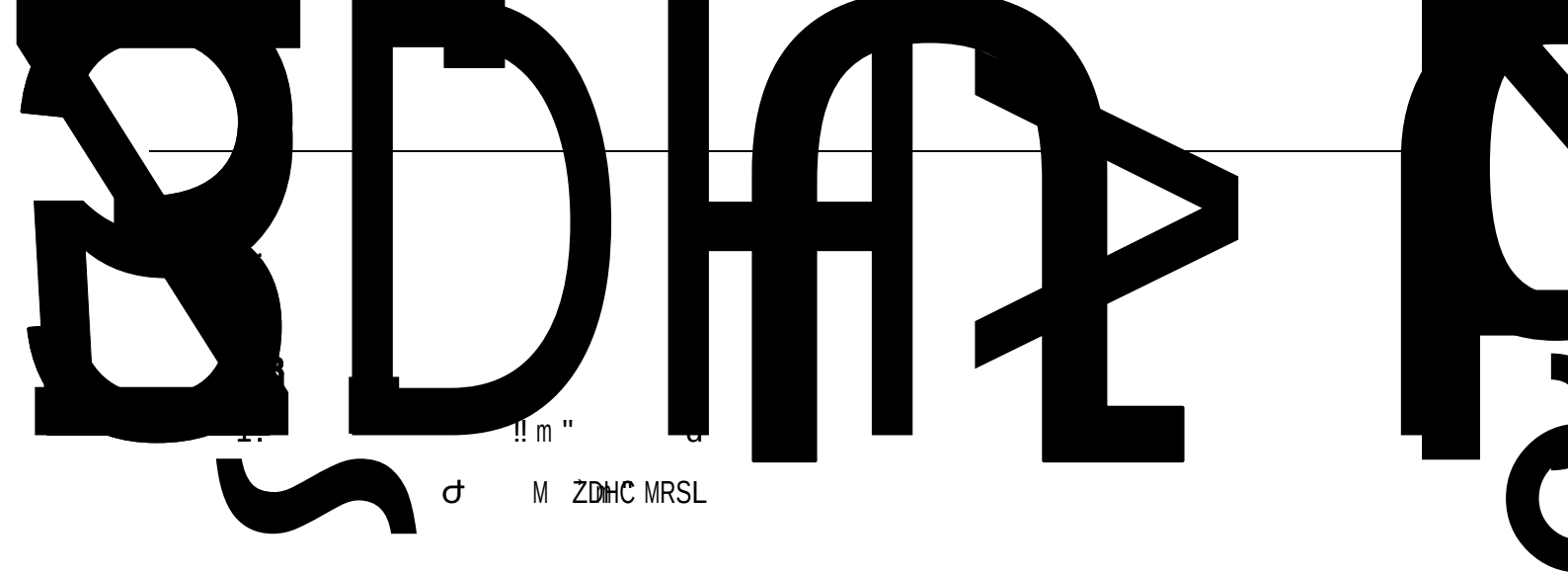

ZDHC MRSL

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1. SDS/MSDS

2. ZDHC MRSL

3. SDS/MSDS

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9. ZDHC

9.1 ZDHC

ZDHC

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1 ZDHC MRSL đ

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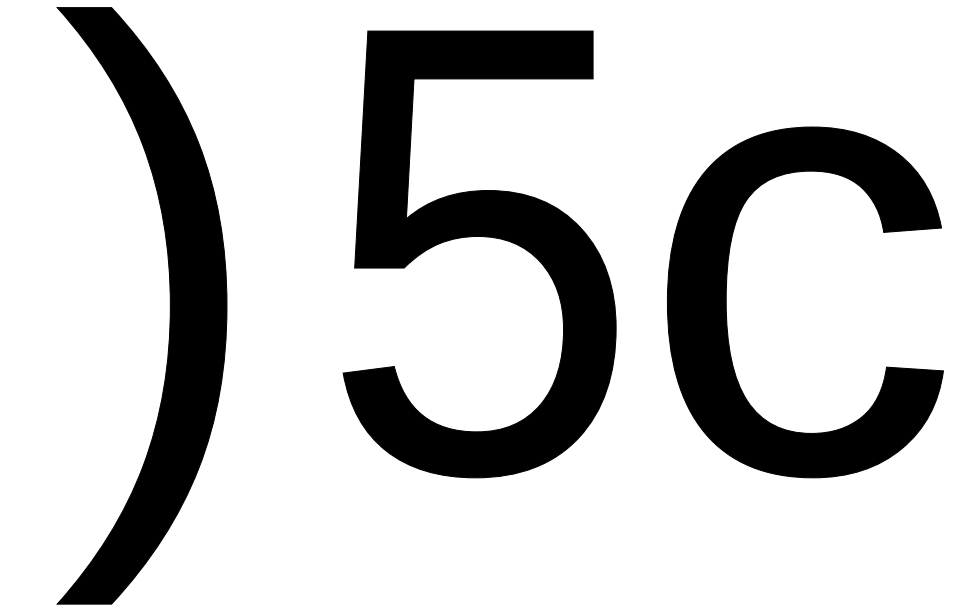
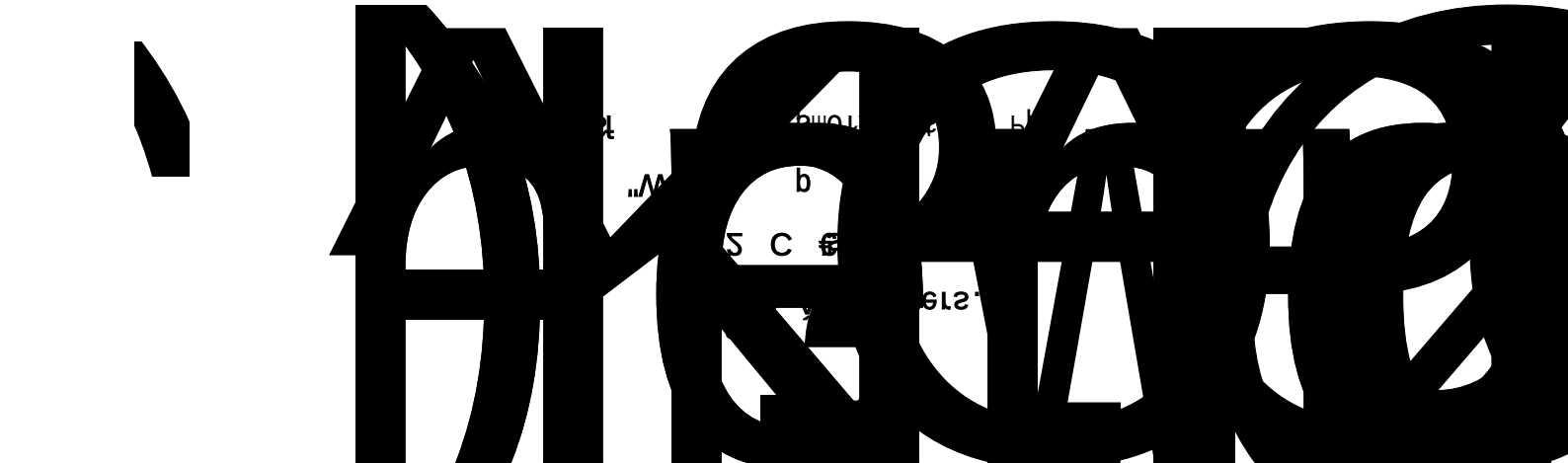
A Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): including all isomers.
(APs) AUOs):





		CAS No.
1	Short-chain Chlorinated Paraffins (SCCPs)(C10-C13) SCCPs C10-C13	85535-84-8
2	Medium-chain Chlorinated Paraffins (MCCPs)(C14-C17) MCCPs C14-C17	85535-85-9
D	**Chlorobenzenes and Chlorotoluenes( )**	
	/	

		CAS No.
1	1,2-Dichlorobenzene 1,2-	95-50-1
2	Other isomers of mono-, di-, tri-, tetra-, penta- and hexa-Chlorobenzene and mono-, di-, tri-, tetra- and penta-chlorotoluene ...~ ...	**Chlorobenzenes** **Chlorotoluenes**
E	**Chlorobenzenes**	
1	Monochlorobenzene	108-90-7
2	1,2-Dichlorobenzene 1,2-	95-50-1
3	1,3-Dichlorobenzene 1,3-	541-73-1
4	1,4-Dichlorobenzene 1,4-	106-46-7
5	1,2,3-Trichlorobenzene 1,2,3-	87-61-6
6	1,2,4-Trichlorobenzene 1,2,4-	120-82-1
7	1,3,5-Trichlorobenzene 1,3,5-	108-70-3
8	1,2,3,4-Tetrachlorobenzene 1,2,3,4-	634-66-2
9	1,2,3,5-Tetrachlorobenzene 1,2,3,5-	634-90-2
10	1,2,4,5-Tetrachlorobenzene 1,2,4,5-	95-94-3
11	Pentachlorobenzene	608-93-5
12	Hexachlorobenzene	118-74-1
F	**Chlorotoluenes**	
1	2-Chlorotoluene 2-	95-49-8
2	3-Chlorotoluene 3-	108-41-8
3	4-Chlorotoluene 4-	106-43-4
4	2,3-Dichlorotoluene 2,3-	32768-54-0
5	2,4-Dichlorotoluene 2,4-	95-73-8
6	2,5-Dichlorotoluene 2,5-	19398-61-9
7	2,6-Dichlorotoluene 2,6-	118-69-4

8

4			
5	3,4,5-Trichlorophenol	1	3,4,5- 609-19-8
6	2,3,4,5-Tetrachlorophenol	2	2,3,4,5- 4901-51-3
7	2,3,4,6-Tetrachlorophenol	2	2,3,4,6- 58-90-2
8	2,3,5,6-Tetrachlorophenol	2	2,3,5,6- 935-95-5
9	Pentachlorophenol (PCP)		PCP 87-86-5
20	TeCP mixed isomers		25167-83-3

7			
18	Disperse Red 17 17	3179-89-3	
19	Disperse Red 151 151	61968-47-6	
20	Disperse Yellow 1 1	119-15-3	
21	Disperse Yellow 3 3	2832-40-8	
22	Disperse Yellow 7 7	6300-37-4	
23	Disperse Yellow 9 9	6373-73-5	
24	Disperse Yellow 23 23	6250-23-3	
25	Disperse Yellow 39 39	12236-29-2	
26	Disperse Yellow 49 49	54824-37-2	
I	**Dyes – Carcinogenic or Equivalent Concern(——)**		
	DIN		
		CAS No.	
1	Acid Red 26 26	3761-53-3	
2	Acid Violet 49 49		
3	Basic Blue 26 (with Michler ' s Ketone > 0.1%) 26 >0.1%	2580-56-5	
4	Basic Green 4 (Malachite Green Chloride) 4		
5	Basic Green 4 (Malachite Green Oxalate) 4	569-64-2/ 2437-29-8/ 10309-95-2	
6	Basic Green 4 (Malachite Green) 4		
7	Basic Green 4 leuco base 4		
8	Basic Red 9 9	569-61-9	
9	Basic Violet 14 14	632-99-5	
10	Basic violet 3 (with Michler ' s Ketone > 0.1%) 3 >0.1%	548-62-9	
11	Direct Black 38 38	1937-37-7	
12	Direct Blue 6 6	2602-46-2	

13	Direct Red 28	28	573-58-0
14	Disperse Blue 1	1	2475-45-8
15	Disperse Blue 3	3	2475-46-9
16	Disperse Orange 11	11	82-28-0
17	Direct Brown 95	95	16071-86-6
18	4-Dimethylaminoazobenzene (C.I. Solvent Yellow 2) 4-	C.I. 2	60

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2 Hexabromodiphenyl ether (Hexa

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( )

CAS No.

1	2-Ethoxyethanol 2-	110-80-5
2	2-Ethoxyethyl acetate 2-	111-15-9
3	2-Methoxyethanol 2-	109-86-4
4	2-Methoxyethyl acetate 2- ; ;	110-49-6
5	2-Methoxypropanol (2S)-2- -1-	1589-47-5
6	2-Methoxypropyl acetate 2- -1- 2-	70657-70-4
7	Bis(2-methoxyethyl) ether ; (2-)	111-96-6
8	Ethylene glycol dimethyl ether ; 1,2-	110-71-4
9	Triethylene glycol dimethyl ether 1,2- (2-) ; ;	112-49-2

L Halogenated Solvents ✓

CAS19

3	o-Cresol 2-	95-48-7	
4	m-Cresol	m-Cresol	
5	p-Cresol	106-44-5	
6	N,N-dimethylacetamide (DMAC) EC* - Emission and Exposure Controls best practices are in place N,N- (DMAC) EC* -	127-19-5	
7	N,N-Dimethylformamide (DMFa) EC* - Emission and Exposure Controls best practices are in place N,N- (DMFa) EC* -	68-12-2	
8	N-Ethyl-2 pyrrolidone (NEP) EC* - Emission and Exposure Controls best practices are in place N- -2- NEP EC* -	2687-91-4	
9	N-Methyl-2-Pyrrolidone (NMP) EC* - Emission and Exposure Controls best practices are in place N- NMP EC* -	872-50-4	
10	Toluene EC* - Emission and Exposure Controls best practices are in place EC* -	108-88-3	
11	Xylene (all isomers)	1330-20-7	
12	o-Xylene	95-47-6	
13	m-Xylene	108-38-3	
14	p-Xylene EC* - Emission and Exposure Controls best practices are in place EC* -	106-42-3	
N	**Organotin Compounds**		
/		/	
		CAS No.	
1	Benzene		
2	Cresol (all isomers)		
3	o-Cresol 2-		
4	m-Cresol		
5	p-Cresol		

6	N,N-dimethylacetamide (DMAC) EC* - Emission and Exposure Controls best practices are in place N,N- (DMAC) EC* -
7	N,N-Dimethylformamide (DMFa) EC* - Emission and Exposure Controls best practices are in place N,N- (DMFa) EC* -
8	N-Ethyl-2 pyrrolidone (NEP) EC* - Emission and Exposure Controls best practices are in place N- -2- NEP EC* -
9	N-Methyl-2-Pyrrolidone (NMP) EC* - Emission and Exposure Controls best practices are in place N- NMP EC* -
10	Toluene EC* - Emission and Exposure Controls best practices are in place EC* -
11	Tripropyltin Compounds (TPT) TPT
12	Dioctyltin (DOT) (DOT)
13	Monobutyltin (MBT) MBT
14	Tributyltin (TBT) (TBT)
15	

4	Borate, zinc salt	
5	D4 (Octamethylcyclotetrasiloxane) D4	556-67-2
6	D5 (Decamethylcyclopentasiloxane) D5 ( )	541-02-6
7	D6 (Dodecamethylcyclohexasiloxane) D6 ( )	540-97-6
8	Diazene-1,2-dicarboxamide [C,C`-azodi(formamide)](ADCA) -1,2- [C,C`-](ADCA) ADCA ZDHC ADCA ZDHC	
9	Perboric acid, sodium salt	
10	Quinoline	
11	Silica (particles of respirable size)	
12	Thiourea	
13	Titanium Dioxide	
P	P[redacted]luorinated and Polyfluorinated Chemicals (PFAS)	

DHC

	MRSL	CAS No.
1	Perfluorobutane sulfonic acid (PFBS) PFBS	
2	Perfluorohexane sulfonic acid (PFHxS) (PFHxS)	
3	Perfluorooctane sulfonic acid (PFOS) and related susbstances (PFOS)	
4	Perfluorodecane sulfonic acid (PFDS) (PFDS)	
5	Perfluorobutanoic acid (PFBA) PFBA	
6	Perfluorohexanoic acid (PFHxA) and related substances	
7	Perfluorooctanoic acid (PFOA) and related substances PFOA	
8	Perfluorodecanoic acid (PFDA) PFDA	
9	4:2 Fluorotelomer alcohols (4:2 FTOH) 4:2 4:2 FTOH	
10	6:2 Fluorotelomer alcohols (6:2	

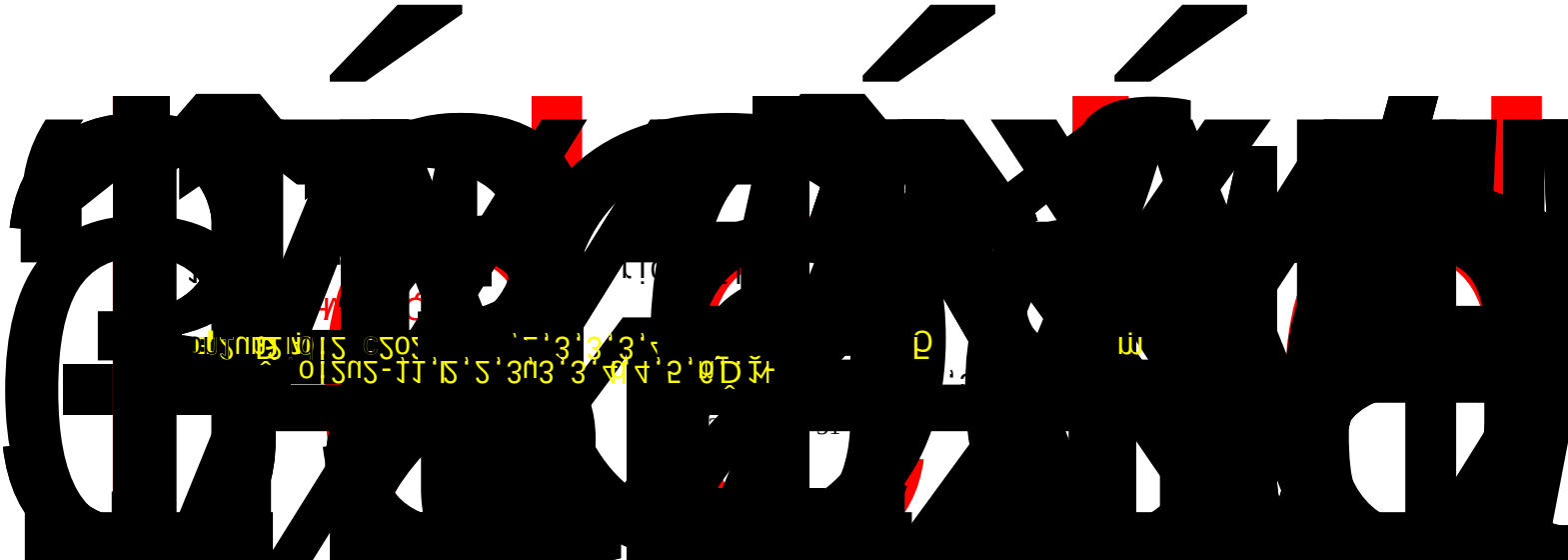
Potassium perfluorooctanoate	2395-00-8
Perfluorononanoic acid and its salts	
Perfluorononanoic acid	375-95-1
Sodium salts of perfluorononan-1-oic-acid	21049-39-8
Ammonium salts of perfluorononan-1-oic-acid	4149-60-4
Perfluorodecanoic acid and its salts	
Perfluorodecanoic acid ;	335-76-2
Ammonium nonadecafluoro-decanoate	3108-42-7
Decanoic acid, nonadecafluoro-, sodium salt	3830-45-3
Perfluoroundecanoic acid and its salts	
Perfluoroundecanoic acid	2058-94-8
Perfluorododecanoic acid and its salts	
Perfluorododecanoic acid	307-55-1
Perfluorotridecanoic acid and its salts	
Perfluorotridecanoic acid	72629-94-8
Perfluorotetradecanoic acid and its salts	
Perfluorotetradecanoic acid	0376-06-07
Perfluorohexanoic acid related substances	
Perfluorohexylethyl alcohols	
Perfluorohexyl-ethanol 1H,1H,2H,2H-	647-42-7
Perfluorohexylethyl olefins	
Perfluorohexylethene	25291-17-2
Perfluorohexylethyl halides	
Tridecafluoro-1-iodohexane	

50	Perfluorohexylethyl acrylates or methacrylates		
51	Perfluorohexylethyl polymers		
52	Perfluorooctanoic acid related substances		
53	Methyl perfluorooctanoate ;	376-27-2	
54	Ethyl perfluorooctanoate	3108-24-5	
55	Perfluorooctylethyl alcohols		
56	Perfluorooctylethanol	678-39-7	
57	Perfluorooctylethyl olefins		
58	Perfluorooctylethene	21652-58-4	
59	Perfluorooctylethyl halides		
60	Heptadecafluoro-1-iodooctane 1-	507-63-1	
61	1H,1H,2H,2H-Perfluorodecyliodide 1- -1H,1H,2H,2H-	2043-53-0	
62	Pentadecafluorooctyl fluoride	335-66-0	
63	Perfluorooctylethyl acrylate or methacrylate		
64	Perfluorooctylethyl polymers		
65	Perfluoroalkyl compounds, branched ,		
66	2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propionic acid, its salts and its acyl halides 2- -3-		
67	2,3,3,3-tetrafluoro-2-(heptafluoro-propoxy) propionic acid 2- -3-	13252-13-6	
68	Potassium 2,3,3,3-tetrafluoro-2-(heptafluoro-propoxy) propionate 2,3,3,3- -2-( )	67118-55-2	
69	Ammonium 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)propanoate 2,3,3,3- -2-( )	62037-80-3	
70	2,3,3,3-tetrafluoro-2-(heptafluoro-propoxy) propionyl fluoride (2- -3-)	2062-98-8	
71	Perfluoroalkyl Sulfonic Acids and Derivatives - PFSA - PFSA		
72	Perfluorobutane sulfonic acid and its derivatives		
73	Perfluorobutane sulfonic acid and its salts	Several	

74	Perfluorobutane sulfonic acid	-1-	375-73-5
75	Perfluorobutane sulfonates		45187-15-3
76	Perfluorohexane sulfonic acid and its derivatives		
77	Perfluorohexane sulphonic acid and its salts		
78	Perfluorohexane sulfonic acid		355-

91	1-Butanaminium, N,N,N-tributyl- μεχσ salt with1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid N,N,N- -1- 1,1,2,2,3,3,4,4,5,5,6,6,6- -1-	108427-54-9
92	Ethanaminium, N,N,N-triethyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1- hexanesulfonic acid (1:1) N,N,N- 1,1,2,2,3,3,4,4,5,5,6,6,6- -1- (1:1)	108427-55-0
93	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, compd. with pyrrolidine (1:1) 1,1,2,2,3,3,4,4,5,5,6,6,6- -1- (1:1)	1187817-57-7
94	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) β - 1,1,2,2,3,3,4,4,5,5,6,6,6- -1- (1-)(1:1)	1329995-45-0
95	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) γ - 1,1,2,2,3,3,4,4,5,5,6,6,6- -1- (1-)(1:1)	1329995-69-8
96	Methanaminium, N,N,N-trimethyl-, salt with1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) N,N,N- 1,1,2,2,3,3,4,4,5,5,6,6,6- -1- (1:1)	189274-31-5
97	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) 2- -2- 1,1,2,2,3,3,4,4,5,5,6,6,6- -1- (1:1)	202189-84-2
98	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, gallium salt (9Cl) 1,1,2,2,3,3,4,4,5,5,6,6,6- -1- (9Cl)	341035-71-0
99	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-, scandium(3+) salt (3:1) 1,1,2,2,3,3,4,4,5,5,6,6,6- -1- (3+)(3:1)	350836-93-0
100	Sulfonium, tris[4-(1,1- dimethylethyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1- hexanesulfonic [4- 1,1-] -1,1,2,2,3,3,4,4,5,5,6,6,6- -1-	425670-70-8
101	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 [4- 1,1-] 1,1,2,2,3,3,4,4,5,5,6,6,6- -1-	421555-74-0
10	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	421555-73-9

2	-4,1- 1,1,2,2,3,3,4,4,5,5,6,6,6- -1- (1:2)
1 0 3	1-Hexanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro xut-ao,1:2)



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124	Lithium perfluorooctane sulfonate 1,1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate	29457-72-5
125	Perfluorooctanesulfonic acid 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonic acid	1763-23-1
126	Perfluorooctane sulfonate 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate	45298-90-6
127	Potassium heptadecafluoro-octane-1- sulphonate	2795-39-3
128	Ethanaminium, N,N,N-triethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1)	56773-42-3
129	1-Decanaminium, N-decyl-N,N-dimethyl-, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesulfonate (1:1)	251099-16-8
130		

7			
138	1-Octanesulfonyl fluoride, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro- FX-8; 1,1,2,3,3,4,4,5,5,6,6,7,7,8,8,8- -1- ; ;	307-35-7	
P	**Phthalates — including all other esters of ortho-phthalic acid( )**		
		CAS No.	
1	1,2-Benzenedicarboxylic acid, di-C6-8-branched and linear alkyl esters, C7-rich (DIHP) C6-8 (C7)	71888-89-6	
2	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP) 1,2- -C7-11 DHNUP	68515-42-4	
3	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear 1,2-	68515-50-4	
4	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear 1,2-	84777-06-0	
5	Benzyl butyl phthalate (BBP) (BBP)	85-68-7	
6	Bis(2-methoxyethyl) phthalate (DMEP) (DMEP)	117-82-8	
7	Di(ethylhexyl) phthalate (DEHP) (2-) (DEHP)	117-81-7	
8	Di-iso-butyl phthalate (DIBP) (DIBP)	84-69-5	
9	Di-iso-decyl phthalate (DIDP) (DIDP)	26761-40-0	
10	Di-iso-nonyl phthalate (DINP) (DINP)	28553-12-0	
11	Di-iso-octyl phthalate (DIOP) (DIOP)	27554-26-3	
12	Di-iso-pentyl phthalates (DIPP) DIPP	605-50-5	
13	Di-n-hexyl phthalate (DnHP) (DnHP)	84-75-3	
14	Di-n-octyl phthalate (DNOP) - (DNOP)	117-84-0	
15	Di-n-pentyl phthalate (DnPP) (DnPP)	131-18-0	
16	Di-n-propyl phthalate (DPRP) (DPRP)	131-16-8	
17	Dibutyl phthalate (DBP) DBP	84-74-2	
18	Dicyclohexyl phthalate (DCHP) (DCHP)	84-61-7	
1	Diethyl phthalate (DEP) (DEP)	84-66-2	

9			
2			
0	Diisohexyl phthalate		71850-09-4
2			
1	Dinonyl phthalate (DNP)	DNP	84-76-4
2			
2	n-Pentyl-isopentyl phthalate		776297-69-9

Q **Polycyclic Aromatic Hydrocarbons (PAHs)**

PAHs

PAHs PAHs

CAS No.

1 Benzo[a]pyrene (BaP) (BaP) Θ

[redacted]

	[redacted]	101-77-9
	[redacted]	120-71-8
31	4-methoxy-m-phenylenediamine 4-	615-05-4
32	4-methyl-m-phenylenediamine 4- -1,3-	95-80-7
33	5-nitro-o-toluidine 5-	99-55-8
34	Component 1: C39H23Cl- CrN7O12S 2Na [1-[(5- -2-)]-2- (2-)][4- -3-[(2- -3,5-)]-7-[(4-)]-2- (3-)] (2-)	118685-33-9
35	Component 2: C46H-30CrN10O20S2 3Na	Not Allocated
S	**Total Heavy Metals**	

[redacted]

4			
T	UV Absorbers		
		CAS No.	
1	2-Benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320) 2- -2- -4,6- (UV-320)	3846-71-7	
2	2,4-Di-tert-butyl-6-(5-chlorobenzotriazole-2-yl) phenol (UV-327) 2,4- -6-(5- -2-) (UV-327	3864-99-1	
3	2-(2H-benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328) 2-(2H- -2-)-4,6- (UV-328	25973-55-1	
4	2-(2H-benzotriazol-2-yl)-4-(tert-butyl)-6-(sec- butyl) phenol (UV-350) 2-(2H- -2-)-4-( )-6-( ) (UV-30)	36437-37-3	

CHAPTER 2 ZDHC MRSL CANDIDATE LIST

2A Bisphenols

CAS No.

1	Bisphenol AF	AF	1478-61-1
2	Bisphenol F	F	620-92-8

enol