

**CHEMICALS UNDER CONSIDERATION FOR POSSIBLE LISTING
VIA THE AUTHORITATIVE BODIES MECHANISM**

**PACKAGE 6b
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The chemicals listed in the Table below meet the criteria for listing under Proposition 65 via the authoritative bodies listing mechanism. The regulatory guidance for listing by this mechanism is set forth in Title 22, California Code of Regulations (22 CCR), Section 12306. For example, the regulations include provisions covering the criteria for evaluating the documentation and scientific findings by the authoritative body to determine whether listing under Proposition 65 is required.

For carcinogenicity, the authoritative bodies are U.S. EPA, IARC, FDA, NIOSH and the National Toxicology Program (NTP). OEHHA has found that the chemicals in the table below have been “formally identified” as causing cancer according to the regulations covering this issue (22 CCR 12306(d)). The chemicals below are the subject of reports published by the authoritative bodies which conclude that the chemicals cause cancer or reproductive toxicity or have been included on a list of chemicals causing these effects issued by the authoritative body. Also, the documents specifically and accurately identify the chemicals and the documents meet one or more of the criteria outlined in 22 CCR 12306 (d)(2).

OEHHA also finds that the criteria given in regulation for “as causing cancer” (22 CCR 12306(e)) have been satisfied for the chemicals in the table below. In making this evaluation, OEHHA relied upon the discussion of data by the authoritative bodies in making their findings that the specified chemicals cause such effects. A brief discussion of the relevant carcinogenesis studies providing evidence for the findings is presented below. The statements in bold reflect data and conclusions that satisfy the criteria for the sufficiency of evidence for carcinogenicity (22 CCR 12306(e)).

Chemical	CAS No.	Chemical Use	Reference
Chloroprene	126-99-8	Intermediate in production of polychloroprene elastomer (used in coating of rubber goods, wire, cable, fabric; cements, sealants, adhesives).	NTP (1998a) IARC (1999)
Cobalt sulfate heptahydrate	10026-24-1	Used in electroplating and electrochemical industries; in inks, paints, varnishes, linoleum; ceramics; in animal feed; has been used on pasture lands.	NTP (1998b)
Fenoxycarb	72490-01-8	Carbamate insecticide acts as an insect growth regulator; used primarily in structural pest control.	U.S. EPA (1996)

Chloroprene (CAS No. 126-99-8)

Increased incidence of malignant tumors and combined malignant and benign tumors in male and female mice at multiple sites; increased incidence of combined malignant and benign tumors in male rats at multiple sites and in female rats.

The NTP (1998a) has concluded that there is clear evidence of the carcinogenic activity of chloroprene in male and female B6C3F₁ mice and in male and female F344/N rats. The International Agency for Research on Cancer (IARC, 1999) has classified chloroprene as a Group 2B carcinogen based on sufficient evidence for the carcinogenicity of chloroprene in experimental animals.

The NTP (1998a) exposed B6C3F₁ mice and F344/N rats to chloroprene by inhalation for two years. In rats, incidences of squamous cell papilloma or carcinoma of the oral cavity were significantly increased in mid- and high-dose males (0/50, 2/50, 5/50, 12/50 for controls, low-, mid- and high-dose groups, respectively) and in high-dose females (1/49, 3/50, 5/50, 11/50). The incidence of renal tubule adenoma or carcinoma was significantly increased in male rats (combined single and step sections: 1/50, 9/50, 6/50, 8/50). Although increases in female rats were not statistically significant, the NTP noted the unusual finding of four renal tubule adenomas in high-dose females and one renal tubule carcinoma in a low-dose female. There were also statistically significant increases in thyroid follicular cell adenoma or carcinoma in male rats (0/50, 2/50, 4/49, 5/50). Although increases in thyroid follicular cell neoplasms in high-dose females were not significantly greater than in chamber controls, they did exceed the historical range for controls. In female rats, the incidence of mammary gland fibroadenoma was significantly greater in the mid- and high-dose groups compared to chamber controls (24/49, 32/50, 36/50, 36/50).

In both male and female B6C3F₁ mice, statistically significant increases in alveolar/bronchiolar neoplasms were observed in all dose groups except low-dose males (alveolar/bronchiolar adenoma or carcinoma combined: 13/26, 28/50, 36/50, 43/50 for males and 4/50, 28/49, 34/50, 42/50 for females). In addition, for all exposed males the incidences of hemangiosarcoma (3/50, 13/50, 22/50, 19/50) and combined hemangioma or hemangiosarcoma (3/50, 14/50, 23/50, 21/50) were significantly greater than in controls. In females, significant increases were also observed in hemangiosarcoma (4/50, 6/50, 17/50, 5/50) and combined hemangioma or hemangiosarcoma (4/50, 6/50, 18/50, 8/50). In mid- and high-dose male mice, there were also statistically significant increases in tumors of the Harderian gland (combined adenoma/carcinoma: 2/50, 5/50, 10/50, 12/50) and renal tubule adenoma (combined single and step sections: 0/50, 2/49, 3/50, 9/50). In females, there were statistically significant increases in hepatocellular carcinoma (5/50, 11/49, 14/50, 19/50); in mammary gland carcinoma (3/50, 4/50, 7/50,

12/50); in sarcoma of the skin (0/50, 11/50, 11/50, 18/50); in mesentery sarcoma (0/50, 4/50, 8/50, 3/50) and in Harderian gland adenoma (1/50, 3/50, 3/50, 8/50). Additionally, increased incidences of neoplasms of the forestomach in both males and females and of Zymbal's gland in females were attributed to chloroprene exposure.

IARC (1999) evaluated the NTP studies as well as other available studies. Chloroprene exposure resulted in lung tumors in an inhalation study (Dong *et al.*, 1989) in which Kunming albino mice were exposed to chloroprene for four hours per day, six days per week for seven months. The incidences of mice with lung adenomas were 1/77, 9/111, 10/106, and 26/132 for control, low-dose, mid-dose, and high-dose groups, respectively. No other organs were examined. In another study, mammary tumors were significantly greater ($p > 0.05$) in high-dose female Wistar rats than in control animals (Trochimowicz *et al.*, 1998). No increases in tumors were seen in hamsters (Trochimowicz *et al.*, 1998).

Cobalt sulfate heptahydrate (CAS No. 10026-24-1)

Increased incidence of malignant and combined malignant and benign pulmonary tumors in male and female mice and female rats.

The NTP (1998b) has concluded that there is clear evidence of carcinogenic activity of cobalt sulfate heptahydrate in male and female B6C3F₁ mice and in female F344/N rats.

The NTP (1998b) exposed B6C3F₁ mice and F344/N rats to cobalt sulfate heptahydrate via inhalation for two years. Alveolar/bronchiolar tumors were observed in both species. In mice, there were statistically significant increases in the incidence of alveolar/bronchiolar carcinoma in high-dose males (4/50, 5/50, 7/50 and 11/50 for chamber control, low-, mid- and high-dose groups, respectively) and in high-dose females (1/50, 1/50, 4/50 and 9/50). The combined incidence of alveolar/bronchiolar adenoma or carcinoma was significantly increased in high-dose males (11/50, 14/50, 19/50, 28/50 for) and in mid- and high-dose females (4/50, 7/50, 13/50, 18/50).

In female F344/N rats, statistically significant increases were observed in the incidences of alveolar/bronchiolar carcinoma and combined alveolar/bronchiolar tumors (alveolar/bronchiolar adenoma or carcinoma or squamous cell carcinoma). The incidence of alveolar/bronchiolar carcinoma was 0/50, 2/49, 6/50, and 6/50 (for chamber control, low-, mid- and high-dose groups, respectively). In comparison, no alveolar/bronchiolar carcinomas were observed in 650 historical controls. The incidence of combined alveolar/bronchiolar tumors (alveolar/bronchiolar adenoma or carcinoma or squamous cell carcinoma) was 0/50, 3/49, 16/50, and 16/50. Additionally, a statistically significant increase in benign, complex or malignant adrenal pheochromocytoma was observed in high-dose female rats (2/48, 1/49, 4/50, 10/48).

In high-dose male rats, the combined incidence of alveolar/bronchiolar neoplasms (7/50) was significantly greater than that in chamber controls (1/50). The NTP (1998b) concluded that there was some evidence of carcinogenic activity of cobalt sulfate heptahydrate in male F344/N rats.

Fenoxycarb (CAS No. 72490-01-8)

Increased incidence of combined malignant and benign tumors in multiple strains of mice.

The U.S. EPA (1996) has classified fenoxycarb as a B2 carcinogen based on sufficient evidence in animals. The relevant studies are described below.

Male and female CD-1 mice were administered fenoxycarb via diet for 80 weeks. The U.S. EPA (1996) determined that the highest dose used in this study was not adequate for determining carcinogenicity in either males or females. However, even at the administered doses, statistically significant increases in the incidences of alveolar/bronchiolar neoplasms (adenoma/carcinoma combined: 7/50, 13/50, 14/50, 20/50 for control, low-, mid- and high-dose groups, respectively) and Harderian gland adenomas (7/50, 9/50, 6/50, 13/46) occurred in male mice. For both lung neoplasms and Harderian gland tumors, the data demonstrated a statistically significant trend with increasing dose. No effect was observed in female mice. A second study conducted in another mouse strain is noted by the U.S. EPA (1996a) in the "Weight of Evidence Considerations" section of the report. Preliminary review of this study indicated significant increases in lung adenoma/carcinoma in both sexes as well as significant increases in hepatocellular adenoma/carcinoma in male mice.

U.S. EPA (1996) also considered the fact that fenoxycarb is structurally related to urethane, and urethane is a potential metabolite of fenoxycarb. Urethane similarly produces lung tumors in a multitude of mouse strains and Harderian gland tumors in several different strains of mice.

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