CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT
SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986
(PROPOSITION 65)

Notice of Intent To List: 1-Bromopropane
July 10, 2015

The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) intends to list *1-bromopropane* as known to the state to cause cancer under the Safe Drinking Water and Toxic Enforcement Act of 1986[1]. This action is being proposed under the authoritative bodies listing mechanism[2].

Chemical (CAS No.)	Endpoint	Reference	Occurrence and Uses
1-Bromopropane (106-94-5)	Cancer[a]	NTP (2014)	Used as a solvent cleaner in vapor and immersion degreasing operations for cleaning metals, plastics, and electronic and optical components. Also used in dry cleaning, asphalt production, and solvent and adhesive sprays. Has been used as an intermediate in the synthesis of pharmaceuticals, insecticides, quaternary ammonium compounds, flavors and fragrances.

[a] This chemical is currently listed for developmental, male and female reproductive toxicity under Proposition 65.

Background on listing via the authoritative bodies mechanism: A chemical must be listed under the Proposition 65 regulations when two conditions are met:

1) An authoritative body formally identifies the chemical as causing cancer (Section 25306(d)[3]).
2) The evidence considered by the authoritative body meets the sufficiency criteria contained in the regulations (Section 25306(e)).

[1] Commonly known as Proposition 65, the Safe Drinking Water and Toxic Enforcement Act of 1986 is codified in Health and Safety Code section 25249.5 *et seq*.
[2] See Health and Safety Code section 25249.8(b) and Title 27, Cal. Code of Regs., section 25306.
[3] All referenced sections are from Title 27 of the Cal. Code of Regulations.

However, the chemical is not listed if scientifically valid data which were not considered by the authoritative body clearly establish that the sufficiency of evidence criteria were not met (Section 25306(f)).

The National Toxicology Program (NTP) is one of several institutions designated as authoritative for the identification of chemicals as causing cancer (Section 25306(m)).

OEHHA is the lead agency for Proposition 65 implementation. After an authoritative body has made a determination about a chemical, OEHHA evaluates whether listing under Proposition 65 is required using the criteria contained in the regulations.

OEHHA's determination: *1-Bromopropane* meets the criteria for listing as known to the state to cause cancer under Proposition 65, based on findings of the NTP (2014).

Formal identification and sufficiency of evidence for *1-bromopropane*: In 2014, NTP published the Thirteenth Edition of the *Report on Carcinogens* (NTP, 2014). This report satisfies the formal identification and sufficiency of evidence criteria in the Proposition 65 regulations for 1-bromopropane. NTP concluded that 1-bromopropane is "*reasonably anticipated to be a human carcinogen* based on sufficient evidence of carcinogenicity from studies in experimental animals" (emphasis in original). OEHHA is relying on NTP's discussion of data and conclusions in the report that 1-bromopropane causes cancer. Evidence described in the report includes studies (NTP, 2011) showing that 1-bromopropane increased the incidence of combined malignant and benign skin tumors in male rats and increased the incidences of combined malignant and benign lung tumors in female mice:

> "In male rats, 1-bromopropane caused significant dose-related increases in the incidences of several types of benign and/or malignant skin tumors (keratoacanthoma; keratoacanthoma and squamous-cell carcinoma combined; and keratoacanthoma, squamous-cell carcinoma, basal-cell adenoma, and basal-cell carcinoma combined)."
>
> "In female mice, 1‑bromopropane caused significant dose-related increases in the incidence of benign and malignant lung tumors combined (alveolar/bronchiolar adenoma and carcinoma)."

Thus, NTP (2014) found that 1-bromopropane causes increased incidences of combined malignant and benign skin tumors in male rats, and combined malignant and benign lung tumors in female mice.

Request for comments: OEHHA is requesting comments as to whether *1-bromopropane* meets the criteria set forth in the Proposition 65 regulations for authoritative bodies listings. In order to be considered, **OEHHA must receive comments by 5:00 p.m. on August 10, 2015.** We encourage you to submit comments in electronic form, rather than in paper form. Comments transmitted by e-mail should be addressed to P65Public.Comments@oehha.ca.gov with "NOIL - 1-Bromopropane" in the subject line. Comments submitted in paper form may be mailed, faxed, or delivered in person to the addresses below:

Mailing Address:	Ms. Esther Barajas-Ochoa Office of Environmental Health Hazard Assessment P.O. Box 4010, MS-12B Sacramento, California 95812-4010
Fax:	(916) 323-2265
Street Address:	1001 I Street Sacramento, California 95814

Comments received during the public comment period will be posted on the OEHHA web site after the close of the comment period. Electronic files submitted should not have any form of encryption.

If you have any questions, please contact Esther Barajas-Ochoa at esther.barajas-ochoa@oehha.ca.gov or at (916) 445-6900.

References

National Toxicology Program (NTP, 2011). National Toxicology Program. Toxicology and Carcinogenesis Studies of 1-Bromopropane (CAS No. 106-94-5) in F344/N Rats and B6C3F1 Mice (Inhalation Studies). Technical Report Series No. 564. NIH Publication No. 11-5906. U.S. Department of Health and Human Services, NTP, Research Triangle Park, NC. Available at URL: http://ntp.niehs.nih.gov/ntp/htdocs/lt_rpts/tr564.pdf.

National Toxicology Program (NTP, 2014). Report on Carcinogens, Thirteenth Edition, U.S. Department of Health and Human Services, Public Health Service, NTP, Research Triangle Park, North Carolina. Available at URL: http://ntp.niehs.nih.gov/pubhealth/roc/roc13/index.html.