

Appendix 13.03 Summary of TAP Analysis and Emission Inventory

Item	Chemical	Species	Reporting Limit (LOR)	Results	TAP for Non-carcinogenic Risk Assessment	for Non-Carcinogenic Effect [1]		IARC Group	TAP for Carcinogenic Risk Assessment	for Carcinogenic Effect [1]	Emission Rate after Deodorization Units [2]
						Chronic RfC	Acute RfC			IUR	
						(µg/m3)	(µg/m3)			(µg/m3) ⁻¹	
1	Sulphur dioxide	Criteria air pollutants	133	≥ LOR	√	-	20 (24 hr)	Group 3	-	-	1.4E-02
2	Nitrogen dioxide	Criteria air pollutants	30	≥ LOR	√	40 (annual)	200 (1 hr)	-	-	-	2.2E-01
3	Carbon monoxide	Criteria air pollutants	2289	< LOR	-	-	30000 (1 hr)	-	-	-	-
4	Hydrogen sulphide	Inorganic compound	71	≥ LOR	√	2	150 (24 hrs)	-	-	-	3.7E-03
5	Ammonia	Inorganic compound	7	≥ LOR	√	70	1190	-	-	-	1.5-03
6	Dimethyl sulphide	Organosulfur compounds	3	≥ LOR	-	-	-	-	-	-	-
7	Diethyl sulphide	Organosulfur compounds	369	< LOR	-	-	-	-	-	-	-
8	Acetone	Ketone	237	< LOR	-	30863	61725	-	-	-	-
9	Butanone (Methyl ethyl ketone)	Ketone	295	< LOR	-	5000	13000	-	-	-	-
10	Acetaldehyde	VOCs	36	< LOR	-	9	470	Group 2B	√	2.2E-06	2.8E-04
11	Benzene	VOCs	3	< LOR	-	10	29	Group 1	√	6.0E-06	2.2E-05
12	Carbon disulphide	VOCs	3	≥ LOR	√	700	100 (24 hrs)	-	-	-	8.2E-05
13	Carbon tetrachloride	VOCs	6	< LOR	-	100	1900	Group 2B	√	6.0E-06	5.1E-05
14	Chlorobenzene	VOCs	5	< LOR	-	1000	-	-	-	-	-
15	Chloroform	VOCs	5	≥ LOR	√	98	488	Group 2B	√	2.3E-05	9.7E-04
16	Formaldehyde	VOCs	25	< LOR	-	100	49	Group 1	√	1.3E-05	1.9E-04
17	Hexane (or n-hexane)	VOCs	4	< LOR	-	700	-	-	-	-	-
18	Methanol	VOCs	131	≥ LOR	√	20000	28000	-	-	-	1.8E-03
19	Methyl chloride (Chloromethane)	VOCs	2	< LOR	-	90	1032	Group 3	-	-	-
20	Methyl chloroform (1,1,1-Trichloroethane)	VOCs	6	< LOR	-	5000	10906	Group 3	-	-	-
21	Methylene chloride (Dichloromethane)	VOCs	4	≥ LOR	√	600	3000 (24 hrs)	Group 2A	√	1.0E-08	2.2E-04
22	Styrene	VOCs	4	< LOR	-	851	21286	Group 2B	-	-	-
23	1,1,2,2-Tetrachloroethane	VOCs	7	< LOR	-	-	-	Group 2B	√	5.8E-05	5.8E-05

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						Chronic RfC	Acute RfC			IUR	Emission Rate after Deodourization Units [2]
						(µg/m3)	(µg/m3)			(µg/m3) ⁻¹	g/s
24	Tetrachloroethylene (Perchloroethylene)	VOCs	7	≥ LOR	√	250	41	Group 2A	√	2.6E-07	4.1E-03
25	Toluene	VOCs	4	≥ LOR	√	3766	7533	Group 3		-	1.3E-04
26	1,2,4-Trichlorobenzene	VOCs	7	< LOR	-	-	-	-	-	-	-
27	1,1,2-Trichloroethane	VOCs	1	< LOR	-	-	-	Group 3	-	1.6E-05	-
28	Trichloroethylene	VOCs	5	≥ LOR	√	2	-	Group 1	√	4.3E-07	2.1E-04
29	Xylenes (isomers and mixture)	VOCs	4	≥ LOR	√	870	8679	Group 3		-	2.4E-04
30	Methyl mercaptan (Methanethiol)	VOCs	2	< LOR	-	-	-	-	-	-	-
31	Ethyl mercaptan (Ethanethiol)	VOCs	3	< LOR	-	-	-	-	-	-	-
32	1,2-Dichloroethane	VOCs	4	< LOR		2427	700 (24 hrs)	Group 2B	√	2.6E-05	2.9E-05
33	Ethylbenzene	VOCs	4	≥ LOR	√	22000	21699	Group 2B	√	2.5E-06	9.5E-05
34	a-Pinene	VOCs	6	< LOR	-	-	-	-	-	-	-
35	n-Decane	VOCs	6	≥ LOR	-	-	-	-	-	-	-
36	d-Limonene	VOCs	6	≥ LOR	-	-	-	Group 3	-	-	-
37	Terpenes	VOCs	11	< LOR	-	-	-	-	-	-	-
38	o-Dichlorobenzene (1,2-Dichlorobenzene)	VOCs	6	< LOR	-	-	-	Group 3	-	-	-
39	m-Dichlorobenzene(1,3-Dichlorobenzene)	VOCs	6	< LOR	-	-	-	Group 3	-	-	-
40	p-Dichlorobenzene (1,4-Dichlorobenzene)	VOCs	6	< LOR		60	12017	Group 2B	√	1.1E-05	1.0E-04
41	Naphthalene	PAHs	1	≥ LOR	√	10	-	Group 2B	√	3.4E-05	1.3E-05
42	Benzo (a) Pyrene	PAHs	1	< LOR		-	-	Group 1	√	8.7E-02	6.0E-06
43	Acenaphthylene	PAHs	1	< LOR	-	-	-	-	-	-	-
44	Acenaphthene	PAHs	1	< LOR	-	-	-	Group 3	-	-	-
45	Fluorene	PAHs	1	< LOR	-	-	-	Group 3	-	-	-
46	Phenanthrene	PAHs	1	< LOR	-	-	-	Group 3	-	-	-

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						Chronic RfC (µg/m3)	Acute RfC (µg/m3)			IUR (µg/m3) ⁻¹	
47	Anthracene	PAHs	1	< LOR	-	-	-	Group 3	-	-	-
48	Fluoranthene	PAHs	1	< LOR	-	-	-	Group 3	-	-	-
49	Pyrene	PAHs	1	< LOR	-	-	-	Group 3	-	-	-
50	Benz(a)anthracene	PAHs	1	< LOR	-	-	-	Group 2B	√	1.1E-04	6.0E-06
51	Chrysene	PAHs	1	< LOR	-	-	-	Group 2B	√	1.1E-05	1.2E-05
52	Benzo(b)fluoranthene	PAHs	1	< LOR	-	-	-	Group 2B	√	1.1E-04	6.0E-06
53	Benzo(k)fluoranthene	PAHs	1	< LOR	-	-	-	Group 2B	√	1.1E-04	6.0E-06
54	Indeno (1,2,3-cd)pyrene	PAHs	1	< LOR	-	-	-	Group 2B	√	1.1E-04	6.0E-06
55	Dibenz(a,h)anthracene	PAHs	1	< LOR	-	-	-	Group 2A	√	1.2E-03	6.0E-06
56	Benzo(g,h,i)perylene	PAHs	1	< LOR	-	-	-	Group 3	-	-	-

Notes:

[1] Refer to Appendix 13.01.

[2] Refer to the emission rates measured as shown in Appendix 13.05. For those chemicals not detected, 50% of detection limit is assumed as the concentration for calculation of emission rates. The removal efficiencies by deodourization units adopted for calculation of emission rates refer to Table 13.12.