

Recommendation:

- EPA should consider adding Nesnow et al. (1983) and Levin et al. (1977) studies to Table 2-11 and should consider combining results from the different studies shown in Table 2-11. This would strengthen the derived DSF. Skin cancer bioassay studies that examined only one BaP level or observed 90-100% incidence of tumors are not suitable for estimating points of departure (POD). However, consistencies in the observations of these studies with observations from the studies listed in Table 2-11 and those used to develop the POD and DSF would strengthen the derived DSF.

The EPA review of the epidemiologic evidence of skin cancer in humans is not sufficiently thorough. The assessment cites evidence of an excess of skin cancer in studies of roofers (Hammond et al. 1976) and workers exposed to creosote-treated wood (Karlehagen et al., 1992; Tornqvist, 1986), but these groups work outside and would thus have substantial exposure to UV. The assessment also notes that recent studies of chimney sweeps do not demonstrate an increased skin cancer risk (Hogstedt et al. 2013). The assessment does not cite or discuss other studies that reported an excess of skin cancer in destructive distillation of coal, shale oil extraction (Miller et al., 1986), tar refinery (Letzel and Drexler, 1998), asphalt workers and roofers (Partanen and Boffetta, 1994), workers exposed to creosote in brick making and wood impregnation (Karlehagen et al. 1992) or studies of workers in other industries with PAH exposure that were reviewed by Boffetta et al. (1997) and (Gawjridger, 2004).

Boffetta P, Jourenkova N, Gustavsson P. Cancer risk from occupational and environmental exposure to polycyclic aromatic hydrocarbons. *Cancer Causes Control*. 1997 May;8(3):444-72.

Gawjridger DJ. (2004). Occupational skin cancers. *Occupat Med* 54:458-463.

Letzel SL, Drexler H. (1998). Occupationally related tumors in tar refinery workers. *J Am Acad Dermatol* 39:712-720.

Karlehagen S, Andersen A, Ohlson CG. Cancer incidence among creosote exposed workers. *Scand J Work Environ*. 1992;18(1):26-9.

Miller BG, Cowie HA, Middleton WG, Seaton A. (1986) Epidemiologic studies of Scottish oil shale workers: III. Causes of death. *Am J Ind Med* 9:433-446.

Partanen T, Boffetta P. (1994). Cancer risk in asphalt workers and roofers: review and meta-analysis of epidemiologic studies. *Am J Ind Med* 26:721-740.