

## Appendix 6 Classification of chemicals list

The following table describes the hazard profile of the list of compounds (Table 5.6) identified under both nitrogen and oxygen conditions, in all oils and during different flight stages. The hazard profile, or classification, of a substance is an indication of its intrinsic toxicity. A substance is classified, e.g. assigned a notation for a specific toxicity, according to an internationally agreed classification criteria. The classification can distinguish between the various types of toxicity (reprotoxic, carcinogenic, irritant), the potency (4 (less potent) =>1 (most potent), the frequency needed to exert the toxicity (Single Exposure (SE) vs Repeated Exposure (RE)) and the level of evidence (1A, 1B and 2) available (for more information, see the Guidance on the criteria for Classification and Labelling under REACH).

In most cases, the manufacture or importer classifies the substance without any review by an independent organisation, the so-called self-classification. Different manufacturers classify the same substance differently. Harmonized classification means the classification is agreed upon in a scientific committee and that classification is mandatory for every manufacturer or importer.

The substances are run through the Classification and Labelling database of the European Chemical Agency (ECHA) database. This database contains all classification and labelling information on notified and registered substances received from manufacturers and importers in the European Union. Manufacturers and importers need to notify a substance to the Classification and Labelling (C&L) Inventory if they intent to place the substance on the EU market.

Compound #	Name	CAS	Harmonized classification	Self-classification*
1	Diethyl Phthalate	84-66-2		NC
2	1-Nonene, 4,6,8-trimethyl-	54410-98-9		
3	2-Ethylhexyl salicylate	118-60-5		Skin Irrit. 2
4	Acetophenone	98-86-2	Acute Tox. 4 Eye Irrit. 2	
5	Benzaldehyde	100-52-7	Acute Tox. 4	
6	Benzene, 1,3-bis(1,1-dimethylethyl)-	1014-60-4	NR	NR
7	Heptane, 4-methyl-	589-53-7	Asp. Tox. 1 Skin Irrit. 2 STOT SE 3	
8	Nonanal	124-19-6		NC
9	2,4-Dimethyl-1-heptene	19549-87-2		Asp. Tox. 1
10	Decanal	112-31-2		Eye Irrit. 2
11	Dodecanoic acid, isooctyl ester	84713-06-4		NC
12	Heptadecane, 2,6,10,14-tetramethyl-	18344-37-1	NR	NR
13	Octanal	124-13-0		Skin Irrit. 2 Eye Irrit. 2
14	Dodecane, 4,6-dimethyl-	61141-72-8	NR	NR
15	Heptane	142-82-5	Asp. Tox. 1 Skin Irrit.2 STOT SE 3	
16	5,9-Undecadien-2-one, 6,10-dimethyl-	689-67-8		Skin Irrit. 2
17	Benzene	71-43-2	Asp. Tox. 1 Skin Irrit. 2 Eye Irrit. 2 Muta. 1B Carc. 1A STOT RE 1	

Compound #	Name	CAS	Harmonized classification	Self-classification*
18	Glycidol	556-52-5	Acute Tox. 4 Skin Irrit. 2 Eye Irrit. 2 Acute Tox. 3 STOT SE 3 Muta. 2 Carc. 1B Repr. 1B	
19	Nonane, 2,6-dimethyl-	17302-28-2	NR	NR
20	2-Propanol, 2-methyl-	75-65-0	Eye Irrit. 2 Acute Tox. 4 STOT SE 3	
21	Decane, 2,3,5,8-tetramethyl-	192823-15-7	NR	NR
22	Nonane	111-84-2		Eye Irrit. 2
23	Octane	111-65-9	Asp. Tox. 1 Skin Irrit. 2 STOT SE 3	
24	Phenol, 2,4-bis(1,1-dimethylethyl)-	96-76-4		Acute Tox. 4 Skin Irrit. 2 Eye Dam. 1
25	2,5-Hexanediol, 2,5-dimethyl-	110-03-2		Eye Dam. 1
26	Acetic acid, octadecyl ester	822-23-1	NR	NR
27	Undecane	1120-21-4		Asp. Tox. 1
28	2-Heptanone, 4-methyl-	6137-06-0	NR	NR
29	Hexane, 2,3,4-trimethyl-	921-47-1	NR	NR
30	1,2-Benzenedicarboxylic acid, di-2-propenyl ester	131-17-9	Acute Tox. 4	
31	1-Iodo-2-methylundecane	73105-67-6	NR	NR
32	Isopropyl Palmitate	142-91-6		NC
33	n-Decanoic acid	334-48-5		Skin Irrit. 2 Eye Irrit. 2
34	Tridecane	629-50-5		Asp. Tox. 1
35	TCP isomer	563-04-2		Acute Tox. 4
36	1-Propanol, 2-methyl-	78-83-1	Skin Irrit. 2 Eye Dam. 1 STOT SE 3	
37	1-Tridecanol	112-70-9		NC
38	5-Hepten-2-one, 6-methyl-	110-93-0		Eye Irrit. 2
39	Decane	124-18-5		Asp. Tox. 1
40	Pentane	109-66-0	Asp. Tox. 1 STOT SE 3	
41	Pentanoic acid, methyl ester	624-24-8		NC
42	Amylene Hydrate	75-85-4	Skin Irrit. 2 Acute Tox. 4 STOT SE 3	
43	Glycerin	56-81-5		NC
44	Heptanal	111-71-7		Skin Irrit. 2 Eye Irrit. 2
45	Heptanoic acid, methyl ester	106-73-0		Skin Irrit. 2

Compound #	Name	CAS	Harmonized classification	Self-classification*
46	Octane, 3,5-dimethyl-	15869-93-9		NC
47	Phenol	108-95-2	Acute Tox. 3 Skin Corr. 1B Muta. 2 STOT RE 2	
48	Propane, 2-ethoxy-2-methyl-	637-92-3		STOT SE 3
49	1,2-Benzenedicarboxylic acid, bis(2-methylpropyl) ester	84-69-5	Repr. 1B	
50	2-Butanone	78-93-3	Eye Irrit. 2 STOT SE 3	
51	Butylated Hydroxytoluene	128-37-0		NC
52	Decanoic acid, 2-ethylhexyl ester	73947-30-5		NC
53	Diazene, dimethyl-	503-28-6		NC
54	Dodecane, 2-methyl-	1560-97-0	NR	NR
55	Methacrolein	78-85-3		Acute Tox. 3 Skin Corr. 1B Eye Dam. 1 Acute Tox. 2
56	Pentadecane	629-62-9		Asp. Tox. 1
57	Benzaldehyde, 4-methyl-	104-87-0		Acute Tox. 4 Eye Irrit. 2
58	Phenol, 3-methyl-	108-39-4	Acute Tox. 3 Skin Corr. 1B	
59	2H-Pyran-2-one, tetrahydro-	542-28-9		Eye Dam. 1
60	Benzene, (1,1,2-trimethylpropyl)-	26356-11-6	NR	NR
61	Cyclopropyl carbinol	2516-33-8		Acute Tox. 4 Eye Irrit. 2
62	Hexadecen-1-ol, trans-9-	64437-47-4	NR	NR
63	Hexanal	66-25-1		Eye Irrit. 2
64	Isobutane	75-28-5	NC	
65	Octanoic acid, methyl ester	111-11-5		Skin Sens. 1
66	(2-Aziridinylethyl)amine	4025-37-0	NR	NR
67	1,4-Dioxane-2,5-dione, 3,6-dimethyl-, (3S-cis)-	4511-42-6		Eye Irrit. 2
68	1-Octene, 3,7-dimethyl-	4984-01-4		NC
69	2-Butene	107-01-7		NC
70	Cyclobutylamine	2516-34-9		Skin Corr. 1B
71	n-Hexadecanoic acid	57-10-3		NC
72	Tridecane, 3-methyl-	6418-41-3	NR	NR
73	1-Octene	111-66-0		Asp. Tox. 1
74	2(5H)-Furanone, 3-methyl-	22122-36-7		Skin Irrit. 2 Eye Irrit. 2 STOT SE 3
75	Pentanal	110-62-3		Skin Sens. 1 Eye Irrit. 2 Acute Tox. 4 STOT SE 3
76	1,2-Benzenedicarboxylic acid, mono(2-ethylhexyl) ester	4376-20-9		Skin Irrit. 2 Eye Irrit. 2

Compound #	Name	CAS	Harmonized classification	Self-classification*
77	2,5-Furandione, dihydro-3-methyl-	4100-80-5		Skin Irrit. 2 Eye Irrit. 2 STOT SE 3
78	Benzeneacetaldehyde	122-78-1		Acute Tox. 4 Skin Sens. 1
79	Dodecanoic acid	143-07-7		Eye Dam. 1
80	Methylglyoxal	78-98-8		Acute Tox. 4 Skin Sens. 1B Eye Dam. 1 Muta. 2
81	Pentadecane, 2,6,10-trimethyl-	3892-00-0	NR	NR
82	2-Hexanone	591-78-6	STOT SE 3 Repr. 2 STOT RE 1	
83	Hydroxyurea	127-07-1		Muta. 1B Repr. 2
84	(S)-2-Hydroxypropanoic acid	79-33-4		Skin Irrit. 2 Eye Dam. 1
85	1,3,5,7-Cyclooctatetraene	629-20-9		Asp. Tox. 1 Skin Irrit. 2 Eye Irrit. 2 STOT SE 3
86	2-Propanone, 1-hydroxy-	116-09-6		NC
87	Butyrolactone	96-48-0		Acute Tox. 4 Eye Dam. 1 STOT SE 3
88	Cyclopentanone	120-92-3	Skin Irrit. 2 Eye Irrit. 2	
89	Dodecane	112-40-3		Eye Irrit. 2
90	Eicosane	112-95-8		NC
91	Heptadecane, 2,6-dimethyl-	54105-67-8	NR	NR
92	l-Pantoyl lactone	5405-40-3		Eye Dam. 1
93	Pentanoic acid	109-52-4	Skin Corr. 1B	
94	Phthalic anhydride	85-44-9	Acute Tox. 4 Skin Irrit. 2 Skin Sens. 1 Eye Dam. 1 Resp. Sens. 1 STOT SE 3	
95	trans-3-Decene	19150-21-1	NR	NR
96	Undecanal	112-44-7		Skin Irrit. 2
97	1-Hexene	592-41-6		Asp. Tox. 1
98	1H-Indene, 1-methylene-	2471-84-3	NR	NR
99	1-Pentene	109-67-1		NC
100	Acetone	67-64-1	Eye Irrit. 2 STOT SE 3	
101	Decane, 3,7-dimethyl-	17312-54-8	NR	NR
102	Formamide, N-methyl-	123-39-7	Acute Tox. 4 Repr. 1B	

Compound #	Name	CAS	Harmonized classification	Self-classification*
103	Hexane	110-54-3	Asp. Tox. 1 Skin Irrit. 2 STOT SE 3 Repr. 2 STOT RE 2	
104	Octane, 1-chloro-	111-85-3		Asp. Tox. 1
105	1,3,5-Cycloheptatriene	544-25-2		Asp. Tox. 1 Acute Tox. 3 Skin Irrit. 2 Eye Irrit. 2 STOT SE 3
106	1-Hexadecanol	36653-82-4		NC
107	3-Undecene, (Z)-	821-97-6	NR	NR
108	Benzonitrile	100-47-0	Acute Tox. 4	
109	Cyclooctane, 1,4-dimethyl-, cis-	13151-99-0	NR	NR
110	Dodecane, 2,7,10-trimethyl-	74645-98-0	NR	NR
111	Heptane, 3-ethyl-	15869-80-4	NR	NR
112	1-Pentene, 2,4,4-trimethyl-	107-39-1	NC	
113	1-Pentene, 2-methyl-	763-29-1		NC
114	1-Propene, 2-methyl-	115-11-7	NC	
115	2(3H)-Furanone, dihydro-5-methyl-	108-29-2		NC
116	2-Heptanone	110-43-0	Acute Tox.4	
117	2-Hexenal	505-57-7		Acute Tox. 4 Acute Tox. 3 Skin Sens. 1
118	2-Pentanone	107-87-9		Acute Tox. 4 Eye Irrit. 2 STOT SE 3
119	2-tert-Butyltoluene	1074-92-6		NC
120	Acetic acid	64-19-7	Skin Corr. 1A	
121	cis-2-Nonene	6434-77-1		Asp. Tox. 1 Skin Irrit. 2 Eye Irrit. 2 STOT SE 3
122	Decane, 1-chloro-	1002-69-3		Carc. 2
123	Heptanoic acid	111-14-8	Skin Corr. 1B	
124	Isopropyl Myristate	110-27-0		NC
125	Tetradecanoic acid	544-63-8		NC
126	1-Pentene, 4-methyl-	691-37-2		Asp. Tox. 1 Or Skin Irrit. 2 Eye Irrit. 2 STOT SE 3
127	2-Cyclopenten-1-one	930-30-3		NC

\* according to the largest number of notifiers

NC = not classified for human health effects

NR = not registered under REACH

Acute Tox = Acute toxicity  
Asp. Tox. = Aspiration toxicity  
Eye Irrit. = Eye irritation  
Eye Dam. = Eye Damage  
Skin Irrit. = Skin irritation

Skin Corr. = Skin corrosion  
Skin Sens. = Skin sensitisation  
Resp. Sens = Respiratory sensitisation  
STOT SE = Specific Target Organ Toxicity Single  
Exposure  
STOT RE = Specific Target Organ Toxicity Repeated  
Exposure  
Muta. = Mutagenicity  
Carc. = Carcinogenicity  
Repr.= Reprotoxicity