Wood Smoke Chemical Composition

⊗Indicates a chemical present in both wood smoke and tobacco smoke
 ¾Indicates a hazardous chemical for which ATSDR has prepared a toxicological profile
 ♣Indicates a chemical classified as a carcinogen by the US government
 •Indicates a chemical that is one of the Top 20 CERCLA priority hazardous substances
 1-275 Indicates position on the CERCLA priority hazardous substances list

ALL CHEMICALS LISTED BELOW ARE REPORTED PRESENT IN WOOD SMOKE

\$\\\^{198}\text{carbon monoxide.} \\^{66}\text{methane. volatile organic compounds} (C_2-C_7) , aldehydes: \otimes *** ²⁴⁵ formaldehyde. \otimes ** ⁷² acrolein. propionaldehyde, butyraldehyde, @acetaldehyde, furfural; substituted furans, & ** • benzene, alkyl benzenes: & ** • 68 toluene, ⊗acetic acid, ⊗formic acid; ⊗ nitrogen oxides (NO. NO2). naphthalenes. oxygenated monoaromatics: guaiacol (and derivatives), & phenol (and derivatives), syringol (and derivatives), \(\ext{\text{catechol}} \) (and derivatives); particulate organic carbon, oxygenated polycyclic aromatic hydrocarbons, ⁹ polycyclic aromatic hydrocarbons: ⊗ ²⁷⁰ fluorene, ⊗²¹⁹phenanthrene, ⊗²anthracene, methylanthracenes, ⊗²⁰⁶fluoranthene, ⊗²⁴⁹pyrene, ⊗²⁴⁹pyrene, ⊗²⁴⁹benzo(a)anthracene, ⊗ № 117 chrvsene. ⊗ № 10 60 70 benzofluoranthenes, \$benzo(e) pyrene, ⊗ \$\infty \cdot \sigma^8\text{benzo(a)pyrene, \$\precept{\pi}\equiv \text{perylene, }\pi \sigma^{180}\text{indeno(1,2,3-cd)} pyrene, \$\frac{1}{2}\text{benzo(ghi)pervlene, coronene, }\frac{1}{2}\text{dibenzo(a,h)pyrene,} retene. (a.h)anthracene: trace elements: Sodium. Magnesium, \$186 Aluminum, Silicon, Sulfur, 96 Chlorine, Potassium, Calcium, Titanium, \$197 Vanadium, S& Chromium, [№] Manganese, Iron, [№] Nickel, Copper, ⁷³Zinc, Bromine, ⊗ № • ²Lead: particulate elemental carbon, normal alkanes $(C_{24}-C_{30})$, cyclic di-and triterpenoids, dehydroabietic acid. isopimaric acid, lupenone, friedelin, **chlorinated dioxins

Sources:

Larson TV and Koenig JQ. 1994. Wood Smoke: Emissions and Noncancer Respiratory Effects. Table 1, Chemical composition of wood smoke. Annual Review of Public Health, v.15, p.136-137.

US Surgeon General. 1989. Reducing the Health Consequences of Smoking. Tables 5-8, p.81-89.

US Department of Health and Human Services. Agency for Toxic Substances and Disease Registry (ATSDR). Toxicological Profiles.

US Department of Health and Human Services. National Toxicology Program.

Report on Carcinogens. Tenth, 2002.

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List of Priority Hazardous Substances, 2001

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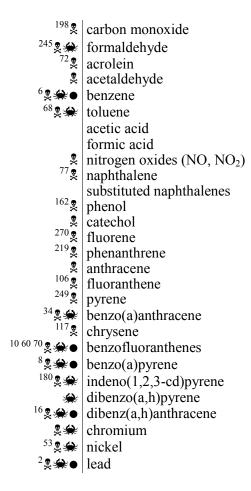
List of Priority Hazardous Substances, 2001

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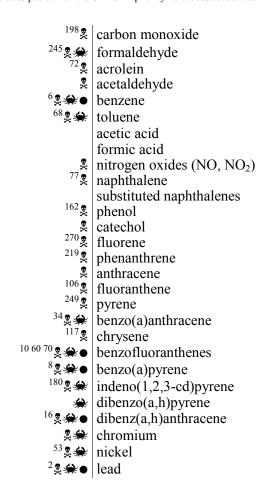
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