

COMMENTARY

Need for Improved Science in Standard Setting
for Hexavalent Chromium

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In response to a petition filed by the Oil, Chemical, and Atomic Worker's Union, the Occupational Safety and Health Administration (OSHA) has initiated a rulemaking process to lower the hexavalent chromium [Cr(VI)] permissible exposure limit (PEL); a revised standard is scheduled to be proposed in September 1999 (63CFR62007, November 9, 1998). A summary of estimated chromium doses and lung cancer mortality rates reported for an occupational cohort with exposure to trivalent [Cr(III)] and hexavalent chromium at the Painesville, Ohio, chromate production facility (Mancuso, 1975) has been used by OSHA as the basis of their health risk assessment (OSHA, 1995). The data from this internationally recognized cohort have contributed substantially to regulatory quantitative risk assessments for Cr(VI) (i.e., USEPA, 1984; CDHS, 1985) and to the conclusion that the weight of evidence is sufficient to identify Cr(VI) as a lung carcinogen (USEPA, 1984, 1997; WHO, 1988; ATSDR, 1993; IARC, 1990; Langard, 1990; Lees, 1991). Although the Mancuso cohort data represent the most widely used dose–response assessment available to evaluate the inhalation cancer risk associated with occupational exposure, there are numerous errors in the analysis that have been documented in the past (e.g., USEPA, 1984; OSHA, 1995; Mundt and Dell, 1997).