OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT

Proposition 65

Interpretive Guidelines No. 2019-01 — 2019-09 Consumption of Chlorothalonil Residues in Certain Foods

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Reproductive and Cancer Hazard Assessment Branch
Office of Environmental Health Hazard Assessment
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Introduction

The California Environmental Protection Agency's Office of Environmental Health Hazard Assessment (OEHHA) is the lead agency for the implementation of the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65 or the Act)[1]. OEHHA received a request from Dentons US LLP and Technology Sciences Group Inc., on behalf of Syngenta Crop Protection, LLC (Syngenta), requesting Safe Use Determinations (SUDs)[2] for certain foods that may contain detectable amounts of chlorothalonil.

OEHHA has conducted an evaluation to determine whether chlorothalonil exposure from consumption of these foods, in specified forms, poses no significant cancer risk within the meaning of Proposition 65. For a large number of these foods, OEHHA has issued SUDs (https://oehha.ca.gov/proposition-65/proposition-65-safe-use-determinations-suds). For a smaller number of these foods OEHHA has chosen to issue interpretive guidelines (IGs)[3] in response to this request. These IGs are presented in this document. OEHHA may issue an IG to interpret Proposition 65 and its implementing regulations, as applied to specific facts. An IG reflects OEHHA's scientific interpretation of the available information as the lead agency for implementation of the Act[4].

This document provides the results of OEHHA's analyses of chlorothalonil exposures for the following foods/food forms: almonds; asparagus; cooked black-eyed peas; cooked garbanzo beans; fresh, uncooked green beans; hazelnuts; cooked lentils; cooked pink beans; and pistachios. It is intended to provide information for businesses and the general public to facilitate the implementation of Proposition 65. It is limited to the facts and assumptions contained herein. Further information about Proposition 65 is available on the OEHHA website at: https://oehha.ca.gov/proposition-65.

[1] Health and Safety Code section 25249.5 et seq.
[2] Title 27, Cal. Code of Regs., section 25204; all further references are to sections of Title 27 of the California Code of Regulations, unless otherwise noted.
[3] Section 25203
[4] Health and Safety Code section 25249.12

Proposition 65 Listing of Chlorothalonil and Its No Significant Risk Level

Chlorothalonil was listed as a chemical known to cause cancer under Proposition 65, effective January 1, 1989. A No Significant Risk Level (NSRL) of 41 micrograms (µg) per day was adopted in regulation on June 15, 2012[5]. For purposes of Proposition 65, daily exposure to the chemical at this level is estimated to result in one excess cancer per 100,000 people exposed, assuming lifetime exposure at the level in question[6]. Businesses causing exposures at or below the NSRL are exempt from the Proposition 65 warning requirement[7].

Level of Exposure to Proposition 65 Chemicals that Cause Cancer

Proposition 65 regulations address how to calculate the exposure to chemicals listed as known to cause cancer:

> "For purposes of Section 25249.10(c) of the Act, the level of exposure to a chemical listed as causing cancer, assuming lifetime exposure at the level in question, shall be determined by multiplying the level in question (stated in terms of a concentration of a chemical in a given medium) times the reasonably anticipated rate of exposure for an individual to the given medium of exposure measured over a lifetime of seventy years."[8]

The regulations give further guidance for calculating the reasonably anticipated rate of exposure for chemical exposures from consumer products:

> "For exposures to consumer products, lifetime exposure shall be calculated using the average rate of intake or exposure for average users of the consumer product, and not on a per capita basis for the general population. The average rate of intake or exposure shall be based on data for use on a general category or categories of consumer products, such as the United States Department of Agriculture Home Economic Research Report, Foods Commonly Eaten by Individuals: Amount Per Day and Per Eating Occasion, where such data are available."[9]

[5] OEHHA, No Significant Risk Level for the Proposition 65 Carcinogen Chlorothalonil, California Environmental Protection Agency, OEHHA, January 2012.
[6] Section 25703(b)
[7] Health and Safety Code section 25249.10(c)
[8] Section 25721(c)
[9] Section 25721(d)(4); the National Health and Nutrition Examination Survey provides the functional equivalent of the USDA survey cited in this subsection

Chlorothalonil Residue Data

The US Department of Agriculture's (USDA) Pesticide Data Program (PDP)[10] tests produce and some other foods for pesticide residues. The US Environmental Protection Agency (US EPA) uses the program's results in its dietary assessments of pesticide exposure. The California Department of Pesticide Regulation (DPR) Pesticide Residue Monitoring Program (PRMP)[11] also tests produce for chlorothalonil residues. OEHHA used both sources of residue data in the analyses that follow. The most recent residue data from both USDA and DPR are from 2017.

Food Consumption Data

The National Health and Nutrition Examination Survey (NHANES) provides data on consumption of particular types of foods by consumers of these foods. NHANES is a program of studies administered by the US Centers for Disease Control and Prevention (CDC) designed to assess the health and nutritional status of individuals throughout the United States. NHANES includes a dietary survey[12], from which an average consumption of foods in their various forms specified can be calculated.

OEHHA calculated an average consumption by consumers of the type of food addressed in this document using NHANES dietary survey data. OEHHA used data on food consumed in a form comprised entirely, or almost entirely, of the food itself (e.g., raw or cooked broccoli from a fresh head of broccoli). While some amount of this food may also be consumed in a form that is in a mixture with other food ingredients (e.g., a casserole containing green beans) or in a form that has undergone additional processing (e.g., corn syrup from corn), consumption data for these mixtures includes additional ingredients that contribute to the calculated total mass (grams) consumed. Accordingly, OEHHA could not use data for those types of foods in this document. OEHHA used NHANES dietary survey data for individuals reporting consumption of a particular food on either day of the two-day dietary survey for the years 2007-2016[13].

Processing Factors

US EPA has identified processing factors for certain crops and food forms to account for the anticipated degradation or concentration of chlorothalonil residues during cooking and other food processing methods[14]. In addition, the World Health Organization

[10] USDA Agricultural Marketing Service, PDP, Databases and Annual Reports. Available at https://www.ams.usda.gov/datasets/pdp/pdpdata
[11] DPR, PRMP, Annual Residue Data. Available at https://www.cdpr.ca.gov/docs/enforce/residue/rsmonmnu.htm
[12] CDC National Center for Health Statistics, NHANES Dietary Data. Available at https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Dietary
[13] *Ibid.*
[14] US EPA (1999). United States Environmental Protection Agency. Reregistration Eligibility Decision (RED) Document for Chlorothalonil. Document number EPA 738-R-99-004. April 1999.

(WHO) Food and Agriculture Organization's Joint Meeting on Pesticide Residues has evaluated the fate of chlorothalonil residues from storage and food processing of a number of crops and developed "calculated food processing factors"[15]. These factors represent "the concentration of pesticide after processing divided by the concentration before processing"[16]. OEHHA used US EPA processing factors for crops and food forms as appropriate in the calculations below. In the absence of US EPA processing factors, OEHHA used WHO processing factors. In the absence of either a US EPA or WHO processing factor, OEHHA used DPR adjustment factors[17].

Interpretive Guidelines for Chlorothalonil Residues in Certain Foods

This document presents IGs for chlorothalonil residues in almonds (IG No. 2019-01), asparagus (IG No. 2019-02), cooked black-eyed peas (IG No. 2019-03), cooked garbanzo beans (IG No. 2019-04), fresh, uncooked green beans (IG No. 2019-05), hazelnuts (IG No. 2019-06), cooked lentils (IG No. 2019-07), cooked pink beans (IG No. 2019-08), and pistachios (IG No. 2019-09), and includes OEHHA's analyses supporting issuance of each IG based on OEHHA's evaluation of Syngenta's request for SUDs.

OEHHA separately issued SUDs for most of the foods included in the SUD request. These SUDs, and OEHHA's analyses, are presented in "Supporting Materials for Safe Use Determinations for a Number of Foods that May Contain Detectable Amounts of Chlorothalonil", available at https://oehha.ca.gov/proposition-65/proposition-65-safe-use-determinations-suds.

[15] World Health Organization (WHO) & Food and Agriculture Organization (FAO) (2010). Joint FAO/WHO Meeting on Pesticide Residues, Pesticide residues in food, Evaluations Part I – Residues: Chlorothalonil, pages 442-452. Available at http://apps.who.int/pesticide-residues-jmpr-database/pesticide?name=CHLOROTHALONIL.

[16] Keikotlhaile BM and Spanoghe P, Chapter 13. Pesticide Residues in Fruits and Vegetables. In: Stoytcheva M (Editor), Pesticides – Formulations, Effects, Fate, InTech, January, 2011, ISBN: 978-953-307-532-7.

[17] DPR (2005). California Department of Pesticide Regulation. Chlorothalonil Risk Characterization Document for Dietary Exposure. January 2005.

IG No. 2019-01 Almonds

Chlorothalonil Residues in Almonds

Neither USDA nor DPR tested almonds for chlorothalonil residue levels between 2005 and 2017. US EPA has established a tolerance level of 0.05 parts per million[18] (ppm) for almonds.

Almonds

Chlorothalonil Intake from Consumption of Almonds

To determine chlorothalonil intake from almonds, OEHHA first determined the average consumption of almonds in keeping with the approach described on page 3. OEHHA used NHANES dietary survey data for any individual reporting consumption of foods in forms comprised entirely, or almost entirely, of almonds (including raw almonds, roasted almonds, and flavored almonds) on either day of the two-day dietary survey for the years 2007-2016[19] to estimate average consumption. The average level of consumption over both days is presented in Table 1.

As neither US EPA nor WHO apply processing factors for any form of almond, OEHHA used the tolerance for almonds (0.05 ppm) to calculate a mean chlorothalonil intake based on the two-day average consumption of users (Table 1). The mean chlorothalonil intake from almonds, 1.11 µg, is below the NSRL of 41 µg/day.

Table 1. Consumption of almonds and intake of chlorothalonil

Two-day average mean consumption of users (g/day)[a]	Chlorothalonil tolerance level (µg/g)	Two-day average mean chlorothalonil intake (µg)[b]
22.25	0.05	1.11

[a] Calculated by OEHHA using data from the NHANES 2007-2016 survey years (see text).
[b] Intake is calculated by multiplying two-day average mean consumption of users by the tolerance level.

Guidance for Almonds:

Consumption by the average consumer of almonds with chlorothalonil residues at or below the tolerance level of 0.05 ppm will not exceed the Proposition 65 NSRL of 41 µg/day.

[18] Code of Federal Regulations, Title 40, Part 180, Section 180.275
[19] CDC National Center for Health Statistics, NHANES Dietary Data. Available at https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Dietary

IG No. 2019-02 Asparagus

Chlorothalonil Residues in Asparagus

OEHHA obtained available data on chlorothalonil residue levels in asparagus between 2005 and 2017. USDA residue data were only available for 2008 and 2017. DPR residue data were available for all years.

Table 2 summarizes the chlorothalonil residue data available in years 2005-2017. During this time period, chlorothalonil was not detected in any of the 1,141 samples tested. However, in some of the USDA analyses the limit of detection (LOD) exceeded the US EPA tolerance level of 0.1 parts per million[20] (ppm) for asparagus.

Table 2. Chlorothalonil residues in asparagus (tolerance = 0.1 ppm)

Food form	Year	Number of samples	Detection frequency (percent)	Concentration range (ppm)[a]	Limit of Detection (ppm)	Data Source
Fresh	2005	9	0	< LOD	0.01 – 0.05	DPR PRMP
Fresh	2006	14	0	< LOD	0.01 – 0.05	
Fresh	2007	5	0	< LOD	0.01 – 0.02	
Fresh	2008	372	0	< LOD	0.008 – 0.18	USDA PDP
Fresh	2008	3	0	< LOD	0.01 – 0.05	DPR PRMP
Fresh	2009	24	0	< LOD	0.01 – 0.04	
Fresh	2010	27	0	< LOD	0.01 – 0.02	
Fresh	2011	23	0	< LOD	0.01 – 0.02	
Fresh	2012	79	0	< LOD	0.02 – 0.03	
Fresh	2013	41	0	< LOD	0.02 – 0.03	
Fresh	2014	22	0	< LOD	0.01 – 0.03	
Fresh	2015	25	0	< LOD	0.03	
Fresh	2016	73	0	< LOD	0.03	
Fresh	2017	354	0	< LOD	0.02	USDA PDP
Fresh	2017	70	0	< LOD	0.01	DPR PRMP

[a] Concentrations measured when chlorothalonil was detected in the sample.

Asparagus

Chlorothalonil Intake from Consumption of Asparagus

To determine chlorothalonil intake from asparagus, OEHHA first determined the average consumption of asparagus in keeping with the approach described on page 3. OEHHA used NHANES dietary survey data for any individual reporting consumption of foods in forms comprised entirely, or almost entirely, of asparagus (including raw and cooked asparagus) on either day of the two-day dietary survey for the years 2007-2016[21] to

[20] Code of Federal Regulations, Title 40, Part 180, Section 180.275
[21] CDC National Center for Health Statistics, NHANES Dietary Data. Available at https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Dietary

estimate average consumption. The average level of consumption over both days is presented in Table 3.

As neither US EPA nor WHO apply processing factors for any form of asparagus, OEHHA used the tolerance for asparagus to calculate a mean chlorothalonil intake based on the two-day average consumption of users (Table 3). The mean chlorothalonil intake of 5.56 µg from asparagus is below the NSRL of 41 µg/day.

Table 3. Consumption of asparagus and intake of chlorothalonil

Two-day average mean consumption of users (g/day)[a]	Chlorothalonil tolerance level (µg/g)	Two-day average mean chlorothalonil intake (µg)[b]
55.60	0.1	5.56

[a] Calculated by OEHHA using data from the NHANES 2007-2016 survey years (see text).
[b] Intake is calculated by multiplying two-day average mean consumption of users by the tolerance level.

Guidance for Asparagus:

Consumption by the average consumer of asparagus with chlorothalonil residues at or below the tolerance of 0.1 ppm will not exceed the Proposition 65 NSRL of 41 µg/day.

IG No. 2019-03 Black-Eyed Peas

Chlorothalonil Residues in Black-Eyed Peas

Neither USDA nor DPR tested black-eyed peas for chlorothalonil residue levels between 2005 and 2017. In 2010, DPR tested two samples of peas listed as "field or southern" and "southern" peas, for which black-eyed peas were not a definitive identity; no chlorothalonil residue was detected in either sample. US EPA has established a tolerance level of 0.1 parts per million[22] (ppm) for "bean, dry, seed", which encompasses a variety of beans, including black-eyed peas, within the genus *Vigna*[23].

Cooked Black-Eyed Peas

Chlorothalonil Intake from Consumption of Cooked Black-Eyed Peas

To determine chlorothalonil intake from cooked black-eyed peas, OEHHA first determined the average consumption of cooked black-eyed peas in keeping with the approach described on page 3. OEHHA used NHANES dietary survey data for any individual reporting consumption of foods in forms comprised entirely, or almost entirely, of cooked black-eyed peas (including canned black-eyed peas) on either day of the two-day dietary survey for the years 2007-2016[24] to estimate average consumption. The average level of consumption over both days is presented in Table 4.

As neither US EPA nor WHO apply processing factors for any form of black-eyed pea, OEHHA used the tolerance for "bean, dry, seed" (0.1 ppm) to calculate a mean chlorothalonil intake based on the two-day average consumption of users (Table 4). The mean chlorothalonil intake of 5.66 µg from cooked black-eye peas is below the NSRL of 41 µg/day.

Table 4. Consumption of cooked black-eyed peas and intake of chlorothalonil

Two-day average mean consumption of users (g/day)[a]	Chlorothalonil tolerance level (µg/g)	Two-day average mean chlorothalonil intake (µg)[b]
56.59	0.1	5.66

[a] Calculated by OEHHA using data from the NHANES 2007-2016 survey years (see text).
[b] Intake is calculated by multiplying two-day average mean consumption of users by the tolerance level.

[22] Code of Federal Regulations, Title 40, Part 180, Section 180.275
[23] Code of Federal Regulations, Title 40, Part 180, Section 180.41
[24] CDC National Center for Health Statistics, NHANES Dietary Data. Available at https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Dietary

Guidance for Cooked Black-Eyed Peas:

Consumption by the average consumer of cooked black-eyed peas with chlorothalonil residues at or below the tolerance level of 0.1 ppm will not exceed the Proposition 65 NSRL of 41 µg/day.

IG No. 2019-04 Garbanzo Beans

Chlorothalonil Residues in Garbanzo Beans

OEHHA obtained available data on chlorothalonil residue levels in garbanzo beans between 2005 and 2017. USDA residue data, for canned garbanzo beans, were only available for 2009 and 2010. DPR residue data, for fresh garbanzo beans, were only available for 2006 and 2009 through 2017.

Table 5 summarizes the chlorothalonil residue data available in years 2005-2017. During this time period, 342 samples of garbanzo beans were analyzed. One sample tested in 2017, with a residue of 11 parts per million (ppm), exceeded the US EPA tolerance level of 0.1 ppm[25] for "bean, dry, seed", which encompasses a variety of beans, including garbanzo beans, within the genus *Phaseolus*[26].

Table 5. Chlorothalonil residues in garbanzo beans (tolerance = 0.1 ppm)

Food form	Year	Number of samples	Detection frequency (percent)	Concentration range (ppm)[a]	Limit of Detection (ppm)	Data Source
Fresh	2006	1	0	< LOD	0.01 – 0.05	DPR PRMP
Canned	2009	135	0	< LOD	0.0194- 0.02	USDA PDP
Fresh	2009	3	0	< LOD	0.01 – 0.04	DPR PRMP
Canned	2010	186	0	< LOD	0.02	USDA PDP
Fresh	2010	1	0	< LOD	0.01 – 0.02	DPR PRMP
Fresh	2011	1	0	< LOD	0.01 – 0.02	
Fresh	2012	3	0	< LOD	0.02 – 0.03	
Fresh	2013	2	0	< LOD	0.02 – 0.03	
Fresh	2014	1	0	< LOD	0.01 – 0.03	
Fresh	2015	2	0	< LOD	0.03	
Fresh	2016	1	0	< LOD	0.02	
Fresh	2017	6	16.7	11	0.01	

[a] Concentrations measured when chlorothalonil was detected in the sample.

Cooked Garbanzo Beans

Chlorothalonil Intake from Consumption of Cooked Garbanzo Beans

To determine chlorothalonil intake from cooked garbanzo beans, OEHHA first determined the average consumption of cooked garbanzo beans in keeping with the approach described on page 3. OEHHA used NHANES dietary survey data for any individual reporting consumption of foods in forms comprised entirely, or almost entirely, of cooked garbanzo beans (including canned garbanzo beans) on either day of the two-day dietary

[25] Code of Federal Regulations, Title 40, Part 180, Section 180.275
[26] Code of Federal Regulations, Title 40, Part 180, Section 180.41

survey for the years 2007-2016[27] to estimate average consumption. The average level of consumption over both days is presented in Table 6.

As neither US EPA nor WHO apply processing factors for any form of garbanzo bean, OEHHA used the tolerance for "bean, dry, seed" (0.1 ppm) to calculate a mean chlorothalonil intake from cooked garbanzo beans based on the two-day average consumption of users (Table 6). The mean chlorothalonil intake of 4.17 µg from cooked garbanzo beans is below the NSRL of 41 µg/day.

Table 6. Consumption of cooked garbanzo beans and intake of chlorothalonil

Two-day average mean consumption of users (g/day)[a]	Chlorothalonil tolerance level (µg/g)	Two-day average mean chlorothalonil intake (µg)[b]
41.72	0.1	4.17

[a] Calculated by OEHHA using data from the NHANES 2007-2016 survey years (see text).
[b] Intake is calculated by multiplying two-day average mean consumption of users by the tolerance level.

Guidance for Cooked Garbanzo Beans:

Consumption by the average consumer of cooked garbanzo beans with chlorothalonil residues at or below the tolerance level of 0.1 ppm will not exceed the Proposition 65 NSRL of 41 µg/day.

[27] CDC National Center for Health Statistics, NHANES Dietary Data. Available at https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Dietary

IG No. 2019-05 Green Beans

Chlorothalonil Residues in Green Beans

OEHHA obtained available data on chlorothalonil residue levels in fresh, uncooked green beans between 2005 and 2017. USDA residue data were available only for 2005, 2007, and 2008. DPR residue data were only available for 2006 through 2017.

Table 7 summarizes the chlorothalonil residue data available in years 2005-2017. During this time period, 2,283 samples of fresh green beans were analyzed. Two samples tested in 2007 exceeded the US EPA tolerance level of 5 parts per million[28] (ppm) for "bean, snap, succulent", with residues of 5.6 and 9.1 ppm.

Table 7. Chlorothalonil residues in green beans (tolerance = 5 ppm)

Food form	Year	Number of samples	Detection frequency (percent)	Concentration range (ppm)[a]	Limit of Detection (ppm)	Data Source
Fresh	2005	181	35.9	0.003 – 3.9	0.002 – 0.005	USDA PDP
Fresh	2006	68	2.9	0.03 – 0.5	0.01 – 0.05	DPR PRMP
Fresh	2007	739	15.6	0.008 – 9.1	0.0075 – 0.0375	USDA PDP
Fresh	2007	68	2.9	0.12 – 0.13	0.01 – 0.02	DPR PRMP
Fresh	2008	741	11.1	0.009 – 2.6	0.0075 – 0.15	USDA PDP
Fresh	2008	37	2.6	1.5	0.01 – 0.05	DPR PRMP
Fresh	2009	27	0	< LOD	0.01 – 0.04	
Fresh	2010	27	7.4	0.07 – 0.15	0.01 – 0.02	
Fresh	2011	23	8.7	0.08 – 0.3	0.01 – 0.02	
Fresh	2012	30	16.7	0.06 – 1.46	0.02 – 0.03	
Fresh	2013	95	6.3	0.031 – 0.92	0.02 – 0.03	
Fresh	2014	64	3.1	0.06 – 0.07	0.01 – 0.03	
Fresh	2015	27	3.7	0.2	0.03	
Fresh	2016	67	0	< LOD	0.02	
Fresh	2017	89	0	0.12 – 0.13	0.01	

[a] Concentrations measured when chlorothalonil was detected in the sample.

Fresh, Uncooked Green Beans

Chlorothalonil Intake from Consumption of Fresh, Uncooked Green Beans

To determine chlorothalonil intake from fresh, uncooked green beans, OEHHA first determined the average consumption of fresh, uncooked green beans in keeping with the approach described on page 3. OEHHA used NHANES dietary survey data for any individual reporting consumption of foods in forms comprised entirely, or almost entirely, of fresh, uncooked green beans on either day of the two-day dietary survey for the years

[28] Code of Federal Regulations, Title 40, Part 180, Section 180.275

2007-2016[29] to estimate average consumption. The average level of consumption over both days is presented in Table 8.

As neither US EPA nor WHO apply processing factors for fresh, uncooked green beans, OEHHA used the tolerance for green beans (5 ppm) to calculate a mean chlorothalonil intake based on the two-day average consumption of users (Table 8). The mean chlorothalonil intake of 179.65 µg from fresh, uncooked green beans is above the NSRL of 41 µg/day.

Table 8. Consumption of fresh, uncooked green beans and intake of chlorothalonil

Two-day average mean consumption of users (g/day)[a]	Chlorothalonil tolerance level (µg/g)	Two-day average mean chlorothalonil intake (µg)[b]
35.93	5	179.65

[a] Calculated by OEHHA using data from the NHANES 2007-2016 survey years (see text).
[b] Intake is calculated by multiplying two-day average mean consumption of users by the tolerance level.

Guidance for Fresh, Uncooked Green Beans:

Consumption by the average consumer of fresh, uncooked green beans with chlorothalonil residues at or below 1.14 ppm will not exceed the Proposition 65 NSRL of 41 µg/day.

[29] CDC National Center for Health Statistics, NHANES Dietary Data. Available at https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Dietary

IG No. 2019-06 Hazelnuts

Chlorothalonil Residues in Hazelnuts

Neither USDA nor DPR tested hazelnuts for chlorothalonil residue levels from 2005 to 2017. US EPA has established a tolerance level of 0.1 parts per million[30] (ppm) for hazelnuts.

Hazelnuts

Chlorothalonil Intake from Consumption of Hazelnuts

To determine chlorothalonil intake from hazelnuts, OEHHA first determined the average consumption of hazelnuts in keeping with the approach described on page 3. OEHHA used NHANES dietary survey data for any individual reporting consumption of foods in forms comprised entirely, or almost entirely, of hazelnuts on either day of the two-day dietary survey for the years 2007-2016[31] to estimate average consumption. The average level of consumption over both days is presented in Table 9.

As neither US EPA nor WHO apply processing factors for any forms of hazelnut, OEHHA used the tolerance for hazelnuts (0.1 ppm) to calculate a mean chlorothalonil intake based on the two-day average consumption of users (Table 9). The mean chlorothalonil intake of 1.34 µg from hazelnuts is below the NSRL of 41 µg/day.

Table 9. Consumption of hazelnuts and intake of chlorothalonil

Two-day average mean consumption of users (g/day)[a]	Chlorothalonil tolerance level (µg/g)	Two-day average mean chlorothalonil intake (µg)[b]
13.35	0.1	1.34

[a] Calculated by OEHHA using data from the NHANES 2007-2016 survey years (see text).
[b] Intake is calculated by multiplying two-day average mean consumption of users by the tolerance level.

Guidance for Hazelnuts:

Consumption by the average consumer of hazelnuts with chlorothalonil residues at or below the tolerance level of 0.1 ppm will not exceed the Proposition 65 NSRL of 41 µg/day.

[30] Code of Federal Regulations, Title 40, Part 180, Section 180.275
[31] CDC National Center for Health Statistics, NHANES Dietary Data. Available at https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Dietary

IG No. 2019-07 Lentils

Chlorothalonil Residues in Lentils

Neither USDA nor DPR tested lentils for chlorothalonil residue levels from 2005 to 2017. US EPA has established a tolerance level of 0.10 parts per million[32] (ppm) for lentils.

Cooked Lentils

Chlorothalonil Intake from Consumption of Cooked Lentils

To determine chlorothalonil intake from cooked lentils, OEHHA first determined the average consumption of cooked lentils in keeping with the approach described on page 3. OEHHA used NHANES dietary survey data for any individual reporting consumption of foods in forms comprised entirely, or almost entirely, of cooked lentils (including canned lentils) on either day of the two-day dietary survey for the years 2007-2016[33] to estimate average consumption. The average level of consumption over both days is presented in Table 10.

As neither US EPA nor WHO apply processing factors for any form of lentil, OEHHA used the tolerance for lentils (0.10 ppm) to calculate a mean chlorothalonil intake based on the two-day average consumption of users (Table 10). The mean chlorothalonil intake of 9.65 µg from cooked lentils is below the NSRL of 41 µg/day.

Table 10. Consumption of cooked lentils and intake of chlorothalonil

Two-day average mean consumption of users (g/day)[a]	Chlorothalonil tolerance level (µg/g)	Two-day average mean chlorothalonil intake (µg)[b]
96.5	0.10	9.65

[a] Calculated by OEHHA using data from the NHANES 2007-2016 survey years (see text).
[b] Intake is calculated by multiplying two-day average mean consumption of users by the tolerance level.

Guidance for Cooked Lentils:

Consumption by the average consumer of cooked lentils with chlorothalonil residues at or below the tolerance level of 0.10 ppm will not exceed the Proposition 65 NSRL of 41 µg/day.

[32] Code of Federal Regulations, Title 40, Part 180, Section 180.275
[33] CDC National Center for Health Statistics, NHANES Dietary Data. Available at https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Dietary

IG No. 2019-08 Pink Beans

Chlorothalonil Residues in Pink Beans

Neither USDA nor DPR tested pink beans for chlorothalonil residue levels between 2005 to 2017. US EPA has established a tolerance level of 0.1 parts per million[34] (ppm) for "bean, dry, seed", which encompasses a variety of beans, including pink beans, within the genus *Phaseolus*[35].

Cooked Pink Beans

Chlorothalonil Intake from Consumption of Cooked Pink Beans

To determine chlorothalonil intake from cooked pink beans, OEHHA first determined the average consumption of cooked pink beans in keeping with the approach described on page 3. OEHHA used NHANES dietary survey data for any individual reporting consumption of foods in forms comprised entirely, or almost entirely, of cooked pink beans (including canned pink beans) on either day of the two-day dietary survey for the years 2007-2016[36] to estimate average consumption. The average level of consumption over both days is presented in Table 11.

As neither US EPA nor WHO apply processing factors for any form of pink bean, OEHHA used the tolerance for "bean, dry, seed" (0.1 ppm) to calculate a mean chlorothalonil intake based on the two-day average consumption of users (Table 11). The mean chlorothalonil intake of 5.61 µg from cooked pink beans is below the NSRL of 41 µg/day.

Table 11. Consumption of cooked pink beans and intake of chlorothalonil

Two-day average mean consumption of users (g/day)[a]	Chlorothalonil tolerance level (µg/g)	Two-day average mean chlorothalonil intake (µg)[b]
56.08	0.1	5.61

[a] Calculated by OEHHA using data from the NHANES 2007-2016 survey years (see text).
[b] Intake is calculated by multiplying two-day average mean consumption of users by the tolerance level.

[34] Code of Federal Regulations, Title 40, Part 180, Section 180.275
[35] Code of Federal Regulations, Title 40, Part 180, Section 180.41
[36] CDC National Center for Health Statistics, NHANES Dietary Data. Available at https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Dietary

Guidance for Cooked Pink Beans:

Consumption by the average consumer of cooked pink beans with chlorothalonil residues at or below the tolerance level of 0.1 ppm will not exceed the Proposition 65 NSRL of 41 µg/day.

IG No. 2019-09 Pistachios

Chlorothalonil Residues in Pistachios

Neither USDA nor DPR tested pistachios for chlorothalonil residue levels between 2005 and 2017. US EPA has established a tolerance level of 0.2 parts per million[37] (ppm) for pistachios.

Pistachios

Chlorothalonil Intake from Consumption of Pistachios

To determine chlorothalonil intake from pistachios, OEHHA first determined the average consumption of pistachios in keeping with the approach described on page 3. OEHHA used NHANES dietary survey data for any individual reporting consumption of foods in forms comprised entirely, or almost entirely, of pistachios (including raw pistachios, roasted pistachios, and salted pistachios) on either day of the two-day dietary survey for the years 2007-2016[38] to estimate average consumption. The average level of consumption over both days is presented in Table 12.

As neither US EPA nor WHO apply processing factors for any form of pistachio, OEHHA used the tolerance for pistachios (0.2 ppm) to calculate a mean chlorothalonil intake based on the two-day average consumption of users (Table 12). The mean chlorothalonil intake of 4.38 µg from pistachios is below the NSRL of 41 µg/day.

Table 12. Consumption of pistachios and intake of chlorothalonil

Two-day average mean consumption of users (g/day)[a]	Chlorothalonil tolerance level (µg/g)	Two-day average mean chlorothalonil intake (µg)[b]
21.89	0.2	4.38

[a] Calculated by OEHHA using data from the NHANES 2007-2016 survey years (see text).
[b] Intake is calculated by multiplying two-day average mean consumption of users by the tolerance level.

Guidance for Pistachios:

Consumption by the average consumer of pistachios with chlorothalonil residues at or below the tolerance level of 0.2 ppm will not exceed the Proposition 65 NSRL of 41 µg/day.

[37] Code of Federal Regulations, Title 40, Part 180, Section 180.275
[38] CDC National Center for Health Statistics, NHANES Dietary Data. Available at https://wwwn.cdc.gov/nchs/nhanes/search/datapage.aspx?Component=Dietary