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
Lead (Pb)	Paint dust Outdoor air	1.5 μg/m^3	Based on adverse effects on neuropsychological functioning of children, average exposure for three months (WHO: 0.5–1 μg/m^3 for 1 year). Sources—leaded gasoline (being phased out), paint (houses, cars), smelters (metal refineries), manufacture of lead storage batteries. Health effects—brain and other nervous system damage; children are at special risk. Some lead-containing chemicals cause cancer in animals. Lead causes digestive and other health problems. Environmental effects—Lead can harm wildlife.	C-4 [c] C-4 [m] C-18
Nitrogen Dioxide (NO_2)	Leaking vented combustion appliances Unvented combustion appliances Outdoor air Parking garages	100 μg/m^3	Based on providing protection against adverse respiratory effects, average exposure for one year. Sources—burning of gasoline, natural gas, coal, oil, etc. Cars are an important source of NO_2 outdoors and cooking and water- and space-heating devices are important sources indoors. Health effects—lung damage, illnesses of breathing passages and lungs (respiratory system). Environmental effects—Nitrogen dioxide is a component of acid rain (acid aerosols), which can damage trees and lakes. Acid aerosols can reduce visibility. Property damage—Acid aerosols can eat away stone used on buildings, statues, monuments, etc.	C-4 [c] C-9 [m] C-18
		470 μg/m^3	24-hour average to prevent high exposures during use of combustion appliances such as space-heating devices and gas stoves.	C-41
Odors	Occupants VOC sources (including fungal sources such as mold) Cooking, food processing, sewage, biowaste facilities, etc.	Predicted (or measured) acceptability to 80% or more of occupants or visitors	CO_2 concentration can be used as a surrogate for occupant odors (odorous bioeffluents). See Informative Appendix D for a discussion of indoor CO_2 levels and ventilation rates. For sources other than people, source control is recommended.	C-12, 24, 29, 30 [c] C-9 (CO_2), C-15 (odor) [m]
Ozone (O_3)	Electrostatic appliances Office machines Ozone generators Outdoor air	100 μg/m^3 (50 ppb)	Based on 25% increase in symptom exacerbations among adults or asthmatics (normal activity), eight-hour exposure (WHO); continuous exposure (FDA). Ozone present at levels below the concentration of interest may contribute to the degradation of indoor air quality directly and by reacting with other contaminants in the indoor space. Ground-level ozone is the principal component of smog. Sources—outdoors, from chemical reaction of pollutants, VOCs, and NO_x; indoors, from photocopiers, laser printers, ozone generators, electrostatic precipitators, and some other air cleaners. Health effects—breathing problems, reduced lung function, asthma, irritated eyes, stuffy nose, reduced resistance to colds and other infections. May speed up aging of lung tissue. Environmental effects—Outdoors, ozone can damage plants and trees; smog can cause reduced visibility. Property damage—Indoors and outdoors, ozone damages natural and synthetic rubbers, plastics, fabrics, etc.	C-6, 11 [c] C-6 [m] C-18
Particles ($PM_{2.5}$)	Combustion products, cooking, candles, incense, resuspension, outdoor air, diesel exhaust, and parking garages	15 μg/m^3		C-4

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 [C-17]

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/m^3
ppm × molecular weight/24.45 = mg/m^3
ppm × molecular weight × 28.3/24,450 = mg/ft^3