



NATURAL RESOURCES DEFENSE COUNCIL

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Via Electronic Mail and First Class Mail

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NTP Liaison and Scientific Review Office
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RE: Natural Resources Defense Council ("NRDC") and Interfaith Community Organization ("ICO") Comments on the *NTP Technical Report on the Toxicology and Carcinogenesis Studies of Sodium Dichromate Dihydrate (CAS NO. 7789-12-0) in F344N Rats and B6C3F1 Mice (Drinking Water Studies)*, NTP TR 546, NIH Publication No. 07-5887

Dear Dr. Shane:

NRDC and ICO are pleased to submit our comments on the *NTP Technical Report on the Toxicology and Carcinogenesis Studies of Sodium Dichromate Dihydrate*.

NRDC submits these comments on behalf of its over 1.2 million members and online activists committed to ensuring a safe and healthy environment for all living things. ICO is a community-based grassroots organization led by local church leaders in the Hudson County area of New Jersey.

General Comments

We fully support the conclusion by the NTP in this report that there is clear evidence of carcinogenic activity of sodium dichromate dihydrate in male and female F344/N rats, which indicate that exposure by the oral route to sodium dichromate dihydrate has a high potential for hazard to humans. As such, we believe the NTP data directly contradicts and therefore disproves the position of industry that hexavalent chromium ("Cr VI") is reduced in the stomach so no

tumors are expected beyond the stomach and no Cr VI is expected to be distributed systemically. Instead, the NTP report confirms that in well-conducted, robust experiments on rodents, exposure to Cr VI through drinking water poses a significant and measurable risk of cancer. Moreover, this NTP report is supported by the findings of other studies and reviews of studies on the toxicity and carcinogenicity of chromium compounds.¹

We believe this new study should be finalized as soon as practicable and immediately distributed to state and federal agencies currently engaged in rulemaking around drinking water and soil cleanup levels for Cr VI. It is imperative that this scientific consensus regarding the carcinogenic impacts of ingested Cr VI make its way to the hands of decision-makers who will be setting standards to protect the health of communities around the country.

Specific Comments

Although we fully support the conclusions of the study, we have the following specific comments on how the study could be stronger:

- The studies didn't include perinatal exposure (pre-birth and neonatal life-stages), which may under estimate risk if infants and children are more susceptible than adults.
- It is unknown if F344 rats and B6C3F1 mice are as sensitive as human subgroups of varying susceptibility. For example, some sites in these rodent strains never show tumor induction (e.g., prostate).
- A longer duration treatment regime and observation period (greater than 2 years) is needed to detect late developing tumors. This might be particularly important for this compound because only a small fraction of orally administered Cr VI is absorbed through the gut and into the bloodstream.
- The statistical power of the study to detect an effect was limited (N=50), and this would bias towards the null, i.e. make it less likely to detect an effect that is real
- The study failed to consider co-exposures with synergistic-acting agents such as UV light. This issue is relevant in light of published studies suggesting that chromium exacerbates UV-induced cancer.²

¹ See Max Costa and Catherine B. Klein, *Toxicity and Carcinogenicity of Chromium Compounds in Humans*, *Critical Reviews in Toxicology*, 36:155–163, 2006.

² See Ahmed N. Uddin, Fredric J. Burns, Toby G. Rossman, Haobin Chen, Thomas Kluz, and Max Costa, *Dietary chromium and nickel enhance UV-carcinogenesis in skin of hairless mice*, *Toxicology and Applied Pharmacology* xx (2007) xxx–xxx (received 4 October 2006; revised 4 January 2007; accepted 22 March 2007).

Thank you for the opportunity to comment on this important report.

Sincerely,

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