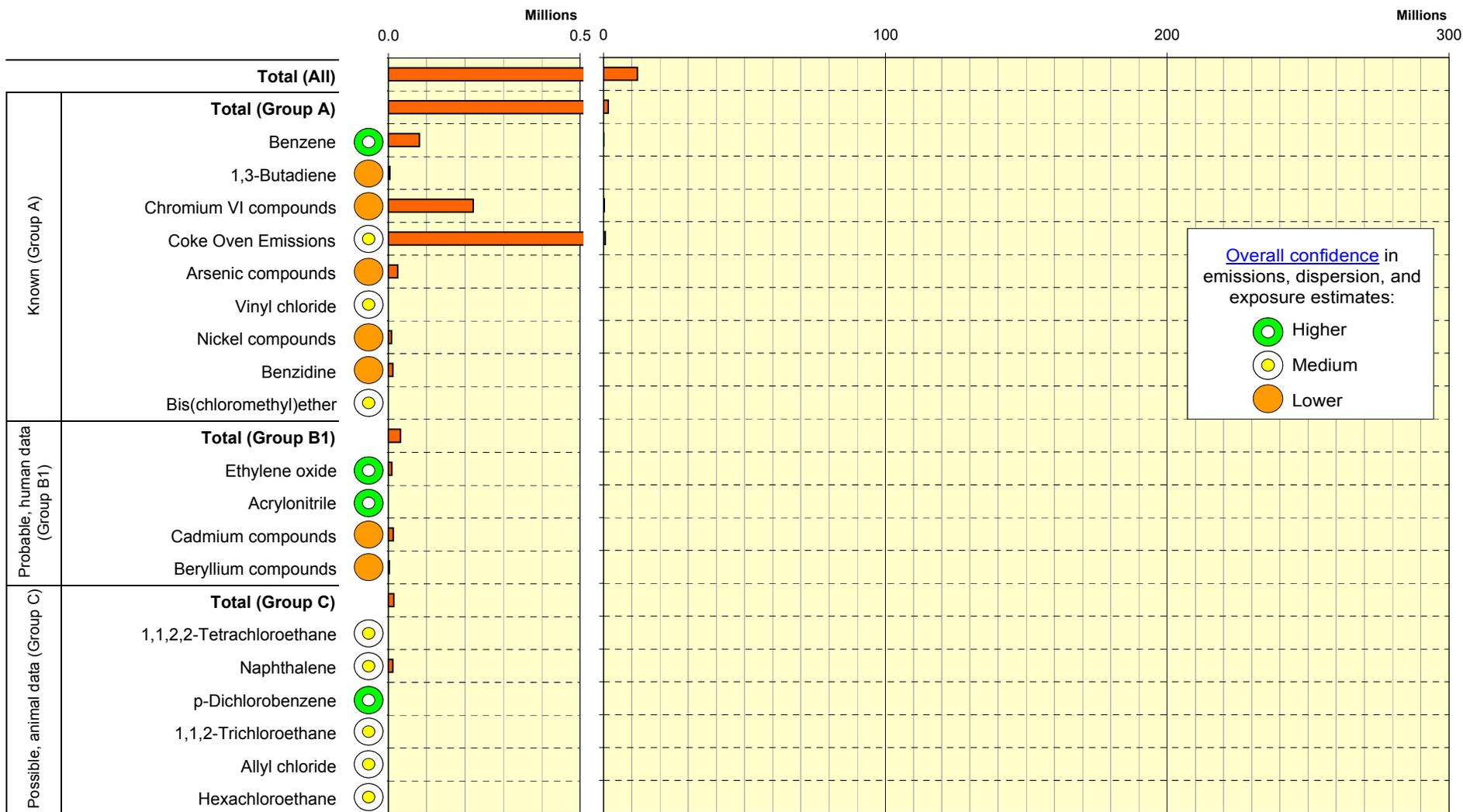


US EPA ARCHIVE DOCUMENT

Population residing in census tracts for which the 1999 median exposure exceeded a lifetime cancer risk level of 100 in 1 million (based on all sources combined).



Results are based on inhalation exposure to outdoor sources only. Although these results assume continuous exposure to 1999 levels of air toxics over a lifetime, current and planned control programs are expected to substantially reduce these exposures and associated cancer risk for some pollutants. Please see additional information about additional limitations on the following page.

EPA strongly cautions that these modeling results are most meaningful when viewed at the state or national level, and should not be used to draw conclusions about local exposures or risks (e.g., to compare local areas, to identify the exact location of “hot spots,” or to revise or design emission reduction programs). Substantial uncertainties with the input data for these models may cause the results to misrepresent actual risks, especially at the census tract level. However, we believe the census tract data and maps can provide a useful approximation of geographic *patterns of variation* in risk within counties. For example, a cluster of census tracts with higher estimated risks may suggest the existence of a “hot spot,” although the specific tracts affected will be uncertain. More refined assessments based on additional data and analysis would be needed to better characterize such risks at the tract level. The points below highlight limitations to consider when looking at the results:

- The emissions used in this assessment do not reflect significant emission reductions that have occurred since 1999 and will continue to occur as a result of ongoing federal and state regulatory programs, including those from: 1) mobile source regulations that are being phased in over time; 2) federal technology-based MACT, residual risk, and area source regulatory programs; 3) state or private sector initiatives, and 4) facility closures.
- The results are not actual measurements of risk, but rather estimates that are generated from computer models. These risk estimates should not be confused with *measured risks*, such as analyses of past automobile crashes, which are supported by actual observations of events.
- Risk estimates are surrounded by substantial uncertainties associated with characterizing sources, exposures, and pollutant hazards. Among the most important uncertainties underlying these modeling results are:
  - Use of emission estimates from multiple sources (e.g., state- or industry-submitted, computed by EPA from activity data and emission factors, or developed by EPA test programs). These estimates differ across geographic regions and source categories, and may vary substantially in quality;
  - As applied nationally, the ASPEN model employs inputs and assumptions that may not be fully representative of particular local areas and the nature of their emissions and concentrations;
  - Use of exposure estimates for the median individual within each census tract. Some individuals may have substantially higher or lower exposures than the median individual;
  - Use of health values that reflect an estimated relationship between exposure and response extrapolated from studies of humans or laboratory animals exposed to high concentrations;
  - Use of exposure-response methods and assumptions that are “protective” (i.e., more likely to overestimate risk than underestimate it); and
  - Use of summation to combine risks of different air pollutants in the absence of data showing non-additive interactions.
- The risk estimates are limited to consideration of inhalation exposure. People receive substantial additional exposures to air pollutants such as mercury and PCBs that bioaccumulate in food. In addition, this assessment does not include emissions from indoor sources of air toxics. Studies have shown that many people receive substantial additional inhalation exposure to common indoor air pollutants such as formaldehyde and perchloroethylene.
- Because of these uncertainties, EPA does not support the use of these results for:
  - Drawing conclusions that certain hazardous air pollutants are above or below *absolute* levels of concern in particular areas;
  - Drawing conclusions about the contributions of individual sources (i.e., sources within a source sector) to total emissions and risk;
  - Comparing risks between areas within counties or other small geographic areas or to identify the exact location of “hot spots;” and
  - Use as the sole basis for risk reduction plans or regulations to control specific sources or pollutants.
- EPA supports the use of these results, in combination with other information, to inform the design of more detailed local assessments by:
  - Providing a general sense of the community’s inhalation risks *relative* to those of other communities.
  - Prioritizing emissions sources for more detailed inventory development (including input to future NEIs) and modeling;
  - Identifying potential pollutants of concern in different areas of a community;
  - Flagging approximate locations of potential hot spots for monitoring or high-resolution modeling.