Appendix 3.8 Emission Inventory for Industrial Emissions

Emission factors for fuel combustion

Parameters	Value	Unit	Reference
Max. fuel sulphur content:	0.005%	w/w	Air Pollution Control (Fuel Restriction) Regulation mandates the use of Ultra Low Sulphur Diesel (ULSD) in commercial and industrial purposes
Density of ULSD at 15°C	0.845	kg/L	EN 590 Diesel Fuel Requirements
NOx emission factor of fuel	20	lb/kgal	USEPA AP-42 5th Ed Vol. I Section 1.3 - "Fuel Oil Combustion", Table 1.3-1 and 1.3-6 : Emission Factors for uncontrolled Industrial Boilers firing distillate oil
	2.3965	g/L	
RSP emission factor of fuel	1	lb/kgal	
	0.1198	g/L	
FSP emission factor of fuel	0.25	lb/kgal	
	0.0300	g/L	

Derivation of emission rates of the chimneys at Hang Sun Chemical Mfg. Ltd. and Hop Hing Oil Factory

Emission rate of each pollutant (g/s): Reported fuel consumption rate (kg/hr) / density of fuel (kg/L) x emission factor of fuel of each pollutant (g/L) / 3600 (s/hr)

Chimney Operator	Reported fuel consumption rate (kg/hr)	Emission rate (g/s)		
		NOx	RSP	FSP
Hang Sun Chemical Mfg. Ltd.	270	2.13E-01	1.06E-02	2.66E-03
Hop Hing Oil Factory	65	5.12E-02	2.56E-03	6.41E-04

Appendix 3.8 Emission Inventory for Industrial Emissions

Description	Source	Type	Locations		Stack Parameters							Hour	Emission Rate (g/s) or (g/m²/s)		
			X	Y	Release Height	Exit Temperature (Point Source)[4]	Exit Velocity (Point Source)	Stack Diameter (Point Source)	Length of X (Area Source)	Length of Y (Area Source)	Angle (Area Source)		NO_x	RSP	FSP
	ID		(m)	(m)	(mAG)	(K)	(m/s)	(m)	(m)	(m)	(Degree)	(hr)	Working hours	Working hours	Working hours
Hong Kong Concrete Company Ltd[3]	HKCC_EP1A	POINT	819002.0	833315.0	14.0	0	15.6	0.2	-	-	-	0700 - 1900	-	2.48E-03	7.29E-04
	HKCC_EP1B	POINT	819006.0	833315.0	14.0	0	15.6	0.2	-	-	-		-	2.48E-03	7.29E-04
	HKCC_EP2A	POINT	819011.0	833315.0	10.0	0	15.6	0.2	-	-	-		-	2.48E-03	7.29E-04
	HKCC_EP2B	POINT	819007.0	833310.0	10.0	0	15.6	0.2	-	-	-		-	2.48E-03	7.29E-04
	HKCC_EP4	AREA	819016.0	833307.0	0.5	-	-	-	3.8	6	0		-	2.19E-04	6.43E-05
	HKCC_EP9	AREA	819011.0	833308.0	0.5	-	-	-	3	78	29		-	1.08E-04	3.18E-05
	HKCC_EP1	POINT	819013.0	833319.0	1.5	0	15.5	0.2	-	-	-		-	2.48E-03	7.29E-04
Pun Chun Sauce & Preserved Fruit Factory Ltd[2]	PC_CH01	POINT	818033.0	832299.0	20.0	373	6.0	0.5	-	-	-	0900 - 1700	3.47E-02	1.73E-03	4.33E-04
	PC_CH02	POINT	818044.0	832299.0	15.0	373	6.0	0.5	-	-	-		3.47E-02	1.73E-03	4.33E-04
	PC_CH03	POINT	818047.0	832303.0	13.0	373	6.0	0.5	-	-	-		3.47E-02	1.73E-03	4.33E-04
	PC_CH04	POINT	818049.0	832307.0	15.0	373	6.0	0.5	-	-	-		3.47E-02	1.73E-03	4.33E-04
	PC_CH05	POINT	818038.0	832307.0	15.0	373	6.0	0.5	-	-	-		3.47E-02	1.73E-03	4.33E-04
	PC_CH06	POINT	818045.0	832319.0	15.0	373	6.0	0.5	-	-	-		3.47E-02	1.73E-03	4.33E-04
	PC_CH07	POINT	818050.0	832329.0	20.0	373	6.0	0.5	-	-	-		3.47E-02	1.73E-03	4.33E-04
	PC_CH08	POINT	818062.0	832343.0	15.0	373	6.0	0.5	-	-	-		3.47E-02	1.73E-03	4.33E-04
	PC_CH09	POINT	818089.0	832326.0	15.0	373	6.0	0.5	-	-	-		3.47E-02	1.73E-03	4.33E-04
	PC_CH10	POINT	818096.0	832322.0	15.0	373	6.0	0.5	-	-	-		3.47E-02	1.73E-03	4.33E-04
Hang Sun Chemical Mfg. Ltd.[1]	HSCM_CH12	POINT	818185.0	832370.0	24.0	513	9.1	0.47	-	-	-	24 hrs	2.13E-01	1.06E-02	2.66E-03
Wing Kai Destruction & Recycle Co.[2]	WKDR_CH13	POINT	819122.0	833456.0	33.8	533	1.0	0.65	-	-	-	24 hrs	2.40E-01	1.20E-02	3.00E-03
Hop Hing Oil Factory[1]	HHOF_CH14	POINT	819123.0	833208.0	24.4	488	1.0	0.5	-	-	-	24 hrs	5.12E-02	2.56E-03	6.41E-04

Note:
[1] Locations, stack parameters, and emission rates were derived from the information provided by the chimney operator in Feb 2023. Since no information on the exit temperature was provided by the chimney operators, the exit temperature was referenced to the approved EIA Report on Housing Sites in Yuen Long South (AEIAR-215/2017).
[2] No response was received from the chimney operator. The locations, stack parameters, and emission rates were referenced to the approved EIA Report on Housing Sites in Yuen Long South (EIA-254/2017) and was confirmed to be valid from site visits.
[3] Locations, stack parameters, and emission rates were derived from its Specified Process (SP) License. (License No.: L-3-209(5))
[4] 0K in AERMOD model setting means the emission sources were released at ambient temperature.