Sensory emission rates from personal computers and television sets

Sensory emissions from personal computers (PCs), PC monitors + PC towers, and television sets (TVs) having been in operation for 50, 400 and 600 h were assessed by a panel of 48 subjects. One brand of PC tower and four brands of PC monitors were tested. Within each brand, cathode-ray tube (CRT) and thin-flat-transistor (TFT) monitors were selected. Two brands of TVs were tested. All brands are prevalent on the world market. The assessments were conducted in low-polluting 40 m$^3$ test offices ventilated with a constant outdoor air change rate of 1.3 ± 0.2 h$^{-1}$ corresponding to 7 L/s per PC or TV with two units placed at a time in the test offices; air temperature was controlled at 22 ± 0.1°C and relative humidity at 41 ± 0.5%. The subjects entered the offices individually and immediately assessed the air quality. They did not see the PCs or TVs that were placed behind a screen and were in operation. The average sensory emission rate for PCs with CRT monitors was 2.7 ± 1.7 olf/PC after 50 h of operation. It decreased to 1.4 ± 1.2 olf/PC when the operation time was 600 h, suggesting a half-life equal to 4 months of normal use. The sensory emission rates for PCs with TFT monitors were negligible. The average sensory emission rate for TVs was 1 ± 0.6 olf/TV after 50 h of operation. It decreased to a negligible level after 400 h of operation. Present results indicate that air pollution from electronic equipment should be considered when calculating the ventilation requirements for acceptable indoor air quality.

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