



24 K 3 7 > î A " ZDHC MRSLRS



M

ZDHC MRSL

5.2

1. SDS/MSDS

2. ZDHC MRSL

3. SDS/MSDS

5.3

1.

2.

3.

m r

1.

2.

3.

6.

6.1

1.

“

”

“

”

2.

3.

7.

7.1

7.2

1.

2.

7.3

8.

8.1

8.2

9. ZDHC

9.1 ZDHC

ZDHC

9.2

1 ZDHC MRSL

2. ZDHC

3. / Gú
:

4. /

10.

10.1

3

ku

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

) 5C

APPEOs

		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

4			
1	3,4,5-Trichlorophenol	1 3,4,5-	609-19-8
5			
1	2,3,4,5-Tetrachlorophenol	2 2,3,4,5-	4901-51-3
6			
1	2,3,4,6-Tetrachlorophenol	2 2,3,4,6-	58-90-2
7			
1	2,3,5,6-Tetrachlorophenol	2 2,3,5,6-	935-95-5
8			
1	Pentachlorophenol (PCP)	PCP	87-86-5
9			
2	TeCP mixed isomers		25167-83-3
0			

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

1 3	Direct Red 28	28	573-58-0
1 4	Disperse Blue 1	1	2475-45-8
1 5	Disperse Blue 3	3	2475-46-9
1 6	Disperse Orange 11	11	82-28-0
1 7	Direct Brown 95	95	16071-86-6
1 8	4-Dimethylaminoazobenzene (C.I. Solvent Yellow 2) 4-C.I.	2	60

1

1

2 Hexabromodiphenyl ether (Hexa

	(/)	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 4	

CAS 19

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		

	N,N-dimethylacetamide (DMAC)	
6	EC* - Emission and Exposure Controls best practices are in place	
	N,N- (DMAC)	
	EC* -	
	N,N-Dimethylformamide (DMFa)	
7	EC* - Emission and Exposure Controls best practices are in place	
	N,N- (DMFa)	
	EC* -	
	N-Ethyl-2 pyrrolidone (NEP)	
8	EC* - Emission and Exposure Controls best practices are in place	
	N- -2- NEP	
	EC* -	
	N-Methyl-2-Pyrrolidone (NMP)	
9	EC* - Emission and Exposure Controls best practices are in place	
	N- NMP	
	EC* -	
2	Toluene	
1	EC* - Emission and Exposure Controls best practices are in place	
0	EC* -	
1		
1	Tripropyltin Compounds (TPT)	TPT
1		
1	Diocetyl tin (DOT)	(DOT)
2		
1	Monobutyltin (MBT)	MBT
3		
1	Tributyltin (TBT)	(TBT)
4		
1	m s	
5		



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	ADCA	ZDHC
9	Perboric acid, sodium salt			
10	Quinoline			
11	Silica (particles of respirable size)			
12	Thiourea			
13	Titanium Dioxide			
P	P Fluorinated and Polyfluorinated Chemicals (PFAS)			

- 1 Perfluorobutane sulfonic acid (PFBS)
PFBS
- 2 Perfluorohexane sulfonic acid (PFHxS)
(PFHxS)
- 3 Perfluorooctane sulfonic acid (PFOS) and related substances
(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
- 1
0 6:2 Fluorotelomer alcohols (6:2

2 Potassium perfluorooctanoate 2395-00-8
5
2 Perfluorononanoic acid and its salts

2 Perfluorononanoic acid 375-95-1
7

2 Sodium salts of perfluorononan-1-oic-acid 21049-39-8
8

2 Ammonium salts of perfluorononan-1-oic-acid 4149-60-4
9

3 Perfluorodecanoic acid and its salts

0

3 Perfluorodecanoic acid ; 335-76-2
1

3 Ammonium nonadecafluoro-decanoate 3108-42-7
2

3 Decanoic acid, nonadecafluoro-, sodium salt 3830-45-3
3

3 Perfluoroundecanoic acid and its salts

4

3 Perfluoroundecanoic acid 2058-94-8
5

3 Perfluorododecanoic acid and its salts

6

3 Perfluorododecanoic acid 307-55-1
7

3 Perfluorotridecanoic acid and its salts
8

3 Perfluorotridecanoic acid 72629-94-8
9

4 Perfluorotetradecanoic acid and its salts

0

4 Perfluorotetradecanoic acid 0376-06-07
1

4 Perfluorohexanoic acid related substances
2

2

4 Perfluorohexylethyl alcohols

4

4 Perfluorohexyl-ethanol 1H,1H,2H,2H- 647-42-7
5

5 Perfluorohexylethyl olefins

5

4 Perfluorohexylethyl ether 25291-17-2
6

6

4 Perfluorohexylethyl halides

7

4 Tridecafluoro-1-iodohexane

8

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-Perfluorodecyl iodide 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	

7 4	Perfluorobutane sulfonic acid	-1-	375-73-5
7 5	Perfluorobutane sulfonates		45187-15-3
7 6	Perfluorohexane sulfonic acid and its derivatives		
7 7	Perfluorohexane sulphonic acid and its salts		
7 8	Perfluorohexane sulfonic acid		355-

91	1-Butanaminium, N,N,N-tributyl-, salt with 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-1-hexanesulfonic acid (1:1) N,N,N-1-1,1,2,2,3,3,4,4,5,5,6,6,6-1-	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-1-1,1,2,2,3,3,4,4,5,5,6,6,6-(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)	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)	1329995-69-8
96	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) N,N,N-1,1,2,2,3,3,4,4,5,5,6,6,6-(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-] -1,1,2,2,3,3,4,4,5,5,6,6,6-	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-] 1,1,2,2,3,3,4,4,5,5,6,6,6-	421555-74-0
101	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 1-Hexanesulfonic acid,
0 1,1,2,2,3,3,4,4,5,5,6,6,6-tridecafluoro-2,2-dimethyl-3-(sulfonyl)-butane
3

3	;	;	;	-1-	
1	Lithium perfluorooctane sulfonate	-1-			
2	1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-	-1-	;		29457-72-5
4	-1-	;	-1-	;	-1-
1	Perfluorooctane sulfonic acid				
2	1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-	-1-	;		1763-23-1
5					
1	Perfluorooctane sulfonate	1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-			45298-90-6
2	-1-				
6					
1	Potassium heptadecafluoro-octane-1- sulphonate				2795-39-3
7					
	Ethanaminium,	N,N,N-triethyl-,			
1	1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-				
2	heptadecafluoro-1-octanesulfonate (1:1)				56773-42-3
8	;	;			
	N,N,N-	, 1,1,2,2,3,3,4,4,5,5,,6,7,7,8,8,8-			
	-1-	(1:1)			
1	1-Decanaminium,	N-decyl-N,N-dimethyl-			
2	1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-1-octanesu				251099-16-8
9	lfonate (1:1) N-	-N,N-	-1-		
	1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-	-1-		(1:1	
1					
3					
0					

7			
138	1-Octanesulfonyl fluoride, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptafluoro-1- ;	FX-8; 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-DHNUP -C7-11	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) $\ominus$

	to nitrile chloride - -0-	
	m-phenylenediamine monosulphate -4-	
	,4'-	101-77-9
	6-methoxy-phenylamine -3-	120-71-8
3		
1	4-methoxy-phenylenediamine 4-	615-05-4
3		
2	4-methyl-m-phenylenediamine 4- -1,3-	95-80-7
3		
3	5-nitro-o-toluidine 5-	99-55-8
3	Component 1: C39H23Cl- CrN7012S 2Na [1-[(5- -2-)	
4	] -2- (2-)][4- -3-[(2- -3,5-)	118685-33-9
	] -7-[(4-)] -2- (3-)] (2-)	
3		
5	Component 2: C46H-30CrN10020S2 3Na	Not
S		Allocated
	Total Heavy Metals_	

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-di tertpentylphenol (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 MRS� CANDIDATE LIST

2A	Bisphenols		
V	CAS No.		
1	Bisphenol AF	AF	1478-61-1
2	Bisphenol F	F	620-92-8



ZDHC MR 4.0

enol

