

Test Report No.: SHAEC23003051201 **Date**: Mar 27, 2023 Page 1 of 7

Client Name: TMC Industries Inc

Client Address: 1423 Mill Lane Waconia, Minnesota 55387-1044 USA

Sample Name: TMC-43(Job 22-414)

Destination of the Product(s):Ireland, Denmark, UK, Japan, Singapore, Israel, Australia, France, Italy, Germany, S

witzerland

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

The above damping(e) and minimum to be provided by the distinct

SGS Job No.: SP23-007620 Sample Receiving Date: Mar 21, 2023

Testing Period: Mar 21, 2023 ~ Mar 27, 2023

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

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

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

Test Requirement	Conclusion
Perfluoroalkyl and polyfluoroalkyl substances (PFAS) Content	See Results

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

Annie Lin

Annie Liu

Approved Signatory





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Test Result(s):

Test Part Description:

SN ID	Sample No.	SGS Sample ID	Description
SN1	A1	SHA23-0030512-0001.C001	Colorless transparent liquid

Remarks:

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

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) Content

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

and GC-MS.

Test Item(s)	CAS No.	Unit(s)	MDL	A1		
PFOS, its salts and related compounds						
Perfluorooctane sulfonates (PFOS)Note (1)	1763-23-1	mg/kg	0.010	ND		
N-ethylperfluoro-1-octanesulfonamide (N-EtFOSA)	4151-50-2	mg/kg	0.010	ND		
N-methylperfluoro-1-octanesulfonamide (N-MeFOSA)	31506-32-8	mg/kg	0.010	ND		
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (N-EtFOSE)	1691-99-2	mg/kg	0.010	ND		
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (N-MeFOSE)	24448-09-7	mg/kg	0.010	ND		
Perfluorooctane Sulfonamide (PFOSA)	754-91-6	mg/kg	0.010	ND		
PFOA, its salts						
Perfluorooctanoic acid (PFOA)Note (2)	335-67-1	mg/kg	0.010	ND		
PFOA-related compounds						
1H,1H,2H,2H-Perfluorodecanesulfonic acid (8:2 FTS)Note (3)	39108-34-4	mg/kg	0.010	ND		
Methyl perfluorooctanoate (Me-PFOA)	376-27-2	mg/kg	0.1	ND		
Ethyl perfluorooctanoate (Et-PFOA)	3108-24-5	mg/kg	0.1	ND		
1H,1H,2H,2H-Perfluorodecyl acrylate (8:2 FTA)Note (3)	27905-45-9	mg/kg	0.1	ND		
1H,1H,2H,2H-Perfluorodecyl methacrylate (8:2 FTMA)Note (3)	1996-88-9	mg/kg	0.1	ND		
Perfluoro-1-iodooctane (PFOI)	507-63-1	mg/kg	0.1	ND		
2H,2H-Perfluorodecane Acid (H2PFDA/8:2 FTCA) ^{Note} (3), Note (11)	27854-31-5	mg/kg	0.010	ND		
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH)Note (3)	678-39-7	mg/kg	0.1	ND		
Sum of PFOA-related compounds	-	mg/kg	-	ND		
C9-C14 PFCA, their salts						
Perfluorononane Acid (PFNA)Note (4)	375-95-1	mg/kg	0.010	ND		
Perfluorodecane Acid (PFDA)Note (4)	335-76-2	mg/kg	0.010	ND		
Perfluoroundecanoic Acid (PFUnDA)	2058-94-8	mg/kg	0.010	ND		
Perfluorododecanoic Acid (PFDoDA)Note (4)	307-55-1	mg/kg	0.010	ND		
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8	mg/kg	0.010	ND		
Perfluorotetradecanoic Acid (PFTDA)	376-06-7	mg/kg	0.010	ND		
Perfluoro-3,7-dimethyloctanoic Acid (PF-3,7-DMOA)	172155-07-6	mg/kg	0.010	ND		
Sum of C9-C14 PFCA, their salts	-	mg/kg	-	ND		



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Test Item(s)	CAS No.	Unit(s)	MDL	A1
2-Perfluorohexyl ethanoic acid (6:2 FTCA)	53826-12-3	mg/kg	0.010	ND
3-Perfluoropentyl propanoic acid (5:3 FTCA)	914637-49-3	mg/kg	0.010	ND
Perfluorohexadecanoic Acid (PFHxDA)	67905-19-5	mg/kg	0.010	ND
Perfluorooctadecanoic Acid (PFODA)	16517-11-6	mg/kg	0.010	ND
bis(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-	678-41-1	mg/kg	0.010	ND
heptadecafluorodecyl) hydrogen phosphate (8:2diPAP)	070-41-1			ND
1H,1H,2H,2H-Perfluorooctyl methacrylate (6:2 FTMA)	2144-53-8	mg/kg	0.1	ND
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	919005-14-4	mg/kg	0.010	ND
Perfluoro-3-methoxypropanoic acid (PFMPA)	377-73-1	mg/kg	0.010	ND
Perfluoro-4-methoxybutanoic acid (PFMBA)	863090-89-5	mg/kg	0.010	ND
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	151772-58-6	mg/kg	0.010	ND
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (9CI-PF3ONS)	756426-58-1	mg/kg	0.010	ND
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (11Cl-PF3OUdS)	763051-92-9	mg/kg	0.010	ND
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	113507-82-7	mg/kg	0.010	ND
3-Perfluoropropyl propanoic acid (3:3 FTCA)	356-02-5	mg/kg	0.010	ND
3-Perfluoroheptyl propanoic acid (7:3 FTCA)	812-70-4	mg/kg	0.010	ND

Notes:

(1) PFOS refer to its salts/derivative including

PFOS-K CAS No.: 2795-39-3 PFOS-Li CAS No.: 29457-72-5 PFOS-Na CAS No.: 4021-47-0 PFOS-NH₄ CAS No.: 29081-56-9 PFOS-NH(OH)₂ CAS No.: 70225-14-8 CAS No.: 56773-42-3 PFOS-N(C₂H₅)₄ $PFOS-N(C_{10}H_{21})_2(CH_3)_2$ CAS No.: 251099-16-8 **POSF** CAS No.: 307-35-7

(2) PFOA refer to its salts/derivative including

PFOA-Na CAS No.: 335-95-5 CAS No.: 2395-00-8 PFOA-K CAS No.: 335-93-3 PFOA-Ag CAS No.: 335-66-0 PFOA-F **APFO** CAS No.: 3825-26-1

(3) PFAS classified as both PFOA-related compounds and C9-C14 PFCA-related substances.

(4) PFNA refer to its salts including

PFNA-Na CAS No.: 21049-39-8 PFNA-NH₄ CAS No.: 4149-60-4

PFDA refer to its salts including

PFDA-Na CAS No. 3830-45-3 CAS No: 3108-42-7 PFDA-NH₄

PFDoDA refer to its salts including

PFDoDA-NH₄ CAS No: 3793-74-6

(5) PFBS refers to its salts including

PFBS-K CAS No.: 29420-49-3 PFBS-H₂O CAS No.: 59933-66-3

(6) PFHxA refers to its salt including

CAS No.: 21615-47-4

(7) PFHxS refers to its salts including



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PFHxS-Na CAS No.: 82382-12-5 PFHxS-K CAS No.: 3871-99-6 PFHxS-Li CAS No.: 55120-77-9 PFHxS-NH₄ CAS No.: 68259-08-5

(8) PFHpS refers to its salts including

CAS No. 21934-50-9 PFHpS-Na CAS No.: 60270-55-5 PFHpS-K

(9) HPFO-DA refers to its salts including

CAS No.: 62037-80-3 HFPO-DA-NH₄ HFPO-DA-K CAS No.: 67118-55-2 HFPO-DA-F CAS No.: 2062-98-8

(10)PFDS refer to its salts including

PFDS-Na CAS No.: 2806-15-7 PFDS-K CAS No.: 2806-16-8 PFDS-NH₄ CAS No.: 67906-42-7 (11)H2PFDA / 8:2 FTCA refer to its salt/derivative including 8:2 FTCA-P(C₄H₉)₄ CAS No.: 882489-14-7

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.



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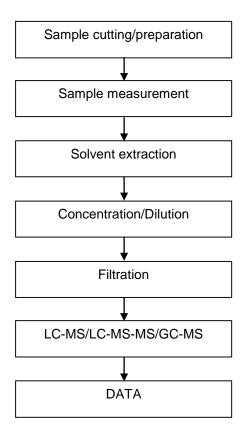
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Test Report ATTACHMENTS

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PFASs/ PFOS/PFOA Testing Flow Chart





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Sample Photo:



SGS authenticate the photo on original report only

*** End of Report ***



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