



Supplementary Materials

Table S1. Concentration range (C_A) of pollutants with index values (IAQI-S) reversely calculated by Eq. (1).

Index Grade	Index Value	PM ₁₀ ($\mu\text{g}/\text{m}^3$) (8hr-avg)	PM _{2.5} ($\mu\text{g}/\text{m}^3$) (8hr-avg)	CO ₂ (ppm) (8hr-avg)	Index description concerning health
Good	0-50	0-20	0-10	300-700	A level with no health impacts
Moderate	51-100	21-75	11-35	701-1,000	A level at which health impacts are unlikely to occur.
Caution	101-200	76-150	36-70	1,001-2,000	A level at which health impacts are unlikely to occur except in case sensitive to indoor air pollutants [Gymnasiums and auditoriums should be kept below that level].
Unhealthy	201-300	151-220	71-100	2,001-3,000	A level at which health impacts can be present and, in individuals sensitive to air pollutants, there is a high probability of health impacts.
Very Unhealthy	301-400	221-300	101-140	3,000-4,000	A level at which a health impact is likely to occur and at which an adverse health impact would be caused in individuals sensitive to an air pollutant.
Hazardous	401-500	301-380	141-180	4,001-5,000	A level of health alert at which the risk is increased for everyone, and sensitive groups face to emergency conditions.

Table S2. Concentration range (C_A) of pollutants with index values (IAQI-C) reversely calculated by Eq. (1).

Index Grade	Index Value	PM ₁₀ ($\mu\text{g}/\text{m}^3$) (8hr-avg)	PM _{2.5} ($\mu\text{g}/\text{m}^3$) (8hr-avg)	CO ₂ (ppm) (8hr-avg)	Index description concerning health
Good	0-50	0-10	0-5	300-500	A level with no health impacts.
Moderate	51-100	11-40	6-20	501-800	Acceptable air quality [Infants aged 0 years who are sensitive to air pollutants must be kept below the relevant grade]
Caution	101-200	41-75	21-35	801-1,000	A level at which health impacts can be present and, in individuals sensitive to air pollutants, there is a high probability of health impacts.
Unhealthy	201-300	76-150	36-70	1,001-2,000	A level at which a health impact is likely to occur and at which an adverse health impact would occur in individuals sensitive to an air pollutant.
Very Unhealthy	301-400	151-220	71-100	2,001-3,000	A level that would cause adverse health impacts and, in individuals sensitive to air pollutants, a level at which acute exposure could cause serious effects.
Hazardous	401-500	221-300	101-140	3,001-4,000	Warning level of an imminent health hazard.

Table S3. Concentration range (C_A) of pollutants with index values (IAQI-E) reversely calculated by Eq. (1).

Index Grade	Index Value	PM ₁₀ ($\mu\text{g}/\text{m}^3$) (8hr-avg)	PM _{2.5} ($\mu\text{g}/\text{m}^3$) (8hr-avg)	CO ₂ (ppm) (8hr-avg)	Index description concerning health
Good	0-50	0-10	0-5	300-500	A level at which health impacts are unlikely to occur.
Moderate	51-100	11-20	6-10	501-700	A level at which health impacts are unlikely to occur except in individuals sensitive to indoor air pollutants
Caution	101-150	21-40	11-20	700-800	A level at which health impacts can be present and, in individuals sensitive to air pollutants, there is a high probability of health impacts.
Unhealthy	151-200	41-75	21-35	801-1,000	A level at which a health impact is likely to occur and at which an adverse health impact would occur in individuals sensitive to an air pollutant.
Very Unhealthy	201-350	76-180	36-85	1,001-2,500	A level that would cause adverse health impacts and, in individuals sensitive to air pollutants, a level at which acute exposure could cause serious effects.
Hazardous	351-500	181-300	86-140	2,501-4,000	Warning level of an imminent health hazard.

Table S4. Concentration distribution in school classrooms.

Contaminant	Mean	Min	Median	Max	S. D
PM ₁₀ (µg/m ³)	30.93	1.03	26.49	167.17	22.33
PM _{2.5} (µg/m ³)	14.82	0.87	12.71	62.70	10.92
CO ₂ (ppm)	715.81	300.29	518.08	3799.38	461.01

Table S5. Concentration distributions in child daycare centers.

Contaminant	Mean	Min	Median	Max	S. D
PM ₁₀ (µg/m ³)	24.32	9.00	19.02	160.62	16.26
PM _{2.5} (µg/m ³)	9.85	1.00	7.03	84.75	9.43
CO ₂ (ppm)	624.79	300.33	508.46	2711.13	272.80

Table S6. Concentration levels in elderly nursing homes.

Contaminant	Mean	Min	Median	Max	S. D
PM ₁₀ (µg/m ³)	12.86	1.17	8.87	142.69	12.14
PM _{2.5} (µg/m ³)	10.12	1.00	6.73	128.65	10.14
CO ₂ (ppm)	706.51	303.56	686.04	1340.02	179.91