

Technical appendix

The classification reflects the performance in relation to three essential characteristics:

- Total Volatile Organic Compounds (TVOC) emission performance
- Formaldehyde emissions
- Carcinogenic VOC emissions

which will be declared as

TVOC emission performance*	A_{3/1}
Formaldehyde emissions	F1
Carcinogenic VOC emissions*	C1

* excluding formaldehyde (as being specifically covered in separate classes)

TVOC emission performance

The classification of this essential characteristic is based on the total VOC emissions as foreseen in table 1, supplemented by the performance related to individual compounds and their EU-LCI values.

Table 1 Total VOC emissions

Classes	TVOC after 28days TVOC _{D28}
Class A₃	≤ 200 µg/m ³
Class A₂	≤ 500 µg/m ³
Class A₁	≤ 1000 µg/m ³
Class B	≤ 1500 µg/m ³
Class C	≤ 2000 µg/m ³
Class D	> 2000 µg/m ³

Table 2 Individual compounds

Compound	Class 1 < EU-LCI ≤ 1 every individual ratio (C _i /LCI _i) ≤ 1,0	Class 2 > EU-LCI = 1 ≤ EU-LCI x 2	Class 3 > EU-LCI x 2

Class 1 comprises cases where none of the individual emission concentrations exceeds the corresponding EU-LCI value.

Where the ratio of the emission concentration of any individual compound divided by the corresponding EU-LCI value (C_i/LC_{i1}) exceeds 1,0, such a compound is to be individually declared.

The outcome of the classification is determined by the highest individual result.

Table 3 EU-LCI values

CAS no.	Compound	EU-LCI $\mu\text{g}/\text{m}^3$
108-88-3	Toluene	2900
100-41-4	Ethylbenzene	850
1330-20-7 106-42-3 108-38-3 95-47-6	Xylene (o-, m-, p-) and mix of o-, m- and p-xylene isomers	500
103-65-1	n-Propylbenzene	950
108-67-8 95-63-6 526-73-8	Trimethylbenzene (1,2,3-,1,2,4-,1,3,5-)	450
611-14-3	2-Ethyltoluene	550
527-84-4 535-77-3 99-87-6 25155-15-1	Cymene (o-, m-, p-,) (1-Isopropyl-2(3,4)-methylbenzene) and mix of o-, m-, and p-cymene	1000
95-93-2	1,2,4,5-Tetramethylbenzene	500
104-51-8	n-Butylbenzene	1100
99-62-7 100-18-5	Diisopropylbenzene (1,3-, 1,4-)	750
2189-60-8	Phenyl octane and isomers	1100
100-42-5	Styrene	250
91-20-3	Naphthalene	10
95-13-6	Indene	450
110-82-7	Cyclohexane	6000
108-87-2	Methyl cyclohexane	8100
	Other saturated aliphatic hydrocarbons C9-C16	6000
498-15-7	3-Carene	1500
80-56-8	α -Pinene	2500
127-91-3	β -Pinene	1400
138-86-3	Limonene	5000
	Other terpene hydrocarbons	1400
75-65-0	2-Methyl-2-propanol (tert-butanol)	620
71-36-3	1-Butanol	3000
71-41-0 30899-19-5 94624-12-1 6032-29-7 584-02-1 137-32-6 123-51-3 598-75-4 75-85-4 75-84-3	1-Pentanol (all isomers)	730
111-27-3	1-Hexanol	2100
108-93-0	Cyclohexanol	2000
104-76-7	2-Ethyl-1-hexanol	300

123-42-2	4-Hydroxy-4-methyl-pentane-2-on (diacetone alcohol)	960
128-37-0	BHT (2,6-di-tert-butyl-4-methylphenol)	100
100-51-6	Benzyl alcohol	440
111-46-6	Diethylene glycol	440
110-98-5 25265-71-8	Dipropylene glycol	670
110-63-4	1,4-Butanediol	2000
6846-50-0	2,2,4-Trimethylpentanediol diisobutyrate	450
111-96-6	Diethylene glycol dimethyl ether (1-Methoxy-2-(2-methoxy-ethoxy)-ethane)	28
25265-77-4	2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate	600
109-59-1	Ethylene glycol isopropylether (2-Methylethoxyethanol)	220
111-90-0	Diethylene glycol monoethyl ether (2-(2-ethoxyethoxy)ethanol)	350
2807-30-9	Ethylene glycol monoisopropyl ether (2-Propoxyethanol)	860
111-76-2	Ethylene glycol monobutylether (2-butoxyethanol)	1100
112-34-5	Diethylene glycol monobutylether	670
124-17-4	Diethylene glycol monomethyl ether acetate (Butyldiglykolacetate, 2-(2-butoxyethoxy) ethyl acetate)	850
122-99-6	2-Phenoxyethanol	1100
1589-47-5	1-Propylene glycol 2-methyl ether (2-Methoxy-1-propanol)	19
70657-70-4	1-Propylene glycol 2-methyl ether acetate (2-Methoxy-1-propyl acetate)	28
34590-94-8	Dipropylene glycol monomethyl ether	3100
63019-84-1 89399-28-0 111109-77-4	Dipropylene glycol dimethyl ether	1300
75-07-0	Acetaldehyde	1200
123-72-8	Butanal	650
110-62-3	Pentanal	800
66-25-1	Hexanal	900
111-71-7	Heptanal	900
123-05-7	2-Ethyl-hexanal	900
124-13-0	Octanal	900
124-19-6	Nonanal	900
112-31-2	Decanal	900
4170-30-3 123-73-9 15798-64-8	2-Butenal (Crotonaldehyd)	5
1576-87-0 764-39-6 31424-04-1	2-Pentenal	7
6728-26-3 505-57-7 16635-54-4 1335-39-3 73543-95-0	Hexenal	7
2463-63-0 18829-55-5 57266-86-1 29381-66-6	2-Heptenal	7
2363-89-5 2548-87-0 25447-69-2 20664-46-4	2-Octenal	7
2463-53-8 18829-56-6 60784-31-8	2-Nonenal	7
3913-71-1	2-Decenal	7

2497-25-8 3913-81-3		
2463-77-6 53448-07-0 1337-83-3	2-Undecenal	7
78-93-3	2-Butanone (ethylmethylketone)	5000
563-80-4	3-Methyl-2-butanone	7000
120-92-3	Cyclopentanone	900
108-94-1	Cyclohexanone	410
583-60-8	2-Methylcyclohexanone	2300
98-86-2	Acetophenone	490
79-09-4	Propionic acid	310
149-57-5	2-Ethylhexanoic acid	150
108-21-4	Propyl acetate (n-, iso-)	4200
108-65-6	2-Methoxy-1-methylethyl acetate	2700
110-19-0	Isobutyl acetate	4800
123-86-4	n-Butyl acetate	4800
96-33-3	Methyl acrylate	180
140-88-5	Ethyl acrylate	200
141-32-2	n-Butyl acrylate	110
103-11-7	2-Ethylhexyl acrylate	380
	Other acrylates (acrylic acid esters)	110
627-93-0	Dimethyl adipate	50
106-65-0	Dimethyl succinate	50
1119-40-0	Dimethyl glutarate	50
105-75-9	Dibutyl fumarate	50
105-76-0	Maleic acid dibutylester	50
13048-33-4	Hexamethylene diacrylate	10
106-46-7	1,4-Dichlorobenzene	150
123-91-1	1,4-Dioxane	400
105-60-2	Caprolactame	300
556-67-2	Octamethylcyclotetrasiloxane (D4)	1200
100-97-0	Hexamethylenetetramine	30
96-29-7	2-Butanonoxime	15
26172-55-4	5-Chloro-2-methyl-2H-isothiazol-3-one (CIT)	1
2682-20-4	2-Methyl-4-isothiazolin-3-one (MIT)	100

The table includes all compounds with values for the Lowest Concentration of Interest (LCI) which have been developed by a number of experts currently comprised in the subgroup on EU-LCI values of the Advisory Group.

The complete list of EU-LCI values can also be found at http://www.eu-lci.org/EU-LCI_Website/EU-LCI_Values_files/Agreed%20EU-LCI%20values_Dec15.pdf

These EU-LCI values are to become an element of the classification at hand by means of the adoption of this delegated act.

Formaldehyde emissions

Table 4

	Class F1	Class F3 (E1)	Class F4 (E2)
Formaldehyde	$\leq 0,06 \text{ mg/m}^3$	$\leq 0,12 \text{ mg/m}^3$	$> 0,12 \text{ mg/m}^3$

Carcinogenic VOC emissions

(Emission of VOC substances classified as carcinogens category 1A or 1B in table 3.1 of Annex VI to Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)

Table 5 Classes for carcinogenic VOC emissions

	Class C1	Class C2
Carcinogenic VOC emissions 28d	$\leq 1 \mu\text{g} / \text{m}^3$	$> 1 \mu\text{g} / \text{m}^3$