INITIAL STATEMENT OF REASONS
TITLE 27, CALIFORNIA CODE OF REGULATIONS

PROPOSED AMENDMENT TO:
SECTION 25705(b) SPECIFIC REGULATORY LEVELS
POSING NO SIGNIFICANT RISK

MALATHION

SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986
PROPOSITION 65

PURPOSE AND BACKGROUND OF PROPOSED AMENDMENTS OF REGULATION

This proposed regulatory amendment would adopt a No Significant Risk Level (NSRL) for malathion under Proposition 65[1] in Title 27, California Code of Regulations, section 25705(b)[2]. The proposed NSRL of 180 micrograms per day (µg/day) is based on a carcinogenicity study in rodents and was derived using the methods described in Section 25703.

Proposition 65 was enacted as a ballot initiative on November 4, 1986. The Office of Environmental Health Hazard Assessment (OEHHA) within the California Environmental Protection Agency is the lead state entity responsible for the implementation of Proposition 65[3]. OEHHA has the authority to adopt and amend regulations to implement and further the purposes of the Act[4].

The Act requires businesses to provide a warning when they cause an exposure to a chemical listed as known to the state to cause cancer or reproductive toxicity. The Act also prohibits the discharge of listed chemicals to sources of drinking water. Warnings are not required and the discharge prohibition does not apply when exposures are insignificant. The NSRL provides guidance for determining when this is the case for exposures to chemicals listed as causing cancer.

[1] The Safe Drinking Water and Toxic Enforcement Act of 1986, codified at Health and Safety Code section 25249.5 et. seq., commonly known as Proposition 65, hereafter referred to as “Proposition 65” or “The Act”.
[2] All further regulatory references are to sections of Title 27 of the Cal. Code of Regs., unless otherwise indicated.
[3] Section 25102(o).
[4] Health and Safety Code, section 25249.12(a).

Malathion was listed as known to the state to cause cancer under Proposition 65 on May 20, 2016.

DEVELOPMENT OF PROPOSED NSRL

To develop the proposed NSRL for malathion, OEHHA relied on Volume 112 in the series of International Agency for Research on Cancer (IARC) Monographs on the Evaluation of Carcinogenic Risks to Humans entitled "Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos"[5], which summarizes the available data from rodent carcinogenicity studies of malathion, as well as other information relevant to the carcinogenic activity of the chemical. The NSRL is based upon the results of the most sensitive scientific study deemed to be of sufficient quality[6].

Selection of Studies Used to Determine Cancer Potency

OEHHA reviewed the available data from the rodent carcinogenicity studies of malathion discussed by IARC[7], and determined that two 18-month diet studies conducted in male and female $B6C3F_1$ mice and a two-year diet study conducted in female Fischer 344 (F344) rats met the criterion in Section 25703 as being sensitive studies of sufficient quality.

The two 18-month diet studies of malathion conducted in male and female $B6C3F_1$ mice were performed by the International Research and Development Corporation and reviewed by the US Environmental Protection Agency (US EPA)[8,9]. In each of these studies, groups of 55 $B6C3F_1$ mice were fed a diet containing malathion (purity, 96.4%) at concentrations of 0, 100, 800, 8000, or 16000 parts per million (ppm) for 18 months[10].

[5] International Agency for Research on Cancer (IARC, 2015). IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 112, Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos. IARC, World Health Organization, Lyon, France. Available from: http://monographs.iarc.fr/ENG/Monographs/vol112/index.php

[6] Section 25703(a)(4)

[7] International Agency for Research on Cancer (IARC, 2015). IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 112, Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos. IARC, World Health Organization, Lyon, France. Available from: http://monographs.iarc.fr/ENG/Monographs/vol112/index.php

[8] US EPA (1994). Malathion: 18-month carcinogenicity study in mice, International Research and Development Corporation. MRID 43407201. HED Doc No. 011455. Slauter RW, author. Peer reviewed by EPA. Washington (DC): Office of Pesticides and Toxic Substances, United States Environmental Protection Agency. Available from: https://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/057701/057701-004.pdf, accessed July 18, 2016.

[9] US EPA (2000). Cancer assessment document. Evaluation of the carcinogenic potential of malathion. Final report. Washington DC: Cancer Assessment Review Committee, Health Effects Division, Office of Pesticide Programs, United States Environmental Protection Agency.

[10] US EPA (1994). Malathion: 18-month carcinogenicity study in mice, International Research and Development Corporation. MRID 43407201. HED Doc No. 011455. Slauter RW, author. Peer reviewed by

The average daily intake was 0, 17.4, 143, 1476, and 2978 mg/kg/day for males and 0, 20.8, 167, 1707, and 3448 mg/kg/day for females[11]. Survival was not affected by treatment with malathion at any dose in either study[12]. Statistically significant malathion treatment-related increases in combined hepatocellular adenomas and carcinomas were observed in the 8000 and 16,000 ppm groups in both sexes. Statistically significant positive trends for combined hepatocellular adenomas and carcinomas were also observed in both sexes. The tumor incidence data used to estimate cancer potency from each of these studies are presented in Table 1.

Table 1. Tumor incidences[a] of treatment-related lesions in B6C3F$_1$ mice administered malathion in the diet for 18 months (IARC, 2015; US EPA, 1994; 2000)

Organ	Tumor type	Malathion dietary concentrations (ppm)					Trend test p-value[b]
		0	100	800	8000	16000	
Male mice							
Liver	Hepatocellular adenoma or carcinoma[c] (first occurrence of tumor: week 53)	4/54	10/54	9/55	15/55**	49/51***	$p < 0.001$
Female mice							
Liver	Hepatocellular adenoma or carcinoma[c] (first occurrence of tumor: week 78)	1/55	1/53	2/53	10/52**	43/51***	$p < 0.001$

[a] Data as reported by IARC (2015) and US EPA (1994, 2000). The numerator represents the number of tumor-bearing animals and the denominator represents the number of animals examined, excluding those that died before week 54, as reported by US EPA (1994)

[b] p-values for exact trend test conducted by OEHHA

[c] Treatment group tumor incidences with asterisks indicate significant results from Fisher pairwise comparison with controls (performed by OEHHA): * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

EPA. Washington (DC): Office of Pesticides and Toxic Substances, United States Environmental Protection Agency. Available from: https://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/057701/057701-004.pdf, accessed July 18, 2016.

[11] US EPA (1994). Malathion: 18-month carcinogenicity study in mice, International Research and Development Corporation. MRID 43407201. HED Doc No. 011455. Slauter RW, author. Peer reviewed by EPA. Washington (DC): Office of Pesticides and Toxic Substances, United States Environmental Protection Agency. Available from: https://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/057701/057701-004.pdf, accessed July 18, 2016.

[12] *Ibid.*

The two-year diet study of malathion conducted in female F344 rats was performed by Huntingdon Life Sciences and reviewed by US EPA[13,14]. In this study, groups of 55 female F344 rats were fed a diet containing malathion (purity, 97.1%) at concentrations of 0, 100/50, 500, 6000, or 12000 ppm for two years[15]. The low dose was changed from 100 ppm to 50 ppm after three months, due to inhibition of erythrocyte cholinesterase inhibition in this group. The average daily intake was 0, 3, 35, 415, and 868 mg/kg/day, and percent survival at two years was 69, 74, 75, 62, and 36[16]. Survival in the top dose group was significantly different from controls at two years[17,18]. A statistically significant malathion treatment-related increase in combined hepatocellular adenomas and carcinomas was observed in the 12,000 ppm group; a statistically significant positive trend for combined hepatocellular adenoma and carcinoma was also observed. Observations of squamous cell carcinomas of the oral cavity in one animal each in the lowest and highest dose groups were also considered treatment related[19]. The tumor incidence data from this study used to estimate cancer potency are presented in Table 2.

[13] US EPA (1997). Malathion: 2-year chronic feeding/carcinogenicity study in Fischer 344 rats. Huntingdon Life Sciences. 1996. MRID 43942901. Washington (DC): Office of Pesticides and Toxic Substances, United States Environmental Protection Agency. Available from: http://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/057701/057701-114.pdf, accessed July 18, 2016.

[14] US EPA (2000). Cancer assessment document. Evaluation of the carcinogenic potential of malathion. Final report. Washington DC: Cancer Assessment Review Committee, Health Effects Division, Office of Pesticide Programs, United States Environmental Protection Agency.

[15] US EPA (1997). Malathion: 2-year chronic feeding/carcinogenicity study in Fischer 344 rats. Huntingdon Life Sciences. 1996. MRID 43942901. Washington (DC): Office of Pesticides and Toxic Substances, United States Environmental Protection Agency. Available from: http://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/057701/057701-114.pdf, accessed July 18, 2016.

[16] *Ibid.*

[17] International Agency for Research on Cancer (IARC, 2015). IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 112, Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos. IARC, World Health Organization, Lyon, France. Available from: http://monographs.iarc.fr/ENG/Monographs/vol112/index.php

[18] US EPA (1997). Malathion: 2-year chronic feeding/carcinogencity study in Fischer 344 rats. Huntingdon Life Sciences. 1996. MRID 43942901. Washington (DC): Office of Pesticides and Toxic Substances, United States Environmental Protection Agency. Available from: http://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/057701/057701-114.pdf, accessed July 18, 2016.

[19] International Agency for Research on Cancer (IARC, 2015). IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 112, Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos. IARC, World Health Organization, Lyon, France. Available from: http://monographs.iarc.fr/ENG/Monographs/vol112/index.php

Table 2. Tumor incidences[a] of treatment-related lesions in female Fischer 344 rats administered malathion in the diet for two years (IARC, 2015; US EPA, 1997; 2000)

Organ	Tumor type	Malathion dietary concentrations (ppm)					Trend test p-value[b]
		0	100/50	500	6000	12000	
Liver	Hepatocellular adenoma or carcinoma[c] (first occurrence of tumor: week 101)	0/41	2/50	2/44	3/41	6/38**	$p < 0.01$

[a] Data as reported by IARC (2015) and US EPA (1997, 2000). The numerator represents the number of tumor-bearing animals and the denominator represents the number of animals examined, as reported by US EPA (1997)

[b] p-values for exact trend test conducted by OEHHA

[c] Treatment group tumor incidences with asterisks indicate significant results from Fisher pairwise comparison with controls (performed by OEHHA): ** $p < 0.01$

Estimation of Cancer Potency Using the Linearized Multistage Model

In the 2015 review of the mechanistic data for malathion, IARC[20] concluded:

> "Overall, the mechanistic data provide strong support for carcinogenicity findings of malathion. This includes strong evidence for genotoxicity, hormone-mediated effects, oxidative stress, and cell proliferation. There is evidence that these effects can operate in humans."

IARC[21] went on to state:

- "There is strong evidence that exposure to malathion-based pesticides is genotoxic based on studies in humans, in experimental animals, and in human and animal cells in vitro. Assays for mutagenesis in bacteria gave negative results, indicating no direct pro-mutagenic activity."
- "There is strong evidence that malathion modulates receptor-mediated effects and pathways relevant to tumour findings in the hormone-responsive tissues, the thyroid, and mammary gland. There is concordant strong evidence for alteration of cell proliferation in response to malathion in these tissues."

[20] International Agency for Research on Cancer (IARC, 2015). IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 112, Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos. IARC, World Health Organization, Lyon, France. Available from: http://monographs.iarc.fr/ENG/Monographs/vol112/index.php

[21] *Ibid.*

- "There is strong evidence that malathion induces oxidative stress and inflammation. The most extensive database is from in-vivo studies in experimental animals. In addition, oxidative stress was demonstrated in human cells in vitro and in a study of humans acutely poisoned with malathion-based pesticides."

Based on consideration of the available mechanistic information on malathion and the above conclusions reached by IARC[22], the default approach using a linearized multistage model[23] is applied to derive a cancer potency estimate for each of the three studies. There are not principles or assumptions scientifically more appropriate, based on the available data, than this default.

The lifetime probability of a tumor at a specific site given exposure to the chemical at dose d is modeled using the multistage polynomial model:

$$p(d) = \beta_0 + (1-\beta_0)(1-\exp[-(\beta_1 d + \beta_2 d^2 + \cdots + \beta_j d^j)])$$

where the background probability of tumor, β_0, is between 0 and 1 and the coefficients β_i, i = 1…j, are positive. The β_i are parameters of the model, which are taken to be constants and are estimated from the data. The parameter β_0 provides the basis for estimating the background lifetime probability of the tumor.

In order to derive a measure of the cancer response to malathion (per mg/kg-day) in the studies described above, the dose associated with a 5% increased risk of developing a tumor was calculated and the lower bound for this dose was estimated using the multistage polynomial model for cancer in US EPA's Benchmark Dose Software (BMDS)[24]. The ratio of the 5% risk level to that lower bound on dose is known as the "animal cancer slope factor (CSF_{animal})", or the "animal cancer potency".

In modeling data from the male mouse study, due to very high tumor incidence in the high dose group, this dose was removed during the model fitting process in order to

[22] International Agency for Research on Cancer (IARC, 2015). IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 112, Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos. IARC, World Health Organization, Lyon, France. Available from: http://monographs.iarc.fr/ENG/Monographs/vol112/index.php
[23] Section 25703
[24] US EPA Benchmark Dose Software (BMDS) Version 2.6.0.1 (Build 88, 6/25/2015). National Center for Environmental Assessment, US EPA. Available from: http://bmds.epa.gov

achieve sufficient goodness of fit. The natural lifespan of mice and rats is assumed to be two years (104 weeks)[25,26].

To estimate the animal cancer potency from experiments of duration T_e, rather than the natural life span of the animals T, it is assumed that the lifetime incidence of cancer increases with the third power of age. Following Gold and Zeiger[27] and US EPA[28], a correction factor to extrapolate to two years (104 weeks) was required for the cancer slope factors derived from the data in male and female mice[29], as those studies were concluded after 78 weeks. The adjustment was calculated as follows:

$$CSF_{animal,\ adj.} = CSF_{animal} \times (104/78)^3$$

No adjustment was required for the cancer slope factor derived from the data in female rats[30] as the duration of that study was 104 weeks.

Estimation of Human Cancer Potency

Human cancer potency is estimated by an interspecies scaling procedure. According to Section 25703(a)(6), dose in units of mg per kg bodyweight scaled to the three-quarters power is assumed to produce the same degree of effect in different species in the absence of information indicating otherwise. Thus, for each of the three studies described above, scaling to the estimated human potency (CSF_{human}) is achieved by multiplying the animal potency (CSF_{animal}) by the ratio of human to animal body weights (bw_{human}/bw_{animal}) raised to the one-fourth power when CSF_{animal} is expressed in units $(mg/kg\text{-}day)^{-1}$:

$$CSF_{human} = CSF_{animal} \times (bw_{human} / bw_{animal})^{1/4}$$

[25] Gold LS, Zeiger E (1997). Handbook of Carcinogenic Potency and Genotoxicity Databases. CRC Press, Inc., Boca Raton.
[26] US EPA (1988). Recommendations for and Documentation of Biological Values for Use in Risk Assessment. Office of Health and Environmental Assessment, Washington D.C. EPA/600/6-87/008.
[27] Gold LS, Zeiger E (1997). Handbook of Carcinogenic Potency and Genotoxicity Databases. CRC Press, Inc., Boca Raton.
[28] US EPA (1988). Recommendations for and Documentation of Biological Values for Use in Risk Assessment. Office of Health and Environmental Assessment, Washington D.C. EPA/600/6-87/008.
[29] US EPA (1994). Malathion: 18-month carcinogenicity study in mice, International Research and Development Corporation. MRID 43407201. HED Doc No. 011455. Slauter RW, author. Peer reviewed by EPA. Washington (DC): Office of Pesticides and Toxic Substances, United States Environmental Protection Agency. Available from: https://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/057701/057701-004.pdf, accessed July 18, 2016.
[30] US EPA (1997). Malathion: 2-year chronic feeding/carcinogenicity study in Fischer 344 rats. Huntingdon Life Sciences. 1996. MRID 43942901. Washington (DC): Office of Pesticides and Toxic Substances, United States Environmental Protection Agency. Available from: http://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/057701/057701-114.pdf, accessed July 18, 2016.

The default human body weight is 70 kg. In the absence of body weight data from the original studies, the default[31] average body weights of 0.03, 0.025, and 0.35 kg for male mice, female mice, and female rats, respectively, were used. The derivation of the human cancer slope factors using the default body weight values and employing the conversion for short study duration for the mouse studies are summarized below in Table 3.

Table 3. Derivation of CSF_{human} using default animal body weights for the studies and data presented in Tables 1 and 2

Sex/strain/species	Type of neoplasm	Body Weight (kg)	CSF_{animal} $(mg/kg\text{-}day)^{-1}$	CSF_{animal} $(mg/kg\text{-}day)^{-1}$ adjusted for less-than-lifetime study duration	CSF_{human} $(mg/kg\text{-}day)^{-1}$
Male $B6C3F_1$ mice	Hepatocellular adenoma or carcinoma	0.03	0.000231	0.000548	**0.0038**
Female $B6C3F_1$ mice	Hepatocellular adenoma or carcinoma	0.025	0.000121	0.000287	0.0021
Female F344/N rats	Hepatocellular adenoma or carcinoma	0.35	0.000282	Not applicable	0.0011

As shown in Table 3, male mice were the most sensitive to the carcinogenic effects of malathion and thus the NSRL for malathion will be based on the human cancer slope factor derived from the study in male mice of 0.0038 $(mg/kg\text{-}day)^{-1}$.

Calculation of No Significant Risk Level

The NSRL can be calculated from the cancer slope factor as follows. The Proposition 65 no-significant-risk value is one excess case of cancer per 100,000 people exposed, expressed as 10^{-5}. This value is divided by the slope factor, expressed in units of one divided by milligram per kilogram bodyweight per day. The result of the calculation is a dose level associated with a 10^{-5} risk in units of mg/kg-day. This dose then can be converted to an intake amount in units of mg per day by multiplying by the bodyweight for humans. When the calculation is for the general population, the bodyweight is

[31]Gold LS, Zeiger E (1997). Handbook of Carcinogenic Potency and Genotoxicity Databases. CRC Press, Inc., Boca Raton.

assumed to be 70 kg in NSRL calculations[32]. The intake can be converted to a µg per day amount by multiplying by 1000. This sequence of calculations can be expressed mathematically as:

$$\text{NSRL} = \frac{10^{-5} \times 70\,\text{kg}}{\text{CSF}_{\text{human}}} \times 1000\,\mu\text{g/mg}.$$

As indicated previously, the human cancer slope factor for malathion derived from the male mouse study data and exposure parameters presented in Table 1 is 0.0038 per mg/kg-day. Inserting this number into the equation above results in an NSRL of 184 µg/day; rounding yields an NSRL of 180 µg/day.

PROPOSED REGULATORY AMENDMENT

Section 25705(b)

The proposed change to Section 25705(b) is provided below, in underline.

(1) The following levels based on risk assessments conducted or reviewed by the lead agency shall be deemed to pose no significant risk:

Chemical name	Level (micrograms per day)
Acrylonitrile	0.7
…	
<u>Malathion</u>	<u>180</u>
…	

PROBLEM BEING ADDRESSED BY THIS PROPOSED RULEMAKING

Proposition 65 does not provide guidance regarding how to determine whether a warning is required or a discharge is prohibited. OEHHA is the implementing agency for Proposition 65 and has the resources and expertise to examine the scientific literature and calculate a level of exposure, in this case an NSRL, that does not require a warning or for which a discharge is not prohibited.

ECONOMIC IMPACT ASSESSMENT (see below)

[32] Section 25703(a)(8)

NECESSITY

This proposed regulatory amendment would adopt an NSRL that conforms with the Proposition 65 implementing regulations and reflects the currently available scientific knowledge about malathion. The NSRL provides assurance to the regulated community that exposures or discharges at or below this level are considered not to pose a significant risk of cancer. Exposures at or below the NSRL are exempt from the warning and discharge requirements of Proposition 65[33].

BENEFITS OF THE PROPOSED REGULATION

See "Benefits of the Proposed Regulation" under ECONOMIC IMPACT ANALYSIS below.

TECHNICAL, THEORETICAL, AND/OR EMPIRICAL STUDIES, REPORTS, OR DOCUMENTS

The 2015 IARC monograph entitled "Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos"[34], was relied on by OEHHA for calculating the NSRL for malathion. It includes data used in the potency calculation and on mechanisms of carcinogenesis that are relevant to evaluating the most appropriate method for deriving the NSRL in the context of Section 25703. OEHHA also relied on information on the animal carcinogenicity studies of malathion presented in three US EPA documents[35,36,37], and on information presented in two additional documents[38,39] in making adjustments for less than lifetime study

[33] Health and Safety Code sections 25249.9(b) and 25249.10(c)
[34] International Agency for Research on Cancer (IARC, 2015). IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 112, Some Organophosphate Insecticides and Herbicides: Diazinon, Glyphosate, Malathion, Parathion, and Tetrachlorvinphos. IARC, World Health Organization, Lyon, France. Available from: http://monographs.iarc.fr/ENG/Monographs/vol112/index.php
[35] US EPA (1994). Malathion: 18-month carcinogenicity study in mice, International Research and Development Corporation. MRID 43407201. HED Doc No. 011455. Slauter RW, author. Peer reviewed by EPA. Washington (DC): Office of Pesticides and Toxic Substances, United States Environmental Protection Agency. Available from: https://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/057701/057701-004.pdf, accessed July 18, 2016.
[36] US EPA (1997). Malathion: 2-year chronic feeding/carcinogenicity study in Fischer 344 rats. Huntingdon Life Sciences. 1996. MRID 43942901. Washington (DC): Office of Pesticides and Toxic Substances, United States Environmental Protection Agency. Available from: http://archive.epa.gov/pesticides/chemicalsearch/chemical/foia/web/pdf/057701/057701-114.pdf, accessed July 18, 2016.
[37] US EPA (2000). Cancer assessment document. Evaluation of the carcinogenic potential of malathion. Final report. Washington DC: Cancer Assessment Review Committee, Health Effects Division, Office of Pesticide Programs, United States Environmental Protection Agency.
[38] Gold LS, Zeiger E (1997). Handbook of Carcinogenic Potency and Genotoxicity Databases. CRC Press, Inc., Boca Raton.
[39] US EPA (1988). Recommendations for and Documentation of Biological Values for Use in Risk Assessment. Office of Health and Environmental Assessment, Washington D.C. EPA/600/6-87/008.

duration, and converting from animal to human cancer slope factors. Copies of these documents will be included in the regulatory record for this proposed action. These documents are available from OEHHA upon request.

OEHHA also relied on the attached Economic Impact Analysis in developing this proposed regulation.

REASONABLE ALTERNATIVES TO THE REGULATION AND THE AGENCY'S REASONS FOR REJECTING THOSE ALTERNATIVES

The NSRL provides a "safe harbor" value that aids businesses in determining if they are complying with the law. The alternative to the proposed amendment to Section 25705(b) would be to not adopt a NSRL for the chemical. Failure to adopt an NSRL would leave the business community without a "safe harbor" level to assist businesses in complying with Proposition 65. No alternative that is less burdensome yet equally as effective in achieving the purposes of the regulation in a manner that achieves the purposes of the statute has been proposed.

REASONABLE ALTERNATIVES TO THE PROPOSED REGULATORY ACTION THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESSES

OEHHA is not aware of significant cost impacts that small businesses would incur in reasonable compliance with the proposed action. Use of the proposed NSRL by businesses is voluntary and therefore does not impose any costs on small businesses. In addition, Proposition 65 is limited by its terms to businesses with 10 or more employees (Health and Safety Code, section 25249.11(b)) so it has no effect on very small businesses.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON BUSINESS

Because the proposed NSRL provides a "safe harbor" level for businesses to use when determining compliance with Proposition 65, OEHHA does not anticipate that the regulation will have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states.

EFFORTS TO AVOID UNNECESSARY DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS CONTAINED IN THE CODE OF FEDERAL REGULATIONS

Proposition 65 is a California law that has no federal counterpart. There are no federal regulations addressing the same issues and, thus, there is no duplication or conflict with federal regulations.

ECONOMIC IMPACT ANALYSIS
Gov. Code section 11346.3(b)

It is not possible to quantify any monetary values for this proposed regulation given that its use is entirely voluntary and it only provides compliance assistance for businesses subject to the Act.

Impact on the Creation or Elimination of Jobs/Businesses in California: This regulatory proposal will not affect the creation or elimination of jobs within the State of California. Proposition 65 requires businesses with ten or more employees to provide warnings when they expose people to chemicals that are known to cause cancer or developmental or reproductive harm. The law also prohibits the discharge of listed chemicals into sources of drinking water. Malathion is listed under Proposition 65; therefore, effective May 20, 2017, businesses that manufacture, distribute or sell products with malathion in the state must provide a warning if their product or activity exposes the public or employees to significant amounts of this chemical. The regulatory proposal does not create additional compliance requirements, but instead provides a "safe harbor" value that aids businesses in determining whether a warning is required for a given exposure.

Impact on the Creation of New Businesses or Elimination of Existing Businesses within the State of California: This regulatory action will not impact the creation of new businesses or the elimination of existing businesses within the State of California. The regulatory proposal does not create additional compliance requirements, but instead provides a "safe harbor" value that aids businesses in determining if they are complying with the law.

Impact on Expansion of Businesses within the State of California: This regulatory action will not impact the expansion of businesses within the State of California. The regulatory proposal does not create additional compliance requirements, but instead provides a "safe harbor" value that aids businesses in determining if they are complying with the law.

Benefits of the Proposed Regulation: The NSRL provides a "safe harbor" value that aids businesses in determining if they are complying with the law. Some businesses may not be able to afford the expense of establishing an NSRL and therefore may be exposed to litigation for a failure to warn of an exposure to or for a prohibited discharge of the listed chemical. Adopting this regulation will save these businesses those expenses and may reduce litigation costs. By providing a safe harbor level, this regulatory proposal does not require, but may encourage, businesses to lower the

amount of the listed chemical in their product to a level that does not cause a significant exposure, thereby providing a public health benefit to Californians.