

TABLE V.3: SUMMARY OF SELECTED EPIDEMIOLOGIC STUDIES OF LUNG CANCER IN WORKERS EXPOSED TO HEXAVALENT CHROMIUM

Chromium Plating

Reference/Exhibit Number	Study Population	Reference Population	Chromium (VI) Exposure	Lung Cancer Risk
Sorahan & Harrington (2000, Ex. 35-62) Royle (1975, Ex. 7-49)	920 male platers employed in 54 plants in Yorkshire, UK for a minimum of three months between 1969 and 1972; follow up through 1997	-Mortality rates for the general population of England and Wales -Age-, sex-matched comparison group unexposed to Cr(VI)	-Chromic acid mist with some nickel and cadmium co-exposure -Cr(VI) levels in 1970 reported to range from <30 µg/m ³ to >100 µg/m ³	-O/E of 1.85 (p=0.001) based on 60 deaths and general pop -O/E of 1.39 (p=0.06) based on unexposed comparison group -No upward trend with duration of exposure
Sorahan et al. (1998, Ex. 35-271) Sorahan et al. (1987, Ex. 7-57)	1,762 platers employed for a minimum of six months between 1946 and 1975 from a Midlands, UK plant; follow up through 1995.	Mortality rates for the general population of England and Wales	-Chromic acid mist with nickel co-exposure -No reported Cr(VI) exposure levels	-O/E of 1.6 (p<0.01) for male chrome bath workers based on 40 deaths -O/E of 0.66 (NS) for other chrome workers based on 9 deaths -Upward trend (p<0.05) with duration of chrome bath work

Observed/Expected (O/E)
Relative Risk (RR)
Not Statistically Significant (NS)
Odds Ratio (OR)

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Cohort studies of chrome platers in Italy, the United States, and Japan are also discussed in this subsection. Co-

exposure to nickel, another suspected carcinogen, during plating operations can complicate evaluation of an association between Cr(VI) and an

increased risk of lung cancer in chrome platers. Despite this, the International Agency for Research on Cancer concluded that the epidemiological