INTRODUCTION

Pentachlorophenol (PCP) is a pesticide which was widely used for wood preservation. Major uses included commercial wood treatment in the lumber industry and slime control in the pulp and paper industry. The sodium salt of PCP (NaPCP) was also used in wood preservation as a sapstain control agent. Minor uses have included various non-industrial applications as a herbicide, antimicrobial, and disinfectant.

From 1984 to 1988, the United States Environmental Protection Agency issued a series of strict regulatory controls over the manufacture, use, and disposal of PCP[USEPA]. Commercial pentachlorophenol had contained a variety of impurities including higher chlorinated dibenzo-p-dioxins (CDDs) and chlorinated dibenzofurans (CDFs). One of these compounds, hexachlorodibenzo-p-dioxin (HxCDD), was found to be a carcinogen and reproductive toxin in laboratory animals[NTP]. Production of PCP in the United States ceased in 1992.

Acute poisoning with PCP in workers produces a characteristic syndrome of hyperpyrexia caused by uncoupling of oxidative phosphorylation[Wood]. The chronic effects of exposure to PCP have been studied in PCP production workers[Baader, Triebig, Zober, Bauchinger, Baxter, OMalley], PCP formulators[Jones], wood treatment workers[Begley,Klemmer], sprayers[Jones], and sawmill workers[Embree, Enarson, Kleinman]. Several studies have demonstrated that exposure to commercial PCP can produce chloracne[Baader, Baxter, OMalley, Sehgal, Cole]. Some studies have observed irritant effects on the eyes and upper respiratory tract[Baader, Kleinman]; peripheral sensory neuropathy[Treibig]; reversible renal impairment[Begley]; decreased bilirubin[Baxter, Jones], increased serum glutamatdehydrogenase (GLDH) [Zober]; decreased hematocrit and white blood cell count[Enarson], and increased frequency of chromosome alterations in lymphocytes[Bauchinger].

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