

## **Secondhand Smoke Is Toxic and Poisonous**

- The National Toxicology Program estimates that at least 250 chemicals in secondhand smoke are known to be toxic or carcinogenic (cancer causing).
- Secondhand smoke contains a number of poisonous gases and chemicals, including hydrogen cyanide (used in chemical weapons), carbon monoxide (found in car exhaust), butane (used in lighter fluid), ammonia (used in household cleaners), and toluene (found in paint thinners).
- Some of the toxic metals contained in secondhand smoke include arsenic (used in pesticides), lead (formerly found in paint), chromium (used to make steel), and cadmium (used to make batteries).
- There are more than 50 cancer-causing chemicals in secondhand smoke that fall into different chemical classes, including:
  - Polynuclear aromatic hydrocarbons (PAHs) (such as Benzo[a]pyrene)
  - N-Nitrosamines (such as tobacco-specific nitrosamines)
  - Aromatic amines (such as 4-aminobiphenyl)
  - Aldehydes (such as formaldehyde)
  - Miscellaneous organic chemicals (such as benzene and vinyl chloride) and
  - Inorganic compounds (such as those containing metals like arsenic, beryllium, cadmium, lead, nickel and radioactive polonium-210).
- Eleven compounds in tobacco smoke (2-naphthylamine, 4-aminobiphenyl, benzene, vinyl chloride, ethylene oxide, arsenic, beryllium, nickel compounds, chromium, cadmium and polonium-210) have been identified by the International Agency for Research on Cancer as Group 1 (known human carcinogen) carcinogens.
- Secondhand smoke has been designated as a known human carcinogen (cancer-causing agent) by the U.S. Environmental Protection Agency, National Toxicology Program and the International Agency for Research on Cancer (IARC). The National Institute for Occupational Safety and Health has concluded that secondhand smoke is an occupational carcinogen.

Secondhand smoke is composed of sidestream smoke (the smoke released from the burning end of a cigarette) and exhaled mainstream smoke (the smoke exhaled by the smoker). Because sidestream smoke is generated at lower temperatures and under different conditions than mainstream smoke, it contains higher concentrations of many of the toxins found in inhaled cigarette smoke.

<http://www.surgeongeneral.gov/library/secondhandsmoke/factsheets/factsheet9.html>