

breakpoint table. For example, if the individual index for CO is 70, the AQI status for CO therefore is “Moderate”. Each individual index is then compared and the highest index value becomes the final value for AQI. Let’s say the CO is 70 or “Moderate”, O₃ is 45 or “Good” and NO₂ is 120 or “Unhealthy”, then the final AQI value is 120 and the status is “Unhealthy”.

However, the information provided by EPA is only in an aggregated index alerting the harmful condition and was limited to outdoor location. Moreover, the information is static and is an averaged value, while air quality is changeable. Also, some of the indoor air quality parameters in breakpoint table are missing such as in the case of carbon dioxide (CO₂) and Volatile organic compound (VOC) [8].

TABLE 1. EPA’s breakpoint and AQI Index

O ₃ (ppm)	PM ₁₀ (ug/m ³)	PM _{2.5} (ug/m ³)	CO (ppm)	SO ₂ (ppm)	NO ₂ (ppm)	AQI Values	Level of Health Concern
0.000 – 0.059	0 – 54	0.0 – 15.4	0.0 – 4.4	0.000 – 0.034	–	0 – 50	Good
0.060 – 0.075	55 – 154	15.5 – 40.4	4.5 – 9.4	0.035 – 0.144	–	51 – 100	Moderate
0.076 – 0.095	155 – 254	40.5 – 65.4	9.5 – 12.4	0.145 – 0.224	–	101 – 150	Unhealthy for Sensitive Groups
0.096 – 0.115	255 – 354	65.5 – 150.4	12.5 – 15.4	0.225 – 0.304	–	151 – 200	Unhealthy
0.116 – 0.374	355 – 424	150.5 – 250.4	15.5 – 30.4	0.305 – 0.604	0.65 – 1.24	201 – 300	Very Unhealthy
–	425 – 504	250.5 – 350.4	30.5 – 40.4	0.605 – 0.804	1.25 – 1.64	301 – 400	Hazardous
–	505 – 604	350.5 – 500.4	40.5 – 50.4	0.805 – 1.004	1.65 – 2.04	401 – 500	Hazardous

Indoor Air Guideline

There are only six (6) parameters for outside air quality measurement, but for indoor air quality there are additional parameters such as carbon dioxide (CO₂), volatile organic compounds (VOCs), radon and formaldehyde. Oxygen is not classified as a factor that could affect the poor IAQ. However, the concentration level of oxygen is important for indoor air environment.

Table 2 below shows the parameters for indoor air quality index measurement. Due to different environment, the parameters use to measure IAQ level is slightly different in different countries. Table 2 below is the summarized indoor air pollutants for EPA, Hong Kong Environmental Protection Department (HKEPD), Singapore Indoor Air Quality Guideline (SIAQG) and Department of Occupational Safety and Health (DOSH) Malaysia [7][9][10].