# NO SIGNIFICANT RISK LEVEL (NSRL) FOR THE PROPOSITION 65 CARCINOGEN *p*-CHLORO-*o*-TOLUIDINE HYDROCHLORIDE

**August 2002**

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The strong acid salts of *p*-chloro-*o*-toluidine (CAS number 95-69-2) were listed on May 15, 1998 as chemicals known to the State to cause cancer under Proposition 65 (California Health and Safety Code 25249.5 *et seq*.). *p*-Chloro-*o*-toluidine hydrochloride (CAS number 3165-93-3) has been the only commercially available strong acid salt of *p*-chloro-*o*-toluidine (IARC, 2000). Production of both chemicals appears to have ceased in most countries. IARC (2000) located information dating from 1999 that indicated production of *p*-chloro-*o*-toluidine in China.

"*p*-Chloro-*o*-toluidine" was listed on January 1, 1990 as a chemical known to the State to cause cancer under Proposition 65 (California Health and Safety Code 25249.5 *et seq*.). A cancer potency of 0.27 $(mg/kg\text{-}day)^{-1}$ for *p*-chloro-*o*-toluidine was generated using the expedited approach (OEHHA, 1992). The cancer potency for *p*-chloro-*o*-toluidine was based on bioassay results for the hydrochloride salt, adjusted for molecular weight differences. A geometric mean was taken of four potencies derived from dose-response data for vascular tumors in male and female CD-1 HaM/ICR and $B6C3F_1$ mice (Weisburger *et al.*, 1978; NCI, 1979). Survival was poor in the NCI study of male $B6C3F_1$ mice, so the potency for that study was derived using a time-to-tumor analysis (Crump *et al.*, 1991).

To obtain the cancer potency for *p*-chloro-*o*-toluidine hydrochloride, a molecular weight adjustment was applied to the cancer potency for *p*-chloro-*o*-toluidine published previously by OEHHA (1992):

$$q_{human}\ (\text{HCl salt}) = q_{human}\ (\text{parent compound}) \times \left( \frac{\text{MW (parent compound)}}{\text{MW (HCl salt)}} \right) \qquad (1)$$

The molecular weights of the parent compound and its hydrochloride salt are 141.6 and 178.1, respectively.

The no significant risk level (NSRL) in units (mg/day) for a 70 kg person was calculated according to the following equation:

$$\text{NSRL} = \frac{10^{-5} \times 70\ \text{kg}}{q_{human}} \qquad (2)$$

where $q_{human}$ is the human cancer potency in units $(mg/kg\text{-}day)^{-1}$.

The cancer potency and NSRL for *p*-chloro-*o*-toluidine hydrochloride are summarized in Table 1.

**Table 1. Cancer Potency and NSRL for *p*-Chloro-*o*-Toluidine Hydrochloride.**

| Chemical | Cancer Potency $(mg/kg\text{-}day)^{-1}$ | NSRL (μg/day) |
|---|---|---|
| *p*-Chloro-*o*-toluidine hydrochloride | 0.21 | 3.3 |

## REFERENCES


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