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REGULATION 2
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NEW SOURCE REVIEW OF TOXIC AIR CONTAMINANTS

(Adopted June 15, 2005)

2-5-100 GENERAL

2-5-101 Description: The purpose of this rule is to provide for the review of new and modified sources of toxic air contaminant (TAC) emissions in order to evaluate potential public exposure and health risk, to mitigate potentially significant health risks resulting from these exposures, and to provide net health risk benefits by improving the level of control when existing sources are modified or replaced. The rule applies to a new or modified source of toxic air contaminants that is required to have an authority to construct or permit to operate pursuant to Regulation 2, Rule 1. New and modified sources with Hazardous Air Pollutant emissions may also be subject to the Maximum Achievable Control Technology (MACT) requirement of Regulation 2, Rule 2, Section 317.

2-5-102 Applicability and Circumvention: This rule applies to the following:

102.1 A new or modified source of toxic air contaminants for which an application is submitted on or after July 1, 2005;

102.2 A source of toxic air contaminants constructed or modified after January 1, 1987 for which no authority to construct or permit to operate has been issued by the District and for which the District Rules and Regulations and Risk Management Policy in effect at the time of construction or modification required an authority to construct or permit to operate.

2-5-110 Exemption, Low Emission Levels: A project (and each new or modified source included in this project) shall not be subject to this rule if, for each toxic air contaminant, total project emissions are below the acute and chronic trigger levels listed in Table 2-5-1 Toxic Air Contaminant Trigger Levels. For the purposes of Regulation 2-1-316, ~~A~~a source shall not be subject to the ~~provisions~~ Section 2-5-401 HRA requirements of this rule if, for each toxic air contaminant, the ~~increase in~~ emissions from the ~~project is~~ source are below the acute and chronic trigger levels listed in Table 2-5-1.

2-5-111 Limited Exemption, Emergency Standby Engines: This rule shall not apply to toxic air contaminant emissions occurring from emergency use of emergency standby engines (as defined in Regulation 9, Rule 8, Section 231 or the applicable CARB ATCM); or from initial start-up testing; or from emission testing of emergency standby engines required by the APCO.

(Amended January 6, 2010)

2-5-112 ~~Applicability and Circumvention:~~ ~~This rule applies to the following:~~

~~112.1 A new or modified source of toxic air contaminants for which an application is submitted on or after July 1, 2005;~~

~~112.2 A source of toxic air contaminants constructed or modified after January 1, 1987 for which no authority to construct or permit to operate has been issued by the District and for which the District Rules and Regulations and Risk Management Policy in effect at the time of construction or modification required an authority to construct or permit to operate.~~ **Deleted**

2-5-113 Exemption, Small Internal Combustion Engines and Gas Turbines: Internal combustion engines and gas turbines with a maximum output rating less than or equal to 50 horsepower shall not be subject to this rule.

2-5-114 Limited Exemption, Modified Source with No Increase in Toxicity Weighted Emissions: The provisions of Section 2-5-401 shall not apply to a modified source, if the post-modification toxicity weighted emissions are less than or equal to the pre-modification toxicity weighted emissions. Emissions from modified sources shall be calculated in accordance with Section 2-5-601.3.

2-5-115 Limited Exemption, Contemporaneous Health Risk Reduction Projects: Contemporaneous Health Risk Reduction Projects are exempt from the provisions of Section 2-5-302, provided such projects comply with the requirements of Sections 2-5-303 and 2-5-406.

2-5-200 DEFINITIONS

2-5-201 Acute Hazard Index, or Acute HI: Acute hazard index is the sum of the individual acute hazard quotients for toxic air contaminants identified as affecting the same target organ or organ system.

2-5-202 Acute Hazard Quotient, or Acute HQ: Acute hazard quotient is the ratio of the estimated short-term average concentration of the toxic air contaminant to its acute reference exposure level (estimated for inhalation exposure).

2-5-203 Airborne Toxic Control Measure, or ATCM: A recommended method and, where appropriate, a range of methods, established by the California Air Resources Board (CARB) pursuant to the Tanner Act, California Health and Safety Code beginning at Section 39650, that reduces, avoids, or eliminates the emissions of a toxic air contaminant.

2-5-204 Air Toxics Hot Spots Program: The Air Toxics "Hot Spots" Information and Assessment Act of 1987, California Health and Safety Code beginning at Section 44300.

2-5-205 Best Available Control Technology for Toxics, or TBACT: For any new or modified source of toxic air contaminants, except cargo carriers, the most stringent of the following emission controls, provided that under no circumstances shall the controls be less stringent than the emission control required by any applicable provision of federal, State or District laws, rules, regulations or requirements:

205.1 The most effective emission control device or technique which has been successfully utilized for the type of equipment comprising such a source; or

205.2 The most stringent emission limitation achieved by an emission control device or technique for the type of equipment comprising such a source; or

205.3 Any control device or technique or any emission limitation that the APCO has determined to be technologically feasible for the type of equipment comprising such a source, while taking into consideration the cost of achieving emission reductions, any non-air quality health and environmental impacts, and energy requirements; or

205.4 The most stringent emission control for a source type or category specified as MACT by U.S. EPA, or specified in an ATCM by CARB.

2-5-206 Cancer Risk: An estimate of the ~~probability~~ chance that an individual ~~will~~ may develop cancer as a result of ~~lifetime~~ exposure to emitted carcinogens at a given receptor location, and considering, where appropriate, Age Sensitivity Factors to account for inherent increased susceptibility to carcinogens during infancy and childhood.

(Amended January 6, 2010)

2-5-207 Carcinogen: For the purpose of this rule, a carcinogen is any compound for which Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA) has established a cancer potency factor for use in the Air Toxics Hot Spots Program.

2-5-208 Chronic Hazard Index, or Chronic HI: Chronic hazard index is the sum of the individual chronic hazard quotients for toxic air contaminants identified as affecting the same target organ or organ system.

2-5-209 Chronic Hazard Quotient, or Chronic HQ: Chronic hazard quotient is the ratio of the estimated annual average exposure of the toxic air contaminant to its chronic reference exposure level (estimated for inhalation and non-inhalation exposures).

2-5-210 Health Risk: The potential for adverse human health effects resulting from exposure to emissions of toxic air contaminants and ranging from relatively mild temporary conditions, such as eye or throat irritation, shortness of breath, or headaches, to permanent and serious conditions, such as birth defects, cancer or damage to lungs, nerves, liver, heart, or other organs. Measures of health risk include cancer risk, chronic hazard index, and acute hazard index.

2-5-211 **Health Risk Assessment~~Screening Analysis~~, or HR~~S~~A:** An analysis that estimates the potential for increased likelihood of health risk for individuals in the affected population that may be exposed to emissions of one or more toxic air contaminants, determined in accordance with Section 2-5-603.

2-5-212 **Maximally Exposed Individual, or MEI:** A person that may be located at the receptor location where the highest exposure to toxic air contaminants emitted from a given source or project is predicted, as shown by an APCO-approved HR~~S~~A. MEI locations are typically determined for maximum cancer risk, chronic hazard index and acute hazard index based on exposure to residential, worker, and student receptors.

(Amended January 6, 2010)

2-5-213 **Maximum Achievable Control Technology, or MACT:** An emission standard promulgated by U.S. EPA pursuant to Section 112(d) of the Clean Air Act.

2-5-214 **Modified Source of Toxic Air Contaminants:** An existing source that undergoes a physical change, change in method of operation, or increase in throughput or production that results or may result in any of the following:

214.1 An increase in the daily or annual emission level of any toxic air contaminant, or the production rate or capacity that is used to estimate toxic air contaminant emission levels, above emission or production levels approved by the District in any authority to construct.

214.2 An increase in the daily or annual emission level of any toxic air contaminant, or the production rate or capacity that is used to estimate toxic air contaminant emission levels, above levels contained in a permit condition in any current permit to operate or major facility review permit.

214.3 For a source that has never been issued a District authority to construct and that does not have conditions limiting daily or annual toxic air contaminant emissions, an increase in the daily or annual emission level of any toxic air contaminant, or the production rate or capacity that is used to estimate the emission level, above the lower of the authorized capacity as established pursuant to Section 2-5-214.3.1 or the functional capacity as established pursuant to 2-5-214.3.2:

3.1 The authorized capacity is the highest of the following:

3.1.1 The highest attainable design capacity, as shown in pre-construction design drawings, including process design drawings and vendor specifications.

3.1.2 The capacity listed in the District permit to operate.

3.1.3 The highest documented actual levels attained by the source prior to July 1, 2005.

3.2 The functional capacity is the capacity of the source as limited by the capacity of any upstream or downstream process that acts as a bottleneck (a grandfathered source with an emission increase due to debottlenecking is considered to be modified).

For the purposes of applying Section 2-5-214.3, only increases in annual emission levels shall be considered for storage vessels.

214.4 The emission of any toxic air contaminant not previously emitted in a quantity that would result in a cancer risk greater than 1.0 in a million (10^{-6}) or a chronic hazard index greater than 0.20.

For the purposes of applying this definition, a daily capacity may be converted to an annual capacity or limit by multiplication by 365 days/year.

2-5-215 **New Source of Toxic Air Contaminants:** A source of toxic air contaminant emissions, except a source that loses a permit exemption or exclusion in accordance with Regulations 2-1-424 or 2-1-425, that is one or more of the following:

215.1 A source constructed or proposed to be constructed that never had a valid District authority to construct or permit to operate.

215.2 A source that has not been in operation for a period of one year or more and that has not held a valid District permit to operate during this period of non-operation.

215.3 A relocation of an existing source, except for a portable source, to a non-contiguous property.

215.4 A replacement of a source, including an identical replacement of a source, regardless when the original source was constructed.

215.5 A replacement of an identifiable source within a group of sources permitted together under a single source number for the purpose of District permitting convenience.

215.6 A "rebricking" of a glass furnace where changes to the furnace design result in a change in heat generation or absorption.

2-5-216 **Project:** Any source, or group of sources, at a facility that: (a) is part of a proposed construction or modification, (b) is subject to the requirements of Regulation 2-1-301 or 302, and (c) emits one or more toxic air contaminants. All new or modified sources of TACs included in a single permit application will be considered as a project, except that a modified source that meets the requirements of Section 2-5-114 may be excluded from the project. In addition, in order to discourage circumvention that might be achieved by breaking a project into smaller pieces and submitting more than one permit application over a period of time, a project shall include those new or modified sources of TACs at a facility that have been permitted within the ~~two~~three-year period immediately preceding the date a complete application is received, unless the applicant demonstrates to the satisfaction of the APCO that construction or modification of the sources included in the current application was neither (1) a reasonably foreseeable consequence of the previous project, nor (2) a critical element or integral part of the previous project. ~~For modified sources, any consecutive modifications of a source (e.g., increasing a source's permitted throughput), occurring after January 1, 1987, shall be considered together as a project. Any contemporaneous emission reduction proposed for a modified source, as set forth in Section 2-5-601.4, shall be considered as part of a project.~~

(Amended January 6, 2010)

2-5-217 **Project Risk:** The health risk resulting from the ~~increase in~~ emissions of toxic air contaminants from a given project, as indicated by an HR~~S~~A for the MEI.

2-5-218 **Receptor Location:** A location where an individual may live (residential receptor) or work (worker receptor) or otherwise reasonably be expected to be exposed (e.g., student receptor) to toxic air contaminants for the particular chronic or acute exposures being evaluated in an HR~~S~~A. Locations include (a) locations outside of the property boundary of the facility being evaluated and (b) locations inside the property boundary where a person may reside (e.g., at military base housing, prisons, or universities). The APCO shall consider the potential for public exposure in determining appropriate receptor locations.

(Amended January 6, 2010)

2-5-219 **Reference Exposure Level, or REL:** The air concentration or exposure level ~~(~~for a specified exposure duration~~)~~ at or below which adverse non-cancer health effects are not anticipated to occur in the general human population.

2-5-220 **Residential Receptor:** Any receptor location where an individual may reside for a period of six months or more out of a year.

2-5-221 **Source Risk:** The health risk resulting from~~: (a)~~ the emissions of all toxic air contaminants from a new or modified source of toxic air contaminants~~, or (b) the increase in emissions of all toxic air contaminants from a modified source of toxic air contaminants~~, as indicated by an HR~~S~~A for the MEI.

2-5-222 **Toxic Air Contaminant, or TAC:** An air pollutant that may cause or contribute to an increase in mortality or in serious illness or that may pose a present or potential hazard to human health. For the purposes of this rule, TACs consist of the substances listed in Table 2-5-1 Toxic Air Contaminant Trigger Levels.

2-5-223 **Trigger Level:** The emission threshold level for each TAC, as identified ~~listed~~ in Table 2-5-1 Toxic Air Contaminant Trigger Levels, below which the resulting health risks are not expected to cause, or contribute significantly to, adverse health effects.

2-5-224 **Worker Receptor:** Any receptor location that is an occupational setting or place where an individual may work and that is located outside of the boundary of the facility being evaluated.

2-5-225 **K-12 School:** Any public or private school used for purposes of the education of more than 12 children at the school in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily

conducted in private homes. The term may include any building or structure, playground, athletic field, or other area of school property, but does not include unimproved school property.

(Adopted January 6, 2010)

2-5-226 **Student Receptor:** A location of a child at a K-12 school.

(Adopted January 6, 2010)

2-5-227 **Priority Community:** An area, designated by the APCO, where levels of toxic air contaminants are higher than other areas and where people may be particularly vulnerable and may bear disproportionately higher adverse health effects.

(Adopted January 6, 2010)

2-5-228 **Contemporaneous Health Risk Reduction Project:** A project that includes new or modified sources of toxic air contaminants and that also includes contemporaneous shut-downs or alterations of other existing permitted sources at the same facility that result in contemporaneous reductions of toxic air contaminant emissions.

2-5-229 **Net Project Risk:** The net change in health risk at a receptor location resulting from the emissions of toxic air contaminants from new or modified sources and the reductions in emissions of toxic air contaminants due to contemporaneous shut-downs or alterations of existing permitted equipment.

2-5-300 STANDARDS

2-5-301 **Best Available Control Technology for Toxics (TBACT) Requirement:** The applicant shall apply TBACT to any new or modified source of TACs where the source risk is a cancer risk greater than 1.0 in one million (10^{-6} or 1.0E-6), and/or a chronic hazard index greater than 0.20.

2-5-302 **Project Risk Requirement:** The APCO shall deny an Authority to Construct or Permit to Operate for any new or modified source of TACs if the project risk exceeds any of the following project risk limits:

302.1 a cancer risk of 10.0 in one million (10^{-5} or 1.0E-5);
302.2 a chronic hazard index of 1.0;
302.3 an acute hazard index of 1.0.

2-5-303 **Net Project Risk Requirement:** The APCO shall deny an Authority to Construct or Permit to Operate for any new or modified source of TACs if the net project risk at any receptor exceeds any of the following net project risk limits:

302.1 a cancer risk of 10.0 in one million (10^{-5} or 1.0E-5);
302.2 a chronic hazard index of 1.0;
302.3 an acute hazard index of 1.0.

2-5-400 ADMINISTRATIVE REQUIREMENTS

2-5-401 **Health Risk Assessment (HRA)~~Screening Analysis~~ Requirements:** An application for an Authority to Construct or Permit to Operate for any project subject to this rule shall contain an HR~~S~~A conducted in accordance with Section 2-5-603 or the information necessary for the APCO to conduct an HR~~S~~A. The APCO shall prepare an HR~~S~~A where the applicant submits none. The APCO shall notify the applicant if the results of an HR~~S~~A completed by the APCO indicate that the project, as proposed, would not meet the requirements of this rule. The applicant shall be given the opportunity to perform a more refined HR~~S~~A, modify the project, or submit any required plans or information, as necessary to comply with the requirements of this rule.

2-5-402 **Health Risk Assessment~~Screening Analysis~~ Guidelines:** The APCO shall publish Health Risk Assessment~~Screening Analysis~~ Guidelines that specify the procedures to be followed for estimating health risks including acute hazard index, chronic hazard index, and cancer risk. These guidelines will generally conform to the Health Risk Assessment Guidelines adopted by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA) for use in the Air Toxics Hot Spots Program. The Health Risk Assessment~~Screening Analysis~~ Guidelines and Table 2-5-1 will be periodically updated, typically within one year of any significant revision to OEHHA's

Health Risk Assessment Guidelines, including any new or revised health effects value.

2-5-403 **BACT/TBACT Workbook:** The APCO shall publish and periodically update a BACT/TBACT Workbook specifying the requirements for commonly permitted sources. TBACT will be determined for a source by using the workbook as a guidance document or, on a case-by-case basis, using the most stringent definition of Section 2-5-205.

2-5-404 **Designation of Priority Communities:** The APCO shall publish and periodically update a list of the areas that have been designated as priority communities along with the selection criteria and analyses used in designating these communities.

(Adopted January 6, 2010)

2-5-405 **Cumulative Impact Summary for Priority Communities:** The APCO shall publish and periodically update a cumulative impact summary report that describes the cumulative impacts of toxicity weighted emission increases and reductions in each priority community occurring after January 1, 2010.

(Adopted January 6, 2010)

2-5-406 **Applicability Criteria and Administrative Procedures for Contemporaneous Health Risk Reduction Projects:** An applicant that is requesting to use the Section 2-5-115 Limited Exemption for Contemporaneous Health Risk Reduction Projects shall demonstrate to the satisfaction of the APCO that the project meets all of the applicability criteria in Section 2-5-406.1. The applicant shall also comply with all of the procedural requirements in Section 2-5-406.2.

406.1 Contemporaneous health risk reduction projects are limited to projects that include a modified source of toxic air contaminants that meets the following criteria:

1.1 The modified source was installed and operating at the facility prior to January 1, 1987.

1.2 The modified source currently has a valid District operating permit and has maintained a valid District operating permit since the source was first permitted by the District.

1.3 The modified source does not qualify for the Regulation 2-5-114 Limited Exemption for sources with no increases in toxicity weighted emissions.

1.4 The modified source is causing the project to exceed the project risk limits of Section 2-5-302 due to the elimination of the January 1, 1987 baseline for modified sources.

406.2 An application for a contemporaneous health risk reduction project shall contain the following:

2.1 A written request to use the Regulation 2-5-115 Limited Exemption for Contemporaneous Health Risk Reduction Projects.

2.2 A demonstration that the project includes a modified source of toxic air contaminants that meets all of the Section 2-5-406.1 applicability criteria.

2.3 Identification of all sources, source locations, stack parameters or other air dispersion modeling input information for the sources that will be shut-down or altered to reduce toxic air contaminant emissions.

2.4 Throughput rates, sources test data, emission factors, and any other information necessary to characterize the current actual baseline TAC emission rates for each source that will be shut-down or altered to generate TAC emission reductions with emission reductions calculated in accordance with Section 2-5-602.

2.5 A certification that the TAC emission reductions calculated above will be contemporaneous because the emission reductions will be completed within no later than 90 days after the initial start-up date for any new or modified sources in the project.

2.6 A post-project health risk assessment for the project that includes an HRA for the new and modified sources in the project and that

demonstrates that the modified source has met Section 2-5-406.1.4, and identification of each receptor location that is resulting in a project risk above the Section 2-5-302 thresholds.

2.7 A pre-project health risk assessment for the sources that will shut-down or altered based on the baseline TAC emissions calculated pursuant to section 2-5-602 that includes each receptor location with project risk excesses.

2.8 A comparison of the post-project and pre-project health risks for each receptor location, which did not comply with the Section 2-5-302 project risk limits, that demonstrates compliance with the net project risk limits in Section 2-5-303 for each of these receptor locations.

2-5-500 MONITORING AND RECORDS

2-5-501 Monitoring Requirements: The APCO may impose any reasonable monitoring or record keeping requirements deemed necessary to ensure compliance with this rule.

2-5-600 MANUAL OF PROCEDURES

2-5-601 Emission Calculation Procedures: The APCO shall determine annual TAC emissions (expressed as pounds per year), to be used for comparison with chronic trigger levels and in estimating cancer risk and chronic hazard index, and one-hour TAC emissions (expressed as pounds per hour), to be used for comparison with acute trigger levels and in estimating acute hazard index as follows:

601.1 Emission calculations shall include emissions resulting from routine operation of a source or emissions that are reasonably predictable, including, but not limited to continuous and intermittent releases and predictable process upsets or leaks, subject to enforceable limiting conditions.

601.2 Emission calculations for a new source shall be based on the maximum emitting potential of the new source or the maximum permitted emission level of the new source, approved by the APCO, subject to enforceable limiting conditions.

601.3 Emission calculations for a modified source shall be based on:

3.1 For post-modification ~~one-hour~~ emissions, the maximum emitting potential of the modified source or the maximum permitted emission level of the modified source, approved by the APCO, subject to enforceable limiting conditions.

3.2 ~~For annual emissions, the total emission increases resulting from all modifications of a source occurring after January 1, 1987. Emission increases shall be determined by subtracting the adjusted baseline emission rate, as calculated using the methodology in Section 2-5-602, from the new maximum permitted emission level of the modified source, approved by the APCO, subject to enforceable limiting conditions.~~ For pre-modification emissions, the adjusted baseline emission rate for each TAC, as calculated using the methodology in Section 2-5-602.

3.3 For the purposes of Section 2-5-114, toxicity weighted emissions shall be calculated for each case, post-modification and pre-modification, in accordance with Section 2-5-604.

601.4 Emission calculations for a project shall be performed by summing the emissions ~~increases~~ from all new sources of TACs and the post-modification emissions from all modified sources of TACs that are considered part of the project pursuant to Section 2-5-216. ~~For a modified source within the project, the APCO may consider contemporaneous reductions of other emissions from the modified source when estimating the project risk (e.g., a modified source may have a decrease in benzene emissions that would mitigate an increase in toluene emissions).~~

(Amended January 6, 2010)

2-5-602 **Baseline Emission Calculation Procedures:** The following methodology shall be used to calculate baseline emissions for modified sources of TACs:

602.1 For a source that has, contained in a permit condition, an emission cap or emission rate limit, the baseline throughput and baseline emission rate (expressed in the units of mass of emissions per unit of throughput) shall be based on the levels allowed by the permit condition.

602.2 For sources without an emission cap or emission rate limit, baseline throughput and emission rate shall be determined as follows:

2.1 The baseline period consists of the 3-year period immediately preceding the date that the application is complete (or shorter period if the source is less than 3 years old or longer period if the applicant demonstrates to the District's satisfaction that a longer period is appropriate when considering such factors as operational problems and economic conditions). The applicant must have sufficient verifiable records of the source's operation or credible engineering analyses that substantiate to the District's satisfaction the emission rate and throughput during the entire baseline period.

2.2 Baseline throughput is either the:

2.2.1 Actual average throughput during the baseline period, if throughput is not limited by permit condition; or

2.2.2 Maximum throughput as allowed by permit conditions on the date the application is complete.

2.3 Baseline emission rate (expressed in the units of mass of emissions per unit of throughput) is the average actual emission rate during the baseline period. Periods where the actual emission rate exceeded regulatory or permitted limits shall be excluded from the average.

602.3 The adjusted baseline emission rate shall be determined by adjusting the baseline emission rate downward, if necessary, to comply with the most stringent emission rate or emission limit from a MACT, ATCM, or District rule or regulation that is applicable to the type of source being evaluated and that is in effect, has been adopted by U.S. EPA, CARB, or the District, or is contained in the most recently adopted Clean Air Plan for the District.

602.4 The adjusted baseline emissions shall be the adjusted baseline emission rate multiplied by the baseline throughput.

2-5-603 **Health Risk Assessment~~Screening Analysis~~ Procedures:** Each HR~~S~~A shall be prepared following the District's Health Risk Assessment~~Screening Analysis~~ Guidelines.

2-5-604 **Calculation Procedures for Toxicity Weighted Emissions:** Emission increases and reductions shall be determined on a toxicity weighted basis for carcinogens and noncarcinogens. The annual-average emission rate of each carcinogen shall be multiplied by its Cancer Potency (CP) Weighting Factor; the products shall be summed to calculate the total weighted carcinogenic emission rate. The annual-average emission rate of each noncarcinogen shall be divided by its Chronic Reference Exposure Level (CREL) Weighting Factor; the quotients shall be summed to calculate the total weighted noncarcinogenic emission rate. ~~(~~CP and CREL Weighting Factors are ~~listed~~ identified in Table 2-5-1.~~)~~

(Adopted January 6, 2010)

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Acetaldehyde	75-07-0	1.0E+00	~~3.8E+01~~ 2.9E+01	1.4E+02	1.0E-02	4.7E+02	1.4E+02 3.0E+02 (8-Hour)		1.0E-02	
Acetamide	60-35-5		~~5.4E+00~~ 4.1E+00		7.0E-02				7.0E-02	
Acrolein	107-02-8	5.5E-03	1.4E+01	3.5E-01		2.5E+00	3.5E-01 7.0E-01 (8-Hour)			
Acrylamide	79-06-1		~~8.4E-02~~ 6.4E-02		4.5E+00				4.5E+00	
Acrylic acid	79-10-7	1.3E+01				6.0E+03				
Acrylonitrile	107-13-1		~~3.8E-01~~ 2.9E-01	5.0E+00	1.0E+00		5.0E+00		1.0E+00	
Allyl chloride	107-05-1		~~1.8E+01~~ 1.4E+01		2.1E-02				2.1E-02	
Aminoanthraquinone, 2-	117-79-3		~~1.1E+01~~ 8.7E+00		3.3E-02				3.3E-02	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Ammonia	7664-41-7	7.1E+00	7.7E+03	2.0E+02		3.2E+03	2.0E+02			
Aniline	62-53-3		~~6.6E+01~~ 5.0E+01		5.7E-03				5.7E-03	
Arsenic and compounds (inorganic) [3,4]	7440-38-2	4.4E-04	~~7.2E-03~~ 1.6E-03	~~4.0E-04~~ 1.4E-04	~~5.4E+01~~ 1.8E+02	2.0E-01	~~1.5E-02~~ 1.5E-02 (8-Hour)	3.5E-06	1.2E+01	1.5E+00
Arsine	7784-42-1	~~4.4E-04~~ 4.6E-04	~~5.8E-01~~ 6.0E-01	~~4.0E-04~~ 1.4E-02		2.0E-01	~~1.5E-02~~ 1.5E-02 (8-Hour)			
Asbestos [5]	1332-21-4		~~1.7E-03~~ 1.3E-03		2.2E+02				2.2E+02	
Benzene [3]	71-43-2	~~2.9E+00~~ 6.0E-02	~~3.8E+00~~ 2.9E+00	~~6.0E+01~~ 3.0E+00	1.0E-01	~~1.3E+03~~ 2.7E+01	~~6.0E+01~~ 3.0E+00 ~~3.0E+00~~ (8-Hour)		1.0E-01	
Benzidine (and its salts)	92-87-5		~~7.6E-04~~ 5.7E-04		5.0E+02				5.0E+02	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
benzidine based dyes			~~7.6E-04~~ 5.7E-04		5.0E+02				5.0E+02	
direct black 38	1937-37-7		~~7.6E-04~~ 5.7E-04		5.0E+02				5.0E+02	
direct blue 6	2602-46-2		~~7.6E-04~~ 5.7E-04		5.0E+02				5.0E+02	
direct brown 95 (technical grade)	16071-86-6		~~7.6E-04~~ 5.7E-04		5.0E+02				5.0E+02	
Benzyl chloride	100-44-7	5.3E-01	~~2.2E+00~~ 1.7E+00		1.7E-01	2.4E+02			1.7E-01	
Beryllium and compounds [4]	7440-41-7		~~4.7E-02~~ 3.4E-02	7.0E-03	8.4E+00		7.0E-03	2.0E-03	8.4E+00	
Bis (2-chloroethyl) ether (Dichloroethyl ether)	111-44-4		~~1.5E-01~~ 1.1E-01		2.5E+00				2.5E+00	
Bis (chloromethyl) ether	542-88-1		~~8.2E-03~~ 6.2E-03		4.6E+01				4.6E+01	
Butadiene, 1,3-	106-99-0	1.5E+00	~~6.3E-01~~ 4.8E-01	~~2.0E+01~~ 2.0E+00	6.0E-01	6.6E+02	~~2.0E+01~~ 2.0E+00 9.0E+00 (8-Hour)		6.0E-01	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Cadmium and compounds [4]	7440-43-9		~~2.6E-02~~ 1.9E-02	~~1.8E-02~~ 1.0E-02	1.5E+01		2.0E-02	5.0E-04	1.5E+01	
Caprolactam	105-60-2	1.1E-01	8.5E+01	2.2E+00		5.0E+01	2.2E+00 7.0E+00 (8-Hour)			
Carbon disulfide [3]	75-15-0	1.4E+01	3.1E+04	8.0E+02		6.2E+03	8.0E+02			
Carbon tetrachloride [3] (Tetrachloromethane)	56-23-5	4.2E+00	~~2.5E+00~~ 1.9E+00	4.0E+01	1.5E-01	1.9E+03	4.0E+01		1.5E-01	
Chlorinated paraffins	108171-26-2		~~4.2E+00~~ 3.2E+00		8.9E-02				8.9E-02	
Chlorine	7782-50-5	4.6E-01	7.7E+00	2.0E-01		2.1E+02	2.0E-01			
Chlorine dioxide	10049-04-4		2.3E+01	6.0E-01			6.0E-01			
Chloro-o-phenylenediamine, 4-	95-83-0		~~2.4E+01~~ 1.8E+01		1.6E-02				1.6E-02	
Chlorobenzene	108-90-7		3.9E+04	1.0E+03			1.0E+03			
Chloroform [3]	67-66-3	3.3E-01	~~2.0E+01~~ 1.5E+01	3.0E+02	1.9E-02	1.5E+02	3.0E+02		1.9E-02	
Chloropicrin	76-06-2	6.4E-02	1.5E+01	4.0E-01		2.9E+01	4.0E-01			
Chloro-o-toluidine, p-	95-69-2		~~1.4E+00~~ 1.1E+00		2.7E-01				2.7E-01	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Chromium, (hexavalent, 6+) [4]	18540-29-9		~~7.7E-04~~ 5.1E-04	2.0E-01	~~5.1E+02~~ 5.6E+02		2.0E-01	2.0E-02	5.1E+02	5.0E-01
barium chromate [4]	10294-40-3		~~7.7E-04~~ 2.5E-03	~~2.0E-01~~ 4.1E-02	~~5.1E+02~~ 1.2E+02		2.0E-01	2.0E-02	5.1E+02	5.0E-01
calcium chromate [4]	13765-19-0		~~7.7E-04~~ 1.5E-03	~~2.0E-01~~ 6.7E-02	~~5.1E+02~~ 1.9E+02		2.0E-01	2.0E-02	5.1E+02	5.0E-01
lead chromate [4]	7758-97-6		~~7.7E-04~~ 3.2E-03	~~2.0E-01~~ 3.2E-02	~~5.1E+02~~ 9.1E+01		2.0E-01	2.0E-02	5.1E+02	5.0E-01
sodium dichromate [4]	10588-01-9		~~7.7E-04~~ 1.3E-03	~~2.0E-01~~ 7.9E-02	~~5.1E+02~~ 2.2E+02		2.0E-01	2.0E-02	5.1E+02	5.0E-01
strontium chromate [4]	7789-06-2		~~7.7E-04~~ 2.0E-03	~~2.0E-01~~ 5.1E-02	~~5.1E+02~~ 1.4E+02		2.0E-01	2.0E-02	5.1E+02	5.0E-01
Chromium trioxide (as chromic acid mist) [4]	1333-82-0		~~7.7E-04~~ 9.7E-04	~~2.0E-03~~ 1.0E-03	~~5.1E+02~~ 2.9E+02		2.0E-03	2.0E-02	5.1E+02	5.0E-01
Copper and compounds	7440-50-8	2.2E-01				1.0E+02				
Cresidine, p-	120-71-8		~~2.5E+00~~ 1.9E+00		1.5E-01				1.5E-01	
Cresols (m-, o-, p-)	1319-77-3		2.3E+04	6.0E+02			6.0E+02			
Cupferron	135-20-6		~~1.7E+00~~ 1.3E+00		2.2E-01				2.2E-01	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] ($\mu g/m^3$)	Chronic Inhalation REL [10] ($\mu g/m^3$)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] $(mg/kg\text{-}day)^{-1}$	Oral Cancer Potency Factor [10] $(mg/kg\text{-}day)^{-1}$
Cyanide and compounds (inorganic)	57-12-5	7.5E-01	3.5E+02	9.0E+00		3.4E+02	9.0E+00			
hydrogen cyanide (hydrocyanic acid)	74-90-8	7.5E-01	3.5E+02	9.0E+00		3.4E+02	9.0E+00			
Diaminoanisole, 2,4-	615-05-4		~~1.6E+01~~ 1.2E+01		2.3E-02				2.3E-02	
Diaminotoluene, 2,4-	95-80-7		~~9.5E-02~~ 7.2E-02		4.0E+00				4.0E+00	
Dibromo-3-chloropropane, 1,2- (DBCP)	96-12-8		~~5.4E-02~~ 4.1E-02		7.0E+00				7.0E+00	
Dichlorobenzene, 1,4-	106-46-7		~~9.5E+00~~ 7.2E+00	8.0E+02	4.0E-02		8.0E+02		4.0E-02	
Dichlorobenzidine, 3,3-	91-94-1		~~3.2E-01~~ 2.4E-01		1.2E+00				1.2E+00	
Dichloroethane, 1,1- (Ethylidene dichloride)	75-34-3		~~6.6E+01~~ 5.0E+01		5.7E-03				5.7E-03	
Dichloroethylene, 1,1- [see vinylidene chloride]										
Diesel exhaust particulate matter [6]			~~3.4E-01~~ 2.6E-01	5.0E+00	1.1E+00		5.0E+00		1.1E+00	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] ($\mu g/m^3$)	Chronic Inhalation REL [10] ($\mu g/m^3$)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] $(mg/kg\text{-}day)^{-1}$	Oral Cancer Potency Factor [10] $(mg/kg\text{-}day)^{-1}$
Diethanolamine	111-42-2		1.2E+02	3.0E+00			3.0E+00			
Di(2-ethylhexyl)phthalate (DEHP) [4]	117-81-7		~~4.1E+01~~ 2.9E+01		~~9.3E-03~~ 1.0E-02				8.4E-03	8.4E-03
Dimethylaminoazobenzene, p-	60-11-7		~~8.2E-02~~ 6.2E-02		4.6E+00				4.6E+00	
Dimethyl formamide, N,N-	68-12-2		3.1E+03	8.0E+01			8.0E+01			
Dinitrotoluene, 2,4-	121-14-2		~~1.2E+00~~ 9.2E-01		3.1E-01				3.1E-01	
Dioxane, 1,4- (1,4-diethylene dioxide)	123-91-1	6.6E+00	~~1.4E+01~~ 1.1E+01	3.0E+03	2.7E-02	3.0E+03	3.0E+03		2.7E-02	
Epichlorohydrin (1-chloro-2,3-epoxypropane)	106-89-8	2.9E+00	~~4.7E+00~~ 3.6E+00	3.0E+00	8.0E-02	1.3E+03	3.0E+00		8.0E-02	
Epoxybutane, 1,2-	106-88-7		7.7E+02	2.0E+01			2.0E+01			
Ethyl benzene	100-41-4		~~4.3E+01~~ 3.3E+01	2.0E+03	8.7E-03		2.0E+03		8.7E-03	
Ethyl chloride (chloroethane)	75-00-3		1.2E+06	3.0E+04			3.0E+04			
Ethylene dibromide (1,2-dibromoethane)	106-93-4		~~1.5E+00~~ 1.1E+00	8.0E-01	2.5E-01		8.0E-01		2.5E-01	
Ethylene dichloride (1,2-dichloroethane)	107-06-2		~~5.3E+00~~ 4.0E+00	4.0E+02	7.2E-02		4.0E+02		7.2E-02	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Ethylene glycol	107-21-1		1.5E+04	4.0E+02			4.0E+02			
Ethylene glycol butyl ether – EGBE [see Glycol ethers]										
Ethylene oxide (1,2-epoxyethane)	75-21-8		~~1.2E+00~~ 9.2E-01	3.0E+01	3.1E-01		3.0E+01		3.1E-01	
Ethylene thiourea	96-45-7		~~8.4E+00~~ 6.4E+00		4.5E-02				4.5E-02	
Fluorides [4]		5.3E-01	~~5.0E+02~~ 5.7E+01	~~1.3E+01~~ 1.5E+00		2.4E+02	1.3E+01	4.0E-02		
hydrogen fluoride (hydrofluoric acid) [4]	7664-39-3	5.3E-01	~~5.4E+02~~ 5.8E+01	~~1.4E+01~~ 1.5E+00		2.4E+02	1.4E+01	4.0E-02		
Formaldehyde	50-00-0	1.2E-01	~~1.8E+01~~ 1.4E+01	9.0E+00	2.1E-02	5.5E+01	9.0E+00 9.0E+00 (8-Hour)		2.1E-02	
Glutaraldehyde	111-30-8		3.1E+00	8.0E-02			8.0E-02			

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9~~10~~]	CP Weighting Factor [9~~10~~]	Acute Inhalation REL [10] ($\mu g/m^3$)	Chronic Inhalation REL [10] ($\mu g/m^3$)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] $(mg/kg\text{-}day)^{-1}$	Oral Cancer Potency Factor [10] $(mg/kg\text{-}day)^{-1}$
Glycol ethers										
ethylene glycol butyl ether – EGBE (2-butoxy ethanol; butyl cellosolve)	111-76-2	3.1E+01				1.4E+04				
ethylene glycol ethyl ether – EGEE (2-ethoxy ethanol; cellosolve) ~~3~~	110-80-5	8.2E-01	2.7E+03	7.0E+01		3.7E+02	7.0E+01			
ethylene glycol ethyl ether acetate – EGEEA (2-ethoxyethyl acetate; cellosolve acetate) ~~3~~	111-15-9	3.1E-01	1.2E+04	3.0E+02		1.4E+02	3.0E+02			
ethylene glycol methyl ether – EGME (2-methoxy ethanol; methyl cellosolve) ~~3~~	109-86-4	2.1E-01	2.3E+03	6.0E+01		9.3E+01	6.0E+01			
ethylene glycol methyl ether acetate – EGMEA (2-methoxyethyl acetate; methyl cellosolve acetate)	110-49-6		3.5E+03	9.0E+01			9.0E+01			
Hexachlorobenzene	118-74-1		~~2.1E-01~~ 1.6E-01		1.8E+00				1.8E+00	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Hexachlorocyclohexanes (mixed or technical grade) [4]	608-73-1		6.9E-02 3.3E-02		5.7E+00 8.6E+00				4.0E+00	4.0E+00
Hexachlorocyclohexane, alpha- [4]	319-84-6		6.9E-02 3.3E-02		~~5.7E+00~~ 8.6E+00				4.0E+00	4.0E+00
Hexachlorocyclohexane, beta- [4]	319-85-7		~~6.9E-02~~ 3.3E-02		~~5.7E+00~~ 8.6E+00				4.0E+00	4.0E+00
Hexachlorocyclohexane, gamma- (lindane) [4]	58-89-9		~~2.5E-01~~ 1.2E-01		~~1.6E+00~~ 2.4E+00				1.1E+00	1.1E+00
Hexane, n-	110-54-3		2.7E+05	7.0E+03			7.0E+03			
Hydrazine	302-01-2		~~2.2E-02~~ 1.7E-02	2.0E-01	1.7E+01		2.0E-01		1.7E+01	
Hydrochloric acid (hydrogen chloride)	7647-01-0	4.6E+00	3.5E+02	9.0E+00		2.1E+03	9.0E+00			
Hydrogen cyanide (hydrocyanic acid) [see cyanide & compounds]										
Hydrogen fluoride (hydrofluoric acid) [see fluorides & compounds]										
Hydrogen selenide [see selenium compounds]										

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Hydrogen sulfide	7783-06-4	9.3E-02	3.9E+02	1.0E+01		4.2E+01	1.0E+01			
Isophorone	78-59-1		7.7E+04	2.0E+03			2.0E+03			
Isopropyl alcohol (isopropanol)	67-63-0	7.1E+00	2.7E+05	7.0E+03		3.2E+03	7.0E+03			
Lead and compounds (inorganic) [4]	7439-92-1		~~3.2E+00~~ 2.9E-01		~~1.2E-01~~ 9.8E-01				4.2E-02	8.5E-03
lead acetate [4]	301-04-2		~~3.2E+00~~ 4.6E-01		~~1.2E-01~~ 6.2E-01				4.2E-02	8.5E-03
lead phosphate [4]	7446-27-7		~~3.2E+00~~ 3.8E-01		~~1.2E-01~~ 7.5E-01				4.2E-02	8.5E-03
lead subacetate [4]	1335-32-6		3.2E+00 3.8E-01		~~1.2E-01~~ 7.5E-01				4.2E-02	8.5E-03
Lindane [see hexachlorocyclohexane, gamma]										
Maleic anhydride	108-31-6		2.7E+01	7.0E-01			7.0E-01			
Manganese and compounds	7439-96-5		3.5E+00	9.0E-02			9.0E-02 1.7E-01 (8-Hour)			
Mercury and compounds	7439-97-6	1.3E-03	~~2.7E-01~~	~~7.1E-03~~		6.0E-01	3.0E-02	1.6E-04		

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
(inorganic) [4]			2.1E-01	5.4E-03			6.0E-02 (8-Hour)			
mercuric chloride [4]	7487-94-7	~~1.3E-03~~ 1.8E-03	~~2.7E-01~~ 2.8E-01	~~7.1E-03~~ 4.0E-03		6.0E-01	3.0E-02 / 6.0E-02 (8-Hour)	1.6E-04		
Methanol (methyl alcohol)	67-56-1	6.2E+01	1.5E+05	4.0E+03		2.8E+04	4.0E+03			
Methyl bromide (bromomethane)	74-83-9	8.6E+00	1.9E+02	5.0E+00		3.9E+03	5.0E+00			
Methyl chloroform (1,1,1-trichloroethane)	71-55-6	1.5E+02	3.9E+04	1.0E+03		6.8E+04	1.0E+03			
Methyl ethyl ketone (MEK) (2-butanone)	78-93-3	2.9E+01				1.3E+04				
Methyl isocyanate	624-83-9		3.9E+01	1.0E+00			1.0E+00			
Methyl tertiary-butyl ether (MTBE)	1634-04-4		~~2.1E+02~~ 1.6E+02	8.0E+03	1.8E-03		8.0E+03		1.8E-03	
Methylene bis (2-chloroaniline), 4,4'- (MOCA)	101-14-4		~~2.5E-01~~ 1.9E-01		1.5E+00				1.5E+00	
Methylene chloride (dichloromethane)	75-09-2	3.1E+01	~~1.1E+02~~ 8.2E+01	4.0E+02	3.5E-03	1.4E+04	4.0E+02		3.5E-03	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Methylene dianiline, 4,4'- (and its dichloride) [4]	101-77-9		~~2.4E-01~~ 2.6E-02	2.0E+01	~~1.6E+00~~ 1.1E+01		2.0E+01		1.6E+00	1.6E+00
Methylene diphenyl isocyanate	101-68-8		2.7E+01	7.0E-01			7.0E-01			
Michler's ketone (4,4 bis (dimethylamino) benzophenone)	90-94-8		~~4.4E-01~~ 3.3E-01		8.6E-01				8.6E-01	
Naphthalene [see polycyclic aromatic hydrocarbons]										
Nickel and compounds [4] *(values also apply to:)*	7440-02-0	~~1.3E-02~~ 3.1E-05	~~4.3E-01~~ 3.1E-01	~~5.0E-02~~ 1.4E-02	9.1E-01	~~6.0E+00~~ 2.0E-01	~~5.0E-02~~ 1.4E-02 6.0E-02 (8-Hour)	~~5.0E-02~~ 1.1E-02	9.1E-01	
nickel acetate [4]	373-02-4	~~1.3E-02~~ 9.3E-05	~~4.3E-01~~ 9.5E-01	~~5.0E-02~~ 4.7E-03	9.1E-01	~~6.0E+00~~ 2.0E-01	~~5.0E-02~~ 1.4E-02 6.0E-02 (8-Hour)	~~5.0E-02~~ 1.1E-02	9.1E-01	
nickel carbonate [4]	3333-39-3	~~1.3E-02~~ 6.3E-05	~~4.3E-01~~ 6.4E-01	~~5.0E-02~~ 6.9E-03	9.1E-01	~~6.0E+00~~ 2.0E-01	~~5.0E-02~~ 1.4E-02 6.0E-02 (8-Hour)	~~5.0E-02~~ 1.1E-02	9.1E-01	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
nickel carbonyl [4]	13463-39-3	~~1.3E-02~~ 9.0E-05	~~4.3E-01~~ 9.1E-01	~~5.0E-02~~ 4.8E-03	9.1E-01	~~6.0E+00~~ 2.0E-01	~~5.0E-02~~ 1.4E-02 6.0E-02 (8-Hour)	~~5.0E-02~~ 1.1E-02	9.1E-01	
nickel hydroxide [4]	12054-48-7	~~1.3E-02~~ 4.9E-05	~~4.3E-01~~ 5.0E-01	~~5.0E-02~~ 8.9E-03	9.1E-01	~~6.0E+00~~ 2.0E-01	~~5.0E-02~~ 1.4E-02 6.0E-02 (8-Hour)	~~5.0E-02~~ 1.1E-02	9.1E-01	
nickelocene [4]	1271-28-9	~~1.3E-02~~ 6.3E-05	~~4.3E-01~~ 6.4E-01	~~5.0E-02~~ 6.9E-03	9.1E-01	~~6.0E+00~~ 2.0E-01	~~5.0E-02~~ 1.4E-02 6.0E-02 (8-Hour)	~~5.0E-02~~ 1.1E-02	9.1E-01	
nickel oxide [4]	1313-99-1	~~1.3E-02~~ 5.6E-05	~~4.3E-01~~ 4.0E-01	~~1.0E-01~~ 7.9E-02	9.1E-01	~~6.0E+00~~ 2.0E-01	~~1.0E-01~~ 1.4E-02 6.0E-02 (8-Hour)	~~5.0E-02~~ 1.1E-02	9.1E-01	
nickel refinery dust from the pyrometallurgical process [4]		~~1.3E-02~~ 3.1E-05	~~4.3E-01~~ 3.1E-01	~~5.0E-02~~ 1.4E-02	9.1E-01	~~6.0E+00~~ 2.0E-01	~~5.0E-02~~ 1.4E-02 6.0E-02 (8-Hour)	~~5.0E-02~~ 1.1E-02	9.1E-01	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
nickel subsulfide [4]	12035-72-2	~~1.3E-02~~ 1.3E-04	~~4.3E-01~~ 1.3E+00	~~5.0E-02~~ 3.4E-03	9.1E-01	~~6.0E+00~~ 2.0E-01	~~5.0E-02~~ 1.4E-02 6.0E-02 (8-Hour)	~~5.0E-02~~ 1.1E-02	9.1E-01	
Nitric acid	7697-37-2	1.9E-01				8.6E+01				
Nitrosodi-n-butylamine, N-	924-16-3		~~3.4E-02~~ 2.6E-02		1.1E+01				1.1E+01	
Nitrosodi-n-propylamine, N-	621-64-7		~~5.4E-02~~ 4.1E-02		7.0E+00				7.0E+00	
Nitrosodiethylamine, N-	55-18-5		~~1.1E-02~~ 8.0E-03		3.6E+01				3.6E+01	
Nitrosodimethylamine, N-	62-75-9		~~2.4E-02~~ 1.8E-02		1.6E+01				1.6E+01	
Nitrosodiphenylamine, N-	86-30-6		~~4.2E+01~~ 3.2E+01		9.0E-03				9.0E-03	
Nitroso-n-methylethylamine, N-	10595-95-6		~~1.7E-02~~ 1.3E-02		2.2E+01				2.2E+01	
Nitrosomorpholine, N-	59-89-2		~~5.6E-02~~ 4.3E-02		6.7E+00				6.7E+00	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Nitrosopiperidine, N-	100-75-4		~~4.0E-02~~ 3.0E-02		9.4E+00				9.4E+00	
Nitrosopyrrolidine, N-	930-55-2		~~1.8E-01~~ 1.4E-01		2.1E+00				2.1E+00	
Nitrosodiphenylamine, p-	156-10-5		~~1.7E+01~~ 1.3E+01		2.2E-02				2.2E-02	
Ozone	10028-15-6	4.0E-01				1.8E+02				
Pentachlorophenol	87-86-5		~~2.1E+01~~ 1.6E+01		1.8E-02				1.8E-02	
Perchloroethylene (tetrachloroethylene)	127-18-4	4.4E+01	~~1.8E+01~~ 1.4E+01	3.5E+01	2.1E-02	2.0E+04	3.5E+01		2.1E-02	
Phenol	108-95-2	1.3E+01	7.7E+03	2.0E+02		5.8E+03	2.0E+02			
Phosgene	75-44-5	8.8E-03				4.0E+00				
Phosphine	7803-51-2		3.1E+01	8.0E-01			8.0E-01			
Phosphoric acid	7664-38-2		2.7E+02	7.0E+00			7.0E+00			
Phthalic anhydride	85-44-9		7.7E+02	2.0E+01			2.0E+01			
~~PCBs (polychlorinated biphenyls) [low risk] [4,7]~~	~~1336-36-3~~		~~4.7E-01~~					~~2.0E-05~~	~~7.0E-02~~	~~7.0E-02~~
PCBs (polychlorinated biphenyls) ~~[high risk]~~ [4,7,4]	1336-36-3		~~1.7E-02~~ 3.9E-03		~~2.7E+01~~ 7.4E+01			~~2.0E-05~~	2.0E+00	2.0E+00

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Polychlorinated dibenzo-p-dioxins (PCDDs), poly-chlorinated dibenzofurans (PCDFs), and dioxin-like polychlorinated biphenyls (PCBs) (as 2,3,7,8-PCDD equivalent) [4, 7,8]	See Footnote ~~8~~7		~~3.4E-07~~ 4.4E-08	~~3.8E-06~~ 7.6E-08	~~1.3E+06~~ 6.5E+06		4.0E-05	1.0E-08	1.3E+05	1.3E+05
Polycyclic aromatic hydrocarbons (PAH) (as B(a)P-equivalent) [4, 8,9]	See Footnote ~~9~~8		~~6.9E-03~~ 3.3E-03		~~6.4E+01~~ 8.6E+01				3.9E+00	1.2E+01
Naphthalene	91-20-3		~~3.2E+00~~ 2.4E+00	9.0E+00	1.2E-01		9.0E+00		1.2E-01	
Potassium bromate	7758-01-2		~~7.7E-1~~ 5.8E-01	1.7E+00	4.9E-01		1.7E+00		4.9E-01	
Propane sultone, 1,3-	1120-71-4		~~1.6E-01~~ 1.2E-01		2.4E+00				2.4E+00	
Propylene (propene)	115-07-1		1.2E+05	3.0E+03			3.0E+03			
Propylene glycol monomethyl ether	107-98-2		2.7E+05	7.0E+03			7.0E+03			
Propylene oxide	75-56-9	6.8E+00	~~2.9E+01~~ 2.2E+01	3.0E+01	1.3E-02	3.1E+03	3.0E+01		1.3E-02	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] (µg/m³)	Chronic Inhalation REL [10] (µg/m³)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor [10] (mg/kg-day)$^{-1}$
Selenium and compounds [4]	7782-49-2		~~7.7E+02~~ 8.0E+00	~~2.0E+01~~ 2.1E-01			2.0E+01	5.0E-03		
hydrogen selenide	7783-07-5	1.1E-02				5.0E+00				
selenium sulfide [4]	7446-34-6		~~7.7E+02~~ 1.5E+01	~~2.0E+01~~ 1.1E-01			2.0E+01	5.0E-03		
Silica (crystalline, respirable)	7631-86-9		1.2E+02	3.0E+00			3.0E+00			
Sodium hydroxide	1310-73-2	1.8E-02				8.0E+00				
Styrene	100-42-5	4.6E+01	3.5E+04	9.0E+02		2.1E+04	9.0E+02			
Sulfates		2.6E-01				1.2E+02				
Sulfuric acid and oleum	7664-93-9	2.6E-01	3.9E+01	1.0E+00		1.2E+02	1.0E+00			
Sulfuric acid	7664-93-9	2.6E-01	3.9E+01	1.0E+00		1.2E+02	1.0E+00			
sulfur trioxide	7446-11-9	2.6E-01	3.9E+01	1.0E+00		1.2E+02	1.0E+00			
Oleum	8014-95-7	2.6E-01	3.9E+01	1.0E+00		1.2E+02	1.0E+00			
Tetrachloroethane, 1,1,2,2-	79-34-5		~~1.9E+00~~ 1.4E+00		2.0E-01				2.0E-01	
Thioacetamide	62-55-5		~~6.2E-02~~ 4.7E-02		6.1E+00				6.1E+00	
Toluene	108-88-3	8.2E+01	1.2E+04	3.0E+02		3.7E+04	3.0E+02			
Toluene diisocyantates	26471-62-5		2.7E+00	7.0E-02	3.9E-02		7.0E-02		3.9E-02	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] ($\mu g/m^3$)	Chronic Inhalation REL [10] ($\mu g/m^3$)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] $(mg/kg\text{-}day)^{-1}$	Oral Cancer Potency Factor [10] $(mg/kg\text{-}day)^{-1}$
toluene-2,4-diisocyanate	584-84-9		2.7E+00	7.0E-02	3.9E-02		7.0E-02		3.9E-02	
toluene-2,6-diisocyanate	91-08-7		2.7E+00	7.0E-02	3.9E-02		7.0E-02		3.9E-02	
Trichloroethane, 1,1,1 (see methyl chloroform)										
Trichloroethane, 1,1,2- (vinyl trichloride)	79-00-5		~~6.6E+00~~ 5.0E+00		5.7E-02				5.7E-02	
Trichloroethylene	79-01-6		~~5.4E+01~~ 4.1E+01	6.0E+02	7.0E-03		6.0E+02		7.0E-03	
Trichlorophenol, 2,4,6-	88-06-2		~~5.4E+00~~ 4.1E+00		7.0E-02				7.0E-02	
Triethylamine	121-44-8	6.2E+00	7.7E+03	2.0E+02		2.8E+03	2.0E+02			
Urethane (ethyl carbamate)	51-79-6		~~3.8E-01~~ 2.9E-01		1.0E+00				1.0E+00	
Vanadium Compounds										
vanadium (fume or dust)	7440-62-2	6.6E-02				3.0E+01				
vanadium pentoxide	1314-62-1	6.6E-02				3.0E+01				
Vinyl acetate	108-05-4		7.7E+03	2.0E+02			2.0E+02			
Vinyl chloride (chloroethylene)	75-01-4	4.0E+02	~~1.4E+00~~ 1.1E+00		2.7E-01	1.8E+05			2.7E-01	

Chemical	CAS Number [1]	Acute (1-hr. max.) Trigger Level [2,3] (lb/hour)	Chronic Trigger Level [2] (lb/year)	CREL Weighting Factor [9,10]	CP Weighting Factor [9,10]	Acute Inhalation REL [10] ($\mu g/m^3$)	Chronic Inhalation REL [10] ($\mu g/m^3$)	Chronic Oral REL [10] (mg/kg-day)	Inhalation Cancer Potency Factor [10] $(mg/kg\text{-}day)^{-1}$	Oral Cancer Potency Factor [10] $(mg/kg\text{-}day)^{-1}$
Vinylidene chloride (1,1-dichloroethylene)	75-35-4		2.7E+03	7.0E+01			7.0E+01			
Xylenes (mixed isomers)	1330-20-7	4.9E+01	2.7E+04	7.0E+02		2.2E+04	7.0E+02			
m-xylene	108-38-3	4.9E+01	2.7E+04	7.0E+02		2.2E+04	7.0E+02			
o-xylene	95-47-6	4.9E+01	2.7E+04	7.0E+02		2.2E+04	7.0E+02			
p-xylene	106-42-3	4.9E+01	2.7E+04	7.0E+02		2.2E+04	7.0E+02			

(Amended ~~January 6, 2010~~)

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1 Chemical Abstract Number (CAS):
CAS numbers are not available for many chemical groupings and mixtures.

2 Trigger Levels:
All trigger levels are presented in scientific notation (i.e., exponential form based on powers of the based number 10.) For example: 4.9E+01 is equivalent to $4.9X10^1$, or 49; 6.6E-02 is equivalent to $6.6X10^{-2}$, or 0.066; and 5.8E+00 is equivalent to $5.8X10^0$, or 5.8.

3 Averaging Period for Non-Cancer Acute Trigger Levels:
The averaging period for non-cancer acute trigger levels is ~~generally~~ a one-hour exposure. ~~However, some are based on several hours of exposure. The screening levels for the following substances should be compared to estimated emissions occurring over a time period other than maximum one-hour emissions (e.g., a 4-hour trigger level should be compared to the maximum 4-hour average concentration estimated from the maximum emissions occurring in a 4-hour period). However, for conservative screening purposes, a maximum one-hour emission level can be compare to all acute trigger levels.~~
~~**4-hour:** arsenic and inorganic arsenic compounds~~
~~**6-hour:** benzene, carbon disulfide, ethylene glycol ethyl ether, ethylene glycol ethyl ether acetate, ethylene glycol methyl ether~~
~~**7-hour:** carbon tetrachloride, chloroform~~

4 Chemicals for Which Multi-Pathway Risks are Assessed:
Trigger levels are adjusted to include the impact from default non-inhalation pathways.

5 Asbestos:
The units for the inhalation cancer potency factor for asbestos are (100 PCM fibers/m^3)$^{-1}$. A conversion factor of 100 fibers/0.003 μg can be multiplied by a receptor concentration of asbestos expressed in μg/m^3. Unless other information necessary to estimate the concentration (fibers/m^3) of asbestos at receptors of interest is available, an inhalation cancer potency factor of 220 (mg/kg-day)$^{-1}$ is available.

6 Diesel Exhaust Particulate Matter:
Diesel exhaust particulate matter should be used as a surrogate for all TAC emissions from diesel-fueled compression-ignition internal combustion engines. However, diesel exhaust particulate matter should not be used for other types of diesel-fueled combustion equipment, such as boilers or turbines. For equipment other than diesel-fueled compression-ignition internal combustion engines, emissions should be determined for individual TACs and compared to the appropriate trigger level for each TAC.

~~7 **Polychlorinated Biphenyls:**~~
~~**Low Risk:** Use in cases where congeners with more than four chlorines comprise less than one-half percent of total polychlorinated biphenyls.~~
~~**High Risk:** Use in cases where congeners with more than four chlorines do not comprise less than one-half percent of total polychlorinated biphenyls.~~

~~8~~7 **Polychlorinated Dibenzo-p-Dioxins (PCDDs), Polychlorinated Dibenzofurans (PCDFs), and Dioxin-like Polychlorinated Biphenyls (PCBs):**
These substances are PCDDs, PCDFs, and dioxin-like PCBs for which OEHHA has adopted the World Health Organization (WHO_{97}) Toxicity Equivalency Factor (TEF) scheme for evaluating cancer risk due to exposure to samples containing mixtures of PCDDs, PCDFs, and dioxin-like PCBs. PCDDs, PCDFs, and dioxin-like PCBs should be evaluated as PCDD-equivalent. This evaluation process consists of multiplying individual PCDD-, PCDF-, and dioxin-like PCB-specific emission levels with their corresponding TEFs listed below. The sum of these products is the PCDD-equivalent and should be compared to the PCDD-equivalent trigger level.

PCDD	CAS Number	TEF
2,3,7,8-tetrachlorodibenzo-p-dioxin	1746-01-6	1.0
1,2,3,7,8-pentachlorodibenzo-p-dioxin	40321-76-4	1.0
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	39227-28-6	0.1
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	57653-85-7	0.1
1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	19408-74-3	0.1
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	35822-46-9	0.01
1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin	3268-87-9	~~0.0001~~0.0003

PCDF	CAS Number	TEF
2,3,7,8-tetrachlorodibenzofuran	5120-73-19	0.1

1,2,3,7,8-pentachlorodibenzofuran	57117-41-6	~~0.05~~0.03
2,3,4,7,8-pentachlorodibenzofuran	57117-31-4	~~0.5~~0.3
1,2,3,4,7,8-hexachlorodibenzofuran	70648-26-9	0.1
1,2,3,6,7,8-hexachlorodibenzofuran	57117-44-9	0.1
1,2,3,7,8,9-hexachlorodibenzofuran	72918-21-9	0.1
2,3,4,6,7,8-hexachlorodibenzofuran	60851-34-5	0.1
1,2,3,4,6,7,8-heptachlorodibenzofuran	67562-39-4	0.01
1,2,3,4,7,8,9-heptachlorodibenzofuran	55673-89-7	0.01
1,2,3,4,6,7,8,9-octachlorodibenzofuran	39001-02-0	~~0.0001~~0.0003

Dioxin-like PCBs (coplanar PCBs)	CAS Number	TEF
PCB 77 (3,3'4,4'-tetrachlorobiphenyl)	32598-13-3	0.0001
PCB 81 (3,4,4',5-tetrachlorobiphenyl)	70362-50-4	~~0.0001~~0.0003
PCB 105 (2,3,3'4,4'-pentachlorobiphenyl)	32598-14-4	~~0.0001~~0.00003
PCB 114 (2,3,4,4'5-pentachlorobiphenyl)	74472-37-0	~~0.0005~~0.00003
PCB 118 (2,3',4,4',5-pentachlorobiphenyl)	31508-00-6	~~0.0001~~0.00003
PCB 123 (2',3,4,4',5-pentachlorobiphenyl)	65510-44-3	~~0.0001~~0.00003
PCB 126 (3,3',4,4',5-pentachlorobiphenyl)	57465-28-8	0.1
PCB 156 (2,3,3',4,4',5-hexachlorobiphenyl)	38380-08-4	~~0.0005~~0.00003
PCB 157 (2,3,3',4,4',5'-hexachlorobiphenyl)	69782-90-7	~~0.0005~~0.00003
PCB 167 (2,3',4,4',5,5'-hexachlorobiphenyl)	52663-72-6	~~0.00001~~0.00003
PCB 169 (3,3',4,4',5,5'-hexachlorobiphenyl)	32774-16-6	~~0.01~~0.03
PCB 170 (2,2',3,3',4,4',5-heptachlorobiphenyl)	35065-30-6	0
PCB 180 (2,2',3,4,4',5,5'-heptachlorobiphenyl)	35065-29-3	0
PCB 189 (2,3,3',4,4',5,5'-heptachlorobiphenyl)	39635-31-9	~~0.0001~~0.00003

~~9~~8 **Polycyclic Aromatic Hydrocarbons (PAHs):**
These substances are PAH-derivatives that have OEHHA-developed Potency Equivalency Factors (PEFs). PAHs should be evaluated as benzo(a)pyrene-equivalents. This evaluation process consists of multiplying individual PAH-specific emission levels with their corresponding PEFs listed below. The sum of these products is the benzo(a)pyrene-equivalent level and should be compared to the benzo(a)pyrene equivalent trigger level.

PAH or derivative	CAS Number	PEF
benz(a)anthracene	56-55-3	0.1
benzo(b)fluoranthene	205-99-2	0.1
benzo(j)fluoranthene	205-82-3	0.1
benzo(k)fluoranthene	207-08-9	0.1

benzo(a)pyrene	50-32-8	1.0
chrysene	218-01-9	0.01
dibenz(a,j)acridine	224-42-0	0.1
dibenz(a,h)acridine	226-36-8	0.1
dibenz(a,h)anthracene	53-70-3	1.05
7H-dibenzo(c,g)carbazole	194-59-2	1.0
dibenzo(a,e)pyrene	192-65-4	1.0
dibenzo(a,h)pyrene	189-64-0	10
dibenzo(a,i)pyrene	189-55-9	10
dibenzo(a,l)pyrene	191-30-0	10
7,12-dimethylbenz(a)anthracene	57-97-6	64
indeno(1,2,3-cd)pyrene	193-39-5	0.1
5-methylchrysene	3697-24-3	1.0
3-methylcholanthrene	56-49-5	5.7
5-nitroacenaphthene	602-87-9	0.03
1-nitropyrene	5522-43-0	0.1
4-nitropyrene	57835-92-4	0.1
1,6-dinitropyrene	42397-64-8	10
1,8-dinitropyrene	42397-65-9	1.0
6-nitrocrysene	7496-02-8	10
2-nitrofluorene	607-57-8	0.01

~~10~~9 **CREL (chronic Reference Exposure Level) and CP (Cancer Potency) Weighting Factors:** These factors are to be used for purposes of calculating toxicity weighted emissions. Factors were developed assuming multi-pathway exposure where applicable, and continuously operating sources for residential receptor exposure.

10 **Health Effects Values:** All reference exposure levels (RELs) and cancer potency factors (CPFs) are the health effects values for the California Air Toxics Hot Spots Program that have been approved by the Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA) as of March 31, 2016.

(Amended ~~January 6, 2010~~)

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Chemical	CAS Number [1]	Acute Inhalation REL (µg/m³)	Chronic Inhalation REL (µg/m³)	Chronic Oral REL (mg/kg-day)	CREL Weighting Factor [10]	Inhalation Cancer Potency Factor (mg/kg-day)⁻¹	Oral Cancer Potency Factor (mg/kg-day)⁻¹	CP Weighting Factor [10]	Acute (1-hr. max.) Trigger Level [2] (lb/hour)	Chronic Trigger Level [2] (lb/year)
Acetaldehyde	75-07-0	4.7E+02	1.4E+02		1.4E+02	1.0E-02		1.0E-02	1.0E+00	3.8E+01
Acetamide	60-35-5					7.0E-02		7.0E-02		5.4E+00
Acrolein	107-02-8	2.5E+00	3.5E-01		3.5E-01				5.5E-03	1.4E+01
Acrylamide	79-06-1					4.5E+00		4.5E+00		8.4E-02
Acrylic acid	79-10-7	6.0E+03							1.3E+01	
Acrylonitrile	107-13-1		5.0E+00		5.0E+00	1.0E+00		1.0E+00		3.8E-01
Allyl chloride	107-05-1					2.1E-02		2.1E-02		1.8E+01
Aminoanthraquinone, 2-	117-79-3					3.3E-02		3.3E-02		1.1E+01
Ammonia	7664-41-7	3.2E+03	2.0E+02		2.0E+02				7.1E+00	7.7E+03
Aniline	62-53-3					5.7E-03		5.7E-03		6.6E+01
Arsenic and compounds (inorganic) [3,4]	7440-38-2	2.0E-01	1.5E-02	3.5E-06	4.0E-04	1.2E+01	1.5E+00	5.4E+01	4.4E-04	7.2E-03
Arsine	7784-42-1	2.0E-01	1.5E-02		4.0E-04				4.4E-04	5.8E-01
Asbestos [5]	1332-21-4					2.2E+02		2.2E+02		1.7E-03
Benzene [3]	71-43-2	1.3E+03	6.0E+01		6.0E+01	1.0E-01		1.0E-01	2.9E+00	3.8E+00
Benzidine (and its salts)	92-87-5					5.0E+02		5.0E+02		7.6E-04
benzidine based dyes						5.0E+02		5.0E+02		7.6E-04
direct black 38	1937-37-7					5.0E+02		5.0E+02		7.6E-04
direct blue 6	2602-46-2					5.0E+02		5.0E+02		7.6E-04
direct brown 95 (technical grade)	16071-86-6					5.0E+02		5.0E+02		7.6E-04
Benzyl chloride	100-44-7	2.4E+02				1.7E-01		1.7E-01	5.3E-01	2.2E+00
Beryllium and compounds [4]	7440-41-7		7.0E-03	2.0E-03	7.0E-03	8.4E+00		8.4E+00		4.7E-02
Bis (2-chloroethyl) ether (Dichloroethyl ether)	111-44-4					2.5E+00		2.5E+00		1.5E-01
Bis (chloromethyl) ether	542-88-1					4.6E+01		4.6E+01		8.2E-03
Butadiene, 1,3-	106-99-0		2.0E+01		2.0E+01	6.0E-01		6.0E-01		6.3E-01
Cadmium and compounds [4]	7440-43-9		2.0E-02	5.0E-04	1.8E-02	1.5E+01		1.5E+01		2.6E-02

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Chemical	CAS Number [1]	Acute Inhalation REL (µg/m³)	Chronic Inhalation REL (µg/m³)	Chronic Oral REL (mg/kg-day)	CREL Weighting Factor [10]	Inhalation Cancer Potency Factor (mg/kg-day)⁻¹	Oral Cancer Potency Factor (mg/kg-day)⁻¹	CP Weighting Factor [10]	Acute (1-hr. max.) Trigger Level [2] (lb/hour)	Chronic Trigger Level [2] (lb/year)
Carbon disulfide [3]	75-15-0	6.2E+03	8.0E+02		8.0E+02				1.4E+01	3.1E+04
Carbon tetrachloride [3] (Tetrachloromethane)	56-23-5	1.9E+03	4.0E+01		4.0E+01	1.5E-01		1.5E-01	4.2E+00	2.5E+00
Chlorinated paraffins	108171-26-2					8.9E-02		8.9E-02		4.2E+00
Chlorine	7782-50-5	2.1E+02	2.0E-01		2.0E-01				4.6E-01	7.7E+00
Chlorine dioxide	10049-04-4		6.0E-01		6.0E-01					2.3E+01
Chloro-o-phenylenediamine, 4-	95-83-0					1.6E-02		1.6E-02		2.4E+01
Chlorobenzene	108-90-7		1.0E+03		1.0E+03					3.9E+04
Chloroform [3]	67-66-3	1.5E+02	3.0E+02		3.0E+02	1.9E-02		1.9E-02	3.3E-01	2.0E+01
Chloropicrin	76-06-2	2.9E+01	4.0E-01		4.0E-01				6.4E-02	1.5E+01
Chloro-o-toluidine, p-	95-69-2					2.7E-01		2.7E-01		1.4E+00
Chromium, (hexavalent, 6+) [4]	18540-29-9		2.0E-01	2.0E-02	2.0E-01	5.1E+02		5.1E+02		7.7E-04
barium chromate [4]	10294-40-3		2.0E-01	2.0E-02	2.0E-01	5.1E+02		5.1E+02		7.7E-04
calcium chromate [4]	13765-19-0		2.0E-01	2.0E-02	2.0E-01	5.1E+02		5.1E+02		7.7E-04
lead chromate [4]	7758-97-6		2.0E-01	2.0E-02	2.0E-01	5.1E+02		5.1E+02		7.7E-04
sodium dichromate [4]	10588-01-9		2.0E-01	2.0E-02	2.0E-01	5.1E+02		5.1E+02		7.7E-04
strontium chromate [4]	7789-06-2		2.0E-01	2.0E-02	2.0E-01	5.1E+02		5.1E+02		7.7E-04
Chromium trioxide (as chromic acid mist) [4]	1333-82-0		2.0E-03	2.0E-02	2.0E-03	5.1E+02		5.1E+02		7.7E-04
Copper and compounds	7440-50-8	1.0E+02							2.2E-01	
Cresidine, p-	120-71-8					1.5E-01		1.5E-01		2.5E+00
Cresols (m-, o-, p-)	1319-77-3		6.0E+02		6.0E+02					2.3E+04
Cupferron	135-20-6					2.2E-01		2.2E-01		1.7E+00
Cyanide and compounds (inorganic)	57-12-5	3.4E+02	9.0E+00		9.0E+00				7.5E-01	3.5E+02
hydrogen cyanide (hydrocyanic acid)	74-90-8	3.4E+02	9.0E+00		9.0E+00				7.5E-01	3.5E+02
Diaminoanisole, 2,4-	615-05-4					2.3E-02		2.3E-02		1.6E+01

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Chemical	CAS Number [1]	Acute Inhalation REL (µg/m³)	Chronic Inhalation REL (µg/m³)	Chronic Oral REL (mg/kg-day)	CREL Weighting Factor [10]	Inhalation Cancer Potency Factor (mg/kg-day)⁻¹	Oral Cancer Potency Factor (mg/kg-day)⁻¹	CP Weighting Factor [10]	Acute (1-hr. max.) Trigger Level [2] (lb/hour)	Chronic Trigger Level [2] (lb/year)
Diaminotoluene, 2,4-	95-80-7					4.0E+00		4.0E+00		9.5E-02
Dibromo-3-chloropropane, 1,2- (DBCP)	96-12-8					7.0E+00		7.0E+00		5.4E-02
Dichlorobenzene, 1,4-	106-46-7		8.0E+02		8.0E+02	4.0E-02		4.0E-02		9.5E+00
Dichlorobenzidine, 3,3-	91-94-1					1.2E+00		1.2E+00		3.2E-01
Dichloroethane, 1,1- (Ethylidene dichloride)	75-34-3					5.7E-03		5.7E-03		6.6E+01
Dichloroethylene, 1,1- [see vinylidene chloride]										
Diesel exhaust particulate matter [6]			5.0E+00		5.0E+00	1.1E+00		1.1E+00		3.4E-01
Diethanolamine	111-42-2		3.0E+00		3.0E+00					1.2E+02
Di(2-ethylhexyl)phthalate (DEHP) [4]	117-81-7					8.4E-03	8.4E-03	9.3E-03		4.1E+01
Dimethylaminoazobenzene, p-	60-11-7					4.6E+00		4.6E+00		8.2E-02
Dimethyl formamide, N,N-	68-12-2		8.0E+01		8.0E+01					3.1E+03
Dinitrotoluene, 2,4-	121-14-2					3.1E-01		3.1E-01		1.2E+00
Dioxane, 1,4- (1,4-diethylene dioxide)	123-91-1	3.0E+03	3.0E+03		3.0E+03	2.7E-02		2.7E-02	6.6E+00	1.4E+01
Epichlorohydrin (1-chloro-2,3-epoxypropane)	106-89-8	1.3E+03	3.0E+00		3.0E+00	8.0E-02		8.0E-02	2.9E+00	4.7E+00
Epoxybutane, 1,2-	106-88-7		2.0E+01		2.0E+01					7.7E+02
Ethyl benzene	100-41-4		2.0E+03		2.0E+03	8.7E-03		8.7E-03		4.3E+01
Ethyl chloride (chloroethane)	75-00-3		3.0E+04		3.0E+04					1.2E+06
Ethylene dibromide (1,2-dibromoethane)	106-93-4		8.0E-01		8.0E-01	2.5E-01		2.5E-01		1.5E+00
Ethylene dichloride (1,2-dichloroethane)	107-06-2		4.0E+02		4.0E+02	7.2E-02		7.2E-02		5.3E+00
Ethylene glycol	107-21-1		4.0E+02		4.0E+02					1.5E+04
Ethylene glycol butyl ether - EGBE [see Glycol ethers]										

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Chemical	CAS Number [1]	Acute Inhalation REL (µg/m³)	Chronic Inhalation REL (µg/m³)	Chronic Oral REL (mg/kg-day)	CREL Weighting Factor [10]	Inhalation Cancer Potency Factor (mg/kg-day)⁻¹	Oral Cancer Potency Factor (mg/kg-day)⁻¹	CP Weighting Factor [10]	Acute (1-hr. max.) Trigger Level [2] (lb/hour)	Chronic Trigger Level [2] (lb/year)
Ethylene oxide (1,2-epoxyethane)	75-21-8		3.0E+01		3.0E+01	3.1E-01		3.1E-01		1.2E+00
Ethylene thiourea	96-45-7					4.5E-02		4.5E-02		8.4E+00
Fluorides		2.4E+02	1.3E+01	4.0E-02	1.3E+01				5.3E-01	5.0E+02
hydrogen fluoride (hydrofluoric acid)	7664-39-3	2.4E+02	1.4E+01	4.0E-02	1.4E+01				5.3E-01	5.4E+02
Formaldehyde	50-00-0	5.5E+01	9.0E+00		9.0E+00	2.1E-02		2.1E-02	1.2E-01	1.8E+01
Glutaraldehyde	111-30-8		8.0E-02		8.0E-02					3.1E+00
Glycol ethers										
ethylene glycol butyl ether – EGBE (2-butoxy ethanol; butyl cellosolve)	111-76-2	1.4E+04							3.1E+01	
ethylene glycol ethyl ether – EGEE (2-ethoxy ethanol; cellosolve) [3]	110-80-5	3.7E+02	7.0E+01		7.0E+01				8.2E-01	2.7E+03
ethylene glycol ethyl ether acetate – EGEEA (2-ethoxyethyl acetate; cellosolve acetate) [3]	111-15-9	1.4E+02	3.0E+02		3.0E+02				3.1E-01	1.2E+04
ethylene glycol methyl ether – EGME (2-methoxy ethanol; methyl cellosolve) [3]	109-86-4	9.3E+01	6.0E+01		6.0E+01				2.1E-01	2.3E+03
ethylene glycol methyl ether acetate – EGMEA (2-methoxyethyl acetate; methyl cellosolve acetate)	110-49-6		9.0E+01		9.0E+01					3.5E+03
Hexachlorobenzene	118-74-1					1.8E+00		1.8E+00		2.1E-01
Hexachlorocyclohexanes (mixed or technical grade) [4]	608-73-1					4.0E+00	4.0E+00	5.7E+00		6.9E-02
Hexachlorocyclohexane, alpha [4]	319-84-6					4.0E+00	4.0E+00	5.7E+00		6.9E-02
Hexachlorocyclohexane, beta [4]	319-85-7					4.0E+00	4.0E+00	5.7E+00		6.9E-02

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Chemical	CAS Number [1]	Acute Inhalation REL (µg/m³)	Chronic Inhalation REL (µg/m³)	Chronic Oral REL (mg/kg-day)	CREL Weighting Factor [10]	Inhalation Cancer Potency Factor (mg/kg-day)⁻¹	Oral Cancer Potency Factor (mg/kg-day)⁻¹	CP Weighting Factor [10]	Acute (1-hr. max.) Trigger Level [2] (lb/hour)	Chronic Trigger Level [2] (lb/year)
Hexachlorocyclohexane, gamma- (lindane) [4]	58-89-9					1.1E+00	1.1E+00	1.6E+00		2.5E-01
Hexane, n-	110-54-3		7.0E+03		7.0E+03					2.7E+05
Hydrazine	302-01-2		2.0E-01		2.0E-01	1.7E+01		1.7E+01		2.2E-02
Hydrochloric acid (hydrogen chloride)	7647-01-0	2.1E+03	9.0E+00		9.0E+00				4.6E+00	3.5E+02
Hydrogen cyanide (hydrocyanic acid) [see cyanide & compounds]										
Hydrogen fluoride (hydrofluoric acid) [see fluorides & compounds]										
Hydrogen selenide [see selenium compounds]										
Hydrogen sulfide	7783-06-4	4.2E+01	1.0E+01		1.0E+01				9.3E-02	3.9E+02
Isophorone	78-59-1		2.0E+03		2.0E+03					7.7E+04
Isopropyl alcohol (isopropanol)	67-63-0	3.2E+03	7.0E+03		7.0E+03				7.1E+00	2.7E+05
Lead and compounds (inorganic) [4]	7439-92-1					4.2E-02	8.5E-03	1.2E-01		3.2E+00
lead acetate [4]	301-04-2					4.2E-02	8.5E-03	1.2E-01		3.2E+00
lead phosphate [4]	7446-27-7					4.2E-02	8.5E-03	1.2E-01		3.2E+00
lead subacetate [4]	1335-32-6					4.2E-02	8.5E-03	1.2E-01		3.2E+00
Lindane [see hexachlorocyclohexane, gamma]										
Maleic anhydride	108-31-6		7.0E-01		7.0E-01					2.7E+01
Manganese and compounds	7439-96-5		9.0E-02		9.0E-02					3.5E+00
Mercury and compounds (inorganic) [4]	7439-97-6	6.0E-01	3.0E-02	1.6E-04	7.1E-03				1.3E-03	2.7E-01
mercuric chloride [4]	7487-94-7	6.0E-01	3.0E-02	1.6E-04	7.1E-03				1.3E-03	2.7E-01
Methanol (methyl alcohol)	67-56-1	2.8E+04	4.0E+03		4.0E+03				6.2E+01	1.5E+05
Methyl bromide (bromomethane)	74-83-9	3.9E+03	5.0E+00		5.0E+00				8.6E+00	1.9E+02
Methyl chloroform (1,1,1-trichloroethane)	71-55-6	6.8E+04	1.0E+03		1.0E+03				1.5E+02	3.9E+04

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Chemical	CAS Number [1]	Acute Inhalation REL ($\mu g/m^3$)	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Oral REL (mg/kg-day)	CREL Weighting Factor[10]	Inhalation Cancer Potency Factor (mg/kg-day)$^{-1}$	Oral Cancer Potency Factor (mg/kg-day)$^{-1}$	CP Weighting Factor[10]	Acute (1-hr. max.) Trigger Level [2] (lb/hour)	Chronic Trigger Level [2] (lb/year)
Methyl ethyl ketone (MEK) (2-butanone)	78-93-3	1.3E+04							2.9E+01	
Methyl isocyanate	624-83-9		1.0E+00		1.0E+00					3.9E+01
Methyl tertiary-butyl ether (MTBE)	1634-04-4		8.0E+03		8.0E+03	1.8E-03		1.8E-03		2.1E+02
Methylene bis (2-chloroaniline), 4,4'- (MOCA)	101-14-4					1.5E+00		1.5E+00		2.5E-01
Methylene chloride (dichloromethane)	75-09-2	1.4E+04	4.0E+02		4.0E+02	3.5E-03		3.5E-03	3.1E+01	1.1E+02
Methylene dianiline, 4,4'- (and its dichloride) [4]	101-77-9		2.0E+01		2.0E+01	1.6E+00	1.6E+00	1.6E+00		2.4E-01
Methylene diphenyl isocyanate	101-68-8		7.0E-01		7.0E-01					2.7E+01
Michler's ketone (4,4 bis (dimethylamino) benzophenone)	90-94-8					8.6E-01		8.6E-01		4.4E-01
Naphthalene [see polycylcic aromatic hydrocarbons]										
Nickel and compounds [4] *(values also apply to:)*	7440-02-0	6.0E+00	5.0E-02	5.0E-02	5.0E-02	9.1E-01		9.1E-01	1.3E-02	4.3E-01
nickel acetate [4]	373-02-4	6.0E+00	5.0E-02	5.0E-02	5.0E-02	9.1E-01		9.1E-01	1.3E-02	4.3E-01
nickel carbonate [4]	3333-39-3	6.0E+00	5.0E-02	5.0E-02	5.0E-02	9.1E-01		9.1E-01	1.3E-02	4.3E-01
nickel carbonyl [4]	13463-39-3	6.0E+00	5.0E-02	5.0E-02	5.0E-02	9.1E-01		9.1E-01	1.3E-02	4.3E-01
nickel hydroxide [4]	12054-48-7	6.0E+00	5.0E-02	5.0E-02	5.0E-02	9.1E-01		9.1E-01	1.3E-02	4.3E-01
Nickelocene [4]	1271-28-9	6.0E+00	5.0E-02	5.0E-02	5.0E-02	9.1E-01		9.1E-01	1.3E-02	4.3E-01
nickel oxide [4]	1313-99-1	6.0E+00	1.0E-01	5.0E-02	1.0E-01	9.1E-01		9.1E-01	1.3E-02	4.3E-01
nickel refinery dust from the pyrometallurgical process [4]		6.0E+00	5.0E-02	5.0E-02	5.0E-02	9.1E-01		9.1E-01	1.3E-02	4.3E-01
nickel subsulfide [4]	12035-72-2	6.0E+00	5.0E-02	5.0E-02	5.0E-02	9.1E-01		9.1E-01	1.3E-02	4.3E-01
Nitric acid	7697-37-2	8.6E+01							1.9E-01	
Nitrosodi-n-butylamine, N-	924-16-3					1.1E+01		1.1E+01		3.4E-02
Nitrosodi-n-propylamine, N-	621-64-7					7.0E+00		7.0E+00		5.4E-02

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Chemical	CAS Number [1]	Acute Inhalation REL (µg/m³)	Chronic Inhalation REL (µg/m³)	Chronic Oral REL (mg/kg-day)	CREL Weighting Factor [10]	Inhalation Cancer Potency Factor (mg/kg-day)⁻¹	Oral Cancer Potency Factor (mg/kg-day)⁻¹	CP Weighting Factor [10]	Acute (1-hr. max.) Trigger Level [2] (lb/hour)	Chronic Trigger Level [2] (lb/year)
Nitrosodiethylamine, N-	55-18-5					3.6E+01		3.6E+01		1.1E-02
Nitrosodimethylamine, N-	62-75-9					1.6E+01		1.6E+01		2.4E-02
Nitrosodiphenylamine, N-	86-30-6					9.0E-03		9.0E-03		4.2E+01
Nitroso-n-methylethylamine, N-	10595-95-6					2.2E+01		2.2E+01		1.7E-02
Nitrosomorpholine, N-	59-89-2					6.7E+00		6.7E+00		5.6E-02
Nitrosopiperidine, N-	100-75-4					9.4E+00		9.4E+00		4.0E-02
Nitrosopyrrolidine, N-	930-55-2					2.1E+00		2.1E+00		1.8E-01
Nitrosodiphenylamine, p-	156-10-5					2.2E-02		2.2E-02		1.7E+01
Ozone	10028-15-6	1.8E+02							4.0E-01	
Pentachlorophenol	87-86-5					1.8E-02		1.8E-02		2.1E+01
Perchloroethylene (tetrachloroethylene)	127-18-4	2.0E+04	3.5E+01		3.5E+01	2.1E-02		2.1E-02	4.4E+01	1.8E+01
Phenol	108-95-2	5.8E+03	2.0E+02		2.0E+02				1.3E+01	7.7E+03
Phosgene	75-44-5	4.0E+00							8.8E-03	
Phosphine	7803-51-2		8.0E-01		8.0E-01					3.1E+01
Phosphoric acid	7664-38-2		7.0E+00		7.0E+00					2.7E+02
Phthalic anhydride	85-44-9		2.0E+01		2.0E+01					7.7E+02
PCBs (polychlorinated biphenyls) [low risk] [4, 7]	1336-36-3			2.0E-05		7.0E-02	7.0E-02			4.7E-01
PCBs (polychlorinated biphenyls) [high risk] [4, 7]	1336-36-3			2.0E-05		2.0E+00	2.0E+00	2.7E+01		1.7E-02
Polychlorinated dibenzo-p-dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs), and dioxin-like polychlorinated biphenyls (PCBs) (as 2,3,7,8-PCDD equivalent) [4, 8]	See Footnote 8		4.0E-05	1.0E-08	3.8E-06	1.3E+05	1.3E+05	1.3E+06		3.4E-07
Polycyclic aromatic hydrocarbon (PAH) (as B(a)P-equivalent) [4, 9]	See Footnote 9					3.9E+00	1.2E+01	6.4E+01		6.9E-03

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Chemical	CAS Number [1]	Acute Inhalation REL ($\mu g/m^3$)	Chronic Inhalation REL ($\mu g/m^3$)	Chronic Oral REL (mg/kg-day)	CREL Weighting Factor [10]	Inhalation Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$	Oral Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$	CP Weighting Factor [10]	Acute (1-hr. max.) Trigger Level [2] (lb/hour)	Chronic Trigger Level [2] (lb/year)
Naphthalene	91-20-3		9.0E+00		9.0E+00	1.2E-01		1.2E-01		3.2E+00
Potassium bromate	7758-01-2		1.7E+00		1.7E+00	4.9E-01		4.9E-01		7.7E-1
Propane sultone, 1,3-	1120-71-4					2.4E+00		2.4E+00		1.6E-01
Propylene (propene)	115-07-1		3.0E+03		3.0E+03					1.2E+05
Propylene glycol monomethyl ether	107-98-2		7.0E+03		7.0E+03					2.7E+05
Propylene oxide	75-56-9	3.1E+03	3.0E+01		3.0E+01	1.3E-02		1.3E-02	6.8E+00	2.9E+01
Selenium and compounds	7782-49-2		2.0E+01		2.0E+01					7.7E+02
hydrogen selenide	7783-07-5	5.0E+00							1.1E-02	
selenium sulfide	7446-34-6		2.0E+01		2.0E+01					7.7E+02
Silica (crystalline, respirable)	7631-86-9		3.0E+00		3.0E+00					1.2E+02
Sodium hydroxide	1310-73-2	8.0E+00							1.8E-02	
Styrene	100-42-5	2.1E+04	9.0E+02		9.0E+02				4.6E+01	3.5E+04
Sulfates		1.2E+02							2.6E-01	
Sulfuric acid and oleum	7664-93-9	1.2E+02	1.0E+00		1.0E+00				2.6E-01	3.9E+01
Sulfuric acid	7664-93-9	1.2E+02	1.0E+00		1.0E+00				2.6E-01	3.9E+01
sulfur trioxide	7446-11-9	1.2E+02	1.0E+00		1.0E+00				2.6E-01	3.9E+01
Oleum	8014-95-7	1.2E+02	1.0E+00		1.0E+00				2.6E-01	3.9E+01
Tetrachloroethane, 1,1,2,2-	79-34-5					2.0E-01		2.0E-01		1.9E+00
Thioacetamide	62-55-5					6.1E+00		6.1E+00		6.2E-02
Toluene	108-88-3	3.7E+04	3.0E+02		3.0E+02				8.2E+01	1.2E+04
Toluene diisocyantates	26471-62-5		7.0E-02		7.0E-02	3.9E-02		3.9E-02		2.7E+00
toluene-2,4-diisocyanate	584-84-9		7.0E-02		7.0E-02	3.9E-02		3.9E-02		2.7E+00
toluene-2,6-diisocyanate	91-08-7		7.0E-02		7.0E-02	3.9E-02		3.9E-02		2.7E+00
Trichloroethane, 1,1,1 (see methyl chloroform)										
Trichloroethane, 1,1,2- (vinyl trichloride)	79-00-5					5.7E-02		5.7E-02		6.6E+00

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Chemical	CAS Number [1]	Acute Inhalation REL (µg/m³)	Chronic Inhalation REL (µg/m³)	Chronic Oral REL (mg/kg-day)	CREL Weighting Factor[10]	Inhalation Cancer Potency Factor (mg/kg-day)⁻¹	Oral Cancer Potency Factor (mg/kg-day)⁻¹	CP Weighting Factor[10]	Acute (1-hr. max.) Trigger Level [2] (lb/hour)	Chronic Trigger Level [2] (lb/year)
Trichloroethylene	79-01-6		6.0E+02		6.0E+02	7.0E-03		7.0E-03		5.4E+01
Trichlorophenol, 2,4,6-	88-06-2					7.0E-02		7.0E-02		5.4E+00
Triethylamine	121-44-8	2.8E+03	2.0E+02		2.0E+02				6.2E+00	7.7E+03
Urethane (ethyl carbamate)	51-79-6					1.0E+00		1.0E+00		3.8E-01
Vanadium Compounds									-	
vanadium (fume or dust)	7440-62-2	3.0E+01							6.6E-02	
vanadium pentoxide	1314-62-1	3.0E+01							6.6E-02	
Vinyl acetate	108-05-4		2.0E+02		2.0E+02					7.7E+03
Vinyl chloride (chloroethylene)	75-01-4	1.8E+05				2.7E-01		2.7E-01	4.0E+02	1.4E+00
Vinylidene chloride (1,1-dichloroethylene)	75-35-4		7.0E+01		7.0E+01					2.7E+03
Xylenes (mixed isomers)	1330-20-7	2.2E+04	7.0E+02		7.0E+02				4.9E+01	2.7E+04
m-xylene	108-38-3	2.2E+04	7.0E+02		7.0E+02				4.9E+01	2.7E+04
o-xylene	95-47-6	2.2E+04	7.0E+02		7.0E+02				4.9E+01	2.7E+04
p-xylene	106-42-3	2.2E+04	7.0E+02		7.0E+02				4.9E+01	2.7E+04

(Amended January 6, 2010)

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[1] **Chemical Abstract Number (CAS):**
CAS numbers are not available for many chemical groupings and mixtures.

[2] **Trigger Levels:**
All trigger levels are presented in scientific notation (i.e., exponential form based on powers of the based number 10.) For example: 4.9E+01 is equivalent to $4.9X10^{1}$, or 49; 6.6E-02 is equivalent to $6.6X10^{-2}$, or 0.066; and 5.8E+00 is equivalent to $5.8X10^{0}$, or 5.8.

[3] **Averaging Period for Non-Cancer Acute Trigger Levels:**

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

The averaging period for non-cancer acute trigger levels is generally a one-hour exposure. However, some are based on several hours of exposure. The screening levels for the following substances should be compared to estimated emissions occurring over a time period other than maximum one-hour emissions (e.g., a 4-hour trigger level should be compared to the maximum 4-hour average concentration estimated from the maximum emissions occurring in a 4-hour period). However, for conservative screening purposes, a maximum one-hour emission level can be compare to all acute trigger levels.

4-hour: arsenic and inorganic arsenic compounds

6-hour: benzene, carbon disulfide, ethylene glycol ethyl ether, ethylene glycol ethyl ether acetate, ethylene glycol methyl ether

7-hour: carbon tetrachloride, chloroform

[4] **Chemicals for Which Multi-Pathway Risks are Assessed:**

Trigger levels are adjusted to include the impact from default non-inhalation pathways.

[5] **Asbestos:**

The units for the inhalation cancer potency factor for asbestos are $(100\ PCM\ fibers/m^3)^{-1}$. A conversion factor of 100 fibers/0.003 μg can be multiplied by a receptor concentration of asbestos expressed in $\mu g/m^3$. Unless other information necessary to estimate the concentration ($fibers/m^3$) of asbestos at receptors of interest is available, an inhalation cancer potency factor of $220\ (mg/kg\text{-}day)^{-1}$ is available.

[6] **Diesel Exhaust Particulate Matter:**

Diesel exhaust particulate matter should be used as a surrogate for all TAC emissions from diesel fueled compression ignition internal combustion engines. However, diesel exhaust particulate matter should not be used for other types of diesel-fueled combustion equipment, such as boilers or turbines. For equipment other than diesel fueled compression ignition internal combustion engines, emissions should be determined for individual TACs and compared to the appropriate trigger level for each TAC.

[7] **Polychlorinated Biphenyls:**

Low Risk: Use in cases where congeners with more than four chlorines comprise less than one-half percent of total polychlorinated biphenyls.

High Risk: Use in cases where congeners with more than four chlorines do not comprise less than one-half percent of total polychlorinated biphenyls.

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

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[8] **Polychlorinated Dibenzo-p-Dioxins (PCDDs), Polychlorinated Dibenzofurans (PCDFs), and Dioxin-like Polychlorinated Biphenyls (PCBs):** These substances are PCDDs, PCDFs, and dioxin-like PCBs for which OEHHA has adopted the World Health Organization (WHO_{97}) Toxicity Equivalency Factor (TEF) scheme for evaluating cancer risk due to exposure to samples containing mixtures of PCDDs, PCDFs, and dioxin-like PCBs. PCDDs, PCDFs, and dioxin-like PCBs should be evaluated as PCDD-equivalent. This evaluation process consists of multiplying individual PCDD-, PCDF-, and dioxin-like PCB-specific emission levels with their corresponding TEFs listed below. The sum of these products is the PCDD-equivalent and should be compared to the PCDD-equivalent trigger level.

PCDD	CAS Number	TEF
2,3,7,8-tetrachlorodibenzo-p-dioxin	1746-01-6	1.0
1,2,3,7,8-pentachlorodibenzo-p-dioxin	40321-76-4	1.0
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	39227-28-6	0.1
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	57653-85-7	0.1
1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	19408-74-3	0.1
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	35822-46-9	0.01
1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin	3268-87-9	0.0001

PCDF	CAS Number	TEF
2,3,7,8-tetrachlorodibenzofuran	5120-73-19	0.1
1,2,3,7,8-pentachlorodibenzofuran	57117-41-6	0.05
2,3,4,7,8-pentachlorodibenzofuran	57117-31-4	0.5
1,2,3,4,7,8-hexachlorodibenzofuran	70648-26-9	0.1
1,2,3,6,7,8-hexachlorodibenzofuran	57117-44-9	0.1
1,2,3,7,8,9-hexachlorodibenzofuran	72918-21-9	0.1
2,3,4,6,7,8-hexachlorodibenzofuran	60851-34-5	0.1
1,2,3,4,6,7,8-heptachlorodibenzofuran	67562-39-4	0.01
1,2,3,4,7,8,9-heptachlorodibenzofuran	55673-89-7	0.01
1,2,3,4,6,7,8,9-octachlorodibenzofuran	39001-02-0	0.0001

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

Dioxin-like PCBs (coplanar PCBs)	CAS Number	TEF
PCB 77 (3,3'4,4' tetrachlorobiphenyl)	32598-13-3	0.0001
PCB 81 (3,4,4',5 tetrachlorobiphenyl)	70362-50-4	0.0001
PCB 105 (2,3,3'4,4' pentachlorobiphenyl)	32598-14-4	0.0001
PCB 114 (2,3,4,4'5-pentachlorobiphenyl)	74472-37-0	0.0005
PCB 118 (2,3',4,4',5 pentachlorobiphenyl)	31508-00-6	0.0001
PCB 123 (2',3,4,4',5 pentachlorobiphenyl)	65510-44-3	0.0001
PCB 126 (3,3',4,4',5-pentachlorobiphenyl)	57465-28-8	0.1
PCB 156 (2,3,3',4,4',5 hexachlorobiphenyl)	38380-08-4	0.0005
PCB 157 (2,3,3',4,4',5' hexachlorobiphenyl)	69782-90-7	0.0005
PCB 167 (2,3',4,4',5,5'-hexachlorobiphenyl)	52663-72-6	0.00001
PCB 169 (3,3',4,4',5,5' hexachlorobiphenyl)	32774-16-6	0.01
PCB 170 (2,2',3,3',4,4',5 heptachlorobiphenyl)	35065-30-6	0
PCB 180 (2,2',3,4,4',5,5'-heptachlorobiphenyl)	35065-29-3	0
PCB 189 (2,3,3',4,4',5,5' heptachlorobiphenyl)	39635-31-9	0.0001

[9] **Polycyclic Aromatic Hydrocarbons (PAHs):**
These substances are PAH derivatives that have OEHHA-developed Potency Equivalency Factors (PEFs). PAHs should be evaluated as benzo(a)pyrene-equivalents. This evaluation process consists of multiplying individual PAH-specific emission levels with their corresponding PEFs listed below. The sum of these products is the benzo(a)pyrene-equivalent level and should be compared to the benzo(a)pyrene equivalent trigger level.

PAH or derivative	CAS Number	PEF
benz(a)anthracene	56-55-3	0.1
benzo(b)fluoranthene	205-99-2	0.1
benzo(j)fluoranthene	205-82-3	0.1
benzo(k)fluoranthene	207-08-9	0.1
benzo(a)pyrene	50-32-8	1.0
chrysene	218-01-9	0.01
dibenz(a,j)acridine	224-42-0	0.1
dibenz(a,h)acridine	226-36-8	0.1
dibenz(a,h)anthracene	53-70-3	1.05
7H-dibenzo(c,g)carbazole	194-59-2	1.0
dibenzo(a,e)pyrene	192-65-4	1.0
dibenzo(a,h)pyrene	189-64-0	10
dibenzo(a,i)pyrene	189-55-9	10
dibenzo(a,l)pyrene	191-30-0	10
7,12-dimethylbenz(a)anthracene	57-97-6	64
indeno(1,2,3-cd)pyrene	193-39-5	0.1
5-methylchrysene	3697-24-3	1.0
3-methylcholanthrene	56-49-5	5.7

[This table will be replaced with the table above that includes a rearrangement of the current column locations.]

Table 2-5-1 Toxic Air Contaminant Trigger Levels

5-nitroacenaphthene	602-87-9	0.03
1-nitropyrene	5522-43-0	0.1
4-nitropyrene	57835-92-4	0.1
1,6-dinitropyrene	42397-64-8	10
1,8-dinitropyrene	42397-65-9	1.0
6-nitrocrysene	7496-02-8	10
2-nitrofluorene	607-57-8	0.01

[10] **CREL (chronic Reference Exposure Level) and CP (Cancer Potency) Weighting Factors:** These factors are to be used for purposes of calculating toxicity weighted emissions. Factors were developed assuming multi-pathway exposure where applicable, and continuously operating sources for residential receptor exposure.

(Amended January 6, 2010)