Appendix 17.2.3

Background TAPs Concentration

Appendix 17.2.3: Background TAPs Concentrations

Table A17.2.3.1: 30 VOC Species Measured at Tung Chung (TC) EPD Air Quality Monitoring Stations

Ethane+ethene	cis-2-butene	i-octane
Ethene	i-pentane	n-heptane
Ethane	n-pentane	toluene
Propane	1,3-butadiene	n-octane
Propene	trans-2-pentene	ethylbenzene
Ethyne	1-pentene	m-xylene + p-xylene
i-butane	i-hexane	o-xylene
n-butane	isoprene	1,3,5-trimethylbenzene
trans-2-butene	n-hexane	1,2,4-trimethylbenzene
1-butene	benzene	1,2,3-trimethylbenzene

Table A17.2.3.2: 143 VOC Species Measured at Central Western (CW) EPD Air Quality Monitoring Station

1,1,1-Trichloroethane	2,3,4-Trimethylpentane	Chloroform	m-/p-Chlorotoluene
1,1,2,2-Tetrachloroethane	2,3-Dimethylbutane	Chloromethane	m-Dichlorobenzene
1,1,2-Trichloroethane	2,3-Dimethylpentane	cis-1,2-Dichloroethene	Methylcyclohexane
1,1-Dichloroethane	2,4-Dimethylhexane	cis-1,2-Dimethylcyclohexane	Methylcyclopentane
1,1-Dichloroethene	2,4-Dimethylpentane	cis-1,3-Dichloropropene	Methylene chloride
1,2,3,5-Tetramethylbenzene	2,5-Dimethylhexane	cis-2-Butene	Naphthalene
1,2,3-Trimethylbenzene	2-Ethyl-1-Butene	cis-2-Heptene	n-Butylbenzene
1,2,4,5-Tetramethylbenzene	2-Ethyltoluene	cis-2-Hexene	Nonane
1,2,4-Trichlorobenzene	2-Methyl-1-Butene	cis-2-Pentene	n-Propylbenzene
1,2,4-Trimethylbenzene	2-Methyl-2-Butene	cis-3-Heptene	o-Chlorotoluene
1,2,4-Trimethylcyclohexane	2-Methylbutane	cis-3-Methyl-2-Pentene	Octane
1,2-Dibromoethane	2-Methylheptane	cis-4-Methyl-2-Pentene	o-Dichlorobenzene
1,2-Dichloroethane	2-Methylhexane	Cyclohexane	o-Xylene
1,2-Dichloropropane	2-Methylpentane	Cyclohexene	p-Cymene
1,2-Diethylbenzene	3,6-Dimethyloctane	Cyclopentane	p-Dichlorobenzene
1,3,5-Trimethylbenzene	3-Chlolopropene	Cyclopentene	Pentane
Methyl alcohol (Methanol)	3-Ethyltoluene	Decane	Propane
1,3-Diethylbenzene	3-Methyl-1-Pentene	Dibromochloromethane	Propylene
1,4-Dichlorobutane	3-Methylheptane	Dibromomethane	Sec-Butylbenzene
1,4-Diethylbenzene	3-Methylhexane	Dodecane	Styrene
1-Butene/Iso-Butylene	3-Methylpentane	Ethylbenzene	Tert-Butylbenzene
1-Butyne	4-Ethyltoluene	Freon 11	Tetrachloroethene
1-Decene	4-Methyl-1-Pentene	Freon 113	Toluene
1-Heptene	4-Methylheptane	Freon 114	trans-1,2-Dichloroethene
1-Methylcyclohexene	Benzene	Freon 12	trans-1,2-Dimethylcyclohexane
1-Methylcyclopentene	Benzyl chloride	Freon 22	trans-1,3-Dichloropropene
1-Nonene	Bromodichloromethane	Heptane	trans-2-Butene
1-Octene	Bromoethane	Hexachlorobutadiene	trans-2-Heptene
1-Pentene	Bromoform	Hexane	trans-2-Hexene
1-Propyne	Bromomethane	Hexylbenzene	trans-2-Pentene
2,2,3-Trimethylbutane	Bromotrichloromethane	Indan	trans-3-Heptene
2,2,4-Trimethylpentane	Butane	Iso-Butane	trans-3-Methyl-2-Pentene
2,2,5-Trimethylhexane	Carbon tetrachloride	Iso-Butylbenzene	trans-4-Methyl-2-Pentene
2,2-Dimethylbutane	Chlorobenzene	Isoprene	Trichloroethene
2,2-Dimethylhexane	Chloroethane	Iso-Propylbenzene	Undecane
2,2-Dimethylpropane	Chloroethene	m,p-Xylene	

Table A17.2.3.3: 16 Species Carbonyl Compounds (CL) Measured at Central Western (CW) EPD Air Quality Monitoring Station

2,5-Dimethylbenzaldehyde	Benzaldehyde	Hexaldehyde	o-Tolualdehyde
Acetaldehyde	Butyraldehyde/IBA	Isovaleraldehyde	Propionaldehyde
Acetone	Crotonaldehyde	Methyl ethyl ketone	p-Tolualdehyde
Acrolein	Formaldehyde	m-Tolualdehyde	Valeraldehyde

Table A17.2.3.4: 17 Species Polycyclic Aromatic Hydrocarbons (PAH) Measured at Central Western (CW) EPD Air Quality Monitoring Stations

Acenaphthene	Benzo(b)fluoranthene	Dibenzo(a,h)anthracene	Phenanthrene
Acenaphthylene	Benzo(e)pyrene	Fluoranthene	Pyrene
Anthracene	Benzo(g,h,i)perylene	Fluorene	
Benzo(a)anthracene	Benzo(k)fluoranthene	Indeno(1,2,3-cd)pyrene	
Benzo(a)pyrene	Chrysene	Naphthalene	

Appendix 17.2.3: Background TAPs Concentrations

Table A17.2.3.5: EPD Tung Chung monitoring station result (2011)

Pollutants	Acute Risk		Chronic Risk			
	Max. Concentration (μg/m^3) [1]	Acute Risk Criteria (μg/m^3)	Average Concentration (μg/m^3) [1]	Chronic Risk Criteria (μg/m^3)	IUR (per μg/m^3)	Total Carcinogenic Risk
1,3-Butadiene	7.65E-01	660	3.24E-01	2	3.00E-05	9.72E-06
Acetaldehyde	-	470	-	9	2.20E-06	-
Acrolein	-	7	-	0.35	-	-
Arsenic	2.10E-02	0.2	5.00E-03	0.015	1.50E-03	7.50E-06
Benzene	2.22E+00	29	1.38E+00	30	6.00E-06	8.28E-06
Benz(a)anthracene	-	-	-	-	1.10E-04	-
Benzo(a)pyrene	-	-	-	-	8.70E-02	-
Benzo(bk)fluoranthene	-	-	-	-	1.10E-04	-
Beryllium	8.00E-05	-	4.00E-05	0.02	2.40E-03	9.60E-08
Cadmium	6.20E-03	0.03	1.32E-03	0.01	1.80E-03	2.38E-06
Chromium VI	7.80E-03	0.3	2.59E-03	0.1	4.00E-02	1.04E-04
Chrysene	-	-	-	-	1.10E-05	-
Copper	1.20E-01	100	6.05E-02	2.4	-	-
Dibenz(a,h)anthracene	-	-	-	-	1.20E-03	-
Diesel Particulate Matters	8.11E+00	-	2.55E+00	5	3.00E-04	7.64E-04
Ethylbenzene	4.57E+00	21700	1.70E+00	1000	2.50E-06	4.26E-06
Formaldehyde	-	100	-	100	1.30E-05	-
Indeno(1,2,3-cd)pyrene	-	-	-	-	1.10E-04	-
Isopropylbenzene (cumene)	-	-	-	400	-	-
Lead	-	-	5.00E-02	0.5	1.20E-05	-
Manganese	5.60E-02	-	2.06E-02	0.15	-	-
Methyl alcohol (Methanol)	-	28000	-	20000	-	-
Naphthalene	-	-	-	10	3.40E-05	-
n-Hexane	2.72E+00	-	1.36E+00	700	-	-
Nickel	1.40E-02	0.2	4.74E-03	0.09	3.80E-04	1.80E-06
Phenol (carbolic acid)	-	5800	-	200	-	-
Propionaldehyde	-	-	-	8	-	-
Styrene	-	21630	-	1000	-	-
TCDD	-	-	-	-	3.80E+01	-
Toluene	1.46E+01	3750	6.63E+00	5000	-	-
Xylene	1.29E+01	8820	4.98E+00	100	-	-

Notes:
[1] " - " means no measurement at this station.
[2] Total Chromium is measured and assumed as Chromium VI for conservative assessment purpose.

Table A17.2.3.6: EPD Central Western monitoring station result (2011)

Pollutants	Acute Risk		Chronic Risk			
	Max. Concentration (μg/m^3) [1]	Acute Risk Criteria (μg/m^3)	Average Concentration (μg/m^3) [1]	Chronic Risk Criteria (μg/m^3) [1]	IUR (per μg/m^3)	Total Carcinogenic Risk
1,3-Butadiene	8.70E-01	660	1.27E-01	2	3.00E-05	3.80E-06
Acetaldehyde	2.90E+00	470	1.49E+00	9	2.20E-06	3.28E-06
Acrolein	1.00E-02	7	1.00E-02	0.35	-	-
Arsenic	2.50E-02	0.2	5.20E-03	0.015	1.50E-03	7.80E-06
Benzene	6.50E+00	29	1.53E+00	30	6.00E-06	9.17E-06
Benz(a)anthracene	2.72E-03	-	4.50E-04	-	1.10E-04	4.95E-08
Benzo(a)pyrene	4.80E-04	-	2.20E-04	-	8.70E-02	1.91E-05
Benzo(bk)fluoranthene	1.36E-03	-	5.18E-04	-	1.10E-04	5.69E-08
Beryllium	5.00E-05	-	4.00E-05	0.02	2.40E-03	9.60E-08
Cadmium	5.90E-03	0.03	1.19E-03	0.01	1.80E-03	2.14E-06
Chromium VI	8.30E-03	0.3	2.59E-03	0.1	4.00E-02	1.04E-04
Chrysene	1.84E-03	-	4.80E-04	-	1.10E-05	5.28E-09
Copper	1.30E-01	100	5.36E-02	2.4	-	-
Dibenz(a,h)anthracene	8.00E-05	-	3.00E-05	-	1.20E-03	-
Diesel Particulate Matters	6.14E+00	-	2.61E+00	5	3.00E-04	7.82E-04
Ethylbenzene	6.40E+00	21700	1.26E+00	1000	2.50E-06	3.16E-06
Formaldehyde	6.30E+00	100	3.61E+00	100	1.30E-05	4.69E-05
Indeno(1,2,3-cd)pyrene	7.60E-04	-	2.96E-04	-	1.10E-04	3.25E-08
Isopropylbenzene (cumene)	3.60E-01	-	1.18E-01	400	-	-
Lead	-	-	5.20E-02	-	1.20E-05	6.24E-07
Manganese	6.30E-02	-	2.15E-02	0.15	-	-
Methyl alcohol (Methanol)	-	28000	-	20000	-	-
Naphthalene	2.50E+00	-	7.59E-01	10	3.40E-05	2.58E-05
n-Hexane	-	-	-	700	-	-
Nickel	4.10E-02	0.2	6.56E-03	0.09	3.80E-04	2.49E-06
Phenol (carbolic acid)	-	5800	-	200	-	-
Propionaldehyde	6.30E-01	-	1.75E-01	8	-	-
Styrene	1.30E+00	21630	2.11E-01	1000	-	-
TCDD	5.66E-05	-	1.60E-05	-	3.80E+01	6.07E-04
Toluene	1.30E+01	3750	4.89E+00	5000	-	-
Xylene	2.36E+01	8820	2.87E+00	100	-	-

Notes:
[1] " - " means no measurement at this station.
[2] Total Chromium is measured and assumed as Chromium VI for conservative assessment purpose.