

TABLE C-2 Concentration of Interest for Selected Contaminants (Continued)
(Note: References numbers that are followed by [c] and [m] list the concentrations of interest [c] and measurement methods [m]. The user of any value in this table should take into account the purpose for which it was adopted and the means by which it was developed.)

Contaminant	Sources	Concentrations of Interest	Comments	References
Particles (PM ₁₀)	Dust Smoke Deteriorating materials Outdoor air	50 µg/m ³	Based on protecting against respiratory morbidity in the general population and avoiding exacerbation of asthma, average exposure for one year, no carcinogens. Indoor concentrations are normally lower; guideline level may lead to unacceptable deposition of “dust.” Sources—burning of wood, diesel, and other fuels; industrial plants; agriculture (plowing, burning off fields); unpaved roads. Health effects—nose and throat irritation, lung damage, bronchitis, early death. Environmental effects—Particulates are the main source of haze that reduces visibility. Property damage—Ashes, soot, smoke, and dust can dirty and discolor structures and other property, including clothes and furniture.	C-4 [c] C-4 [m]
Radon (Rn)	Soil gas	4 pCi/L ^a	Based on lung cancer, average exposure for one year.	C-7 [c,m] C-10 [m]
Sulfur Dioxide (SO ₂)	Unvented space heaters (kerosene) Outdoor air	80 µg/m ³	Based on protecting against respiratory morbidity in the general population and avoiding exacerbation of asthma, average exposure for one year (WHO: 50 µg/m ³ if with PM). Source—burning of coal and oil, especially high-sulfur coal from the eastern United States; industrial processes (paper, metals). Health effects—breathing problems; may cause permanent damage to lungs. Environmental effects—SO ₂ is a component of acid rain (acid aerosols), which can damage trees and lakes. Acid aerosols can also reduce visibility. Property damage—Acid aerosols can eat away stone used in buildings, statues, monuments, etc.	C-4 [c] C-4 [m] C-18
Total Volatile Organic Compounds (TVOCs)	New building materials and furnishings Consumable products Maintenance materials Outdoor air	Precise guidance on TVOC concentrations cannot be given	A variety of definitions of TVOC have been employed in the past. Reference C-27 contains a specific definition that reflects recent thinking on the subject. There is insufficient evidence that TVOC measurements can be used to predict health or comfort effects. In addition, odor and irritation responses to organic compounds are highly variable. Furthermore, no single method currently in use measures all organic compounds that may be of interest. Therefore, some investigators have reported the total of all measured VOCs as the SumVOC in order to make explicit that the reported value does not represent the total of all VOCs present. Some of the references included here use this method for presenting VOC measurement results. Setting target concentrations for TVOCs is not recommended. Setting target concentrations for specific VOCs of concern is preferred.	C-9 [m] C-14, 26-28, 35, 37
Volatile Organic Compounds (VOCs) (See Table C-3 for a list of selected compounds)	New building materials and furnishings Consumable products Maintenance materials Outdoor air Parking garages Refueling stations	Must be determined for each individual compound (See Table C-3 for a list of selected compounds)	Individual volatile organic compounds may be contaminants of concern in the application of the IAQ Procedure. Concentrations of concern range from less than 1 part per billion (ppb) for some very toxic compounds or for compounds having very low odor thresholds up to concentrations several orders of magnitude higher. Not all compounds can be identified, and toxicological data are incomplete for many compounds.	C-22–26, 28, 42, 43, 44 [c] C-9, 10, 21 [m] C-11, 15, 36, 38, 39, 11

^a. USEPA has promulgated a guideline value of 4 pCi/L indoor concentration. This is not a regulatory value but an action level where mitigation is recommended if the value is exceeded in long-term tests.

Conversion Factors
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Parts per million and mass per unit volume:
Measurements of indoor airborne concentrations of substances are generally converted to standard conditions of 77°F (25°C) and 29.92 in. Hg (101.325 kPa) pressure. Vapors or gases are often expressed in parts per million (ppm) by volume or in mass per unit volume. Concentrations in ppm by volume can be converted to mass per unit volume values as follows:

ppm × molecular weight/24,450 = mg/L
ppm × molecular weight/0.02445 = µg/m³
ppm × molecular weight/24.45 = mg/m³
ppm × molecular weight × 28.3/24,450 = mg/ft³