

Benzene Canada-wide Standard – Phase 1

1. What is the Canada-Wide Standard for Benzene?

Phase 1 of the benzene standard establishes a target of 30 percent reduction in national emissions from 1995 levels by end of 2000. Key actions include the benzene in gasoline regulations, voluntary initiatives to reduce emissions from natural gas dehydrators and the chemical industry, and implementation of measures in the steel industry resulting from development options under CEPA that examined broader pollution prevention and control issues in that sector. Phase 1 provides an accountability mechanism for various current actions towards a Canada-wide control strategy and the coordination of monitoring and reporting of these activities, as well as a means of establishing a baseline for future action at no incremental cost.

Phase 2, to be developed by Spring of 2001, will identify the future direction for benzene control. The form, target and goals of phase 2 will include a combination of initiatives, including a collaborative approach to inventory improvements and sector-specific reductions with other Canada-Wide Standard initiatives.

2. What is the Science on Benzene?

Benzene is a simple organic compound that is a volatile, clear, flammable, colorless liquid at room temperature with an aromatic odor. In all media it is not persistent or bioaccumulative.

Benzene has been classified as carcinogenic to humans. It is a non-threshold toxicant – a substance for which there is considered to be some probability of harm for critical effects at any level of exposure.

The primary long-term air quality management goal for non-threshold toxicants like benzene is to reduce exposure to the extent possible and practicable thereby reducing the risk of the adverse effects of this pollutant on human health. As a result, the possibility of additional emission reductions will also be considered during the development of the Phase 2 benzene standard.

3. Extent of the Problem

Transportation and natural gas dehydrators account for the majority of anthropogenic releases of benzene in Canada. Benzene emissions from gasoline production and distribution, chemical manufacturing, and the steel industry are relatively minor. It is unclear how much benzene is released from other sources, such as residential wood combustion and other wood products sectors.

The largest source of benzene exposure to non-smoking Canadians is vehicular emissions. Cigarette smokers are exposed to even higher levels of benzene.

Average ambient levels for benzene in 1998 were 0.3 - 1.0 $\mu\text{g}/\text{m}^3$ in rural areas and 1.0 - 3.2 $\mu\text{g}/\text{m}^3$ in urban areas. In general, ambient levels of benzene in air in Canada

are generally at or below the long-term targets set for Europe, the UK and various states in the USA.

4. Achieving the Standard

Efforts towards achievement of this CWS will begin with the initial actions listed in the Companion Document that accompanies this CWS agreement. These initial actions range from implementation of Best Management Practices for natural gas dehydrators and steel mills, and enforcement of the CEPA Regulations on fuel dispensing rates and benzene content in gasoline, to Ministerial Approval of the MOU between Environment Canada and the Canadian Chemical Producers Association.

Further information is available from the CCME's website at www.ccme.ca/ccme.