

Appendix 13.01 Review of TAP Toxicity Values

Item	Chemical	Species	WHO [1]		USEPA- IRIS [2]			USHHS-ATSDR [3]			CAL/EPA-OEHHA [4]				Non-Carcinogenic Effect			Carcinogenic Effect			
			IUR	RfC	Chronic RfC	Subchronic RfC	IUR	Chronic MRL	Intermediate MRL	Acute MRL (24 hr)	Chronic REL	8-hr REL	Acute REL (1 hr)	IUR	Chronic RfC [5]	Remark for Chronic RfC	Acute RfC [6]	Remark for Acute RfC	IUR	Remark for Carcinogenic Effect	
			(µg/m ³) ⁻¹	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)-1	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)-1	(µg/m ³)		(µg/m ³)		(µg/m ³) ⁻¹		
1	Sulphur dioxide	Criteria air pollutants	-	20 (24 hr), 500 (10 min)	-	-	-	-	-	-	26	-	-	660	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	20 (24 hr) from WHO	Adopted RfC from WHO Ambient (outdoor) air quality and health, 2014	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
2	Nitrogen dioxide	Criteria air pollutants	-	40 (annual), 200 (1 hr)	-	-	-	-	-	-	-	-	-	470	-	40 (annual)	Adopted RfC from WHO Guidelines for Indoor Air Quality, Europe, 2010	200 (1 hr)	Adopted RfC from WHO Ambient (outdoor) air quality and health, 2014	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
3	Carbon monoxide	Criteria air pollutants	-	30000 (1 hr), 10000 (8 hr)	-	-	-	-	-	-	-	-	-	23,000	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	30000 (1 hr)	Adopted RfC from WHO Air Quality Guidelines for Europe, 2000	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
4	Hydrogen sulphide	Inorganic compound	-	150 (24 hrs)	2	-	-	-	28	98	10	-	-	42	-	2	Adopted RfC from USEPA-IRIS	150 (24 hrs) from WHO	Adopted RfC from WHO Air Quality Guidelines for Europe, 2000	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
5	Ammonia	Inorganic compound	-	-	100	-	-	70	-	1,190	200	-	-	3,200	-	70	Adopted RfC from USHHS-ATSDR	1190	Adopted RfC from USHHS-ATSDR	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
6	Dimethyl sulphide	Organosulfur compounds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
7	Diethyl sulphide	Organosulfur compounds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
8	Acetone	Ketone	-	-	-	-	-	30,863	30,863	61,725	-	-	-	-	-	30863	Adopted RfC from USHHS-ATSDR	61725	Adopted RfC from USHHS-ATSDR	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
9	Butanone (Methyl ethyl ketone)	Ketone	-	-	5,000	-	-	-	-	-	-	-	-	13,000	-	5000	Adopted RfC from USEPA-IRIS	13000	Adopted RfC from Cal/EPD-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
10	Acetaldehyde	VOCs	-	-	9	-	2.2E-06	-	-	-	140	300	470	2.7E-06	9	Adopted RfC from USEPA-IRIS	470	Adopted RfC from Cal/EPD-OEHHA	2.2E-06	IUR from USEPA-IRIS	
11	Benzene	VOCs	6.0E-06	-	30	-	7.8E-06	10	19	29	3	3	27	2.9E-05	10	Adopted RfC from USHHS-ATSDR	29	Adopted RfC from USHHS-ATSDR	6.0E-06	IUR from WHO Air Quality Guidelines for Europe,2000.	
12	Carbon disulphide	VOCs	-	100 (24 Hrs)	700	-	-	934	-	-	800	-	-	6,200	-	700	Adopted RfC from USEPA-IRIS	100 (24 hrs) from WHO	Adopted RfC from WHO Air Quality Guidelines for Europe, 2000	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
13	Carbon tetrachloride	VOCs	-	-	100	-	6.0E-06	189	189	-	40	-	-	1,900	4.2E-05	100	Adopted RfC from USEPA-IRIS	1900	Adopted RfC from Cal/EPA-OEHHA	6.0E-06	IUR from USEPA-IRIS
14	Chlorobenzene	VOCs	-	-	-	-	-	-	-	-	1,000	-	-	-	-	1000	Adopted RfC from Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
15	Chloroform	VOCs	-	-	-	-	2.3E-05	98	244	488	300	-	-	150	5.3E-06	98	Adopted RfC from USHHS-ATSDR	488	Adopted RfC from USHHS-ATSDR	2.3E-05	IUR from USEPA-IRIS
16	Formaldehyde	VOCs	-	100 (30 min)	-	-	1.3E-05	10	37	49	9	9	55	6.0E-06	100	Adopted RfC from WHO Air Quality Guidelines for Europe (According to WHO Guideline, the short-term (30-min) guideline of 0.1 mg/m ³ will also prevent long-term health effects, including cancer.)	49	Adopted RfC from USHHS-ATSDR	1.3E-05	IUR from USEPA-IRIS	
17	Hexane (or n-hexane)	VOCs	-	-	700	-	-	2,114	-	-	7,000	-	-	-	-	700	Adopted RfC from USEPA-IRIS	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
18	Methanol	VOCs	-	260,000 (8hr)	20,000	-	-	-	-	-	4,000	-	-	28,000	-	20000	Adopted RfC from USEPA-IRIS	28000	Adopted RfC from Cal/EPA-OEHHA. The WHO value of 260,000 ug/m ³ is for comparison and reference purposes. No guidance values is published.	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
19	Methyl chloride (Chloromethane)	VOCs	-	-	90	-	-	103	413	1,032	-	-	-	-	-	90	Adopted RfC from USEPA-IRIS	1032	Adopted RfC from USHHS-ATSDR	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA

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			IUR	RfC	Chronic RfC	Subchronic RfC	IUR	Chronic MRL	Intermediate MRL	Acute MRL (24 hr)	Chronic REL	8-hr REL	Acute REL (1 hr)	IUR	Chronic RfC [5]	Remark for Chronic RfC	Acute RfC [6]	Remark for Acute RfC	IUR	Remark for Carcinogenic Effect
			($\mu\text{g}/\text{m}^3$) ⁻¹	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)-1	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)-1	($\mu\text{g}/\text{m}^3$)		($\mu\text{g}/\text{m}^3$)		($\mu\text{g}/\text{m}^3$) ⁻¹	
20	Methyl chloroform (1,1,1-Trichloroethane)	VOCs	-	-	5,000	5,000	-	-	3,817	10,906	1,000	-	68,000	-	5000	Adopted RfC from USEPA-IRIS	10906	Adopted RfC from USHHS-ATSDR	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
21	Methylene chloride (Dichloromethane)	VOCs	-	3000 (24 hrs), 450 (weekly)	600	-	1.0E-08	1,041	1,041	2,083	400	-	14,000	1.0E-06	600	Adopted RfC from USEPA-IRIS	3000 (24 hrs)	Adopted RfC from WHO Air Quality Guidelines for Europe, 2000	1.0E-08	IUR from USEPA-IRIS
22	Styrene	VOCs	-	70 (30 min)	1,000	-	-	851	-	21,286	900	-	21,000	-	851	Adopted RfC from USHHS-ATSDR	21286	Adopted RfC from USHHS-ATSDR. According to WHO Air Quality Guidelines for Europe, the air quality guideline for styrene was based on odour detection threshold level of 70 $\mu\text{g}/\text{m}^3$. Hence it is not selected as acute RfC.	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
23	1,1,2,2-Tetrachloroethane	VOCs	-	-	-	-	-	-	-	-	-	-	-	5.8E-05	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	5.8E-05	IUR from CAL/EPA-OEHHA
24	Tetrachloroethylene (Perchloroethylene)	VOCs	-	250	15	-	2.6E-07	41	41	41	35	-	20,000	5.9E-06	250	Adopted RfC from WHO Air Quality Guidelines for Europe. The other guideline value of 0.68 mg/m^3 , which is calculated based on the LOAEL in mice. The conservative value of 0.25 mg/m^3 is adopted.	41	Adopted RfC from USHHS-ATSDR	2.6E-07	IUR from USEPA-IRIS
25	Toluene	VOCs	-	260 (weekly average)	5,000	-	-	3,766	-	7,533	300	-	37,000	-	3766	Adopted RfC from USHHS-ATSDR	7533	Adopted RfC from USHHS-ATSDR	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
26	1,2,4-Trichlorobenzene	VOCs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
27	1,1,2-Trichloroethane	VOCs	-	-	-	-	1.6E-05	-	-	-	-	-	-	1.6E-05	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	1.6E-05	IUR from USEPA-IRIS
28	Trichloroethylene	VOCs	4.3E-07	135 (8 hr TWA) and a ceiling limit of 1,000,000 (\leq 15 min)	2	-	4.1E-06	2	2	-	600	-	-	2.0E-06	2	Adopted RfC from USEPA-IRIS	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA. According to WHO, the air quality guideline value for trichloroethylene is a time-weighted average recommended by study group for reference. These values are varied from different nations without final conclusion. Thus the value is not adopted.	4.3E-07	IUR from WHO Air Quality Guidelines for Europe,2000.
29	Xylenes (isomers and mixture)	VOCs	-	870	100	-	-	217	2,604	8,679	700	-	22,000	-	870	Adopted RfC from WHO Environmental Health Criteria documents	8679	Adopted RfC from USHHS-ATSDR	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
30	Methyl mercaptan (Methanethiol)	VOCs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
31	Ethyl mercaptan (Ethanethiol)	VOCs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
32	1,2-Dichloroethane	VOCs	-	700 (24 hrs)	-	-	2.6E-05	2,427	-	-	400	-	-	2.1E-05	2427	Adopted RfC from USHHS-ATSDR	700 (24 hrs)	Adopted RfC from WHO Air Quality Guidelines for Europe, 2000	2.6E-05	IUR from USEPA-IRIS
33	Ethylbenzene	VOCs	-	22000	1,000	-	-	260	8,679	21,699	2,000	-	-	2.5E-06	22000	Adopted RfC from WHO Environmental Health Criteria documents	21699	Adopted RfC from USHHS-ATSDR	2.5E-06	IUR from CAL/EPA- OEHHA
34	α -Pinene	VOCs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
35	n-Decane	VOCs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
36	d-Limonene	VOCs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA

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			IUR	RfC	Chronic RfC	Subchronic RfC	IUR	Chronic MRL	Intermediate MRL	Acute MRL (24 hr)	Chronic REL	8-hr REL	Acute REL (1 hr)	IUR	Chronic RfC [5]	Remark for Chronic RfC	Acute RfC [6]	Remark for Acute RfC	IUR	Remark for Carcinogenic Effect
			($\mu\text{g}/\text{m}^3$) ⁻¹	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)-1	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)-1	($\mu\text{g}/\text{m}^3$)		($\mu\text{g}/\text{m}^3$)		($\mu\text{g}/\text{m}^3$) ⁻¹	
37	Terpenes	VOCs	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA	
38	o-Dichlorobenzene (1,2-Dichlorobenzene)	VOCs	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA	
39	m-Dichlorobenzene(1,3-Dichlorobenzene)	VOCs	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA	
40	p-Dichlorobenzene (1,4-Dichlorobenzene)	VOCs	-	-	800	-	-	60	1,202	12,017	800	-	-	1.1E-05	60	Adopted RfC from USHHS-ATSDR	12017	Adopted RfC from USHHS-ATSDR	1.1E-05	IUR from CAL/EPA- OEHHA
41	Naphthalene	PAHs	-	10 (annual average)	3	-	-	4	-	-	9	-	-	3.4E-05	10	Adopted RfC from WHO Guidelines for Indoor Air Quality, Europe, 2010	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	3.4E-05	IUR from CAL/EPA- OEHHA
42	Benzo (a) Pyrene	PAHs	8.7E-02	-	-	-	-	-	-	-	-	-	-	1.1E-03	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	8.7E-02	IUR from WHO Air Quality Guidelines for Europe,2000.
43	Acenaphthylene	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
44	Acenaphthene	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
45	Fluorene	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
46	Phenanthrene	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
47	Anthracene	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
48	Fluoranthene	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
49	Pyrene	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA
50	Benz(a)anthracene	PAHs	-	-	-	-	-	-	-	-	-	-	-	1.1E-04	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	1.1E-04	IUR from CAL/EPA- OEHHA
51	Chrysene	PAHs	-	-	-	-	-	-	-	-	-	-	-	1.1E-05	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	1.1E-05	IUR from CAL/EPA- OEHHA
52	Benzo(b)fluoranthene	PAHs	-	-	-	-	-	-	-	-	-	-	-	1.1E-04	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	1.1E-04	IUR from CAL/EPA- OEHHA
53	Benzo(k)fluoranthene	PAHs	-	-	-	-	-	-	-	-	-	-	-	1.1E-04	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	1.1E-04	IUR from CAL/EPA- OEHHA
54	Indeno (1,2,3-cd)pyrene	PAHs	-	-	-	-	-	-	-	-	-	-	-	1.1E-04	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	1.1E-04	IUR from CAL/EPA- OEHHA
55	Dibenz(a,h)anthracene	PAHs	-	-	-	-	-	-	-	-	-	-	-	1.2E-03	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	1.2E-03	IUR from CAL/EPA- OEHHA
56	Benzo(g,h,i)perylene	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	No RfC available in WHO, EPA-IRIS, USHHS-ATSDR or Cal/EPA-OEHHA	-	No RfC available in WHO, USHHS-ATSDR or Cal/EPA-OEHHA	-	No IUR value is available in WHO, USEPA - IRIS no CAL/EPA-OEHHA

Appendix 13.01 Review of TAP Toxicity Values

Item	Chemical	Species	WHO [1]		USEPA- IRIS [2]			USHHS-ATSDR [3]			CAL/EPA-OEHHA [4]				Non-Carcinogenic Effect			Carcinogenic Effect	
			IUR ($\mu\text{g}/\text{m}^3$) ⁻¹	RfC ($\mu\text{g}/\text{m}^3$)	Chronic RfC ($\mu\text{g}/\text{m}^3$)	Subchronic RfC ($\mu\text{g}/\text{m}^3$)	IUR ($\mu\text{g}/\text{m}^3$)-1	Chronic MRL ($\mu\text{g}/\text{m}^3$)	Intermediate MRL ($\mu\text{g}/\text{m}^3$)	Acute MRL (24 hr) ($\mu\text{g}/\text{m}^3$)	Chronic REL ($\mu\text{g}/\text{m}^3$)	8-hr REL ($\mu\text{g}/\text{m}^3$)	Acute REL (1 hr) ($\mu\text{g}/\text{m}^3$)	IUR ($\mu\text{g}/\text{m}^3$)-1	Chronic RfC [5] ($\mu\text{g}/\text{m}^3$)	Remark for Chronic RfC	Acute RfC [6] ($\mu\text{g}/\text{m}^3$)	Remark for Acute RfC	IUR ($\mu\text{g}/\text{m}^3$) ⁻¹

Notes:

- [1] WHO
WHO Air Quality Guidelines for Europe, 2000.
WHO Guidelines for Indoor Air Quality, 2010.
WHO Ambient (outdoor) Air Quality and Health, 2014.
WHO Air Quality Guidelines Global Update, 2005
Based on chemical-specific Environmental Health Criteria (<http://www.who.int/ipcs/publications/ehc/en/>).
- [2] USEPA - IRIS
Chronic RfC: Concentrations protective of noncarcinogenic effects over chronic exposure (≥ 7 years).
Sub chronic RfC: Concentrations protective of noncarcinogenic effects over subchronic exposure (2 weeks to 7 years).
IUR: Represents carcinogenic potency via the inhalation pathway.
- [3] USHHS-ATSDR:
Chronic: ≥ 365 days
Intermediate: 14 to 364 days
Acute: 1- 14 days
- [4] CAL/EPA-OEHHA
Chronic REL: Air concentrations protective of continuous exposures for up to a lifetime (i.e., annual average concentration should not exceed chronic REL).
8-hr REL: Air concentrations protective of exposures over 8 hours (i.e., average concentration over 8 hours should not exceed 8-hr REL).
Acute REL: Air concentrations protective of exposures over 1 hour (i.e., average concentration over 1 hour should not exceed acute REL).
- [5]
The hierarchy in selecting information source for chronic RfC is WHO > More Stringent Value from USEPA – IRIS and USHHS – ATSDR > CAL/EPA-OEHAA.
- [6]
The hierarchy in selecting information source for acute RfC is WHO > USHHS – ATSDR > CAL/EPA-OEHAA.