAS No.: 89889-20-3)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
1H,1H,2H,2H-Perfluorooctanephosphonic acid and its salts (6:2 FTPA and its salts) (CAS No.: 252237-40-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
1H,1H-perfluorohexan-1-ol (5:1 FTOH) (CAS No.: 423-46-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS and LC/MS/MS.	mg/kg	0.2	n.d.	-
1H,1H-perfluoro-1-heptanol (6:1 FTOH) (CAS No.: 375-82-6)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS and LC/MS/MS.	mg/kg	0.2	n.d.	-
3-(perfluorohexyl)propanol (6:3 FTOH) (CAS No.: 80806-68-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
3,3,4,4,5,5,6,6,7,7,7-undecafluoro-2-heptanol (CAS No.: 914637-05-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS and LC/MS/MS.	mg/kg	0.2	n.d.	-
1-(perfluorohexyl)octane (CAS No.: 133331-77-8)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
1H,1H-Perfluoroheptylamine (6:1 FTNH ₂) (CAS No.: 423-49-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
Perfluorohexyl ethylene (PFHxE) (CAS No.: 25291-17-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	1	n.d.	-
PFHxS and its salts					
Perfluorohexane sulfonate and its salts (PFHxS and its salts) (CAS No.: 355-46-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
PFHxS related compounds					
N-Methylperfluoro-1-hexanesulfonamide (N-Me-FHxSA) (CAS No.: 68259-15-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 7 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Perfluorohexane sulfonamide (PFHxSA) (CAS No.: 41997-13-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
N-[3-(dimethylamino)propyl]tridecafluoro hexanesulphonamide (N-AP-FHxSA) (CAS No.: 50598-28-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
2-[Methyl[(tridecafluorohexyl)sulphonyl]amino]ethyl acrylate (N-MeFHSEA) (CAS No.: 67584-57-0)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
2-Propenoic acid, 2-methyl-, 2-[methyl[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl]amino]ethyl ester (CAS No.: 67584-61-6)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
2-Propenoic acid, 2-methyl-, 2-[ethyl[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl]amino]ethyl ester (CAS No.: 67906-70-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1-Hexanesulfonamide, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-N-(2-hydroxyethyl)-N-methyl- (MeFHxSE) (CAS No.: 68555-75-9)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Glycine, N-ethyl-N-[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl] and its salts (EtFHxSAA and its salts) (CAS No.: 68957-32-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
PFOS and its salts					
Perfluorooctane sulfonates and its salts (PFOS and its salts) (CAS No.: 1763-23-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
PFOS related compounds					
N-ethylperfluoro-1-octanesulfonamide (EtFOSA) (CAS No.: 4151-50-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 8 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
N-Methyl-Perfluorooctanesulfonamide (N-Me-FOSA) (CAS No.: 31506-32-8)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
N-Ethyl-Perfluorooctanesulfonamidoethanol (N-Et-FOSE alcohol) (CAS No.: 1691-99-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
N-Methyl-Perfluorooctanesulfonamidoethanol (N-Me-FOSE alcohol) (CAS No.: 24448-09-7)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorooctanesulfonamide and its salts (PFOSA and its salts) (CAS No.: 754-91-6 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
PFOA and its salts					
Perfluorooctanoic acid and its salts (PFOA and its salts) (CAS No.: 335-67-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
PFOA related compounds					
Methyl perfluorooctanoate (Me-PFOA) (CAS No.: 376-27-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
Ethyl perfluorooctanoate (Et-PFOA) (CAS No.: 3108-24-5)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
Perfluoro-1-iodooctane (PFOI) (CAS No.: 507-63-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
3-Perfluoroheptyl propanoic acid (7:3 FTCA) (CAS No.: 812-70-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Mono-[2-(perfluorooctyl)ethyl]phosphate and its salts (8:2 monoPAP and its salts) (CAS No.: 57678-03-2 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 9 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS
187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
1H,1H,2H,2H-Perfluorodecanesulfonic acid and its salts (8:2 FTS and its salts) (CAS No.: 39108-34-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH) (CAS No.: 678-39-7)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS and LC/MS/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA) (CAS No.: 27905-45-9)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA) (CAS No.: 1996-88-9)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
2H,2H-Perfluorodecane acid and its salts (H2PFDA and its salts) (CAS No.: 27854-31-5 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-Perfluorodecyl iodide (8_2 FTI) (CAS No.: 2043-53-0)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorodecyltriethoxysilane (8:2 FTSi(OC2H5)3) (CAS No.: 101947-16-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
2H,2H,3H,3H-Perfluoroundecanoic Acid and its salts (4HPFUnA and its salts) (CAS No.: 34598-33-9 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H-Heptadecafluoro-1-decene (PFDE) (CAS No.: 21652-58-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
Bis(1H,1H,2H,2H-Perfluorodecyl)phosphate and its salts (8_2diPAP and its salts) (CAS No.: 678-41-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 10 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS
187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
C9-C20 PFCAs its salts and related compounds					
Mono-[2-(perfluorooctyl)ethyl]phosphate and its salts (8:2 monoPAP and its salts) (CAS No.: 57678-03-2 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorodecanesulfonic acid and its salts (8:2 FTS and its salts) (CAS No.: 39108-34-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH) (CAS No.: 678-39-7)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS and LC/MS/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA) (CAS No.: 27905-45-9)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA) (CAS No.: 1996-88-9)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
2H,2H-Perfluorodecane acid and its salts (H2PFDA and its salts) (CAS No.: 27854-31-5 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-Perfluorodecyl iodide (8_2 FTI) (CAS No.: 2043-53-0)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorodecyltriethoxysilane (8:2 FTSi(OC2H5)3) (CAS No.: 101947-16-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
2H,2H,3H,3H-Perfluoroundecanoic Acid and its salts (4HPFUnA and its salts) (CAS No.: 34598-33-9 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H-Heptadecafluoro-1-decene (PFDE) (CAS No.: 21652-58-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 11 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Bis(1H,1H,2H,2H-Perfluorodecyl)phosphate and its salts (8_2diPAP and its salts) (CAS No.: 678-41-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorononan-1-oic acid and its salts (PFNA and its salts) (CAS No.: 375-95-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluoro-3,7-dimethyloctanoic Acid (PF-3,7-DMOA) (CAS No.: 172155-07-6)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorodecane acid and its salts (PFDA and its salts) (CAS No.: 335-76-2 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluoroundecanoic acid and its salts (PFUnDA and its salts) (CAS No.: 2058-94-8 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorododecanoic acid and its salts (PFDoDA and its salts) (CAS No.: 307-55-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorodecane sulfonate and its salts (PFDS and its salts) (CAS No.: 335-77-3 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Pentacosafuorotridecanoic acid and its salts (PFTrDA and its salts) (CAS No.: 72629-94-8 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorotetradecanoic acid and its salts (PFTDA and its salts) (CAS No.: 376-06-7 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-Perfluoro-1-dodecanol (10:2FTOH) (CAS No.: 865-86-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS and LC/MS/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorododecylacrylate (10:2FTA) (CAS No.: 17741-60-5)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 12 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
1H,1H,2H,2H-Perfluorododecyl methacrylate (10:2 FTMA) (CAS No.: 2144-54-9)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-perfluorotetradecan-1-ol (12:2 FTOH) (CAS No.: 39239-77-5)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS and LC/MS/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorododecane sulfonic acid and its salts (10:2 FTS and its salts) (CAS No.: 120226-60-0 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-Perfluorododecyl iodide (10:2 FTI) (CAS No.: 2043-54-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorotetradecyl iodide (12:2 FTI) (CAS No.: 30046-31-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
Perfluorononane sulfonic acid and its salts (PFNS and its salts) (CAS No.: 68259-12-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluoroundecane sulfonic acid and its salts (PFUnDS and its salts) (CAS No.: 749786-16-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorododecane sulfonic acid and its salts (PFDoDS and its salts) (CAS No.: 79780-39-5 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorotridecane sulfonic acid and its salts (PFTrDS and its salts) (CAS No.: 791563-89-8 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
10:2 Fluortelomerphosphatediester and its salts (10:2 diPAP and its salts) (CAS No.: 1895-26-7 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
Perfluorododecyl iodide (PFDoDI) (CAS No.: 307-60-8)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 13 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Perfluorodecyl iodide (PFDI) (CAS No.: 423-62-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
10:2 Fluortelomerphosphatemonoester (10:2 monoPAP and its salts) (CAS No.: 57678-05-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
Perfluoropentadecanoic acid and its salts (PFPeDA and its salts, C15) (CAS No.: 141074-63-7 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
Perfluorohexadecanoic acid and its salts (PFHxDA and its salts, C16) (CAS No.: 67905-19-5 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorooctadecanoic acid and its salts (PFODA and its salts, C18) (CAS No.: 16517-11-6 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Other PFAS					
Trifluoroacetic acid and its salts (TFA and its salts) (CAS No.: 76-05-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	1	n.d.	-
Perfluorobutane acid and its salts (PFBA and its salts) (CAS No.: 375-22-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorobutane sulfonate and its salts (PFBS and its salts) (CAS No.: 375-73-5 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorobutane sulfon amides (CAS No.: 30334-69-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
1,1,2,2,3,3,4,4,4-nonafluoro-N-(2-hydroxyethyl)-N-methylbutane-1-sulphonamide (PFBS-NC3H8O) (CAS No.: 34454-97-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-Perfluorohexyl methacrylate (4:2 FTMA) (CAS No.: 1799-84-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 14 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Perfluoropentane acid and its salts (PFPA and its salts) (CAS No.: 2706-90-3 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluoroheptane acid and its salts (PFHpA and its salts) (CAS No.: 375-85-9 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
7H-Dodecanefluoroheptane acid and its salts (HPFHpA and its salts) (CAS No.: 1546-95-8 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluoroheptane sulfonate and its salts (PFHpS and its salts) (CAS No.: 375-92-8 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluoro-3-methoxypropanoic acid (PFMPA) (CAS No.: 377-73-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluoro-4-methoxybutanoic acid (PFMBA) (CAS No.: 863090-89-5)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA) (CAS No.: 151772-58-6)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
4,8-Dioxa-3H-perfluorononanoic acid and its salts (ADONA and its salts) (CAS No.: 919005-14-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-Perfluoro-1-hexanol (4:2FTOH) (CAS No.: 2043-47-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS and LC/MS/MS.	mg/kg	0.4	n.d.	-
2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid and its salts (HFPO-DA and its salts) (CAS No.: 13252-13-6 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-Perfluorohexanesulfonic acid and its salts (4:2 FTS and its salts) (CAS No.: 757124-72-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 15 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Perfluorooctane sulfonamidoacetic acid and its salts (FOSAA and its salts) (CAS No.: 2806-24-8 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
N-methylperfluorooctane sulfonamidoacetic acid and its salts (N-MeFOSAA and its salts) (CAS No.: 2355-31-9 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
N-ethylperfluorooctane sulfonamidoacetic acid and its salts (N-EtFOSAA and its salts) (CAS No.: 2991-50-6 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluoropentane sulfonic acid and its salts (PFPeS and its salts) (CAS No.: 2706-91-4 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
3-Perfluoropropyl propanoic acid and its salts (3:3 FTCA and its salts) (CAS No.: 356-02-5 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
2-Perfluorohexyl ethanoic acid (6:2 FTCA) (CAS No.: 53826-12-3)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
3-Perfluoropentyl propanoic acid and its salts (5:3 FTCA and its salts) (CAS No.: 914637-49-3 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluoro(2-ethoxyethane)sulfonic acid and its salts (PFEESA and its salts) (CAS No.: 113507-82-7 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid and its salts (9Cl-PF3ONS and its salts) (CAS No.: 756426-58-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid and its salts (11Cl-PF3OUdS and its salts) (CAS No.: 763051-92-9 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 16 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
2-(N-ethylperfluorooctanesulfamido)ethyl acrylate (EtFOSAC) (CAS No.: 423-82-5)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
11H-Perfluoroundecanoic acid and its salts (11H-PFUnDA and its salts) (CAS No.: 1765-48-6 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
Pentafluoropropionate acid and its salts (PFPrA and its salts) (CAS No.: 422-64-0 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorodecyltrichlorosilane (CAS No.: 78560-44-8)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1H,1H,2H,2H-Perfluorodecyltrimethoxysilane (CAS No.: 83048-65-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.				
2H-Perfluoro-2-decenoic acid (8:2 FTUCA) (CAS No.: 70887-84-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
2H-Perfluoro-2-octenoic acid (6:2 FTUCA) (CAS No.: 70887-88-6)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
2H-Perfluoro-2-dodecenoic acid (10:2 FTUCA) (CAS No.: 70887-94-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
2-Perfluorodecyl ethanoic acid (10:2 FTCA) (CAS No.: 53826-13-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
6:6 Perfluorophosphinic acid and its salts (6:6 PFPI and its salts) (CAS No.: 40143-77-9 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
6:8 Perfluorophosphinic acid (6:8 PFPI) (CAS No.: 610800-34-5)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 17 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
8:8 Perfluorophosphinic acid and its salts (8:8 PFPi and its salts) (CAS No.: 40143-79-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H,2H,2H-Heptadecafluorodecyl acetate (8:2 FTOAc) (CAS No.: 37858-04-1)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
1-Dodecanol, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-heneicosafuoro-, 1-acetate (10:2 FTOAc) (CAS No.: 37858-05-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
Perfluoro-2,5-dimethyl-3,6-dioxanonoic acid and its salts (HFPO-TA and its salts) (CAS No.: 13252-14-7 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.2	n.d.	-
Pentafluoroethane sulfonic acid and its salts (PFETs and its salts) (CAS No.: 354-88-1 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Bis[2-(perfluorohexyl)ethyl] Phosphate and its salts (6:2 diPAP and its salts) (CAS No.: 57677-95-9 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Trifluoromethanesulfonimide and its salts (TFSI and its salts) (CAS No.: 82113-65-3 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Trifluoromethane sulfonic acid and its salts (TFMS and its salts) (CAS No.: 1493-13-6 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluoropropate sulfonic acid and its salts (PFPrS and its salts) (CAS No.: 423-41-6 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1-pefluoroheptyl ethanol (7:2 secondary) (7:2s FTOH) (CAS No.: 24015-83-6)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
4:2 Fluorotelomer iodide (4:2 FTI) (CAS No.: 2043-55-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 18 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS
187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
Perfluoroheptane-1-sulfinic acid and its salts (PFHpSi and its salts) (CAS No.: 769067-51-8 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Perfluorooctylphosphoic acid and its salts (PFOPA and its salts) (CAS No.: 40143-78-0 and its salts)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
1H,1H-Perfluorooctylamine (CAS No.: 307-29-9)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
Perfluoroheptanamide (CAS No.: 2358-22-7)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-
Perfluorobutyramide (CAS No.: 662-50-0)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
1H,1H,2H,2H-Nonafluorohexyl acrylate (4:2 FTA) (CAS No.: 52591-27-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.2	n.d.	-
N-methylperfluoro-1-butanedisulfonamide (CAS No.: 68298-12-4)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
N-Ethyl-1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-N-(2-hydroxyethyl)-1-hexanesulfonamide (CAS No.: 34455-03-3)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by LC/MS/MS.	mg/kg	0.01	n.d.	-
Ethyl perfluoroisobutyl ether and its isomers (CAS No.: 163702-05-4 and others)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	10	n.d.	-
1,1,1,2,2,3,4,4,5,5,5-decafluoro-Pentane (CAS No.: 138495-42-8)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	10	n.d.	-
Trifluorotoluene (CAS No.: 98-08-8)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	1	n.d.	-

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 19 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS
187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Test Item(s)	Method	Unit	MDL	Result	Limit
				No.1	
1-Chloro-4 (Trifluoromethyl)Benzene (CAS No.: 98-56-6)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	1	n.d.	-
1H,1H,2H,2H-Perfluorodecylmethyldichlorosilane (CAS No.: 3102-79-2)	Modified EN 17681-1: 2022 & EN 17681-2: 2022, analysis was performed by GC/MS.	mg/kg	0.1	n.d.	-

Note :

1. mg/kg = ppm ; 0.1wt% = 0.1% = 1000ppm
2. MDL = Method Detection Limit
3. n.d. = Not Detected (Less than MDL)
4. "-" = Not Regulated
5. (#2) =
 - a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 $\mu\text{g}/\text{cm}^2$. The sample coating is considered to contain Cr(VI).
 - b. The sample is negative for Cr(VI) if Cr(VI) is n.d. (concentration less than 0.10 $\mu\text{g}/\text{cm}^2$). The coating is considered a non-Cr(VI) based coating
 - c. The result between 0.10 $\mu\text{g}/\text{cm}^2$ and 0.13 $\mu\text{g}/\text{cm}^2$ is considered to be inconclusive - unavoidable coating variations may influence the determination.
6. 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. According to this rule, the judgement of conformity is based on the comparing test results with limits.

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 20 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS
187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

PFAS Remark :

The quantitative technology of PFAS is to analyze the specific structure of PFAS substances. However, PFAS acid and its salts with the same carbon number group have the same specific structure that can be identified. The tested results of the analyzed specific structure cannot be distinguished to identify the contribution from PFAS acid or its salts. Therefore, the tested results display the sum of concentrations of PFAS acids and its salts with the same carbon number group. The concentration of PFAS substances in the below table have been included in the tested results, please refer to the table for relevant information: (The listed PFAS substances are examples only, it do not include all PFAS salts with the same carbon number group.)

Group Name	Substance Name	CAS No.
TFA, its salts	Trifluoroacetic acid (TFA)	76-05-1
	Sodium trifluoroacetate (TFA-Na)	2923-18-4
	Thallium(III) trifluoroacetate (TFA-Tl)	23586-53-0
	Lithium Trifluoroacetate (TFA-Li)	2923-17-3
	Silver trifluoroacetate (TFA-Ag)	2966-50-9
	Cesium Trifluoroacetate (TFA-Cs)	21907-50-6
	Potassium trifluoroacetate (TFA-K)	2923-16-2
	Ammoniumtrifluoroacetate (TFA-NH ₄)	3336-58-1
	Mercury(II) trifluoroacetate (TFA-Hg)	13257-51-7
	Palladium(II) trifluoroacetate (TFA-Pd)	42196-31-6
	Trifluoroacetate / Trifluoroacetic acid anion (TFA anion)	14477-72-6
	Dimethyl[(trifluoroacetyl)oxy]sulfonium trifluoroacetate	57738-66-6
	Aluminium tris(trifluoroacetate) (TFA-Al)	36554-89-9
	Barium bis(trifluoroacetate) (TFA-Ba)	60884-92-6
	Erbium tris(trifluoroacetate) (TFA-Er)	70236-99-6
	Indium trifluoroacetate (TFA-In)	36554-90-2
	Lanthanum tris(trifluoroacetate) (TFA-La)	70236-92-9
	Nickel(2+) trifluoroacetate (TFA-Ni)	16083-14-0
	Lead(II) trifluoroacetate (TFA-Pb)	4146-73-0
	Acetic acid, trifluoro-, rhodium(2+) salt (TFA-Rh)	72654-51-4
	Thulium tris(trifluoroacetate) (TFA-Tm)	70237-00-2
	Ytterbium(3+) tris(trifluoroacetate) (TFA-Yb)	87863-62-5
	Zinc bis(trifluoroacetate) (TFA-Zn)	21907-47-1
	Ruthenium(II) 2,2,2-trifluoroacetate (TFA-Ru)	61612-84-8
	Magnesium 2,2,2-trifluoroacetate (TFA-Mg)	123333-72-2
	Copper(2+) trifluoroacetate (TFA-Cu)	123333-88-0
PFBA, its salts	Perfluorobutane acid (PFBA)	375-22-4
	Ammonium perfluorobutanoate (PFBA-NH ₄)	10495-86-0
	Sodium perfluorobutanoate (PFBA-Na)	2218-54-4

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 21 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
PFBA, its salts	Potassium heptafluorobutanoate (PFBA-K)	2966-54-3
	Silver perfluorobutanoate (PFBA-Ag)	3794-64-7
	Lithium perfluorobutanoate (PFBA-Li)	4146-76-3
	Heptafluorobutanoic acid-piperazine (1:1)	375-04-2
	Perfluorobutanoate (anion)	45048-62-2
PFBS, its salts & derivatives	Perfluorobutane sulfonate (PFBS)	375-73-5
	1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, sodium salt (1:1) (PFBS-Na)	60453-92-1
	Lithium perfluorobutanesulfonate (PFBS-Li)	131651-65-5
	Magnesium perfluorobutanesulfonate (PFBS-Mg)	507453-86-3
	Perfluorobutane Sulfonate K-salt (PFBS-K)	29420-49-3
	Perfluorobutane sulfonyl fluoride (PFBS-F)	375-72-4
	Tetraethylammonium perfluorobutanesulfonate (PFBS-N(CH ₃ CH ₂) ₄)	25628-08-4
	Triphenylsulfonium perfluorobutane sulfonate (TPS-PFBS)	144317-44-2
	Dimethyl(phenyl)sulfonium perfluorobutane sulfonate	220133-51-7
	Tetrabutyl-phosphonium nonafluoro-butane-1-sulfonate	220689-12-3
	Morpholinium perfluorobutanesulfonate	503155-89-3
	Ammonium 1,1,2,2,3,3,4,4,4-nonafluorobutane-1-sulphonate (PFBS-NH ₄)	68259-10-9
	Nonafluorobutanesulfonic acidHydrate	59933-66-3
	Nonafluoro-1-butanefulfonyl chloride (PFBS-Cl)	2991-84-6
	Bis(4-tert-butylphenyl)iodonium perfluoro-1-butanefulfonyl (PFBS-I(C ₆ H ₄) ₂ (C ₄ H ₉) ₂)	194999-85-4
	1,1,2,2,3,3,4,4,4-nonafluorobutane-1-sulphonic acid, compound with 2,2'-iminodiethanol (1:1) (PFBS-NH(C ₂ H ₅ O) ₂)	70225-18-2
	1-(4-butoxy-1-naphthyl)tetrahydrothiophenium nonafluorobutane-1-sulfonate (PFBS-SC ₁₈ H ₂₃ O)	209482-18-8
	Tetrabutylammonium nonafluorobutanesulfonate ((PFBS-N(C ₄ H ₉) ₄))	108427-52-7
	Diphenyliodonium nonafluorobutane-1-sulfonate ((PFBS-I(C ₆ H ₅) ₂))	194999-82-1
	Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefulfonyl (1:1)	241806-75-7
	Sulfonium, (4-cyclohexylphenyl)diphenyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefulfonyl (1:1)	425670-64-0

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 22 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
PFBS, its salts & derivatives	Thiophenium, tetrahydro-1-(1-methyl-1H-indol-3-yl)-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	867373-18-0
	Pyridinium, 1-ethyl-3-methyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	1015420-87-7
	1H-Imidazolium, 1-methyl-3-octyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	905972-83-0
	1H-Imidazolium, 3-hexyl-1-methyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	1001557-05-6
	2-Propanaminium, N,N-dimethyl-N-(1-methylethyl)-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	374571-81-0
	Sulfonium, [4-[2-(1,1-dimethylethoxy)-2-oxoethoxy]phenyl]diphenyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	857285-80-4
	1-Butanaminium, N,N-dibutyl-N-methyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	124472-66-8
	1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, zinc salt (2:1) (PFBS-Zn)	502457-69-4
	1-Pentanaminium, N,N,N-tripropyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	56773-55-8
	Perfluorobutanesulfonic acid tetramethylammonium salt (PFBS-N(CH ₃) ₄)	25628-17-5
	1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, 1,1'-anhydride	36913-91-4
	Perfluorobutane sulfonate (anion)	45187-15-3
	1-(4-butoxy-1-naphthalenyl)tetrahydrothiophenium - 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate	EC No. 468-770-4
	1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, compd. with N,N-diethylethanamine (1:1)	182059-38-7
	1-Octanaminium, N-(2-hydroxyethyl)-N,N-dimethyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	334529-55-4
	Pyridinium, 1-hexadecyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	334529-62-3
	Pyridinium, 1-butyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	334529-64-5
	1-Octanaminium, N-methyl-N,N-dioctyl-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	495417-51-1
	Sulfonium, tris(4-methylphenyl)-, 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonate (1:1)	722538-68-3

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 23 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
PFPA, its salts	Perfluoropentane acid (PFPA)	2706-90-3
	Sodium perfluoropentanoate (PFPA-Na)	2706-89-0
	Potassium perfluoropentanoate (PFPA-K)	336-23-2
	Ammonium perfluoropentanoate (PFPA-NH ₄)	68259-11-0
	Lithium perfluoropentanoate (PFPA-Li)	198482-22-3
	Silver perfluoropentanoate (PFPA-Ag)	2795-30-4
	Perfluoropentanoate (anion)	45167-47-3
	Pentanoic acid, 2,2,3,3,4,4,5,5-nonafluoro-, compd. with phenylmethyl carbamimidothioate (1:1) (PFPeA-C ₈ H ₁₀ N ₂ S)	64808-55-5
	Nonafluoropentanoic anhydrid (PFPeAA)	308-28-1
PFHxA, its salts & derivatives	Perfluorohexane acid (PFHxA)	307-24-4
	Ammonium perfluorohexanoate (PFHxA-NH ₄)	21615-47-4
	Sodium perfluorohexanoate (PFHxA-Na)	2923-26-4
	Potassium perfluorohexanoate (PFHxA-K)	3109-94-2
	Perfluorohexanoyl fluoride (PFHxA-F)	355-38-4
	Silver perfluorohexanoate (PFHxA-Ag)	336-02-7
	Lithium perfluorohexanoate (PFHxA-Li)	90430-61-8
	Perfluorohexanoic anhydride	308-13-4
	Hexanoic acid, undecafluoro-, compd. with piperazine (2:1) (8Cl,9Cl)	423-47-2
	Perfluorohexanoate (anion)	92612-52-7
	Perfluorohexanoyl chloride (PFHxA-Cl)	335-53-5
	Hexanoic acid, 2,2,3,3,4,4,5,5,6,6,6-undecafluoro-, compd. with 1-hexanamine (1:1) (PFHxA-C ₆ H ₁₅ N)	565225-91-4
	Hexanoic acid, 2,2,3,3,4,4,5,5,6,6,6-undecafluoro-, compd. with 1-phenylpiperazine (1:1) (PFHxA-C ₁₀ H ₁₄ N ₂)	985-60-4
6:2 FTS, its salts	1H,1H,2H,2H-Perfluorooctanesulphonic acid (6:2 FTS)	27619-97-2
	Sodium 1H,1H,2H,2H-Perfluorooctanesulfonate (6:2 FTS-Na)	27619-94-9
	Potassium 1H,1H,2H,2H-Perfluorooctanesulfonate (6:2 FTS-K)	59587-38-1
	Ammonium 1H,1H,2H,2H-Perfluorooctanesulfonate (6:2 FTS-NH ₄)	59587-39-2
	1-Octanesulfonic acid, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-, barium salt (2:1) (6:2 FTS-Ba)	1807944-82-6
	3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooctane-1-sulfonate (6:2 FTS(anion))	425670-75-3

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 24 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
6:2 monoPAP, its salts	Mono[2-(perfluorohexyl)ethyl] Phosphate (6:2 monoPAP)	57678-01-0
	Diammonium 6:2 fluorotelomer phosphate monoester (6:2 monoPAP-NH ₄ NH ₄)	1000852-37-8
6:2 FTPA, its salts	1H,1H,2H,2H-Perfluorooctanephosphonic acid (6:2 FTPA)	252237-40-4
	Sodium hydrogen ((perfluorohexyl)ethyl)phosphonate (Cheminox FHP 2OH-Na(PFHEPA-Na))	1189052-95-6
PFHxS, its salts & derivatives	Perfluorohexane sulfonate (PFHxS)	355-46-4
	Perfluorohexanesulfonate Na-salt (PFHxS-Na)	82382-12-5
	Perfluorohexanesulfonate K-salt (PFHxS-K)	3871-99-6
	Ammonium perfluorohexanesulfonate (PFHxS-NH ₄)	68259-08-5
	Perfluorohexanesulfonate Li-salt (PFHxS-Li)	55120-77-9
	Perfluorohexanesulfonate Zn-salt (PFHxS-Zn)	70136-72-0
	Perfluorohexane sulphonyl fluoride (PFHxS-F)	423-50-7
	Phosphonium, triphenyl(phenylmethyl)-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	1000597-52-3
	N,N,N-tributylbutan-1-aminium tridecafluorohexane-1-sulfonate	108427-54-9
	N,N,N-triethylethanaminium tridecafluorohexane-1-sulfonate (1:1)	108427-55-0
	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. With pyrrolidine (1:1)	1187817-57-7
	Ethanaminium, N-[4-[[4-(diethylamino)phenyl][4-(ethylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-ethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	1310480-24-0
	Methanaminium, N-[4-[[4-(dimethylamino)phenyl][4-(ethylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	1310480-27-3
	Methanaminium, N-[4-[[4-(dimethylamino)phenyl][4-(phenylamino)-1-naphthalenyl]methylene]-2,5-cyclohexadien-1-ylidene]-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	1310480-28-4
	Beta-Cyclodextrin, compd. with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid ion(1-) (1:1)	1329995-45-0
	Gamma-Cyclodextrin, compd. with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid ion(1-) (1:1)	1329995-69-8
	Sulfonium, triphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	144116-10-9

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 25 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
PFHxS, its salts & derivatives	Quinolinium, 1-(carboxymethyl)-4-[2-[4-[4-(2,2-diphenylethenyl)phenyl]-1,2,3,3a,4,8b-hexahydrocyclopent[b]indol-7-yl]ethenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	1462414-59-0
	Iodonium, diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	153443-35-7
	Methanaminium, N,N,N-trimethyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1)	189274-31-5
	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with 2-methyl-2-propanamine (1:1)	202189-84-2
	Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	213740-81-9
	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, gallium salt (9Cl)	341035-71-0
	Sulfonium, bis(4-methylphenyl)phenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	341548-85-4
	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, scandium(3+) salt (3:1) (PFHxS-Sc)	350836-93-0
	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, neodymium(3+) salt (3:1) (PFHxS-Nd)	41184-65-0
	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, yttrium(3+) salt (3:1) (PFHxS-Y)	41242-12-0
	Sulfonium, (thiodi-4,1-phenylene)bis[diphenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:2)	421555-73-9
	Iodonium, bis[4-(1,1-dimethylpropyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid	421555-74-0
	Sulfonium, tris[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	425670-70-8
	Tridecafluorohexanesulphonic acid, compound with 2,2'-iminodiethanol (1:1)	70225-16-0
	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with N,N-diethylethanamine (1:1)	72033-41-1

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 26 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
PFHxS, its salts & derivatives	Iodonium, bis[(1,1-dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) (9CI)	866621-50-3
	Sulfonium, (4-methylphenyl)diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	910606-39-2
	Sulfonium, [4-[(2-methyl-1-oxo-2-propen-1-yl)oxy]phenyl]diphenyl-, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonate (1:1)	911027-68-4
	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, cesium salt (1:1) (PFHxS-CsH)	92011-17-1
	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 chloride (PFHxS-Cl)	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[3.3.1.1 ^{3,7}]dec-2-yl 2-methyl-2-propenoate, 3-hydroxytricyclo[3.3.1.1 ^{3,7}]dec-1-yl 2-methyl-2-propenoate and tetrahydro-2-oxo-3-furanyl 2-methyl-2-propenoate	911027-69-5
	Perfluorohexane sulfonate (anion)	108427-53-8
EtFHxSAA, its salts	Tetrabutylphosphonium tridecafluorohexane-1-sulfonate (PFHxS-P (C ₄ H ₉) ₄)	2310194-12-6
	Glycine, N-ethyl-N-[(1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluorohexyl)sulfonyl] (EtFHxSAA)	68957-32-4
	Potassium N-ethyl-N-[(tridecafluorohexyl)sulfonyl]glycinate (EtFHxSAA-K)	67584-53-6
PFHpA, its salts	Sodium N-ethyl-N-[(tridecafluorohexyl)sulphonyl]glycinate (EtFHxSAA-Na)	68555-70-4
	Perfluoroheptane acid (PFHpA)	375-85-9
	Sodium perfluoroheptanoate (PFHpA-Na)	20109-59-5
	Potassium perfluoroheptanoate (PFHpA-K)	21049-36-5
	Ammonium perfluoroheptanoate (PFHpA-NH ₄)	6130-43-4
	Cesium perfluoroheptanoate (PFHpA-Cs)	171198-24-6
	Silver perfluoroheptanoate (PFHpA-Ag)	424-05-5
	Lithium perfluoroheptanoate (PFHpA-Li)	60871-90-1
	Perfluoroheptanoate (anion)	120885-29-2

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



Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 27 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
HPFHpA, its salts	7H-Dodecanefluoroheptane acid (HPFHpA)	1546-95-8
	Sodium 2,2,3,3,4,4,5,5,6,6,7,7-dodecafluoroheptanoate (HPFHpA-Na)	2264-25-7
	Ammonium 2,2,3,3,4,4,5,5,6,6,7,7-dodecafluoroheptanoate (HPFHpA-NH ₄)	376-34-1
	7H-Perfluoroheptanoate (HPFHpA(anion))	69681-35-2
PFHpS, its salts	Perfluoroheptane sulfonate (PFHpS)	375-92-8
	Perfluoroheptanesulfonate Na-salt (PFHpS-Na)	21934-50-9
	Potassium perfluoroheptanesulfonate (PFHpS-K)	60270-55-5
	Ammonium perfluoroheptanesulfonate (PFHpS-NH ₄)	68259-07-4
	Lithium perfluoroheptanesulfonate (PFHpS-Li)	117806-54-9
	1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, compd. with 2,2'-iminobis[ethanol] (1:1)	70225-15-9
	Perfluoroheptane sulfonate (anion)	146689-46-5
	Triethylammonium perfluoroheptane sulfonate	72033-40-0
	Tetraethylammonium perfluoroheptane sulfonate	439863-97-5
	1-Heptanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,7-pentadecafluoro-, anhydride (9CI) (PFHpSA)	140429-92-1
PFOS, its salts & derivatives	Perfluorooctane sulfonates (PFOS)	1763-23-1
	Potassium perfluorooctanesulfonate (PFOS-K)	2795-39-3
	Perfluorooctanesulfonic acid, lithium salt (PFOS-Li)	29457-72-5
	Perfluorooctanesulfonic acid, ammonium salt (PFOS-NH ₄)	29081-56-9
	Perfluorooctane sulfonate diethanolamine salt (PFOS-NH(C ₂ H ₄ OH) ₂)	70225-14-8
	Perfluorooctanesulfonic acid, tetraethylammonium salt (PFOS-N(C ₂ H ₅) ₄)	56773-42-3
	N-decyl-N,N-dimethyldecan-1-aminium 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctane-1-sulfonate (PFOS-DDA)	251099-16-8
	TetrabutylAmmonium perfluorooctanesulfonate (PFOS-N(C ₄ H ₉) ₄)	111873-33-7
	Perfluorooctane sulfonyl fluoride (POSF)	307-35-7
	Perfluorooctanesulfonic acid, magnesium salt (PFOS-Mg)	91036-71-4
	Perfluorooctanesulfonic acid, sodium salt (PFOS-Na)	4021-47-0
	Piperidine 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctanesulfonate	71463-74-6

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 28 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
PFOS, its salts & derivatives	Perfluorooctanesulfonate (anion)	45298-90-6
	1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-, compd. with N,N-diethylethanamine (1:1) (PFOS-N(C ₂ H ₅) ₃)	54439-46-2
	Methanaminium, N,N,N-trimethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1) (PFOS-N(CH ₃) ₄)	56773-44-5
	1-Pentanaminium, N,N,N-tripropyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1) (PFOS-N(C ₃ H ₇) ₃ (C ₅ H ₁₁))	56773-56-9
	1-Butanaminium, N,N-dibutyl-N-methyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1) (PFOS-N(C ₄ H ₉) ₃ (CH ₃))	124472-68-0
	Iodonium, bis[4-(1,1-dimethylethyl)phenyl]-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1)	213740-80-8
	Sulfonium, diphenyl(2,4,6-trimethylphenyl)-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1)	258341-99-0
	Pyridinium, 1-hexadecyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1)	334529-63-4
	1-Decanaminium, N,N,N-triethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1-octanesulfonate (1:1)	773895-92-4
	Tetrabutylphosphonium perfluorooctane sulfonate (PFOS-P(C ₄ H ₉) ₄)	2185049-59-4
	Perfluorooctanesulfonic acid diethylamine salt (PFOS-C ₄ H ₁₁ N)	2205029-08-7
	Heptyldimethyl[2-[(2-methylprop-2-enoyl)oxy]ethyl]azanium perfluorooctanesulfonate (PFOS-C ₁₅ H ₃₀ NO ₂)	1203998-97-3
	1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-, 1,1'-anhydride (PFOSAN)	423-92-7
PFOSA, its salts	Perfluorooctanesulfonamide (PFOSA)	754-91-6
	Perfluorooctanesulfonamide lithium salt (1:1) (PFOSA-Li)	76752-79-9
	Perfluorooctanesulfonamide Sodium salt (1:1) (PFOSA-Na)	76752-78-8
	Perfluorooctanesulfonamide Potassium salt (1:1) (PFOSA-K)	76752-70-0
	Perfluorooctanesulfonamide Ammonium salt (1:1) (PFOSA-NH ₄)	76752-72-2

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 29 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
PFOA, its salts	heptadecafluorooctane-1-sulphonamide, compound with triethylamine(1:1) (PFOA-C ₆ H ₁₅ N)	76752-82-4
PFOA, its salts & derivatives	Perfluorooctanoic acid (PFOA)	335-67-1
	Sodium perfluorooctanoate (PFOA-Na)	335-95-5
	Potassium perfluorooctanoate (PFOA-K)	2395-00-8
	Silver perfluorooctanoate (PFOA-Ag)	335-93-3
	Perfluorooctanoyl fluoride (PFOA-F)	335-66-0
	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1
	Lithium perfluorooctanoate (PFOA-Li)	17125-58-5
	Cobalt perfluorooctanoate (PFOA-Co)	35965-01-6
	Cesium perfluorooctanoate (PFOA-Cs)	17125-60-9
	Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, chromium(3+) (PFOA-Cr(3 ⁺))	68141-02-6
	Pentadecafluorooctanoic acid--piperazine (2/1)PFOA-NH(C ₄ H ₁₀ N)	423-52-9
	Pentadecafluorooctanoate (anion)	45285-51-6
	Perfluorooctanoic Anhydride	33496-48-9
	Ethanaminium, N,N,N-triethyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoate (1:1)	98241-25-9
	Tetramethylammoniumperfluorooctanoat	32609-65-7
	1-Propanaminium, N,N,N-tripropyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoate (1:1)	277749-00-5
	Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, potassium salt, hydrate (1:1:2) (PFOA-K(H ₂ O) ₂)	98065-31-7
	Octanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluoro-, compd. with ethanamine (1:1) (PFOA-C ₂ H ₇ N)	1376936-03-6
	Octanoic acid, pentadecafluoro-, compd. with pyridine (1:1) (9CI) (PFOA-C ₅ H ₅ N)	95658-47-2
	Pentadecafluorooctanoic acid- 1-phenylpiperazine(1:1) (PFOA-C ₁₀ H ₁₄ N ₂)	1514-68-7
	1-Octanaminium, N,N,N-trimethyl-, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctanoate (1:1) (PFOA- C ₁₁ H ₂₆ N)	927835-01-6
8:2 monoPAP, its salts	Mono-[2-(perfluorooctyl)ethyl]phosphate (8:2 monoPAP)	57678-03-2
	8:2 Fluorotelomer diammonium phosphate	93857-44-4
	Disodium 1H,1H,2H,2H-perfluorodecylphosphate	438237-75-3
	Ammonium bis[2-(perfluorohexyl)ethyl] phosphate	1764-95-0

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 30 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
8:2 monoPAP, its salts	3,3,4,4,5,5,6,6,7,7,8,8,8-Tridecafluorooctanol phosphate ammonium salt	92401-44-0
	Sodium 1H,1H,2H,2H-perfluorooctylphosphate	144965-22-0
	Monopotassium monoperfluorohexyl ethylphosphate	150033-28-6
	Ammonium 2-(perfluorohexyl)ethyl hydrogen phosphate	2353-52-8
8:2 FTS, its salts	1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)	39108-34-4
	1H,1H,2H,2H-Perfluorododecane sulfonate acid Potassium salt (8:2 FTS-K)	438237-73-1
	1H,1H,2H,2H-Perfluorododecane sulfonate acid Ammonium salt (8:2 FTS-NH ₄)	149724-40-3
	1H,1H,2H,2H-Perfluorododecane sulfonate acid Sodium salt (8:2 FTS-Na)	27619-96-1
	8:2 Fluorotelomer sulfonate (anion) (8:2 FTS(anion))	481071-78-7
H2PFDA, its salts	2H,2H-Perfluorodecane acid (H2PFDA)	27854-31-5
	Tetrabutylphosphonium 2H,2H-Perfluorodecanoate	882489-14-7
4HPFUnA, its salts	2H,2H,3H,3H-Perfluoroundecanoic Acid (4HPFUnA)	34598-33-9
	Potassium 2H,2H,3H,3H-Perfluoroundecanoate (4HPFUnA-K)	83310-58-1
	Lithium 3-(perfluorooctyl)propanoate (4HPFUnA-Li)	67304-23-8
8:2diPAP, its salts	Bis(1H,1H,2H,2H-Perfluorodecyl)phosphate (8:2diPAP)	678-41-1
	Sodium bis(1H,1H,2H,2H-perfluorodecyl)phosphate (8:2diPAP-Na)	114519-85-6
	Bis(2-hydroxyethyl)ammonium bis((perfluorooctyl)ethyl) hydrogen phosphate	57677-97-1
	Bis[2-(perfluorooctyl)ethyl] phosphate ammonium salt (8:2diPAP-NH ₄)	93776-20-6
	8:2 Fluorotelomer phosphate diester ion	1411713-91-1
PFNA, its salts	Perfluorononanoic acid (PFNA)	375-95-1
	Perfluorononanoate Na-salt (PFNA-Na)	21049-39-8
	Perfluorononanoate ammonium salt (APFN)	4149-60-4
	Potassium perfluorononanoate (PFNA-K)	21049-38-7
	Perfluorononanoate Li-Salt (PFNA-Li)	60871-92-3
	Silver perfluorononanoate (PFNA-Ag)	7358-16-9
	Methanaminium perfluorononanoate (PFNA-NH ₃ (CH ₃))	77032-23-6
	Nonanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-heptafluoro-, compd. with N-ethylethanamine (1:1) PFNA-NH ₂ (C ₂ H ₅) ₂	77032-27-0

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 31 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
PFNA, its salts	Nonanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-heptafluoro-, compd. with N-methylmethanamine (1:1) (PFNA-NH ₂ (CH ₃) ₂)	77032-24-7
	Nonanoic acid, heptafluoro-, compd. with N,N-diethylethanamine (1:1) (9CI) (PFNA-NH(C ₂ H ₅) ₃)	327176-80-7
	Nonanoic acid, heptafluoro-, compd. with piperidine (1:1) (9CI) (PFNA-NH ₂ (C ₅ H ₁₀))	95682-66-9
	Nonanoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,9-heptafluoro-, compd. with benzenamine (1:1) (PFNA-NH ₃ (C ₆ H ₅))	95682-67-0
	Nonanoic acid, heptafluoro-, compd. with cyclohexanamine (1:1) (9CI) (PFNA-NH ₃ (C ₆ H ₁₁))	328531-06-2
	Perfluorononanoate (anion)	72007-68-2
	4-[(6-Methoxy-3-pyridazinyl)sulfamoyl]anilinium heptafluorononanoate (PFNA-C ₁₁ H ₁₂ N ₄ O ₃ S)	298703-33-0
	Perfluorononanoic anhydride (PFNAA)	228407-54-3
PFDA, its salts	Perfluorodecane acid (PFDA)	335-76-2
	Perfluorodecanoate Na-salt (PFDA-Na)	3830-45-3
	Perfluorodecanoate ammonium salt (APFDA)	3108-42-7
	Potassium perfluorodecanoate (PFDA-K*)	51604-85-4
	Silver perfluorodecanoate (PFDA-Ag)	5784-82-7
	Lithium perfluorodecanoate (PFDA-Li)	84743-32-8
	Perfluorodecanoate (anion)	73829-36-4
	Perfluorodecanoic anhydride (PFDA)	942199-24-8
PFUnDA, its salts	Perfluoroundecanoic acid (PFUnDA)	2058-94-8
	Ammonium perfluoroundecanoate (PFUnDA-NH ₄)	4234-23-5
	Perfluoroundecanoic acid sodium salt (PFUnDA-Na)	60871-96-7
	Potassium perfluoroundecanoate (PFUnDA-K)	30377-53-8
	Calcium perfluoroundecanoate (PFUnDA-Ca)	97163-17-2
	Perfluoroundecanoate (anion)	196859-54-8
PFDoDA, its salts	Perfluorododecanoic acid (PFDoDA)	307-55-1
	Ammonium perfluorododecanoate (APFDoDA)	3793-74-6
	Perfluorododecanoate (anion)	171978-95-3
PFDS, its salts	Perfluorodecane sulfonate (PFDS)	335-77-3
	Perfluorodecanesulfonate Na-salt (PFDS-Na)	2806-15-7
	Perfluorodecanesulfonate K-salt (PFDS-K)	2806-16-8
	Perfluoroaliphatic dean-sulfonate salt of NH ₄ (PFDS-NH ₄)	67906-42-7
	Perfluorodecane sulfonate (anion)	126105-34-8
	Perfluorodecane sulfonic anhydride (PFDSA)	51667-62-0

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 32 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
PFTTrDA, its salts	Pentacosafuorotridecanoic acid (PFTTrDA)	72629-94-8
	Ammonium perfluorotridecanoate (PFTTrDA-NH ₄)	4288-72-6
	Sodium perfluorotridecanoate (PFTTrDA-Na)	60872-01-7
	Perfluorotridecanoate (anion)	862374-87-6
PFTDA, its salts	Perfluorotetradecanoic acid (PFTDA)	376-06-7
	Perfluorotetradecanoate (anion)	365971-87-5
10:2 FTS, its salts	1H,1H,2H,2H-Perfluorododecane sulfonic acid (10:2 FTS)	120226-60-0
	1H,1H,2H,2H-Perfluorododecane sulfonic acid Sodium Salt (10:2 FTS-Na)	108026-35-3
PFNS, its salts	Perfluorononane sulfonic acid (PFNS)	68259-12-1
	Sodium perfluoro-1-nonanesulfonate (PFNS-Na*)	98789-57-2
	Ammonium nonadecafluorononanesulphonate (PFNS-NH ₄)	17202-41-4
	Potassium perfluorononanesulfonate (PFNS-K*)	29359-39-5
	Perfluorononane sulfonate (anion)	474511-07-4
PFUnDS, its salts	Perfluoroundecane sulfonic acid (PFUnDS)	749786-16-1
	Perfluoroundecanesulfonate (anion)	441296-91-9
PFDDoDS, its salts	Perfluorododecane sulfonic acid (PFDDoDS)	79780-39-5
	Sodium perfluoro-1-dodecanesulfonate (PFDDoDS-Na*)	1260224-54-1
	Potassium perfluorododecanesulfonate (PFDDoDS-K)	85187-17-3
	Perfluorododecane sulfonate (anion)	343629-43-6
PFTTrDS, its salts	Perfluorotridecane sulfonic acid (PFTTrDS)	791563-89-8
	Sodium perfluoro-1-tridecanesulfonate (PFTTrDS-Na*)	174675-49-1
10:2 diPAP, its salts	10:2 Fluortelomerphosphatediester (10:2 diPAP)	1895-26-7
	bis[3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,12-henicosafuorododecyl] hydrogen phosphate, compound with 2,2'-iminodiethanol (1:1) (10:2 diPAP-C ₄ H ₁₁ O ₂)	57677-98-2
10:2 monoPAP, its salts	10:2 Fluortelomerphosphatemonoester (10:2 monoPAP)	57678-05-4
	10:2 Fluortelomer diammonium dihydrogen phosphate	93857-45-5
PFPeDA, its salts	Perfluoropentadecanoic acid (PFPeDA, C15)	141074-63-7
	Nonacosafuoropentadecanoate (PFPeDA (anion))	1214264-29-5
PFHxDA, its salts	Perfluorohexadecanoic acid (PFHxDA, C16)	67905-19-5
	Hentriacontafluorohexadecanoate anion (PFHxDA (anion))	1214264-30-8
PFODA, its salts	Perfluorooctadecanoic acid (PFODA, C18))	16517-11-6
	Perfluorooctadecanoate anion (PFODA (anion))	798556-82-8

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 33 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
ADONA, its salts	4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4
	Ammonium 4,8-dioxa-3H-perfluorononanoate (ADONA-NH ₄)	958445-44-8
	Sodium 4,8-dioxa-3H-perfluorononanoate (ADONA-Na)	2250081-67-3
HFPO-DA, its salts & derivatives	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid (HFPO-DA)	13252-13-6
	Propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-(2R)-	75579-39-4
	Propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-(2S)-	75579-40-7
	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy) propionic acid, K-salts	67118-55-2
	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy) propionic acid, ammonium salts	62037-80-3
	Propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-, sodium salt (1:1)	67963-75-1
	Propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-, ion(1-)	122499-17-6
	Propanoic acid, 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-, compd. with N-propyl-1-propanamine (1:1)	165951-17-7
	Propanoic acid, 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)-, compd. with N,N-diethylethanamine (1:1) (9CI)	165951-18-8
	4-[(6-Methoxy-3-pyridazinyl)sulfamoyl]anilinium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoate	298703-31-8
	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy) propionic acid, its acyl halides	2062-98-8
	Benzoic acid, 2,3,6-triiodo-, (1-methyl-3-piperidinyl)methyl ester, compd. with 2,3,3,3-tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoro propoxy)propanoate (1:1) (HFPO-C ₁₄ H ₁₆ I ₃ NO ₂)	2412106-69-3
4:2 FTS, its salts	1H,1H,2H,2H-Perfluorohexanesulfonic acid (4:2 FTS)	757124-72-4
	1H,1H,2H,2H-perfluorohexane sulfonate acid sodium salt	27619-93-8
	4: 2 Fluorotelomer sulfonate (4:2FTS(anion))	414911-30-1
FOSAA, its salts	Perfluorooctane sulfonamidoacetic acid (FOSAA)	2806-24-8
	N-[(Perfluorooctyl)sulfonyl]glycinate (FOSAA(anion))	909405-47-6
	N-[(Perfluorooctyl)sulfonyl]glycine potassium salt (1:1) (FOSAA-K)	75260-69-4

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 34 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
FOSAA, its salts	N-[(Perfluorooctyl)sulfonyl]glycine sodium salt (1:1) (FOSAA-Na)	115716-87-5
N-MeFOSAA, its salts	N-methylperfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	2355-31-9
	2-(N-Methylperfluorooctanesulfonamido)acetate (N-Me-FOSAA(anion))	909405-48-7
	Potassium N-((heptadecafluorooctyl)sulphonyl)-N-methylglycinate (N-Me-FOSAA-K)	70281-93-5
N-EtFOSAA, its salts	N-ethylperfluorooctane sulfonamidoacetic (N-EtFOSAA)	2991-50-6
	Potassium N-ethyl-N-((heptadecafluorooctyl)sulphonyl)glycinate (N-Et-FOSAA-K)	2991-51-7
	2-(N-Ethyl-perfluorooctanesulfonamido)acetate (N-Et-FOSAA(anion))	909405-49-8
	Ammonium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-NH ₄)	2991-52-8
	Sodium 2-(N-ethylperfluorooctanesulfonamido)acetate (N-Et-FOSAA-Na)	3871-50-9
PFPeS, its salts	Perfluoropentane sulfonic acid (PFPeS)	2706-91-4
	Sodium perfluoro-1-pentanesulfonate (PFPeS-Na*)	630402-22-1
	Potassium perfluoropentane-1-sulphonate (PFPeS-K)	3872-25-1
	Ammonium perfluoropentanesulfonate (PFPeS-NH ₄ *)	68259-09-6
	Bis(2-hydroxyethyl) ammonium 1,1,2,2,3,3,4,4,5,5,5-undecafluoropentane-1-sulphonate	70225-17-1
	Undecafluoropentane-1-sulfonic acid lithium salt (PFPeS-Li)	1046864-81-6
	Perfluoropentane sulfonate (anion)	175905-36-9
	Triethylammonium perfluoropentane sulfonate	72033-42-2
	Perfluoropentane sulfonic anhydride (PFPeSA)	161877-72-1
3:3 FTCA, its salts	3-Perfluoropropyl propanoic acid (3:3 FTCA)	356-02-5
	4,4,5,5,6,6-Heptafluorohexanoate (3:3 FTCA(anion))	1169706-83-5
5:3 FTCA, its salts	3-Perfluoropentyl propanoic acid (5:3 FTCA)	914637-49-3
	2H,2H,3H,3H-Perfluorooctanoate (5:3 FTCA(anion))	1799325-94-2
PFEEESA, its salts	Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	113507-82-7
	Potassium perfluoro(2-ethoxyethane) sulfonate (PFEEESA-K)	117205-07-9
	Sodium perfluoro(2-ethoxyethane) sulfonate (PFEEESA-Na)	113507-87-2

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 35 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
9Cl-PF ₃ ONS, its salts	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9Cl-PF ₃ ONS)	756426-58-1
	Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate (9Cl-PF ₃ ONS-K)	73606-19-6
	Ammonium perfluoro-2-[(6-chlorohexyl)oxy]ethane-1-sulfonate (9Cl-PF ₃ ONS-NH ₄)	1383434-28-3
11Cl-PF ₃ OUdS, its salts	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF ₃ OUdS)	763051-92-9
	Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate (11Cl-PF ₃ OUdS-K)	83329-89-9
11H-PFUnDA, its salts	11H-Perfluoroundecanoic acid (11H-PFUnDA)	1765-48-6
	potassium 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11-icosafuoroundecanoate (11H-PFUnDA-K)	307-71-1
	Ammonium 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11-icosafuoroundecanoate (11H-PFUnDA-NH ₄)	5081-02-7
	11-H-Perfluoroundecanoate (11H-PFUnDA(anion))	69681-37-4
PFPrA, its salts	Pentafluoropropionate acid (PFPrA)	422-64-0
	Sodium pentafluoropropionate (PFPrA-Na)	378-77-8
	Silver pentafluoropropionate (PFPrA-Ag)	509-09-1
	Potassium pentafluoropropionate (PFPrA-K)	378-76-7
	Ammonium pentafluoropropionate (PFPrA-NH ₄)	2730-58-7
6:6 PFPI, its salts	6:6 Perfluorophosphinic acid (6:6 PFPI)	40143-77-9
	Sodium bis(perfluorohexyl)phosphinate (6:6 PFPI-Na)	70609-44-8
	Bis(perfluorohexyl) phosphinic acid ytterbium(3+) salt (6:6 PFPI-Yb)	500776-72-7
	Bis(perfluorohexyl) phosphinic acid erbium(3+) salt (6:6 PFPI-Er)	500776-73-8
8:8 PFPI, its salts	8:8 Perfluorophosphinic acid (8:8 PFPI)	40143-79-1
	Sodium bis(perfluorooctyl)phosphinate (8:8 PFPI-Na)	500776-69-2
	Bis(perfluorooctyl) phosphinic acid erbium(3+) salt (8:8 PFPI-Er)	500776-70-5
	Bis(perfluorooctyl) phosphinic acid ytterbium(3+) salt (8:8 PFPI-Yb)	500776-71-6
HFPO-TA, its salts	Perfluoro-2,5-dimethyl-3,6-dioxanonanoic acid (HFPO-TA)	13252-14-7
	Potassium perfluoro(2-(2-propoxypropoxy)propanoate) (HFPO-TA-K)	67118-57-4

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 36 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
HFPO-TA, its salts	Perfluoro-2,5-dimethyl-3,6-dioxananoic acid, sodium salt (HFPO-TA-Na)	67963-76-2
	2,3,3,3-Tetrafluoro-2-[1,1,2,3,3,3-hexafluoro-2-(heptafluoropropoxy)propoxy]propanoic acid--ammonia (HFPO-TA-NH ₄)	13043-05-5
	Hexafluoropropene oxide trimer (HFPO-TA-F)	2641-34-1
PFEtS, its salts	Pentafluoroethane sulfonic acid (PFEtS)	354-88-1
	Pentafluoroethanesulfonate (PFEtS (anion))	108410-37-3
	Potassium pentafluoroethane-1-sulfonate (PFEtS-K)	2837-92-5
6:2 diPAP, its salts	Bis[2-(perfluorohexyl)ethyl] Phosphate (6:2 diPAP)	57677-95-9
	Sodium bis[2-(perfluorohexyl)ethyl] phosphate (6:2 diPAP-Na)	407582-79-0
	Bis(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl) phosphate ion (6:2 diPAP(anion))	667465-18-1
TFSl, its salts	Trifluoromethanesulfonimide (TFSl)	82113-65-3
	Pyrrolidinium, 1-butyl-1-methyl-, salt with 1,1,1-trifluoro-N-[(trifluoromethyl)sulfonyl]methanesulfonamide (1:1)	223437-11-4
	Tributylmethyl Ammonium Bis(trifluoromethanesulfonyl) Imide	405514-94-5
	Lithium bis((trifluoromethyl)sulfonyl)azanide (TFSl-Li)	90076-65-6
	1-Decyl-3-methylimidazolium Bis(trifluoromethylsulfonyl)imide	433337-23-6
TFMS, its salts	Trifluoromethane sulfonic acid (TFMS)	1493-13-6
	Trifluoromethane sulfonic acid Sodium salt (TFMS-Na)	2926-30-9
	Silver trifluoromethanesulfonate (TFMS-Ag)	2923-28-6
	Zinc trifluoromethanesulfonate (TFMS-Zn)	54010-75-2
	Scandium trifluoromethanesulfonate (TFMS-Sc)	144026-79-9
	Trifluoromethanesulfonic anhydride	358-23-6
	Lithium trifluoromethanesulfonate (TFMS-Li)	33454-82-9
	Copper(II) trifluoromethanesulfonate (TFMS-Cu)	34946-82-2
	Barium trifluoromethanesulfonate (TFMS-Ba)	2794-60-7
	Cerium(IV) trifluoromethanesulfonate (TFMS-Ce)	107792-63-2
	Magnesium trifluoromethanesulfonate (TFMS-Mg)	60871-83-2
	Potassium trifluoromethanesulfonate (TFMS-K)	2926-27-4
	Nickel(II) Trifluoromethanesulfonate (TFMS-Ni)	60871-84-3
	Tin(II) trifluoromethanesulfonate (TFMS-Sn)	62086-04-8
	Yttrium(III) trifluoromethanesulfonate (TFMS-Y)	52093-30-8
	Iron(III) trifluoromethanesulfonate (TFMS-Fe)	63295-48-7

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 37 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
TFMS, its salts	Cerium(III) Trifluoromethanesulfonate (TFMS-Ce)	76089-77-5
	Tetrabutylammonium trifluoromethanesulfonate	35895-70-6
	Methyltrioctylammonium trifluoromethanesulfonate	121107-18-4
	Imidazole trifluoromethanesulfonate	29727-06-8
	Trifluoroacetyl Trifluoromethanesulfonate	68602-57-3
	Lanthanum(III) trifluoromethanesulfonate (TFMS-La)	52093-26-2
	Indium(III) trifluoromethanesulfonate (TFMS-In)	128008-30-0
	Samarium(III) trifluoromethanesulfonate (TFMS-Sm)	52093-28-4
	Ytterbium(III) trifluoromethanesulfonate (TFMS-Yb)	54761-04-5
	Thulium(III) trifluoromethanesulfonate (TFMS-Tm)	141478-68-4
	Tetraethylammonium trifluoromethanesulfonate	35895-69-3
	1-Fluoro-3,5-dichloropyridinium triflate	107264-06-2
	Triethylamine salt of trifluoromethanesulfonic acid	646-58-2
	Triphenylphosphonium anhydride triflate	72450-51-2
	N,N-Diethyl-6-(diethylamino)-9-(2-(methoxycarbonyl)phenyl)-3H-xanthene-3-ylideneammonium trifluoromethanesulfonate	120611-30-5
	Diphenylammonium Trifluoromethanesulfonate	164411-06-7
	1-(3-aminoazetidin-1-yl)prop-2-en-1-one, trifluoromethanesulfonic acid	2060047-56-3
	Guanidine trifluoromethanesulfonic acid	153756-25-3
	Trifluoromethanesulfonic acid--1-ethyl-1H-imidazole (1/1)	501693-46-5
	Ruthenium(3+), (OC-6-22)-, salt with trifluoromethanesulfonic acid (1:3)	74468-24-9
	O-Pivaloylhydroxylamine trifluoromethanesulfonate	1293990-73-4
	Trifluoromethanesulfonyl chloride	421-83-0
	(2-Pyridylmethyl)sulfonyl chloride triflate	882564-09-2
	Trifluoromethanesulfonyl bromide	15458-53-4
	Mercury(II) trifluoromethanesulfonate (TFMS-Hg)	49540-00-3
	Dysprosium(III) tris(trifluoromethanesulfonate) (TFMS-Dy)	139177-62-1
	Manganese bis(trifluoromethanesulfonate) (TFMS-Mn)	55120-76-8
	Pentaammine(trifluoromethanesulfonato)osmium(III) triflate	83781-30-0
	Lutetium(III) trifluoromethanesulfonate (TFMS-Lu)	126857-69-0
	Terbium(III) trifluoromethanesulfonate (TFMS-Tb)	148980-31-8
	Neodymium(III) trifluoromethanesulfonate (TFMS-Nd)	34622-08-7
	Ammonium trifluoromethanesulfonate (TFMS-NH4)	38542-94-8

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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 38 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Group Name	Substance Name	CAS No.
TFMS, its salts	Holmium(III) trifluoromethanesulfonate (TFMS-Ho)	139177-63-2
	Trifluoromethanesulfonate	37181-39-8
	Praseodymium(III) trifluoromethanesulfonate (TFMS-Pr)	52093-27-3
	Bismuth(III) trifluoromethanesulfonate (TFMS-Bi)	88189-03-1
	Europium(III) trifluoromethanesulfonate (TFMS-Eu)	52093-25-1
	Erbium(III) trifluoromethanesulfonate (TFMS-Er)	139177-64-3
	Gallium(III) trifluoromethanesulfonate (TFMS-Ga)	74974-60-0
	N,N,N-Triethyl-2,2,2-trifluoroethan-1-aminium trifluoromethanesulfonate	380230-73-9
	Methanesulfonic acid, trifluoro-, calcium salt (TFMS-Ga)	55120-75-7
	Thallium(1+) trifluoromethanesulfonate (TFMS-Tl)	73491-36-8
	Hafnium(IV) Trifluoromethanesulfonate (TFMS-Hf)	161337-67-3
PFPrS, its salts	Perfluoropropate sulfonic acid (PFPrS)	423-41-6
	Perfluoropropanesulfonic acid sodium salt (PFPrS-Na)	359868-82-9
PFHpSi, its salts	Perfluoroheptane-1-sulfinic acid (PFHpSi)	769067-51-8
	1-heptanesulfinic Acid Sodium Salt (PFHpSi-Na)	68555-66-8
PFOPA, its salts	Perfluorooctylphosphonic acid (PFOPA)	40143-78-0
	(Heptadecafluorooctyl)phosphonic acid--4-methylaniline (1/1)	1263361-03-0
Ethyl perfluoroisobutyl ether and its isomers	Ethyl perfluoroisobutyl ether and its isomers	163702-05-4
	Perfluoroisobutyl ethyl ether	163702-06-5

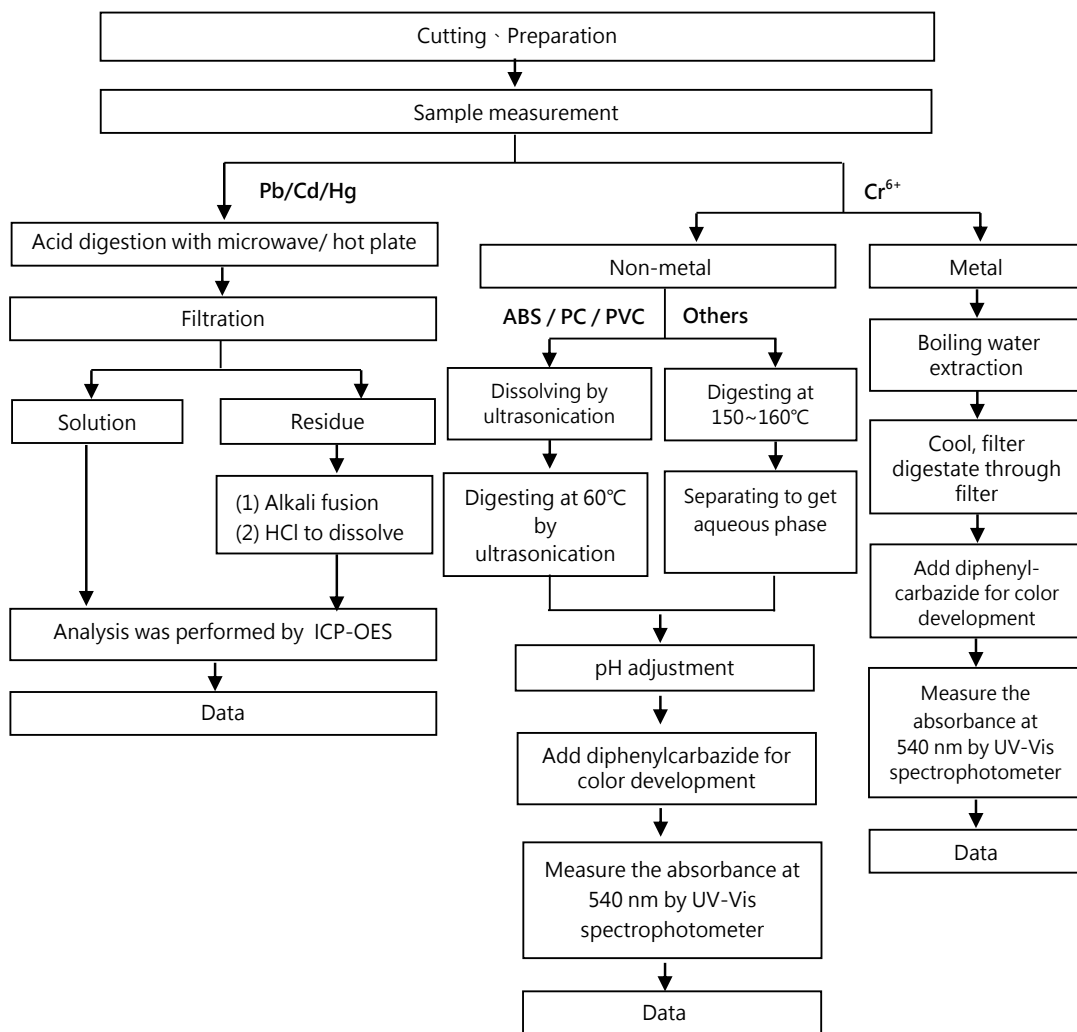
This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

JX ADVANCED METALS CORPORATION, ISOHARA WORKS
187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Analytical flow chart of heavy metal

These samples were dissolved totally by pre-conditioning method according to below flow chart.

(Cr^{6+} test method excluded)

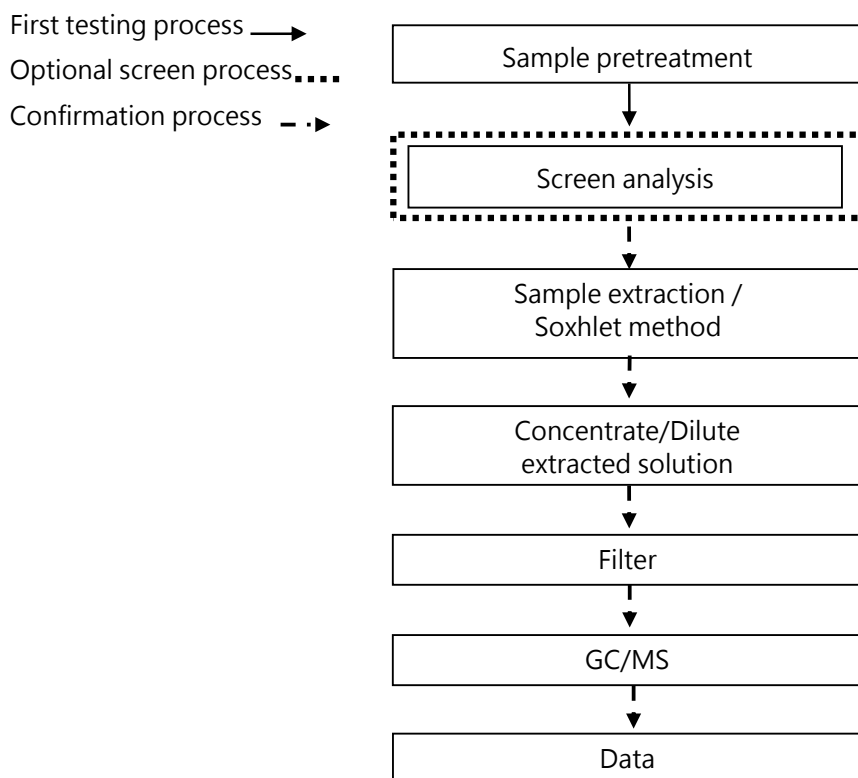


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Analytical flow chart – PBBs / PBDEs

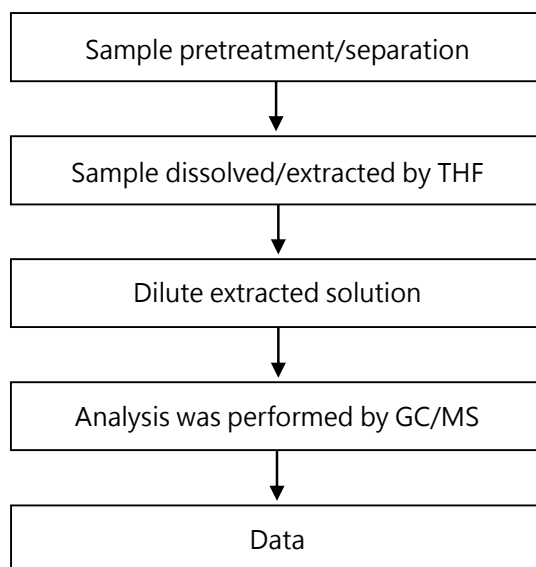


This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <https://www.sgs.com.tw/terms-of-service> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <https://www.sgs.com.tw/terms-of-service>.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

JX ADVANCED METALS CORPORATION, ISOHARA WORKS
187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Analytical flow chart - Phthalate

【Test method: IEC 62321-8】



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

Test Report

No.: ETR25500222

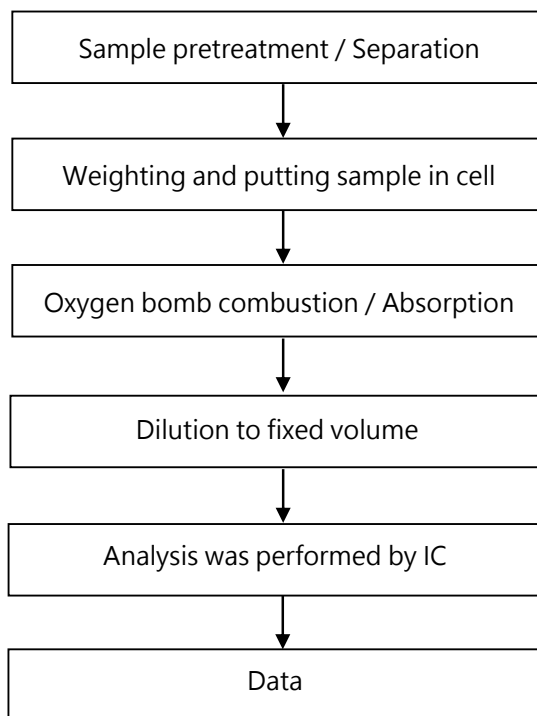
Date: 13-May-2025

Page: 42 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

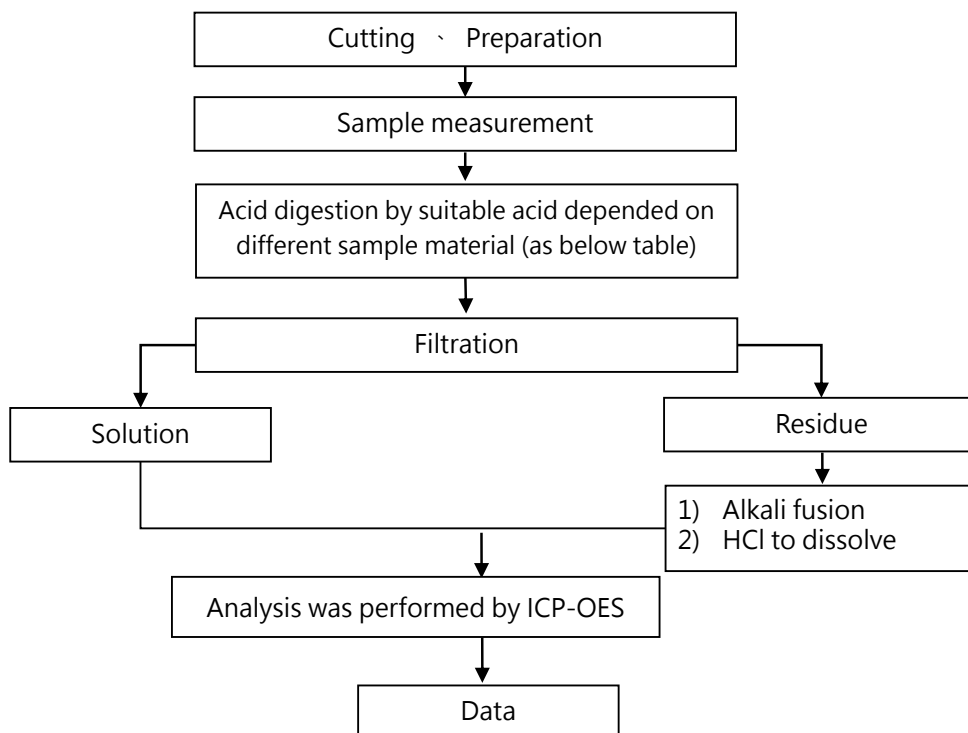
Analytical flow chart - Halogen



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

Flow chart of digestion for the elements analysis performed by ICP-OES

These samples were dissolved totally by pre-conditioning method according to below flow chart.

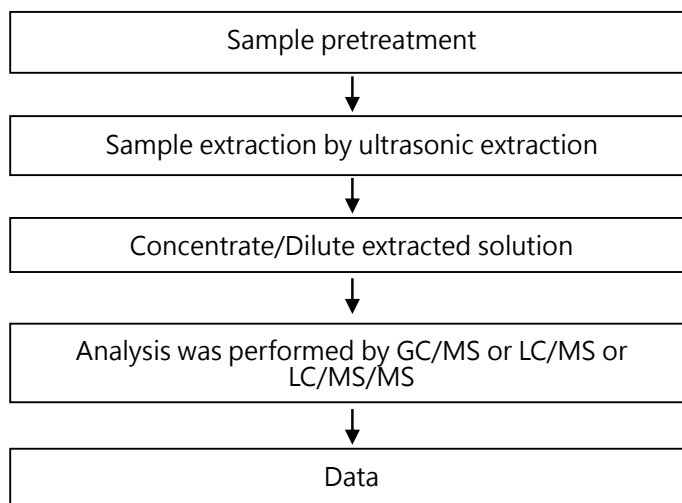


Steel, copper, aluminum, solder	Aqua regia, HNO ₃ , HCl, HF, H ₂ O ₂
Glass	HNO ₃ /HF
Gold, platinum, palladium, ceramic	Aqua regia
Silver	HNO ₃
Plastic	H ₂ SO ₄ , H ₂ O ₂ , HNO ₃ , HCl
Others	Added appropriate reagent to total digestion

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

JX ADVANCED METALS CORPORATION, ISOHARA WORKS
187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

Analytical flow chart – PFAS (including PFOA/PFOS/its related compound, etc.)



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

Test Report

No.: ETR25500222

Date: 13-May-2025

Page: 45 of 45

JX ADVANCED METALS CORPORATION, ISOHARA WORKS

187-4 USUBA, HANAKAWA-CHO, KITAIBARAKI-SHI, IBARAKI, 319-1535, JAPAN

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

ETR25500222



** End of Report **

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