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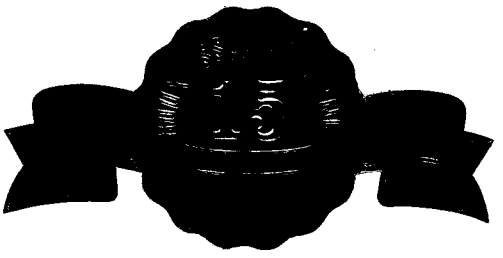

January 22, 1997

Richard Gardineer, P.E.
Regional Hazardous Waste Remediation Engineer
New York State Department of Environmental Conservation
47-40 21st Street
Long Island City, New York 11101

Re: Site-Specific Cleanup Levels
Sunnyside Rail Yard
Queens, New York

Dear Mr. Gardineer:

At the request of the National Railroad Passenger Corporation (AMTRAK), Roux Associates, Inc. (Roux Associates) has prepared this document to evaluate alternative cleanup levels for the constituents of potential concern at the Sunnyside Yard, Queens, New York (excluding Area 1). To date, the New York State Department of Environmental Conservation (NYSDEC), and the New York State Department of Health (NYSDOH) have not defined site-specific cleanup levels for the Yard. In order to verify that the Yard has been adequately delineated, and for the Feasibility Study to be initiated, the site-specific cleanup levels must be established.

The United States Environmental Protection Agency (USEPA) has issued administrative reforms (announced on October 2, 1995, and June 4, 1996), which are intended to elevate the role of risk and cost in Superfund remedy selections. These reforms are intended to improve risk assessments by making them more reasonable, place emphasis on the importance of making cost-effective cleanup decisions, and to integrate cleanup standards under Superfund, the Resource Conservation and Recovery Act, and State cleanup programs.

The USEPA has also issued a Guidance on Land Use in the CERCLA Remedy Selection Process (May 25, 1995) which focuses on developing practicable and cost effective remedial alternatives consistent with reasonably anticipated future land use. This directive states that "reasonably anticipated future use of the land at NPL sites is an important consideration in determining the appropriate extent of remediation. Future use of the land will affect the types of exposures and the frequency of exposures that may occur to any residual contamination remaining on the site, which in turn affects the nature of the remedy chosen." It further states that "this land use directive may have the most relevance in situations where surface soil is the primary exposure pathway."

Roux Associates has considered the objectives of the above-mentioned documents in conducting the review and evaluation of applicable NYSDEC and USEPA criteria and guidance documents to establish protective, yet practicable site-specific cleanup levels for the Yard. In addition, we have compared soil quality data from previous investigations to select cleanup criteria.

During the June 7, 1995 meeting between AMTRAK, New Jersey Transit, Roux Associates, Remedial Engineering, P.C., the NYSDEC, and the NYSDOH, the cost of soil remediation for polychlorinated biphenyls (PCBs) was requested by the NYSDEC in order to evaluate the cost/benefit of potential cleanup scenarios (i.e., less than 1, 10, 25,50 parts per million [ppm]). These costs were submitted to the NYSDEC for review in September 1995, and included recommended site-specific cleanup level for PCBs. Therefore, PCBs are not addressed in this letter.

**1.0 Evaluation of Alternative Cleanup Levels**

The following documents were evaluated to provide guidance for the establishment of alternative cleanup levels for constituents of potential concern detected at the Sunnyside Yard (excluding Area 1). A summary of the purpose of each document is provided in the sections that follow.

- New York State Department of Environmental Conservation Technical And Administrative Guidance Memorandum (TAGM) on Determination of Soil Cleanup Objectives and Cleanup Levels (HWR-94-1994). January 24, 1994.

- Agency for Toxic Substances and Disease Registry. 1993. Draft Toxicological Profile of Polycyclic Aromatic Hydrocarbons (PAHs).

- USEPA Soil Screening Guidance: User's Guide (EPA/540/R-96/018). April 1996.

- Federal Register 30819. Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities; Proposed Rule. July 27, 1990 (Subpart S).

- United States Environmental Protection Agency Region III. Risk Based Concentration Table, July - December 1995.

- United States Environmental Protection Agency, Region IX. Region 9 Preliminary Remedial Goals (PRGs), 1996.

- ASTM Standard E 1739. Risk Based Corrective Action (RBCA) Applied at Petroleum Release Sites.

NYSDEC TAGM

The NYSDEC TAGM develops recommended soil cleanup objectives (RSCOs) based on the following:

- calculations derived from the USEPA Health Effects Assessment Summary Tables (HEAST) from 1994 for carcinogens;
- human health based levels for systemic toxicants which uses an average exposure in which children ages one to six (who exhibit the greatest tendency to ingest soil) is assumed;
- environmental concentrations which are protective of ground-water quality;
- background values for contaminants; and
- detection limits.

IN MOST CASES, A CLEANUP LEVEL IS MOST STRINGENT FOR PROTECTION OF GW, HOWEVER, THOSE #'S ARE BASED ON CONCENTRATIONS IN SATURATED SOIL. A BUILT-IN MULTIPLIER OF 100 WOULD NO DOUBT BE VALID IF THE CONTAMINATION HAS REACHED GW.

The TAGM does state that if the calculated criteria for metals is less than the background values, the background value should be used as the cleanup objective. Site specific background samples for metals were collected during the Phase I Remedial Investigation at the Yard and those values are included in Table 2. In addition, the RSCOs are developed for soil organic carbon content of 1 percent, and require adjustment for actual soil organic carbon content. These adjustments appear to be applicable only to those chemicals which do not have HEAST values.

ATSDR

According to the ATSDR draft toxicological profile, PAHs are ubiquitous in the environment resulting from the incomplete combustion of organic materials (e.g., forest fires, volcanoes, combustion of fuels for heating and transportation). ATSDR provides background concentrations of PAHs for rural, agricultural, and urban soils. The urban concentrations are most representative of the conditions of the Yard, therefore, the urban concentrations are considered as background.

USEPA SSLs

Soil screening levels (SSLs) are used to identify and define areas, contaminants, and conditions that do not require further attention. The SSLs are risk-based concentrations derived from standardized equations which combine exposure assumptions with USEPA toxicity data. The generic SSLs (presented in Tables 1 and 2) are based on a number of default assumptions chosen to be protective of human health for most site conditions. Using the generic SSLs where residential land use assumptions do not apply could result in overly conservative screening levels.

Subpart S

The action levels provided in the proposed Subpart S document are based on a residential scenario where exposures for noncarcinogens must account for exposure to children for the years 0 to six and then adults from 7 to 70. This is extremely conservative and does not allow averaging of childhood and adult exposures. These levels are set with long-term direct contact and soil ingestion by children in mind (55 FR 30819). The exposure to carcinogens is averaged over a lifetime. The methods used for deriving the action levels presented in this document were calculated for the identified constituents of concern.

USEPA Region III RBCs

EPA Region III has developed the Risk-Based Concentration (RBC) Table (attached) to serve as a risk assessment run in reverse. It is used to screen sites (evaluate preliminary remediation goals) and spot check formal risk assessments. This table provides concentrations for both residential and industrial use exposures. A soil RBC of 1,000,000 mg/kg means that no amount of the contaminant in soil will cause harm through incidental ingestion of soil.

RBCA ASTM

The ASTM RBCA guidance was reviewed, but will not be used further for evaluation due to the number of default values which may be used. The use of the varying default values will reflect on the same issues as those raised by the NYSDOH's evaluation of Roux Associates Baseline Risk Assessment; therefore, RBCA levels will not be used for comparison.

**2.0 Data Evaluated**

The sample results evaluated include data from the Phase I RI, Phase II RI, Static Frequency Converter Investigations, and the High Speed Rail Trainset Service and Inspection Building Investigation (excluding Area 1). All analytes exceeding the RSCOs (except PCBs which were previously addressed in the September 20, 1995 document) were evaluated against the site-specific cleanup levels proposed in the above-referenced documents. The site-specific cleanup levels for semivolatile organic compounds (SVOCs), which were represented by the polycyclic aromatic hydrocarbons (PAHs), and metals detected in soil are presented in Tables 1 and 2, respectively. No volatile organic compounds (VOCs) were detected in concentrations above the RSCOs, and are therefore not discussed.

In general, a comparison of site-specific cleanup levels for residential scenarios (i.e., RSCOs, SSLs, Subpart S) indicates that, with few exceptions, the RSCOs (based on a one percent total organic carbon content) are more conservative than the SSLs, and Subpart S concentrations. Given that the Yard is not, and will not be, used for residential purposes, and that the total organic carbon content is greater than one

percent, the use of a residential scenario is inappropriate and extremely conservative, and the use of RSCOs even more conservative. The RBCs for industrial sites were approximately one order of magnitude higher than the residential levels discussed above (i.e., SSLs, Subpart S).

As shown in Table 1, the contrast between the RSCOs and the alternative cleanup levels for PAHs encompass a great degree of difference. For example, the RSCO for benzo(a)anthracene is 224 parts per billion (ppb) while the subpart S action level is 959 ppb, the RBC is 7,800 ppb, and the ATSDR background concentration for urban soils is 59,000 ppb. Only 50 percent of the soil samples at the Yard which exceeded the RSCO exceed Subpart S, only one sample exceeded the RBC, and no samples exceeded the ATSDR background concentration.

Table 2 indicates that there is also a significant difference in the alternative cleanup levels for metals presented. For example, the RSCO for cadmium is 1 ppm or site background, while the soil screening level is 39 ppm, the Subpart S concentration is 40 ppm, and the RBC is 1,000 ppm. Eight sample concentrations exceeded the RSCO, while there were no exceedances for the SSLs, Subpart S, or the RBCs.

**3.0 Conclusions**

This evaluation, in conjunction with the Risk Assessment previously completed by Roux Associates for the Yard, is intended to provide alternative cleanup levels that are protective of both human health and the environment. At the same time, it is our intent to establish practical cleanup levels which are appropriate for a century old rail yard in an urban center that is not intended for residential or recreational usage. With this in mind, it seems overly conservative to rely on the RSCOs, or for that matter, on any residential use scenario. Rather, it is more appropriate to rely on urban background concentrations and risk-based concentrations derived for industrial uses, as shown in the above examples and in Tables 1 and 2. These concentrations (i.e., RBCs) have been developed by the USEPA, are used to evaluate preliminary remedial goals in Region III, and are considered by the United States Government to be protective of human health and the environment for an industrial setting.

In conclusion, we propose to use the RBCs developed by USEPA Region III as the site-specific cleanup levels for the Yard. Based on this evaluation, only one sample (S-43) exceeds the RBCs for three PAHs while five samples (S-101, S-102, S-103, S-43, and HST-2) exceed the RBC for benzo (a)pyrene. In addition, all metals are below the RBCs with the exception of arsenic in its carcinogenic valent state. Only total arsenic was analyzed, therefore, no information is available at this time concerning the species of arsenic present at the Yard. Additional sampling and analysis may be required to evaluate the potential risk posed by arsenic at the Yard.

Should you have any comments, or require further information, please do not hesitate to call.

Sincerely,

ROUX ASSOCIATES, INC.

Linda M. Wilson
Senior Scientist

Joseph D. Duminuco
Principal Hydrogeologist

Attachments

cc: M. Kris, Esq., NYSDEC
S. Ervolina, P.E., NYSDEC
H. Agrawal, P.E., NYSDEC
R. Noonan, AMTRAK
J. Roberts, Esq., AMTRAK, w/o attachment
R. LaRosa, P.E., AMTRAK
R. Mohlenhoff, P.E., AMTRAK
S. Jurow, P.E., New Jersey Transit, w/o attachment
C. Warren, Esq., Robinson, Silverman et. al
P. Gerbasi, P.E., Remedial Engineering, P.C., w/o attachment

# TABLES

**Table 1. Alternative Cleanup Levels for Semivolatile Organic Compounds Detected in Soil at Sunnyside Yard, Queens, New York**

| Analytes | Range of Concentrations (µg/kg)[a] | RSCOs[b] | ATSDR[c] | Soil Screening Levels | Subpart S [d] | Region III RBCs[e] |
|---|---|---|---|---|---|---|
| Benzo(a)anthracene | ND-12,600 | 224 (10) | 59,000 (0) | 900 (3) | 959 (3) | 7,800 (1) |
| Benzo(a)pyrene | ND-5,760 | 61 (18) | 220 (16) | 90 (16) | NL | 780 (5) |
| Benzo(b)fluoranthene | ND-3,200 | 1,100 (7) | 62,000 (0) | 900 (8) | 950 (8) | 7,800 (0) |
| Benzo(k)fluoranthene | ND-5,100 | 1,100 (7) | 26,000 (0) | 9,000 (0) | 9,590 (0) | 78,000 (0) |
| Chrysene | ND-10,100 | 400 (10) | 640 (7) | 88,000 (0) | NL | 780,000 (0) |
| Dibenz(a,h)anthracene | ND-2,090 | 14 or MDL[f] (9) | NL[g] | 90 (2) | 96 (2) | 780 (1) |
| Indeno(1,2,3-cd)pyrene | ND-4,640 | 3,200 (1) | 61,000 (0) | 900 (1) | 9,590 (0) | 7,800 (0) |
| | | | | | | |

a. micrograms per kilogram
b. NYSDEC Recommended Soil Cleanup Objectives
c. Agency for Toxic Substances and Disease Registry
d. Subpart S "action levels" developed from 55 FR 30870-71
e. Risk-Based Concentrations developed by USEPA Region III
f. method detection limit
g. not an analyte on the list

**( ) indicates the number of sample exceedances**

(1) TAGM 4046 VALUES
(2) ATSDR's URBAN #s — BKGRD.
(3) EPA SOIL SCREENING #s (CONCENTRATIONS BELOW #s DO NOT REQUIRE FURTHER ATTENTION
(4) ~~CE~~ SUBPART S #s — RISK BASED #s FOR RESIDENCE
(5) EPA REGION 3 #s FOR RESIDENTIAL AND INDUSTRIAL SCENARIOS.

**Table 2. Alternative Cleanup Levels for Metals detected in Soil at Sunnyside Yard, Queens, New York**

| Analyte | Range of Concentrations (mg/kg)[a] | RSCO[b] | Yard Background | Soil Screening Levels | Subpart S[c] | Region III RBCs[d] |
|---|---|---|---|---|---|---|
| Aluminum | 1,600-11,100 | SB[e] | 4,770 (6) | NL[f] | 80,000 (0) | 1,000,000 (0) |
| Antimony | ND - 20.4 | SB | 2.4 (4) | 31 (0) | 32 (0) | 820 (0) |
| Arsenic | ND-26 | 7.5 or SB (12) | <1.2 | 0.37 | 24 (3) | 610[g]; 3.8[h] (0/17) |
| Beryllium | ND-0.63 | 0.16 or SB (3) | <0.36 | 0.1 (3) | 0.16 (3) | 1.3 (0) |
| Cadmium | ND-9.2 | 1 or SB (8) | <1.1 | 39 (0) | 40 (0) | 1,000 (0) |
| Calcium | 425-18,100 | SB | 6,850 (3) | NL | NL | NL |
| Chromium | 5.1-124 | 10 or SB (25) | 13 (16) | 390 (0) | 80,000 (0) | 1,000,000 (0) |
| Copper | 4.8-629 | 25 or SB (31) | 12 (37) | NL | 2,970 (0) | 82,000 (0) |
| Iron | 3,910-91,800 | 2,000 or SB (39) | 11,200 (18) | NL | NL | 610,000 (0) |
| Lead | 5.4-1,290 | 500 or SB (3) | 8.8 (35) | NL | 400 (4) | NL |
| Manganese | 8.2-667 | SB | 224 (15) | NL | 400 (2) | 47,000 (0) |
| Mercury | ND-22.5 | 0.1 (19) | <0.1 | 23 (0) | 24 (0) | 610(inorganic); 200 (0) |
| Nickel | ND-168 | 13 or SB (13) | 11 (18) | 1,600 (0) | 1,600 (0) | 41,000 (0) |
| Zinc | 16-1,310 | 20 or SB (40) | 22 (39) | 23,000 (0) | 24,000 (0) | 610,000 (0) |

a. milligrams per kilogram
b. NYSDEC Recommended Soil Cleanup Objective
c. Subpart S "action levels" developed using calculations in 55 FR 30870-1
d. Risk Based Concentrations developed by USEPA Region III
e. Site Background
f. not an analyte on the list
g. non-carcinogenic form of arsenic
h. carcinogenic form of arsenic

( ) indicates the number of sample exceedances

# ATTACHMENTS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III
841 Chestnut Street
Philadelphia, Pennsylvania 19107

April 19, 1996

SUBJECT: Risk-Based Concentration Table, January-June 1996

FROM: Roy L. Smith, Ph.D.
Office of RCRA
Technical & Program Support Branch (3HW70)

TO: RBC Table mailing list

Attached is the EPA Region III risk-based concentration (RBC) table, which we distribute semiannually to all interested parties.

*IMPORTANT MESSAGE*

*EPA Region III's Internet website now includes two versions of the RBC Table. (These can be found at* **http://www.epa.gov/reg3hwmd/riskmenu.htm?=Risk+Guidance.** *Once there, I suggest you set a bookmark to ease future access.) One version can be browsed on-line, and a second (identical) version in .ZIP format can be quickly downloaded. The cover memo and background information are also included in both formats.*

*We strongly encourage all RBC table users having Internet access to obtain the table electronically rather than on paper. In this way, users can access the most current RBC table immediately in a form that can be used directly for comparisons with data or risk estimates. This distribution method will also save hundreds of pounds of paper per year and cost substantially less.*

## CONTENTS, USES, AND LIMITATIONS OF THE RBC TABLE

The table contains reference doses and carcinogenic potency slopes (obtained from IRIS through April 1, 1996, HEAST through May 1995, the EPA-NCEA Superfund Health Risk Technical Support Center, and other EPA sources) for nearly 600 chemicals. These toxicity constants have been combined with "standard" exposure scenarios to calculate RBCs--chemical concentrations corresponding to fixed levels of risk (*i.e.*, a hazard quotient of one, or lifetime cancer risk of $10^{-6}$, whichever occurs at a lower concentration) in water, air, fish tissue, and soil.

The RBC table also includes soil screening levels (SSLs) for protection of groundwater and air. Most SSLs were obtained directly from EPA/OSWER's proposed SSL guidance document, to which we have added some additional SSLs based on the same methodology. Sources of SSLs are noted in the table. SSLs incorporate the same exposure assumptions as

RBCs, plus additional assumptions needed for inter-media extrapolation. SSLs are therefore distinct from RBCs, and should be used only in the framework proposed in the OSWER document (available from NTIS as document numbers 9355.4-1, PB95-965530, or EPA540/R-94/105).

The Region III toxicologists use RBCs to screen sites not yet on the NPL, respond rapidly to citizen inquiries, and spot-check formal baseline risk assessments. The background materials provide the complete basis for all the calculations, with the intent of showing users exactly how the RBCs were developed. Simply put, RBCs are risk assessments run in reverse. For a single contaminant in a single medium, under standard default exposure assumptions, the RBC corresponds to the target risk or hazard quotient.

RBCs also have several important limitations. Specifically excluded from consideration are (1) transfers from soil to air and groundwater, and (2) cumulative risk from multiple contaminants or media. Also, the toxicity information in the table has been assembled by hand, and (despite extensive checking and years of use) may contain errors. It's advisable to cross-check before relying on any RfDs or CPSs in the table. If you find any errors, please send me a note.

Many users want to know if the risk-based concentrations can be used as valid no-action levels or cleanup levels, especially for soils. The answer is a bit complex. First, it is important to realize that the RBC table does not constitute regulation or guidance, and should not be viewed as a substitute for a site-specific risk assessment. For sites where:

1. A single medium is contaminated;

2. A single contaminant contributes nearly all of the health risk;

3. Volatilization or leaching of that contaminant from soil is expected not to be significant;

4. The exposure scenarios used in the RBC table are appropriate for the site;

5. The fixed risk levels used in the RBC table are appropriate for the site; and

6. Risk to ecological receptors is expected not to be significant;

the risk-based concentrations would probably be protective as no-action levels or cleanup goals. However, to the extent that a site deviates from this description, as most do, the RBCs would not necessarily be appropriate.

*To summarize, the table should generally not be used to (1) set cleanup or no-action levels at CERCLA sites or RCRA Corrective Action sites, (2) substitute for EPA guidance for preparing baseline risk assessments, or (3) determine if a waste is hazardous under RCRA.*

## ANSWERS TO FREQUENTLY ASKED QUESTIONS

To help you better understand the RBC table, here are answers to our most often-asked questions:

*1. How can the age-adjusted inhalation factor (11.66) be less than the inhalation rate for either a child (12) or an adult (20)?*

Age-adjusted factors are not intake rates, but rather partial calculations which have different units than intake rates do. The fact that these partial calculations have values similar to intake rates is really coincidental, an artifact of the similar magnitude of years of exposure and time-averaged body weight.

*2. Why does arsenic appear in the RBC table separately as a carcinogen and a non-carcinogen, while other contaminants do not?*

Arsenic is double-entered to ensure that the risk assessor realizes that non-carcinogenic concerns are significant for arsenic. Otherwise, one might be tempted to accept a 1e-4 risk (43 ppm in residential soil), when the oral reference dose would be exceeded at 23 ppm.

Also, EPA has a little-known risk management policy for arsenic (dating from 1988) that suggests that arsenic-related cancer risks of up to 1e-3 can be accepted because the cancers are squamous cell carcinomas with a low mortality rate. Thus, non-carcinogenic RBCs represent an important limitation on acceptable arsenic concentrations.

*3. Many contaminants have no inhaled reference dose or carcinogenic potency slope in IRIS, yet these numbers appear in the RBC table with IRIS given as the source. Where did the numbers come from?*

Most inhaled reference doses and potency slopes in the RBC table are converted from reference concentrations and unit risk values which do appear in IRIS. These conversions assume 70-kg persons inhaling 20 $m^3$/d. For example, the inhalation unit risk for arsenic (4.3e-3 risk per $\mu g/m^3$) is divided by 20 $m^3$/d and multiplied by 70 kg times 1000 $\mu$g/mg, yielding a CPSi of 15.1 risk per mg/kg/d.

*4. Why does the RBC table base soil RBCs for cadmium and manganese on reference doses that apply only to drinking water?*

The RBC table's use of the drinking water RfDs for cadmium and manganese reflects (1) the limited space available in the already-crowded table, and (2) the intended use of the table as a screening tool rather than a source of cleanup levels (thereby making false positives acceptable). For a formal risk assessment, Region III would use the food RfDs for soil ingestion.

At this time, only two substances (as far as we know) have distinct oral RfDs for water and food--cadmium and manganese. Adding the two food RfDs to the table would require an entire column, which would be about 99.9% blank. The table has become so crowded that it

would be difficult to accommodate another column. Also, we've given this problem a relatively low priority because the table's primary purpose is to identify environmental problems needing further study. RBCs were never intended for uncritical use as cleanup levels, merely to identify potential problems which need a closer look.

*5. What is the source of the child's inhalation rate of 12 m3/d?*

The calculation comes from basic physiology. It's a scaling of the mass-specific 20 m3/d rate for adults from a body mass of 70 kg to 15 kg, using the two-thirds power of mass, as follows:

Let: IRcm = mass-specific child inhalation rate (m3/kg/d)
IRc = child inhalation rate (m3/d)

20 m3/d ÷ 70kg = 0.286 m3/kg/d (mass-specific adult inhalation rate)

$0.286 \text{ m3/kg/d} \times (70^{.67}) = (\text{IRcm}) \times (15^{.67})$

$\text{IRcm} = (0.286) \times (70^{.67}) \div (15^{.67}) = 0.286 \times 2.807 = 0.803 \text{ m3/kg/d}$

IRc = IRcm x 15kg = 0.803 m3/kg/d x 15kg = 12.04 m3/d

A short (but algebraically equivalent) way to do the conversion:

$20 \times (15 \div 70)^{.333} = 11.97$ (different from, but actually more correct than, 12.04 because of rounding error in calculating by the long form).

*6. Can the oral RfDs in the RBC table be applied to dermal exposure?*

Not directly. EPA's Office of Research and Development is working on dermal RfDs for some substances, but has not yet produced any final values. When dermal RfDs do appear, they will undoubtedly be based on absorbed dose rather than administered dose. Oral RfDs are (usually) based on administered dose and therefore tacitly include a GI absorption factor. Thus, any use of oral RfDs in dermal risk calculations would have to involve removing this absorption factor.

*7. The exposure variables table in the RBC background document lists the averaging time for non-carcinogens as "ED*365". What does that mean?*

ED is exposure duration, in years, and '*' is the computer-ese symbol for multiplication. Multiplying ED by 365 simply converts the duration to days. In fact, the ED term is included in both the numerator and denominator of the RBC algorithms for non-cancer risk, canceling it altogether. We expressed the algorithm this way to allow users to realize this. The total exposure is really adjusted only by EF (days exposed per year) divided by 365. (Note that this explanation applies to non-carcinogenic risk only; for carcinogens, exposure is pro-rated over the number of days in a 70-year life span.)

*8. Why is inorganic lead not included in the RBC table?*

The reason that lead is missing from the RBC table is simple, and fundamental: EPA has no reference dose or potency slope for inorganic lead, so it wasn't possible to calculate risk-based concentrations. EPA considers lead a special case because:

(1) Lead is ubiquitous in all media, so human exposure comes from multiple sources. Comparing single-medium exposures with a reference dose would be misleading.

(2) If EPA did develop a reference dose for lead by the same methods other reference doses, we would probably find that most people already exceed it. Since EPA already knows this and is moving aggressively to lower lead releases nationally, such findings at individual sites would be irrelevant and unduly alarming.

(3) EPA decided to take a new approach to distinguish important lead exposures from trivial ones. EPA developed a computer model (the IEUBK model) which predicts children's blood lead concentrations using lead levels in various media as inputs. The idea is to evaluate a child's entire environment, and reduce lead exposures in the most cost-effective way.

On the practical side, there are several EPA policies on lead which effectively substitute for RBCs. The EPA Office of Solid Waste has released a detailed directive on risk assessment and cleanup of residential soil lead. The directive recommends that soil lead levels less than 400 ppm be considered safe for residential use. Above that level, the document suggests collecting certain types of data and modeling children's blood lead with the IEUBK model. For the purposes of the RBC table, the *de facto* residential soil number would be 400 mg/kg. For water, we suggest 15 ppb (from the national EPA Action Level), and for air, the National Ambient Air Quality Standard.

*9. Where did the potency slopes for carcinogenic PAHs come from?*

The source of the potency slopes for PAHs is "Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons," Final Draft, EPA Environmental Criteria and Assessment Office, Cincinnati, OH. It's available from NTIS as document number ECAO-CIN-842 (March, 1993). The slopes are expressed in terms of order-of-magnitude equivalence factors relating the compounds to benzo[a]pyrene; we have converted these TEQs to potency slopes to fit the format of the table.

*10. May I please have a copy of the January 1991 RBC table?*

We're sorry, but no. The RBC table doesn't represent regulation or guidance, so past issues have no legal importance. Each time we update the table we destroy all obsolete copies, electronic and paper. We do this to ensure that only one set of RBCs, the one based on current information, exists at any time.

*11. I've noticed that some soil RBCs are one million parts per million. Since some of these substances are liquids, that's obviously ridiculous. What is that basis for these*

*calculations?*

A soil RBC of one million parts per million means that no amount of the contaminant in soil will cause a receptor to exceed the oral reference dose by incidental ingestion of soil. In fact, some contaminants would have RBCs of more than one million ppm, but the algorithms cap concentrations at 100%. The reason we retain these admittedly impossible numbers is to let users see that the contaminant is not a threat via soil ingestion.

However, it's important to realize that the RBC calculations do not consider the potential of soil contaminants to leach to groundwater or escape to air by volatilization or dust entrainment. To consider these inter-media transfers, it's necessary to either monitor air and groundwater, or to use a mathematical model. Measured or modeled air and groundwater concentrations should then be compared to the RBCs for air and tap water.

We have begun to incorporate inter-media transfers into the RBC table in the form of soil screening levels (SSLs). However, EPA Headquarters has proposed only about a hundred SSLs so far, so the list is still rather short.

*12. Please elaborate on the meaning of the 'W' source code in the table.*

The "W" code means that a reference dose or potency slope for a contaminant is currently not present on either IRIS or HEAST, but that it once was present on either IRIS or HEAST and was removed. Such withdrawal usually indicates that consensus on the number no longer exists among EPA scientists, but not that EPA believes the contaminant to be unimportant. Older versions of the RBC table had separate codes for IRIS and HEAST withdrawals, but we changed to a single code for both because, after all, it hardly matters.

We retain withdrawn numbers in the table because we still need to deal with these contaminants during the sometimes very long delays before replacement numbers are ready. We take the position that for the purpose of screening an obsolete RBC is better than none at all. The 'W' code should serve as a clear warning that before making any serious decision involving that contaminant you will need to develop an interim value based on current scientific understanding.

If you are assessing risks at a site where a major contaminant is coded "W," consider working with your Regional EPA risk assessor to develop a current toxicity constant. If the site is being studied under CERCLA, the EPA-NCEA Regional Technical Support group may be able to assist.

*13. Can I get copies of supporting documents for interim toxicity constants which are coded "E" in the RBC table?*

Unfortunately, Region 3 does not have a complete set of supporting documents. The EPA-NCEA Superfund Health Risk Technical Support Center prepares these interim toxicity constants in response to site-specific requests from Regional risk assessors, and sends the documentation only to the requestor. The RBC tables contain only the interim values (those with "E" codes) that we've either requested ourselves or otherwise obtained copies of. There may

be many more interim values of which we are unaware. Also, we don't receive automatic updates when NCEA revisits a contaminant, so it's likely that some interim values in the RBC table are obsolete.

It has been NCEA's policy to deny requests for documentation of interim toxicity constants. Although Region 3 has sometimes provided this documentation on request, for the above-stated reasons we have no assurance that the assessments, or even the interim numbers, are current. We've decided to discontinue distributing information that may be misleading. If an "E"-coded contaminant is a major risk contributor at your site, we strongly suggest that you work with EPA to develop an up-to-date reference dose or slope factor.

## CHANGES IN THIS ISSUE OF THE RBC TABLE

New or revised EPA toxicity constants are now marked with "**" before the contaminant name. This is to help users quickly pick out substances with new RBCs. Formerly these contaminants were printed in underlined boldface type that copied badly. A new basis code, "M" for MCL, has been added to the upper right corner of each page. This code denotes soil screening levels for groundwater protection that are based on EPA Maximum Contaminant Levels.

If you have a question about the RBC Table, please call the Superfund Technical Support Section at 215-566-3041 (please note this new number). Please limit your questions to general RBC issues; if you have a question about applying RBCs to a site, please contact the EPA Regional Office handling the project. Thanks for your help and cooperation and we hope that the RBC Table continues to be a useful resource.

I have one last announcement--I'll be leaving Region III at the end of May, 1996. As a result, I'll no longer be able to answer your questions about the RBC table. However, Region III will continue to distribute and support the table, and other Regional toxicologists will be available to help you. Thank you all for your interest and support; it's been a privilege working with all of you.

Attachment

# EPA Region III Risk-Based Concentration Table

Background Information

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April 19, 1996

## Development of Risk-Based Concentrations

### General

Separate carcinogenic and non-carcinogenic risk-based concentrations were calculated for each compound for each pathway. The concentration in the table is the lower of the two, rounded to two significant figures. The following terms and values were used in the calculations:

| Exposure variables | Value | Symbol |
|---|---|---|
| *General:* | | |
| Carcinogenic potency slope oral (risk per mg/kg/d): | * | CPSo |
| Carcinogenic potency slope inhaled (risk per mg/kg/d): | * | CPSi |
| Reference dose oral (mg/kg/d): | * | RfDo |
| Reference dose inhaled (mg/kg/d): | * | RfDi |
| Target cancer risk: | 1e-06 | TR |
| Target hazard quotient: | 1 | THQ |
| Body weight, adult (kg): | 70 | BWa |
| Body weight, age 1-6 (kg): | 15 | BWc |
| Averaging time carcinogens (d): | 25550 | ATc |
| Averaging time non-carcinogens (d): | ED*365 | ATn |
| Inhalation, adult (m3/d): | 20 | IRAa |
| Inhalation, child (m3/d): | 12 | IRAc |
| Inhalation factor, age-adjusted (m3-y/kg-d): | 11.66 | IFAadj |
| Tap water ingestion, adult (L/d): | 2 | IRWa |
| Tap water ingestion, age 1-6 (L/d): | 1 | IRWc |
| Tap water ingestion factor, age-adjusted (L-y/kg-d): | 1.09 | IFWadj |
| Fish ingestion (g/d): | 54 | IRF |
| Soil ingestion, adult (mg/d): | 100 | IRSa |
| Soil ingestion, age 1-6 (mg/d): | 200 | IRSc |
| Soil ingestion factor, age adjusted (mg-y/kg-d): | 114.29 | IFSadj |
| *Residential:* | | |
| Exposure frequency (d/y): | 350 | EFr |
| Exposure duration, total (y): | 30 | EDtot |
| Exposure duration, age 1-6 (y): | 6 | EDc |
| Volatilization factor (L/m3): | 0.5 | K |
| *Occupational:* | | |

| Exposure variables | Value | Symbol |
|---|---|---|
| Exposure frequency (d/y): | 250 | EFo |
| Exposure duration (y): | 25 | EDo |
| Fraction of contaminated soil ingested (unitless) | 0.5 | FC |

*: Contaminant-specific toxicological constants. The priority among sources of toxicological constants was as follows: (1) IRIS, (2) HEAST, (3) HEAST alternative method, (4) EPA-NCEA Superfund Health Risk Technical Support Center, (5) withdrawn from IRIS or HEAST, and (6) other EPA documents. Each source was used only if numbers from higher-priority sources were unavailable. The EPA Superfund Health Risk Technical Support Center, part of the EPA National Center for Environmental Assessment in Cincinnati, develops provisional RfDs and CPSs on request for contaminants not in IRIS or HEAST. These provisional values are labeled "E = EPA-NCEA provisional" in the table. It is possible they may be obsolete. If one of the "E" constants is important to a Superfund risk assessment, consider requesting, through a Regional risk assessor, a new provisional value.

## Age-adjusted factors

Because contact rates with tap water, ambient air, and residential soil are different for children and adults, carcinogenic risks during the first 30 years of life were calculated using age-adjusted factors. These factors approximated the integrated exposure from birth until age 30 by combining contact rates, body weights, and exposure durations for two age groups - small children and adults. The age-adjusted factor for soil was obtained from RAGS IB; the others were developed by analogy.

### Air inhalation

$$IFAadj\ \frac{m^3 \cdot y}{kg \cdot d} = \frac{EDc \cdot IRAc}{BWc} + \frac{(EDtot - EDc) \cdot IRAa}{BWa}$$

### Tap water ingestion

$$IFWadj\ \frac{L \cdot y}{kg \cdot d} = \frac{EDc \cdot IRWc}{BWc} + \frac{(EDtot - EDc) \cdot IRWa}{BWa}$$

### Soil ingestion

$$IFSadj\ \frac{mg \cdot y}{kg \cdot d} = \frac{EDc \cdot IRSc}{BWc} + \frac{(EDtot - EDc) \cdot IRSa}{BWa}$$

## Residential water

Volatilization terms were calculated only for compounds with a mark in the "VOC" column. Compounds having a Henry's Law constant greater than $10^{-5}$ were considered volatile. The list may be incomplete, but is unlikely to include false positives. The equations and the volatilization factor (K, above) were obtained from RAGS IB. Oral potency slopes and reference doses were used for both oral and inhaled exposures for volatile compounds lacking inhalation values. Inhaled potency slopes were substituted for unavailable oral potency slopes only for volatile compounds; inhaled RfDs were substituted for unavailable oral RfDs for both volatile and non-volatile compounds. RBCs for carcinogens were based on combined childhood and adult exposure; for non-carcinogens RBCs were based on adult exposure.

### Carcinogens

$$RBC\ \frac{\mu g}{L} = \frac{TR \cdot ATc \cdot 1000\frac{\mu g}{mg}}{EFr \cdot ([K \cdot IFAadj \cdot CPSi] + [IFWadj \cdot CPSo])}$$

### Non-carcinogens

$$RBC\ \frac{\mu g}{L} = \frac{THQ \cdot BWa \cdot ATn \cdot 1000\frac{\mu g}{mg}}{EFr \cdot EDtot \cdot \left(\frac{K \cdot IRAa}{RfDi} + \frac{IRWa}{RfDo}\right)}$$

## Ambient air

Oral potency slopes and references were used where inhalation values were not available. RBCs for carcinogens were based on combined childhood and adult exposure; for non-carcinogens RBCs were based on adult exposure.

### Carcinogens

$$RBC\ \frac{\mu g}{m^3} = \frac{TR \cdot ATc \cdot 1000\frac{\mu g}{mg}}{EFr \cdot IFAadj \cdot CPSi}$$

### Non-carcinogens

$$RBC\ \frac{\mu g}{m^3} = \frac{THQ \cdot RfDi \cdot BWa \cdot ATn \cdot 1000\frac{\mu g}{mg}}{EFr \cdot EDtot \cdot IRAa}$$

## Edible fish

All RBCs were based on adult exposure.

### Carcinogens

$$RBC\ \frac{mg}{kg} = \frac{TR \cdot BWa \cdot ATc}{EFr \cdot EDtot \cdot \frac{IRF}{1000\frac{g}{kg}} \cdot CPSo}$$

### Non-carcinogens

$$RBC\ \frac{mg}{kg} = \frac{THQ \cdot RfDo \cdot BWa \cdot ATn}{EFr \cdot EDtot \cdot \frac{IRF}{1000\frac{g}{kg}}}$$

## Commercial/industrial soil ingestion

RBCs were based on adult occupational exposure, including an assumption that only 50% of total soil ingestion is work-related.

### Carcinogens

$$RBC\ \frac{mg}{kg} = \frac{TR \cdot BWa \cdot ATc}{EFo \cdot EDc \cdot \frac{IRSa}{10^6\ \frac{mg}{kg}} \cdot FC \cdot CPSo}$$

### Non-carcinogens

$$RBC\ \frac{mg}{kg} = \frac{THQ \cdot RfDo \cdot BWa \cdot ATn}{EFo \cdot EDo \cdot \frac{IRSa}{10^6\ \frac{mg}{kg}} \cdot FC}$$

### Residential soil ingestion

RBCs for carcinogens were based on combined childhood and adult exposure; RBCs for non-carcinogens were based on childhood exposure only.

### Carcinogens

$$RBC\ \frac{mg}{kg} = \frac{TR \cdot ATc}{EFr \cdot \frac{IFSadj}{10^6\ \frac{mg}{kg}} \cdot CPSo}$$

### Non-carcinogens

$$RBC\ \frac{mg}{kg} = \frac{THQ \cdot RfDo \cdot BWc \cdot ATn}{EFr \cdot EDc \cdot \frac{IRSc}{10^6\ \frac{mg}{kg}}}$$

## Development of Soil Screening Levels

### General

In December 1994 the EPA Office of Solid Waste and Emergency Response proposed Soil Screening Guidance (Document 9355.4-1, PB95-963530, EPA540/R-94/101, available through NTIS at 703-487-4650). This draft document provides (1) a framework in which soil screening levels are to be used, (2) a detailed methodology for calculating soil screening levels, and (3) soil screening levels for 107 substances. (Note: EPA released an updated draft of this document in early 1996. We have decided to wait until the SSL guidance is final before changing the RBC table.)

Consistent with this new guidance, the risk-based concentration table now includes two columns of generic soil screening levels (SSLs). OSWER's 107 proposed soil screening levels have been added verbatim. In addition, the proposed SSL methodology has been used to calculate soil screening levels for more substances, which are also included in the new table. The table clearly distinguishes the OSWER SSLs from the "unofficial" ones.

These SSLs provide reasonable maximum estimates of transfers of contaminants from soil to

other media. One column contains soil concentrations protective of groundwater quality; the other contains soil concentrations protective of air quality. "Protective" is defined in the same terms as the risk-based concentrations for tap water and air -- that residential contact scenarios will yield a fixed upper bound risk of $10^{-6}$ or a fixed hazard quotient of 1 (whichever occurs at the lower concentration).

*OSWER's SSLs should be used only within the framework proposed in the guidance document. The additional SSLs included in the RBC table are intended for the same uses (although they obviously carry less weight than the formally proposed numbers).*

The SSLs are based on the following assumptions:

| Input variables | Value | Symbol* |
|---|---|---|
| Surface soil moisture content (g/g) | 0.1 | $W_s$ |
| Vadose zone soil moisture content (kg/kg) | 0.2 | $W_v$ |
| Surface soil bulk density (g/cm$^3$) | 1.5 | $\rho_{bs}$ |
| Vadose zone soil bulk density (kg/L) | 1.5 | $\rho_{bv}$ |
| Surface soil particle density (g/cm$^3$) | 2.65 | $\rho_{ss}$ |
| Vadose zone soil particle density (g/cm$^3$) | 2.65 | $\rho_{sv}$ |
| Total surface soil porosity (L pore /L soil) | 0.43 | $N_s$ |
| Total vadose zone soil porosity (L pore/L soil) | 0.43 | $N_v$ |
| Air-filled surface soil porosity (L air/L soil) | 0.28 | $\theta_{as}$ |
| Water-filled surface soil porosity (L water/L soil) | 0.15 | $\theta_{ws}$ |
| Air-filled vadose zone soil porosity (L air/L soil) | 0.13 | $\theta_{av}$ |
| Water-filled vadose zone soil porosity (L water/L soil) | 0.30 | $\theta_{wv}$ |
| Organic carbon fraction of surface soil (g/g) | 0.006 | $FOC_s$ |
| Organic carbon fraction of vadose zone soil (g/g) | 0.002 | $FOC_v$ |
| Dispersion factor for 0.5 acres (g/m$^2$s per kg/m$^3$) | 35.1 | Q/C |
| Particulate emission factor (m$^3$/kg) | 6.79e+08 | PEF |
| Exposure interval (s) | 9.50e+08 | T |
| Dilution-attenuation factor (unitless) | 10 | DAF |

*: Symbols were adjusted, variables were rearranged, and derived and chemical-specific variables were omitted for simplicity and clarity. Presentation of the input variables in a single table using the same terms as in the OSWER SSL document would have been confusing. The terms used here are generally similar to OSWER's, and can easily be compared with the SSL guidance document.

With two exceptions described in the following section, SSL calculations were based on the same algorithms presented in the OSWER draft SSL guidance document. For details of the calculations (and for general background information on SSLs), I strongly recommend consulting that document. The "unofficial" SSLs were developed under the following conditions:

## Soil Screening Levels for Inhalation

Inhaled reference doses and potency slopes were used if available. If inhalation values were not available, oral RfDs and potency slopes were substituted. SSLs were calculated only for substances for which aqueous solubility, Koc, Henry's Law constant, and diffusivity in air were available. SSLs were calculated only for substances for which a volatilization factor could be calculated. This was done because OSWER's large proposed particulate emission factor rendered it pointless to estimate SSLs for particulate emissions alone. The final calculated SSL shown in the RBC table is the smaller of the risk-based SSL and the soil saturation concentration. All calculated SSLs were rounded to 2 significant figures.

The OSWER risk algorithms for inhalation were revised in order to be consistent with the rest of the RBC table. Only calculated SSLs were affected by this; SSLs proposed by OSWER are presented verbatim. Calculated SSLs for inhalation of carcinogens were based on an integrated lifetime exposure rather than adult exposure. SSLs for inhalation of noncarcinogens were based on adult exposure for 350 days per year rather than 365 days per year. The following algorithms were used to calculate inhalation SSLs:

### Carcinogens

$$SSL\ \frac{mg}{kg} = \frac{TR \cdot ATc}{EFr \cdot IFAadj \cdot \left(\frac{1}{VF} + \frac{1}{PEF}\right) \cdot CPSi}$$

### Non-carcinogens

$$SSL\ \frac{mg}{kg} = \frac{THQ \cdot BWa \cdot ATn \cdot RfDi}{EFr \cdot EDtot \cdot IRAa \cdot \left(\frac{1}{VF} + \frac{1}{PEF}\right)}$$

## Soil Screening Levels for Groundwater Use

All algorithms were as proposed by OSWER. MCLs were used as target groundwater concentrations if available. If MCLs were unavailable the risk-based concentration in the "tap water" column of the RBC table was used as the target groundwater concentration. All SSLs for groundwater are based on a dilution-attenuation factor (DAF) of 10. Since these SSLs scale linearly with DAF, the SSLs for DAF=1 would be ten times lower. They were omitted to conserve space. All groundwater SSLs were rounded to 2 significant figures and capped at unity.

*Sources: I=IRIS H=HEAST A=HEAST alternate W=Withdrawn from IRIS or HEAST E=EPA-NCEA Regional Support provisional value O=Other EPA documents.*

*Basis: C=carcinogenic effects N=noncarcinogenic effects E=EPA draft Soil Screening Level S=soil saturation concentration M=EPA MCL.*

| Contaminant | CAS | RfDo mg/kg/d | RfDi mg/kg/d | CPSo kg·d/mg | CPSi kg·d/mg | VOC | Risk-Based Concentrations: Tap Water µg/L | Ambient Air µg/m3 | Fish mg/kg | Soil Ingestion: Industrial mg/kg | Soil Ingestion: Residential mg/kg | Soil Screening Levels-Transfers from Soil to: Air mg/kg | Groundwater mg/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acephate | 30560191 | 4.00E-03 I | | 8.70E-03 I | | | 7.7 C | 0.72 C | 0.36 C | 660 C | 73 C | | |
| Acetaldehyde | 75070 | | 2.57E-03 I | | 7.70E-03 I | | 94 N | 0.81 C | | | | | |
| Acetochlor | 34256821 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Acetone | 67641 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | 62000 E | 8 E |
| Acetone cyanohydrin | 75865 | 7.00E-02 H | 4.00E-02 A | | | | 2600 N | 150 N | 95 N | 140000 N | 5500 N | | |
| Acetonitrile | 75078 | 6.00E-03 I | 1.43E-02 A | | | | 220 N | 52 N | 8.1 N | 12000 N | 470 N | | |
| Acetophenone | 98862 | 1.00E-01 I | 5.71E-06 W | | | ☒ | 0.042 N | 0.021 N | 140 N | 200000 N | 7800 N | | |
| Acifluorfen | 62476599 | 1.30E-02 I | | | | | 470 N | 47 N | 18 N | 27000 N | 1000 N | | |
| Acrolein | 107028 | 2.00E-02 H | 5.71E-06 I | | | | 730 N | 0.021 N | 27 N | 41000 N | 1600 N | | |
| Acrylamide | 79061 | 2.00E-04 I | | 4.50E+00 I | 4.55E+00 I | | 0.015 C | 0.0014 C | 0.0007 C | 1.3 C | 0.14 C | | |
| Acrylic acid | 79107 | 5.00E-01 I | 2.86E-04 I | | | | 18000 N | 1 N | 680 N | 1E+06 N | 39000 N | | |
| Acrylonitrile | 107131 | 1.00E-03 H | 5.71E-04 I | 5.40E-01 I | 2.38E-01 I | | 0.12 C | 0.026 C | 0.0058 C | 11 C | 1.2 C | | |
| Alachlor | 15972608 | 1.00E-02 I | | 8.00E-02 H | | | 0.84 C | 0.078 C | 0.039 C | 72 C | 8 C | | |
| Alar | 1596845 | 1.50E-01 I | | | | | 5500 N | 550 N | 200 N | 310000 N | 12000 N | | |
| Aldicarb | 116063 | 1.00E-03 I | | | | | 37 N | 3.7 N | 1.4 N | 2000 N | 78 N | 570 E | 0.036 M |
| Aldicarb sulfone | 1646884 | 1.00E-03 I | | | | | 37 N | 3.7 N | 1.4 N | 2000 N | 78 N | | |
| Aldrin | 309002 | 3.00E-05 I | | 1.70E+01 I | 1.71E+01 I | | 0.004 C | 0.00037 C | 0.00019 C | 0.34 C | 0.038 C | 0.5 E | 0.005 E |
| Ally | 74223646 | 2.50E-01 I | | | | | 9100 N | 910 N | 340 N | 510000 N | 20000 N | | |
| Allyl alcohol | 107186 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Allyl chloride | 107051 | 5.00E-02 W | 2.86E-04 I | | | | 1800 N | 1 N | 68 N | 100000 N | 3900 N | | |
| Aluminum | 7429905 | 1.00E+00 E | | | | | 37000 N | 3700 N | 1400 N | 1E+06 N | 78000 N | | |
| Aluminum phosphide | 20859738 | 4.00E-04 I | | | | | 15 N | 1.5 N | 0.54 N | 820 N | 31 N | | |
| Amdro | 67485294 | 3.00E-04 I | | | | | 11 N | 1.1 N | 0.41 N | 610 N | 23 N | | |
| Ametryn | 834128 | 9.00E-03 I | | | | | 330 N | 33 N | 12 N | 18000 N | 700 N | | |
| m-Aminophenol | 591275 | 7.00E-02 H | | | | | 2600 N | 260 N | 95 N | 140000 N | 5500 N | | |
| 4-Aminopyridine | 504245 | 2.00E-05 H | | | | | 0.73 N | 0.073 N | 0.027 N | 41 N | 1.6 N | | |
| Amitraz | 33089611 | 2.50E-03 I | | | | | 91 N | 9.1 N | 3.4 N | 5100 N | 200 N | | |
| Ammonia | 7664417 | | 2.86E-02 I | | | | 1000 N | 100 N | | | | | |
| Ammonium sulfamate | 7773060 | 2.00E-01 I | | | | | 7300 N | 730 N | 270 N | 410000 N | 16000 N | | |
| Aniline | 62533 | | 2.86E-04 I | 5.70E-03 I | | | 10 N | 1 N | 0.55 C | 1000 C | 110 C | 45 N | 0.031 N |
| Antimony and compounds | 7440360 | 4.00E-04 I | | | | | 15 N | 1.5 N | 0.54 N | 820 N | 31 N | | |
| Antimony pentoxide | 1314609 | 5.00E-04 H | | | | | 18 N | 1.8 N | 0.68 N | 1000 N | 39 N | | |
| Antimony potassium tartrate | 304610 | 9.00E-04 H | | | | | 33 N | 3.3 N | 1.2 N | 1800 N | 70 N | | |
| Antimony tetroxide | 1332316 | 4.00E-04 H | | | | | 15 N | 1.5 N | 0.54 N | 820 N | 31 N | | |
| Antimony trioxide | 1309644 | 4.00E-04 H | | | | | 15 N | 1.5 N | 0.54 N | 820 N | 31 N | | |
| Apollo | 74115245 | 1.30E-02 I | | | | | 470 N | 47 N | 18 N | 27000 N | 1000 N | | |
| Aramite | 140578 | 5.00E-02 H | | 2.50E-02 I | 2.49E-02 I | | 2.7 C | 0.25 C | 0.13 C | 230 C | 26 C | | |
| Arsenic | 7440382 | 3.00E-04 I | | | | | 11 N | 1.1 N | 0.41 N | 610 N | 23 N | 380 E | 15 E |
| Arsenic (as carcinogen) | 7440382 | | | 1.50E+00 I | 1.51E+01 I | | 0.045 C | 0.00041 C | 0.0021 C | 3.8 C | 0.43 C | 380 E | 15 E |

*Sources: I=IRIS H=HEAST A=HEAST alternate W=Withdrawn from IRIS or HEAST E=EPA-NCEA Regional Support provisional value O=Other EPA documents.*

*Basis: C=carcinogenic effects N=noncarcinogenic effects E=EPA draft Soil Screening Level S=soil saturation concentration M=EPA MCL.*

| Contaminant | CAS | RfDo mg/kg/d | RfDi mg/kg/d | CPSo kg·d/mg | CPSi kg·d/mg | VOC | Risk-Based Concentrations: Tap Water µg/L | Ambient Air µg/m3 | Fish mg/kg | Soil Ingestion: Industrial mg/kg | Soil Ingestion: Residential mg/kg | Soil Screening Levels-Transfers from Soil to: Air mg/kg | Groundwater mg/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arsine | 7784421 | | 1.43E-05 I | | | | 0.52 N | 0.052 N | | | | | |
| Assure | 76578148 | 9.00E-03 I | | | | | 330 N | 33 N | 12 N | 18000 N | 700 N | | |
| Asulam | 3337711 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Atrazine | 1912249 | 3.50E-02 I | | 2.22E-01 H | | | 0.3 C | 0.028 C | 0.014 C | 26 C | 2.9 C | | |
| Avermectin B1 | 65195553 | 4.00E-04 I | | | | | 15 N | 1.5 N | 0.54 N | 820 N | 31 N | | |
| Azobenzene | 103333 | | | 1.10E-01 I | 1.08E-01 I | | 0.61 C | 0.058 C | 0.029 C | 52 C | 5.8 C | | |
| Barium and compounds | 7440393 | 7.00E-02 I | 1.43E-04 A | | | | 2600 N | 0.52 N | 95 N | 140000 N | 5500 N | 350000 E | 32 E |
| Baygon | 114261 | 4.00E-03 I | | | | | 150 N | 15 N | 5.4 N | 8200 N | 310 N | | |
| Bayleton | 43121433 | 3.00E-02 I | | | | | 1100 N | 110 N | 41 N | 61000 N | 2300 N | | |
| Baythroid | 68359375 | 2.50E-02 I | | | | | 910 N | 91 N | 34 N | 51000 N | 2000 N | | |
| Benefin | 1861401 | 3.00E-01 I | | | | | 11000 N | 1100 N | 410 N | 610000 N | 23000 N | | |
| Benomyl | 17804352 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Bentazon | 25057890 | 2.50E-03 I | | | | | 91 N | 9.1 N | 3.4 N | 5100 N | 200 N | | |
| Benzaldehyde | 100527 | 1.00E-01 I | | | | V | 610 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Benzene | 71432 | | 1.71E-03 E | 2.90E-02 I | 2.90E-02 I | V | 0.36 C | 0.22 C | 0.11 C | 200 C | 22 C | 0.5 E | 0.02 E |
| Benzenethiol | 108985 | 1.00E-05 H | | | | | 0.37 N | 0.037 N | 0.014 N | 20 N | 0.78 N | | |
| Benzidine | 92875 | 3.00E-03 I | | 2.30E+02 I | 2.35E+02 I | | 0.00029 C | 0.00003 C | 0.00001 C | 0.025 C | 0.0028 C | 1.3 C | 1.100E-06 C |
| Benzoic acid | 65850 | 4.00E+00 I | | | | | 150000 N | 15000 N | 5400 N | 1E+06 N | 310000 N | 320 E | 280 E |
| Benzotrichloride | 98077 | | | 1.30E+01 I | | | 0.0052 C | 0.00048 C | 0.00024 C | 0.44 C | 0.049 C | 0.012 C | 0.000073 C |
| Benzyl alcohol | 100516 | 3.00E-01 H | | | | | 11000 N | 1100 N | 410 N | 610000 N | 23000 N | | |
| Benzyl chloride | 100447 | | | 1.70E-01 I | | V | 0.062 C | 0.037 C | 0.019 C | 34 C | 3.8 C | 0.5 C | 0.00036 C |
| Beryllium and compounds | 7440417 | 5.00E-03 I | | 4.30E+00 I | 8.40E+00 I | | 0.016 C | 0.00075 C | 0.00073 C | 1.3 C | 0.15 C | 690 E | 180 E |
| Bidrin | 141662 | 1.00E-04 I | | | | | 3.7 N | 0.37 N | 0.14 N | 200 N | 7.8 N | | |
| Biphenthrin (Talstar) | 82657043 | 1.50E-02 I | | | | | 550 N | 55 N | 20 N | 31000 N | 1200 N | | |
| 1,1-Biphenyl | 92524 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | 9000 S | 110 N |
| Bis(2-chloroethyl)ether | 111444 | | | 1.10E+00 I | 1.16E+00 I | V | 0.0092 C | 0.0054 C | 0.0029 C | 5.2 C | 0.58 C | 0.3 E | 0.0003 E |
| Bis(2-chloroisopropyl)ether | 39638329 | 4.00E-02 I | | 7.00E-02 H | 3.50E-02 H | V | 0.26 C | 0.18 C | 0.045 C | 82 C | 9.1 C | | |
| Bis(chloromethyl)ether | 542881 | | | 2.20E+02 I | 2.17E+02 I | V | 0.00005 C | 0.00003 C | 0.00001 C | 0.026 C | 0.0029 C | 0.00004 C | 1.000E-07 C |
| Bis(2-chloro-1-methylethyl)ether | | | | 7.00E-02 W | 7.00E-02 W | | 0.96 C | 0.089 C | 0.045 C | 82 C | 9.1 C | | |
| Bis(2-ethylhexyl)phthalate (DEHP) | 117817 | 2.00E-02 I | | 1.40E-02 I | | | 4.8 C | 0.45 C | 0.23 C | 410 C | 46 C | 210 E | 11 E |
| Bisphenol A | 80057 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Boron (and borates) | 7440428 | 9.00E-02 I | 5.71E-03 H | | | | 3300 N | 21 N | 120 N | 180000 N | 7000 N | | |
| Boron trifluoride | 7637072 | | 2.00E-04 H | | | | 7.3 N | 0.73 N | | | | | |
| Bromodichloromethane | 75274 | 2.00E-02 I | | 6.20E-02 I | | V | 0.17 C | 0.1 C | 0.051 C | 92 C | 10 C | 1800 E | 0.3 E |
| Bromoethene | 593602 | | | | 1.10E-01 H | V | 0.096 C | 0.057 C | | | | | |
| Bromoform (tribromomethane) | 75252 | 2.00E-02 I | | 7.90E-03 I | 3.85E-03 I | V | 2.4 C | 1.6 C | 0.4 C | 720 C | 81 C | 46 E | 0.5 E |
| Bromomethane | 74839 | 1.40E-03 I | 1.43E-03 I | | | V | 8.7 N | 5.2 N | 1.9 N | 2900 N | 110 N | 2 E | 0.1 E |
| 4-Bromophenyl phenyl ether | 101553 | 5.80E-02 O | | | | | 2100 N | 210 N | 78 N | 120000 N | 4500 N | | |
| Bromophos | 2104963 | 5.00E-03 H | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |

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| Contaminant | CAS | RfDo mg/kg/d | RfDi mg/kg/d | CPSo kg·d/mg | CPSi kg·d/mg | VOC | Risk-Based Concentrations: Tap Water µg/L | Ambient Air µg/m3 | Fish mg/kg | Soil Ingestion: Industrial mg/kg | Soil Ingestion: Residential mg/kg | Soil Screening Levels-Transfers from Soil to: Air mg/kg | Groundwater mg/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bromoxynil | 1689845 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Bromoxynil octanoate | 1689992 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| 1,3-Butadiene | 106990 | | | | 9.80E-01 I | ☒ | 0.011 C | 0.0064 C | | | | 0.0013 C | 0.000072 C |
| 1-Butanol | 71363 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | 9700 E | 8 E |
| Butyl benzyl phthalate | 85687 | 2.00E-01 I | | | | | 7300 N | 730 N | 270 N | 410000 N | 16000 N | 530 E | 68 E |
| Butylate | 2008415 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| sec-Butylbenzene | 135988 | 1.00E-02 E | | | | ☒ | 61 N | 37 N | 14 N | 20000 N | 780 N | 80 S | 0.27 M |
| tert-Butylbenzene | 104518 | 1.00E-02 E | | | | ☒ | 61 N | 37 N | 14 N | 20000 N | 780 N | | 0.27 M |
| Butylphthalyl butylglycolate | 85701 | 1.00E+00 I | | | | | 37000 N | 3700 N | 1400 N | 1E+06 N | 78000 N | | |
| Cacodylic acid | 75605 | 3.00E-03 H | | | | | 110 N | 11 N | 4.1 N | 6100 N | 230 N | | |
| Cadmium and compounds | 7440439 | 5.00E-04 I | 5.71E-05 W | | 6.30E+00 I | | 18 N | 0.00099 C | 0.68 N | 1000 N | 39 N | 920 E | 6 E |
| Caprolactam | 105602 | 5.00E-01 I | | | | | 18000 N | 1800 N | 680 N | 1E+06 N | 39000 N | | |
| Captafol | 2425061 | 2.00E-03 I | | 8.60E-03 H | | | 7.8 C | 0.73 C | 0.37 C | 670 C | 74 C | | |
| Captan | 133062 | 1.30E-01 I | | 3.50E-03 H | | | 19 C | 1.8 C | 0.9 C | 1600 C | 180 C | | |
| Carbaryl | 63252 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | 0.34 S | 23 N |
| Carbofuran | 1563662 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Carbon disulfide | 75150 | 1.00E-01 I | 2.00E-01 I | | | ☒ | 1000 N | 730 N | 140 N | 200000 N | 7800 N | 11 E | 14 E |
| Carbon tetrachloride | 56235 | 7.00E-04 I | 5.71E-04 E | 1.30E-01 I | 5.25E-02 I | ☒ | 0.16 C | 0.12 C | 0.024 C | 44 C | 4.9 C | 0.2 E | 0.03 E |
| Carbosulfan | 55285148 | 1.00E-02 I | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| Carboxin | 5234684 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Chloral | 75876 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| Chloramben | 133904 | 1.50E-02 I | | | | | 550 N | 55 N | 20 N | 31000 N | 1200 N | | |
| Chloranil | 118752 | | | 4.03E-01 H | | | 0.17 C | 0.016 C | 0.0078 C | 14 C | 1.6 C | | |
| Chlordane | 57749 | 6.00E-05 I | | 1.30E+00 I | 1.29E+00 I | | 0.052 C | 0.0049 C | 0.0024 C | 4.4 C | 0.49 C | 10 E | 2 E |
| Chlorimuron-ethyl | 90982324 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Chlorine | 7782505 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Chlorine dioxide | 10049044 | | 5.71E-05 I | | | | 2.1 N | 0.21 N | | | | | |
| Chloroacetaldehyde | 107200 | 6.90E-03 O | | | | | 250 N | 25 N | 9.3 N | 14000 N | 540 N | | |
| Chloroacetic acid | 79118 | 2.00E-03 H | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| 2-Chloroacetophenone | 532274 | | 8.57E-06 I | | | | 0.31 N | 0.031 N | | | | | |
| 4-Chloroaniline | 106478 | 4.00E-03 I | | | | | 150 N | 15 N | 5.4 N | 8200 N | 310 N | 1200 S | 0.3 E |
| Chlorobenzene | 108907 | 2.00E-02 I | 5.71E-03 A | | | ☒ | 39 N | 21 N | 27 N | 41000 N | 1600 N | 94 E | 0.6 E |
| Chlorobenzilate | 510156 | 2.00E-02 I | | 2.70E-01 H | 2.70E-01 H | | 0.25 C | 0.023 C | 0.012 C | 21 C | 2.4 C | | |
| p-Chlorobenzoic acid | 74113 | 2.00E-01 H | | | | | 7300 N | 730 N | 270 N | 410000 N | 16000 N | | |
| 4-Chlorobenzotrifluoride | 98566 | 2.00E-02 H | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | 86 N | 7.5 N |
| 2-Chloro-1,3-butadiene | 126998 | 2.00E-02 A | 2.00E-03 H | | | ☒ | 14 N | 7.3 N | 27 N | 41000 N | 1600 N | | |
| 1-Chlorobutane | 109693 | 4.00E-01 H | | | | ☒ | 2400 N | 1500 N | 540 N | 820000 N | 31000 N | | |
| Chlorodibromomethane | 124481 | 2.00E-02 I | | 8.40E-02 I | | ☒ | 0.13 C | 0.075 C | 0.038 C | 68 C | 7.6 C | 1900 E | 0.2 E |
| 1-Chloro-1,1-difluoroethane | 75683 | | 1.43E+01 I | | | ☒ | 87000 N | 52000 N | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chlorodifluoromethane | 75456 | | 1.43E+01 I | | | ☒ | 87000 N | 52000 N | | | | | |
| Chloroethane | 75003 | 4.00E-01 E | 2.86E+00 I | | | ☒ | 8600 N | 10000 N | 540 N | 820000 N | 31000 N | 2600 S | 33 N |
| 2-Chloroethyl vinyl ether | 110758 | 2.50E-02 O | | | | ☒ | 150 N | 91 N | 34 N | 51000 N | 2000 N | | |
| Chloroform | 67663 | 1.00E-02 I | | 6.10E-03 I | 8.05E-02 I | ☒ | 0.15 C | 0.078 C | 0.52 C | 940 C | 100 C | 0.2 E | 0.3 E |
| Chloromethane | 74873 | | | 1.30E-02 H | 6.30E-03 H | ☒ | 1.4 C | 0.99 C | 0.24 C | 440 C | 49 C | 0.063 C | 0.0066 C |
| 4-Chloro-2,2-methylaniline hydrochloride | 3165933 | | | 4.60E-01 H | | | 0.15 C | 0.014 C | 0.0069 C | 12 C | 1.4 C | | |
| 4-Chloro-2-methylaniline | 95692 | | | 5.80E-01 H | | | 0.12 C | 0.011 C | 0.0054 C | 9.9 C | 1.1 C | | |
| beta-Chloronaphthalene | 91587 | 8.00E-02 I | | | | | 2900 N | 290 N | 110 N | 160000 N | 6300 N | 2.8 S | 140 N |
| o-Chloronitrobenzene | 88733 | | | 2.50E-02 H | | ☒ | 0.42 C | 0.25 C | 0.13 C | 230 C | 26 C | | |
| p-Chloronitrobenzene | 100005 | | | 1.80E-02 H | | ☒ | 0.59 C | 0.35 C | 0.18 C | 320 C | 35 C | | |
| 2-Chlorophenol | 95578 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | 53000 E | 2 E |
| 2-Chloropropane | 75296 | | 2.86E-02 H | | | ☒ | 170 N | 100 N | | | | 22 N | 0.64 N |
| Chlorothalonil | 1897456 | 1.50E-02 I | | 1.10E-02 H | | | 6.1 C | 0.57 C | 0.29 C | 520 C | 58 C | | |
| o-Chlorotoluene | 95498 | 2.00E-02 I | | | | ☒ | 120 N | 73 N | 27 N | 41000 N | 1600 N | 1200 N | 5.6 N |
| Chlorpropham | 101213 | 2.00E-01 I | | | | | 7300 N | 730 N | 270 N | 410000 N | 16000 N | | |
| Chlorpyrifos | 2921882 | 3.00E-03 I | | | | | 110 N | 11 N | 4.1 N | 6100 N | 230 N | | |
| Chlorpyrifos-methyl | 5598130 | 1.00E-02 H | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| Chlorsulfuron | 64902723 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Chlorthiophos | 60238564 | 8.00E-04 H | | | | | 29 N | 2.9 N | 1.1 N | 1600 N | 63 N | | |
| Chromium III and compounds | 16065831 | 1.00E+00 I | 5.71E-07 W | | | | 37000 N | 0.0021 N | 1400 N | 1E+06 N | 78000 N | | |
| Chromium VI and compounds | 18540299 | 5.00E-03 I | | | 4.20E+01 I | | 180 N | 0.00015 C | 6.8 N | 10000 N | 390 N | 140 E | 19 E |
| Coal tar | 8001589 | | | | 2.20E+00 W | | | 0.0028 C | | | | | |
| Cobalt | 7440484 | 6.00E-02 E | | | | | 2200 N | 220 N | 81 N | 120000 N | 4700 N | | |
| Coke Oven Emissions | 8007452 | | | | 2.17E+00 I | | | 0.0029 C | | | | | |
| Copper and compounds | 7440508 | 4.00E-02 E | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | | |
| Crotonaldehyde | 123739 | 1.00E-02 W | | 1.90E+00 H | 1.90E+00 W | | 0.035 C | 0.0033 C | 0.0017 C | 3 C | 0.34 C | | |
| Cumene | 98828 | 4.00E-02 I | 2.57E-03 H | | | | 1500 N | 9.4 N | 54 N | 82000 N | 3100 N | 81 N | 65 N |
| Cyanides: | | | | | | | | | | | | | |
| Barium cyanide | 542621 | 1.00E-01 W | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Calcium cyanide | 592018 | 4.00E-02 I | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | | |
| **Chlorine cyanide | 506774 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Copper cyanide | 544923 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Cyanazine | 21725462 | 2.00E-03 H | | 8.40E-01 H | | | 0.08 C | 0.0075 C | 0.0038 C | 6.8 C | 0.76 C | | |
| Cyanogen | 460195 | 4.00E-02 I | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | | |
| Cyanogen bromide | 506683 | 9.00E-02 I | | | | | 3300 N | 330 N | 120 N | 180000 N | 7000 N | | |
| Cyanogen chloride | 506774 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Free cyanide | 57125 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Hydrogen cyanide | 74908 | 2.00E-02 I | 8.57E-04 I | | | | 730 N | 3.1 N | 27 N | 41000 N | 1600 N | | |
| Potassium cyanide | 151508 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Potassium silver cyanide | 506616 | 2.00E-01 I | | | | | 7300 N | 730 N | 270 N | 410000 N | 16000 N | | |
| Silver cyanide | 506649 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Sodium cyanide | 143339 | 4.00E-02 I | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | | |
| Thiocyanate | | 2.00E-02 E | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Zinc cyanide | 557211 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Cyclohexanone | 108941 | 5.00E+00 I | | | | ☒ | 30000 N | 18000 N | 6800 N | 1E+06 N | 390000 N | | |
| Cyclohexlamine | 108918 | 2.00E-01 I | | | | | 7300 N | 730 N | 270 N | 410000 N | 16000 N | | |
| Cyhalothrin/Karate | 68085858 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Cypermethrin | 52315078 | 1.00E-02 I | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| Cyromazine | 66215278 | 7.50E-03 I | | | | | 270 N | 27 N | 10 N | 15000 N | 590 N | | |
| Dacthal | 1861321 | 1.00E-02 I | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| Dalapon | 75990 | 3.00E-02 I | | | | | 1100 N | 110 N | 41 N | 61000 N | 2300 N | | |
| Danitol | 39515418 | 2.50E-02 I | | | | | 910 N | 91 N | 34 N | 51000 N | 2000 N | | |
| DDD | 72548 | | | 2.40E-01 I | | | 0.28 C | 0.026 C | 0.013 C | 24 C | 2.7 C | 37 S | 0.7 E |
| DDE | 72559 | | | 3.40E-01 I | | | 0.2 C | 0.018 C | 0.0093 C | 17 C | 1.9 C | 10 S | 0.5 E |
| DDT | 50293 | 5.00E-04 I | | 3.40E-01 I | 3.40E-01 I | | 0.2 C | 0.018 C | 0.0093 C | 17 C | 1.9 C | 80 E | 1 E |
| Decabromodiphenyl ether | 1163195 | 1.00E-02 I | | | | ☒ | 61 N | 37 N | 14 N | 20000 N | 780 N | | |
| Demeton | 8065483 | 4.00E-05 I | | | | | 1.5 N | 0.15 N | 0.054 N | 82 N | 3.1 N | | |
| Diallate | 2303164 | | | 6.10E-02 H | | ☒ | 0.17 C | 0.1 C | 0.052 C | 94 C | 10 C | | |
| Diazinon | 333415 | 9.00E-04 H | | | | | 33 N | 3.3 N | 1.2 N | 1800 N | 70 N | 5400 S | 2.8 N |
| Dibenzofuran | 132649 | 4.00E-03 E | | | | | 150 N | 15 N | 5.4 N | 8200 N | 310 N | 120 S | 120 N |
| 1,4-Dibromobenzene | 106376 | 1.00E-02 I | | | | ☒ | 61 N | 37 N | 14 N | 20000 N | 780 N | | |
| 1,2-Dibromo-3-chloropropane | 96128 | | 5.71E-05 I | 1.40E+00 H | 2.42E-03 H | ☒ | 0.048 C | 0.21 N | 0.0023 C | 4.1 C | 0.46 C | 1.9 N | 0.00061 M |
| 1,2-Dibromoethane | 106934 | | 5.71E-05 H | 8.50E+01 I | 7.70E-01 I | ☒ | 0.00075 C | 0.0081 C | 0.00004 C | 0.067 C | 0.0075 C | 0.0058 C | 0.00018 M |
| Dibutyl phthalate | 84742 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | 100 E | 120 E |
| Dicamba | 1918009 | 3.00E-02 I | | | | | 1100 N | 110 N | 41 N | 61000 N | 2300 N | | |
| 1,2-Dichlorobenzene | 95501 | 9.00E-02 I | 4.00E-02 A | | | ☒ | 270 N | 150 N | 120 N | 180000 N | 7000 N | 300 E | 6 E |
| 1,3-Dichlorobenzene | 541731 | 8.90E-02 O | | | | ☒ | 540 N | 320 N | 120 N | 180000 N | 7000 N | | |
| 1,4-Dichlorobenzene | 106467 | | 2.29E-01 I | 2.40E-02 H | | ☒ | 0.44 C | 0.26 C | 0.13 C | 240 C | 27 C | 7700 E | 1 E |
| 3,3'-Dichlorobenzidine | 91941 | | | 4.50E-01 I | | | 0.15 C | 0.014 C | 0.007 C | 13 C | 1.4 C | 52 S | 0.01 E |
| 1,4-Dichloro-2-butene | 764410 | | | | 9.30E+00 H | ☒ | 0.0011 C | 0.00067 C | | | | | |
| Dichlorodifluoromethane | 75718 | 2.00E-01 I | 5.71E-02 A | | | ☒ | 390 N | 210 N | 270 N | 410000 N | 16000 N | 37 N | 7.5 N |
| 1,1-Dichloroethane | 75343 | 1.00E-01 H | 1.43E-01 A | | | ☒ | 810 N | 520 N | 140 N | 200000 N | 7800 N | 980 E | 11 E |
| 1,2-Dichloroethane (EDC) | 107062 | | 2.86E-03 E | 9.10E-02 I | 9.10E-02 I | ☒ | 0.12 C | 0.069 C | 0.035 C | 63 C | 7 C | 0.3 E | 0.01 E |
| 1,1-Dichloroethylene | 75354 | 9.00E-03 I | | 6.00E-01 I | 1.75E-01 I | ☒ | 0.044 C | 0.036 C | 0.0053 C | 9.5 C | 1.1 C | 0.04 E | 0.03 E |
| 1,2-Dichloroethylene (cis) | 156592 | 1.00E-02 H | | | | ☒ | 61 N | 37 N | 14 N | 20000 N | 780 N | 1500 E | 0.2 E |
| 1,2-Dichloroethylene (trans) | 156605 | 2.00E-02 I | | | | ☒ | 120 N | 73 N | 27 N | 41000 N | 1600 N | 3600 E | 0.3 E |
| 1,2-Dichloroethylene (mixture) | 540590 | 9.00E-03 H | | | | ☒ | 55 N | 33 N | 12 N | 18000 N | 700 N | | |
| 2,4-Dichlorophenol | 120832 | 3.00E-03 I | | | | | 110 N | 11 N | 4.1 N | 6100 N | 230 N | 4800 S | 0.5 E |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Dichlorophenoxyacetic Acid (2,4-D) | 94757 | 1.00E-02 I | | | | ☒ | 61 N | 37 N | 14 N | 20000 N | 780 N | 7000 E | 1.7 M |
| 4-(2,4-Dichlorophenoxy)butyric Acid | 94826 | 8.00E-03 I | | | | | 290 N | 29 N | 11 N | 16000 N | 630 N | | |
| 1,2-Dichloropropane | 78875 | | 1.14E-03 I | 6.80E-02 H | | ☒ | 0.16 C | 0.092 C | 0.046 C | 84 C | 9.4 C | 11 E | 0.02 E |
| 2,3-Dichloropropanol | 616239 | 3.00E-03 I | | | | | 110 N | 11 N | 4.1 N | 6100 N | 230 N | | |
| 1,3-Dichloropropene | 542756 | 3.00E-04 I | 5.71E-03 I | 1.75E-01 H | 1.30E-01 H | ☒ | 0.077 C | 0.048 C | 0.018 C | 33 C | 3.7 C | 0.1 E | 0.001 E |
| Dichlorvos | 62737 | 5.00e-04 I | 1.43E-04 I | 2.90E-01 I | | | 0.23 C | 0.022 C | 0.011 C | 20 C | 2.2 C | 3.5 C | 0.00072 C |
| Dicofol | 115322 | | | 4.40E-01 W | | | 0.15 C | 0.014 C | 0.0072 C | 13 C | 1.5 C | | |
| Dicyclopentadiene | 77736 | 3.00E-02 H | 5.71E-05 A | | | ☒ | 0.42 N | 0.21 N | 41 N | 61000 N | 2300 N | | |
| Dieldrin | 60571 | 5.00E-05 I | | 1.60E+01 I | 1.61E+01 I | | 0.0042 C | 0.00039 C | 0.0002 C | 0.36 C | 0.04 C | 2 E | 0.001 E |
| Diesel emissions | | | 1.43E-03 I | | | | 52 N | 5.2 N | | | | | |
| Diethyl phthalate | 84662 | 8.00E-01 I | | | | | 29000 N | 2900 N | 1100 N | 1E+06 N | 63000 N | 520 E | 110 E |
| Diethylene glycol, monobutyl ether | 112345 | | 5.71E-03 H | | | | 210 N | 21 N | | | | | |
| Diethylene glycol, monoethyl ether | 111900 | 2.00E+00 H | | | | | 73000 N | 7300 N | 2700 N | 1E+06 N | 160000 N | | |
| Diethylformamide | 617845 | 1.10E-02 H | | | | | 400 N | 40 N | 15 N | 22000 N | 860 N | | |
| Di(2-ethylhexyl)adipate | 103231 | 6.00E-01 I | | 1.20E-03 I | | | 56 C | 5.2 C | 2.6 C | 4800 C | 530 C | | |
| Diethylstilbestrol | 56531 | | | 4.70E+03 H | | | 0.00001 C | 1E-06 C | 7E-07 C | 0.0012 C | 0.00014 C | | |
| Difenzoquat (Avenge) | 43222486 | 8.00E-02 I | | | | | 2900 N | 290 N | 110 N | 160000 N | 6300 N | | |
| Diflubenzuron | 35367385 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| 1,1-Difluoroethane | 75376 | | 1.14E+01 I | | | ☒ | 69000 N | 42000 N | | | | | |
| Diisopropyl methylphosphonate (DIMP) | 1445756 | 8.00E-02 I | | | | | 2900 N | 290 N | 110 N | 160000 N | 6300 N | | |
| Dimethipin | 55290647 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Dimethoate | 60515 | 2.00E-04 I | | | | | 7.3 N | 0.73 N | 0.27 N | 410 N | 16 N | | |
| 3,3'-Dimethoxybenzidine | 119904 | | | 1.40E-02 H | | | 4.8 C | 0.45 C | 0.23 C | 410 C | 46 C | | |
| Dimethylamine | 124403 | | 5.71E-06 W | | | | 0.21 N | 0.021 N | | | | | |
| 2,4-Dimethylaniline hydrochloride | 21436964 | | | 5.80E-01 H | | | 0.12 C | 0.011 C | 0.0054 C | 9.9 C | 1.1 C | | |
| 2,4-Dimethylaniline | 95681 | | | 7.50E-01 H | | | 0.09 C | 0.0083 C | 0.0042 C | 7.6 C | 0.85 C | | |
| N-N-Dimethylaniline | 121697 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| 3,3'-Dimethylbenzidine | 119937 | | | 9.20E+00 H | | | 0.0073 C | 0.00068 C | 0.00034 C | 0.62 C | 0.069 C | 29 C | 0.00039 C |
| N,N-Dimethylformamide | 68122 | 1.00E-01 H | 8.57E-03 I | | | | 3700 N | 31 N | 140 N | 200000 N | 7800 N | | |
| 1,1-Dimethylhydrazine | 57147 | | | 2.60E+00 W | 3.50E+00 W | | 0.026 C | 0.0018 C | 0.0012 C | 2.2 C | 0.25 C | | |
| 1,2-Dimethylhydrazine | 540738 | | | 3.70E+01 W | 3.70E+01 W | | 0.0018 C | 0.00017 C | 0.00009 C | 0.15 C | 0.017 C | | |
| 2,4-Dimethylphenol | 105679 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | 5400 E | 3 E |
| 2,6-Dimethylphenol | 576261 | 6.00E-04 I | | | | | 22 N | 2.2 N | 0.81 N | 1200 N | 47 N | | |
| 3,4-Dimethylphenol | 95658 | 1.00E-03 I | | | | | 37 N | 3.7 N | 1.4 N | 2000 N | 78 N | | |
| Dimethyl phthalate | 131113 | 1.00E+01 H | | | | | 370000 N | 37000 N | 14000 N | 1E+06 N | 780000 N | 1600 E | 1200 E |
| Dimethyl terephthalate | 120616 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| 1,2-Dinitrobenzene | 528290 | 4.00E-04 H | | | | | 15 N | 1.5 N | 0.54 N | 820 N | 31 N | | |
| 1,3-Dinitrobenzene | 99650 | 1.00E-04 I | | | | | 3.7 N | 0.37 N | 0.14 N | 200 N | 7.8 N | | |
| 1,4-Dinitrobenzene | 100254 | 4.00E-04 H | | | | | 15 N | 1.5 N | 0.54 N | 820 N | 31 N | | |

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*Basis: C=carcinogenic effects N=noncarcinogenic effects E=EPA draft Soil Screening Level S=soil saturation concentration M=EPA MCL.*

| Contaminant | CAS | RfDo mg/kg/d | RfDi mg/kg/d | CPSo kg·d/mg | CPSi kg·d/mg | VOC | Risk-Based Concentrations: Tap Water µg/L | Ambient Air µg/m3 | Fish mg/kg | Soil Ingestion: Industrial mg/kg | Soil Ingestion: Residential mg/kg | Soil Screening Levels- Transfers from Soil to: Air mg/kg | Groundwater mg/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,6-Dinitro-o-cyclohexyl phenol | 131895 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| 2,4-Dinitrophenol | 51285 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | 360 N | 0.1 E |
| Dinitrotoluene mixture | | | | 6.80E-01 I | | | 0.099 C | 0.0092 C | 0.0046 C | 8.4 C | 0.94 C | | |
| 2,4-Dinitrotoluene | 121142 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | 120 S | 0.2 E |
| 2,6-Dinitrotoluene | 606202 | 1.00E-03 H | | | | | 37 N | 3.7 N | 1.4 N | 2000 N | 78 N | 370 S | 0.1 E |
| Dinoseb | 88857 | 1.00E-03 I | | | | | 37 N | 3.7 N | 1.4 N | 2000 N | 78 N | | |
| di-n-Octyl phthalate | 117840 | 2.00E-02 H | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | 1000000 S | 1000000 E |
| 1,4-Dioxane | 123911 | | | 1.10E-02 I | | | 6.1 C | 0.57 C | 0.29 C | 520 C | 58 C | | |
| Diphenamid | 957517 | 3.00E-02 I | | | | | 1100 N | 110 N | 41 N | 61000 N | 2300 N | | |
| Diphenylamine | 122394 | 2.50E-02 I | | | | | 910 N | 91 N | 34 N | 51000 N | 2000 N | | |
| 1,2-Diphenylhydrazine | 122667 | | | 8.00E-01 I | 7.70E-01 I | | 0.084 C | 0.0081 C | 0.0039 C | 7.2 C | 0.8 C | | |
| Diquat | 85007 | 2.20E-03 I | | | | | 80 N | 8 N | 3 N | 4500 N | 170 N | | |
| Direct black 38 | 1937377 | | | 8.60E+00 H | | | 0.0078 C | 0.00073 C | 0.00037 C | 0.67 C | 0.074 C | | |
| Direct blue 6 | 2602462 | | | 8.10E+00 H | | | 0.0083 C | 0.00077 C | 0.00039 C | 0.71 C | 0.079 C | | |
| Direct brown 95 | 16071866 | | | 9.30E+00 H | | | 0.0072 C | 0.00067 C | 0.00034 C | 0.62 C | 0.069 C | | |
| Disulfoton | 298044 | 4.00E-05 I | | | | | 1.5 N | 0.15 N | 0.054 N | 82 N | 3.1 N | | |
| 1,4-Dithiane | 505293 | 1.00E-02 I | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| Diuron | 330541 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| Dodine | 2439103 | 4.00E-03 I | | | | | 150 N | 15 N | 5.4 N | 8200 N | 310 N | | |
| Endosulfan | 115297 | 6.00E-03 I | | | | | 220 N | 22 N | 8.1 N | 12000 N | 470 N | 1 S | 3 E |
| Endothall | 145733 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Endrin | 72208 | 3.00E-04 I | | | | | 11 N | 1.1 N | 0.41 N | 610 N | 23 N | 16 S | 0.4 E |
| Epichlorohydrin | 106898 | 2.00E-03 H | 2.86E-04 I | 9.90E-03 I | 4.20E-03 I | | 6.8 C | 1 N | 0.32 C | 580 C | 65 C | | |
| 1,2-Epoxybutane | 106887 | | 5.71E-03 I | | | | 210 N | 21 N | | | | | |
| Ethephon (2-chloroethyl phosphonic acid) | 16672870 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Ethion | 563122 | 5.00E-04 I | | | | | 18 N | 1.8 N | 0.68 N | 1000 N | 39 N | | |
| 2-Ethoxyethanol acetate | 111159 | 3.00E-01 A | | | | | 11000 N | 1100 N | 410 N | 610000 N | 23000 N | | |
| 2-Ethoxyethanol | 110805 | 4.00E-01 H | 5.71E-02 I | | | | 15000 N | 210 N | 540 N | 820000 N | 31000 N | | |
| Ethyl acrylate | 140885 | | | 4.80E-02 H | | | 1.4 C | 0.13 C | 0.066 C | 120 C | 13 C | | |
| EPTC (S-Ethyl dipropylthiocarbamate) | 759944 | 2.50E-02 I | | | | | 910 N | 91 N | 34 N | 51000 N | 2000 N | | |
| Ethyl acetate | 141786 | 9.00E-01 I | | | | | 33000 N | 3300 N | 1200 N | 1E+06 N | 70000 N | | |
| Ethylbenzene | 100414 | 1.00E-01 I | 2.86E-01 I | | | ☒ | 1300 N | 1000 N | 140 N | 200000 N | 7800 N | 260 E | 5 E |
| Ethylene cyanohydrin | 109784 | 3.00E-01 H | | | | | 11000 N | 1100 N | 410 N | 610000 N | 23000 N | | |
| Ethylene diamine | 107153 | 2.00E-02 H | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Ethylene glycol | 107211 | 2.00E+00 I | | | | | 73000 N | 7300 N | 2700 N | 1E+06 N | 160000 N | | |
| Ethylene glycol, monobutyl ether | 111762 | | 5.71E-03 H | | | | 210 N | 21 N | | | | | |
| Ethylene oxide | 75218 | | | 1.02E+00 H | 3.50E-01 H | | 0.066 C | 0.018 C | 0.0031 C | 5.6 C | 0.63 C | | |
| Ethylene thiourea (ETU) | 96457 | 8.00E-05 I | | 1.19E-01 H | | | 0.57 C | 0.053 C | 0.027 C | 48 C | 5.4 C | | |
| Ethyl ether | 60297 | 2.00E-01 I | | | | ☒ | 1200 N | 730 N | 270 N | 410000 N | 16000 N | | |

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*Basis: C=carcinogenic effects N=noncarcinogenic effects E=EPA draft Soil Screening Level S=soil saturation concentration M=EPA MCL.*

| | | | | | | | Risk-Based Concentrations | | | | | Soil Screening Levels- Transfers from Soil to: | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Tap | Ambient | | Soil Ingestion | | | |
| | | RfDo | RfDi | CPSo | CPSi | VOC | Water | Air | Fish | Industrial | Residential | Air | Groundwater |
| Contaminant | CAS | mg/kg/d | mg/kg/d | kg·d/mg | kg·d/mg | | µg/L | µg/m3 | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| Ethyl methacrylate | 97632 | 9.00E-02 H | | | | | 3300 N | 330 N | 120 N | 180000 N | 7000 N | | |
| Ethyl p-nitrophenyl phenylphosphorothioate | 2104645 | 1.00E-05 I | | | | | 0.37 N | 0.037 N | 0.014 N | 20 N | 0.78 N | | |
| Ethylnitrosourea | 759739 | | | 1.40E+02 W | | | 0.00048 C | 0.00005 C | 0.00002 C | 0.041 C | 0.0046 C | | |
| Ethylphthalyl ethyl glycolate | 84720 | 3.00E+00 I | | | | | 110000 N | 11000 N | 4100 N | 1E+06 N | 230000 N | | |
| Express | 10120 | 8.00E-03 I | | | | | 290 N | 29 N | 11 N | 16000 N | 630 N | | |
| Fenamiphos | 22224926 | 2.50E-04 I | | | | | 9.1 N | 0.91 N | 0.34 N | 510 N | 20 N | | |
| Fluometuron | 2164172 | 1.30E-02 I | | | | | 470 N | 47 N | 18 N | 27000 N | 1000 N | | |
| Fluoride | 7782414 | 6.00E-02 I | | | | | 2200 N | 220 N | 81 N | 120000 N | 4700 N | | |
| Fluoridone | 59756604 | 8.00E-02 I | | | | | 2900 N | 290 N | 110 N | 160000 N | 6300 N | | |
| Flurprimidol | 56425913 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Flutolanil | 66332965 | 6.00E-02 I | | | | | 2200 N | 220 N | 81 N | 120000 N | 4700 N | | |
| Fluvalinate | 69409945 | 1.00E-02 I | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| Folpet | 133073 | 1.00E-01 I | | 3.50E-03 I | | | 19 C | 1.8 C | 0.9 C | 1600 C | 180 C | | |
| Fomesafen | 72178020 | | | 1.90E-01 I | | | 0.35 C | 0.033 C | 0.017 C | 30 C | 3.4 C | | |
| Fonofos | 944229 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| Formaldehyde | 50000 | 2.00E-01 I | | | 4.55E-02 I | | 7300 N | 0.14 C | 270 N | 410000 N | 16000 N | | |
| Formic Acid | 64186 | 2.00E+00 H | | | | | 73000 N | 7300 N | 2700 N | 1E+06 N | 160000 N | | |
| Fosetyl-al | 39148248 | 3.00E+00 I | | | | | 110000 N | 11000 N | 4100 N | 1E+06 N | 230000 N | | |
| Furan | 110009 | 1.00E-03 I | | | | | 37 N | 3.7 N | 1.4 N | 2000 N | 78 N | | |
| Furazolidone | 67458 | | | 3.80E+00 H | | | 0.018 C | 0.0016 C | 0.00083 C | 1.5 C | 0.17 C | | |
| Furfural | 98011 | 3.00E-03 I | 1.43E-02 A | | | | 110 N | 52 N | 4.1 N | 6100 N | 230 N | | |
| Furium | 531828 | | | 5.00E+01 H | | | 0.0013 C | 0.00013 C | 0.00006 C | 0.11 C | 0.013 C | | |
| Furmecyclox | 60568050 | | | 3.00E-02 I | | | 2.2 C | 0.21 C | 0.11 C | 190 C | 21 C | | |
| Glufosinate-ammonium | 77182822 | 4.00E-04 I | | | | | 15 N | 1.5 N | 0.54 N | 820 N | 31 N | | |
| Glycidaldehyde | 765344 | 4.00E-04 I | 2.86E-04 H | | | | 15 N | 1 N | 0.54 N | 820 N | 31 N | | |
| Glyphosate | 1071836 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Haloxyfop-methyl | 69806402 | 5.00E-05 I | | | | | 1.8 N | 0.18 N | 0.068 N | 100 N | 3.9 N | | |
| Harmony | 79277273 | 1.30E-02 I | | | | | 470 N | 47 N | 18 N | 27000 N | 1000 N | | |
| HCH (alpha) | 319846 | | | 6.30E+00 I | 6.30E+00 I | | 0.011 C | 0.00099 C | 0.0005 C | 0.91 C | 0.1 C | 0.9 E | 0.0004 E |
| HCH (beta) | 319857 | | | 1.80E+00 I | 1.80E+00 I | | 0.037 C | 0.0035 C | 0.0018 C | 3.2 C | 0.35 C | 16 E | 0.002 E |
| HCH (gamma) Lindane | 58899 | 3.00E-04 I | | 1.30E+00 H | | | 0.052 C | 0.0048 C | 0.0024 C | 4.4 C | 0.49 C | 4.2 C | 0.006 E |
| HCH-technical | 608731 | | | 1.80E+00 I | 1.79E+00 I | | 0.037 C | 0.0035 C | 0.0018 C | 3.2 C | 0.35 C | | |
| Heptachlor | 76448 | 5.00E-04 I | | 4.50E+00 I | 4.55E+00 I | X | 0.0023 C | 0.0014 C | 0.0007 C | 1.3 C | 0.14 C | 0.3 E | 0.06 E |
| Heptachlor epoxide | 1024573 | 1.30E-05 I | | 9.10E+00 I | 9.10E+00 I | X | 0.0012 C | 0.00069 C | 0.00035 C | 0.63 C | 0.07 C | 1 E | 0.03 E |
| Hexabromobenzene | 87821 | 2.00E-03 I | | | | X | 12 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| Hexachlorobenzene | 118741 | 8.00E-04 I | | 1.60E+00 I | 1.61E+00 I | X | 0.0066 C | 0.0039 C | 0.002 C | 3.6 C | 0.4 C | 1 E | 0.8 E |
| Hexachlorobutadiene | 87683 | 2.00E-04 H | | 7.80E-02 I | 7.70E-02 I | X | 0.14 C | 0.081 C | 0.04 C | 73 C | 8.2 C | 1 E | 0.1 E |
| Hexachlorocyclopentadiene | 77474 | 7.00E-03 I | 2.00E-05 H | | | X | 0.15 N | 0.073 N | 9.5 N | 14000 N | 550 N | 2 E | 10 E |
| Hexachlorodibenzo-p-dioxin mixture | 19408743 | | | 6.20E+03 I | 4.55E+03 I | | 0.00001 C | 1E-06 C | 5E-07 C | 0.0009 C | 0.0001 C | | |

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*Basis: C=carcinogenic effects N=noncarcinogenic effects E=EPA draft Soil Screening Level S=soil saturation concentration M=EPA MCL.*

| Contaminant | CAS | RfDo mg/kg/d | RfDi mg/kg/d | CPSo kg·d/mg | CPSi kg·d/mg | VOC | Risk-Based Concentrations: Tap Water µg/L | Ambient Air µg/m3 | Fish mg/kg | Soil Ingestion: Industrial mg/kg | Soil Ingestion: Residential mg/kg | Soil Screening Levels-Transfers from Soil to: Air mg/kg | Groundwater mg/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hexachloroethane | 67721 | 1.00E-03 I | | 1.40E-02 I | 1.40E-02 I | ☒ | 0.75 C | 0.45 C | 0.23 C | 410 C | 46 C | 49 E | 0.2 E |
| Hexachlorophene | 70304 | 3.00E-04 I | | | | | 11 N | 1.1 N | 0.41 N | 610 N | 23 N | | |
| Hexahydro-1,3,5-trinitro-1,3,5-triazine | 121824 | 3.00E-03 I | | 1.10E-01 I | | | 0.61 C | 0.057 C | 0.029 C | 52 C | 5.8 C | | |
| 1,6-Hexamethylene diisocyanate | 822060 | | 2.86E-06 I | | | | 0.1 N | 0.01 N | | | | | |
| n-Hexane | 110543 | 6.00E-02 H | 5.71E-02 I | | | ☒ | 350 N | 210 N | 81 N | 120000 N | 4700 N | 32 N | 13 N |
| Hexazinone | 51235042 | 3.30E-02 I | | | | | 1200 N | 120 N | 45 N | 67000 N | 2600 N | | |
| Hydrazine, hydrazine sulfate | 302012 | | | 3.00E+00 I | 1.71E+01 I | | 0.022 C | 0.00037 C | 0.0011 C | 1.9 C | 0.21 C | | |
| Hydrogen chloride | 7647010 | | 5.71E-03 I | | | | 210 N | 21 N | | | | | |
| Hydrogen sulfide | 7783064 | 3.00E-03 I | 2.85E-04 I | | | | 110 N | 1 N | 4.1 N | 6100 N | 230 N | | |
| Hydroquinone | 123319 | 4.00E-02 H | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | | |
| Imazalil | 35554440 | 1.30E-02 I | | | | | 470 N | 47 N | 18 N | 27000 N | 1000 N | | |
| Imazaquin | 81335377 | 2.50E-01 I | | | | | 9100 N | 910 N | 340 N | 510000 N | 20000 N | | |
| Iprodione | 36734197 | 4.00E-02 I | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | | |
| Iron | 7439896 | 3.00E-01 E | | | | | 11000 N | 1100 N | 410 N | 610000 N | 23000 N | | |
| Isobutanol | 78831 | 3.00E-01 I | | | | ☒ | 1800 N | 1100 N | 410 N | 610000 N | 23000 N | | |
| Isophorone | 78591 | 2.00E-01 I | | 9.50E-04 I | | | 71 C | 6.6 C | 3.3 C | 6000 C | 670 C | 3400 E | 0.2 E |
| Isopropalin | 33820530 | 1.50E-02 I | | | | | 550 N | 55 N | 20 N | 31000 N | 1200 N | | |
| Isopropyl methyl phosphonic acid | 1832548 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Isoxaben | 82558507 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Kepone | 143500 | | | 1.80E+01 E | | | 0.0037 C | 0.00035 C | 0.00018 C | 0.32 C | 0.035 C | | |
| Lactofen | 77501634 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| Linuron | 330552 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| Lithium | 7439932 | 2.00E-02 E | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Londax | 83056996 | 2.00E-01 I | | | | | 7300 N | 730 N | 270 N | 410000 N | 16000 N | | |
| Malathion | 121755 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Maleic anhydride | 108316 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Maleic hydrazide | 123331 | 5.00E-01 I | | | | | 18000 N | 1800 N | 680 N | 1E+06 N | 39000 N | | |
| Malononitrile | 109773 | 2.00E-05 H | | | | | 0.73 N | 0.073 N | 0.027 N | 41 N | 1.6 N | | |
| Mancozeb | 8018017 | 3.00E-02 H | | | | | 1100 N | 110 N | 41 N | 61000 N | 2300 N | | |
| Maneb | 12427382 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| **Manganese and compounds | 7439965 | 2.30E-02 I | 1.43e-05 I | | | | 840 N | 0.052 N | 31 N | 47000 N | 1800 N | | |
| Mephosfolan | 950107 | 9.00E-05 H | | | | | 3.3 N | 0.33 N | 0.12 N | 180 N | 7 N | | |
| Mepiquat chloride | 24307264 | 3.00E-02 I | | | | | 1100 N | 110 N | 41 N | 61000 N | 2300 N | | |
| Mercuric chloride | 7487947 | 3.00E-04 I | | | | | 11 N | 1.1 N | 0.41 N | 610 N | 23 N | | |
| Mercury (inorganic) | 7439976 | 3.00E-04 H | 8.57E-05 H | | | | 11 N | 0.31 N | 0.41 N | 610 N | 23 N | 7 E | 3 E |
| Mercury (methyl) | 22967926 | 1.00E-04 I | | | | | 3.7 N | 0.37 N | 0.14 N | 200 N | 7.8 N | | |
| Merphos | 150505 | 3.00E-05 I | | | | | 1.1 N | 0.11 N | 0.041 N | 61 N | 2.3 N | | |
| Merphos oxide | 78488 | 3.00E-05 I | | | | | 1.1 N | 0.11 N | 0.041 N | 61 N | 2.3 N | | |
| Metalaxyl | 57837191 | 6.00E-02 I | | | | | 2200 N | 220 N | 81 N | 120000 N | 4700 N | | |

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*Basis: C=carcinogenic effects N=noncarcinogenic effects E=EPA draft Soil Screening Level S=soil saturation concentration M=EPA MCL*

| Contaminant | CAS | RfDo mg/kg/d | RfDi mg/kg/d | CPSo kg-d/mg | CPSi kg-d/mg | VOC | Risk-Based Concentrations: Tap Water µg/L | Ambient Air µg/m3 | Fish mg/kg | Soil Ingestion: Industrial mg/kg | Soil Ingestion: Residential mg/kg | Soil Screening Levels-Transfers from Soil to: Air mg/kg | Groundwater mg/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Methacrylonitrile | 126987 | 1.00E-04 I | 2.00E-04 A | | | | 3.7 N | 0.73 N | 0.14 N | 200 N | 7.8 N | | |
| Methamidophos | 10265926 | 5.00E-05 I | | | | | 1.8 N | 0.18 N | 0.068 N | 100 N | 3.9 N | | |
| Methanol | 67561 | 5.00E-01 I | | | | | 18000 N | 1800 N | 680 N | 1E+06 N | 39000 N | | |
| Methidathion | 950378 | 1.00E-03 I | | | | | 37 N | 3.7 N | 1.4 N | 2000 N | 78 N | | |
| Methomyl | 16752775 | 2.50E-02 I | | | | | 910 N | 91 N | 34 N | 51000 N | 2000 N | | |
| Methoxychlor | 72435 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | 41 S | 62 E |
| 2-Methoxyethanol acetate | 110496 | 2.00E-03 A | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| 2-Methoxyethanol | 109864 | 1.00E-03 H | 5.71E-03 I | | | | 37 N | 21 N | 1.4 N | 2000 N | 78 N | | |
| 2-Methoxy-5-nitroaniline | 99592 | | | 4.60E-02 H | | | 1.5 C | 0.14 C | 0.069 C | 120 C | 14 C | | |
| Methyl acetate | 79209 | 1.00E+00 H | | | | | 37000 N | 3700 N | 1400 N | 1E+06 N | 78000 N | | |
| Methyl acrylate | 96333 | 3.00E-02 A | | | | | 1100 N | 110 N | 41 N | 61000 N | 2300 N | | |
| 2-Methylaniline hydrochloride | 636215 | | | 1.80E-01 H | | | 0.37 C | 0.035 C | 0.018 C | 32 C | 3.5 C | | |
| 2-Methylaniline | 95534 | | | 2.40E-01 H | | | 0.28 C | 0.026 C | 0.013 C | 24 C | 2.7 C | | |
| Methyl chlorocarbonate | 79221 | 1.00E+00 W | | | | | 37000 N | 3700 N | 1400 N | 1E+06 N | 78000 N | | |
| 4-(2-Methyl-4-chlorophenoxy) butyric acid | 94815 | 1.00E-02 I | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| 2-Methyl-4-chlorophenoxyacetic acid | 94746 | 5.00E-04 I | | | | | 18 N | 1.8 N | 0.68 N | 1000 N | 39 N | | |
| 2-(2-Methyl-14-chlorophenoxy)propionic acid | 93652 | 1.00E-03 I | | | | | 37 N | 3.7 N | 1.4 N | 2000 N | 78 N | | |
| Methylcyclohexane | 108872 | | 8.57E-01 H | | | | 31000 N | 3100 N | | | | 60 S | 1500 N |
| Methylene bromide | 74953 | 1.00E-02 A | | | | X | 61 N | 37 N | 14 N | 20000 N | 780 N | | |
| Methylene chloride | 75092 | 6.00E-02 I | 8.57E-01 H | 7.50E-03 I | 1.64E-03 I | X | 4.1 C | 3.8 C | 0.42 C | 760 C | 85 C | 7 E | 0.01 E |
| 4,4'-Methylene bis(2-chloroaniline) | 101144 | 7.00E-04 H | | 1.30E-01 H | 1.30E-01 H | | 0.52 C | 0.048 C | 0.024 C | 44 C | 4.9 C | | |
| 4,4'-Methylenebisbenzenearnine | 101779 | | | 2.50E-01 W | | | 0.27 C | 0.025 C | 0.013 C | 23 C | 2.6 C | | |
| 4,4'-Methylene bis(N,N'-dimethyl)aniline | 101611 | | | 4.60E-02 I | | | 1.5 C | 0.14 C | 0.069 C | 120 C | 14 C | | |
| 4,4'-Methylenediphenyl isocyanate | 101688 | | 5.71E-06 I | | | X | 0.035 N | 0.021 N | | | | | |
| Methyl ethyl ketone | 78933 | 6.00E-01 I | 2.86E-01 I | | | X | 1900 N | 1000 N | 810 N | 1E+06 N | 47000 N | | |
| Methyl hydrazine | 60344 | | | 1.10E+00 W | | | 0.061 C | 0.0057 C | 0.0029 C | 5.2 C | 0.58 C | | |
| Methyl isobutyl ketone | 108101 | 8.00E-02 H | 2.29E-02 A | | | | 2900 N | 84 N | 110 N | 160000 N | 6300 N | | |
| Methyl methacrylate | 80626 | 8.00E-02 H | | | | | 2900 N | 290 N | 110 N | 160000 N | 6300 N | | |
| 2-Methyl-5-nitroaniline | 99558 | | | 3.30E-02 H | | | 2 C | 0.19 C | 0.096 C | 170 C | 19 C | | |
| Methyl parathion | 298000 | 2.50E-04 I | | | | | 9.1 N | 0.91 N | 0.34 N | 510 N | 20 N | 28 S | 0.041 N |
| 2-Methylphenol (o-cresol) | 95487 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | 12000 S | 6 E |
| 3-Methylphenol (m-cresol) | 103394 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| 4-Methylphenol (p-cresol) | 106445 | 5.00E-03 H | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Methyl styrene (mixture) | 25013154 | 6.00E-03 A | 1.14E-02 A | | | X | 60 N | 42 N | 8.1 N | 12000 N | 470 N | 100 N | 1 N |
| Methyl styrene (alpha) | 98839 | 7.00E-02 A | | | | X | 430 N | 260 N | 95 N | 140000 N | 5500 N | 8.8 S | 7.5 N |
| Methyl tertbutyl ether (MTBE) | 1634044 | 5.00E-03 E | 8.57E-01 I | | | X | 180 N | 3100 N | 6.8 N | 10000 N | 390 N | | |
| Metolaclor (Dual) | 51218452 | 1.50E-01 H | | | | | 5500 N | 550 N | 200 N | 310000 N | 12000 N | | |
| Metribuzin | 21087649 | 2.50E-02 I | | | | | 910 N | 91 N | 34 N | 51000 N | 2000 N | | |
| Mirex | 2385855 | 2.00E-04 I | | 1.80E+00 W | | | 0.037 C | 0.0035 C | 0.0018 C | 3.2 C | 0.35 C | | |

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| | | | | | | | Risk-Based Concentrations | | | | | Soil Screening Levels- Transfers from Soil to: | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Tap | Ambient | | Soil Ingestion | | | |
| | | RfDo | RfDi | CPSo | CPSi | VOC | Water | Air | Fish | Industrial | Residential | Air | Groundwater |
| Contaminant | CAS | mg/kg/d | mg/kg/d | kg-d/mg | kg-d/mg | | µg/L | µg/m3 | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| Molinate | 2212671 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| Molybdenum | 7439987 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Monochloramine | 10599903 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Naled | 300765 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| 2-Naphthylamine | 91598 | | | 1.30E+02 E | | | 0.00052 C | 0.00005 C | 0.00002 C | 0.044 C | 0.0049 C | | |
| Napropamide | 15299997 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Nickel refinery dust | | | | | 8.40E-01 I | | | 0.0075 C | | | | | |
| Nickel and compounds | 7440020 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | 6900 E | 21 E |
| Nickel subsulfide | 12035722 | | | | 1.70E+00 I | | | 0.0037 C | | | | | |
| Nitrapyrin | 1929824 | 1.50E-03 W | | | | | 55 N | 5.5 N | 2 N | 3100 N | 120 N | | |
| Nitrate | 14797558 | 1.60E+00 I | | | | | 58000 N | 5800 N | 2200 N | 1E+06 N | 130000 N | | |
| Nitric oxide | 10102439 | 1.00E-01 W | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| Nitrite | 14797650 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| 2-Nitroaniline | 88744 | 6.00E-05 W | 5.71E-05 H | | | | 2.2 N | 0.21 N | 0.081 N | 120 N | 4.7 N | | |
| 3-Nitroaniline | 99092 | 3.00E-03 O | | | | | 110 N | 11 N | 4.1 N | 6100 N | 230 N | | |
| 4-Nitroaniline | 100016 | 3.00E-03 O | | | | | 110 N | 11 N | 4.1 N | 6100 N | 230 N | | |
| Nitrobenzene | 98953 | 5.00E-04 I | 5.71E-04 A | | | X | 3.4 N | 2.1 N | 0.68 N | 1000 N | 39 N | 110 E | 0.09 E |
| Nitrofurantoin | 67209 | 7.00E-02 H | | | | | 2600 N | 260 N | 95 N | 140000 N | 5500 N | | |
| Nitrofurazone | 59870 | | | 1.50E+00 H | 9.40E+00 H | | 0.045 C | 0.00067 C | 0.0021 C | 3.8 C | 0.43 C | | |
| Nitrogen dioxide | 10102440 | 1.00E+00 W | | | | | 37000 N | 3700 N | 1400 N | 1E+06 N | 78000 N | | |
| Nitroguanidine | 556887 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | | |
| 4-Nitrophenol | 100027 | 6.20E-02 O | | | | | 2300 N | 230 N | 84 N | 130000 N | 4800 N | | |
| 2-Nitropropane | 79469 | | 5.71E-03 I | | 9.40E+00 H | | 210 N | 0.00067 C | | | | | |
| N-Nitrosodi-n-butylamine | 924163 | | | 5.40E+00 I | 5.60E+00 I | | 0.012 C | 0.0011 C | 0.00058 C | 1.1 C | 0.12 C | | |
| N-Nitrosodiethanolamine | 1116547 | | | 2.80E+00 I | | | 0.024 C | 0.0022 C | 0.0011 C | 2 C | 0.23 C | | |
| N-Nitrosodiethylamine | 55185 | | | 1.50E+02 I | 1.51E+02 I | | 0.00045 C | 0.00004 C | 0.00002 C | 0.038 C | 0.0043 C | | |
| N-Nitrosodimethylamine | 62759 | | | 5.10E+01 I | 4.90E+01 I | | 0.0013 C | 0.00013 C | 0.00006 C | 0.11 C | 0.013 C | | |
| N-Nitrosodiphenylamine | 86306 | | | 4.90E-03 I | | | 14 C | 1.3 C | 0.64 C | 1200 C | 130 C | 29 C | 0.2 E |
| N-Nitroso di-n-propylamine | 621647 | | | 7.00E+00 I | | | 0.0096 C | 0.00089 C | 0.00045 C | 0.82 C | 0.091 C | 0.014 C | 0.00002 E |
| N-Nitroso-N-methylethylamine | 10595956 | | | 2.20E+01 I | | | 0.0031 C | 0.00028 C | 0.00014 C | 0.26 C | 0.029 C | | |
| N-Nitrosopyrrolidine | 930552 | | | 2.10E+00 I | 2.13E+00 I | | 0.032 C | 0.0029 C | 0.0015 C | 2.7 C | 0.3 C | | |
| m-Nitrotoluene | 99081 | 1.00E-02 H | | | | X | 61 N | 37 N | 14 N | 20000 N | 780 N | 460 S | 0.42 N |
| o-Nitrotoluene | 88722 | 1.00E-02 H | | | | X | 61 N | 37 N | 14 N | 20000 N | 780 N | 460 S | 0.42 N |
| p-Nitrotoluene | 99990 | 1.00E-02 H | | | | X | 61 N | 37 N | 14 N | 20000 N | 780 N | 460 S | 0.42 N |
| Norflurazon | 27314132 | 4.00E-02 I | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | | |
| NuStar | 85509199 | 7.00E-04 I | | | | | 26 N | 2.6 N | 0.95 N | 1400 N | 55 N | | |
| Octabromodiphenyl ether | 32536520 | 3.00E-03 I | | | | | 110 N | 11 N | 4.1 N | 6100 N | 230 N | | |
| Octahydro-1357-tetranitro-1357-tetrazocine | 2691410 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Octamethylpyrophosphoramide | 152169 | 2.00E-03 H | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |

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| Contaminant | CAS | RfDo mg/kg/d | RfDi mg/kg/d | CPSo kg·d/mg | CPSi kg·d/mg | VOC | Risk-Based Concentrations: Tap Water µg/L | Ambient Air µg/m3 | Fish mg/kg | Soil Ingestion: Industrial mg/kg | Soil Ingestion: Residential mg/kg | Soil Screening Levels-Transfers from Soil to: Air mg/kg | Soil Screening Levels-Transfers from Soil to: Groundwater mg/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oryzalin | 19044883 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Oxadiazon | 19666309 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Oxamyl | 23135220 | 2.50E-02 I | | | | | 910 N | 91 N | 34 N | 51000 N | 2000 N | | |
| Oxyfluorfen | 42874033 | 3.00E-03 I | | | | | 110 N | 11 N | 4.1 N | 6100 N | 230 N | | |
| Paclobutrazol | 76738620 | 1.30E-02 I | | | | | 470 N | 47 N | 18 N | 27000 N | 1000 N | | |
| Paraquat | 1910425 | 4.50E-03 I | | | | | 160 N | 16 N | 6.1 N | 9200 N | 350 N | | |
| Parathion | 56382 | 6.00E-03 H | | | | | 220 N | 22 N | 8.1 N | 12000 N | 470 N | 110 S | 3.9 N |
| Pebulate | 1114712 | 5.00E-02 H | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Pendimethalin | 40487421 | 4.00E-02 I | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | | |
| Pentabromo-6-chloro cyclohexane | 87843 | | | 2.30E-02 H | | | 2.9 C | 0.27 C | 0.14 C | 250 C | 28 C | | |
| Pentabromodiphenyl ether | 32534819 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| Pentachlorobenzene | 608935 | 8.00E-04 I | | | | ☒ | 4.9 N | 2.9 N | 1.1 N | 1600 N | 63 N | 570 N | 48 N |
| Pentachloronitrobenzene | 82688 | 3.00E-03 I | | 2.60E-01 H | | ☒ | 0.041 C | 0.024 C | 0.012 C | 22 C | 2.5 C | | |
| Pentachlorophenol | 87865 | 3.00E-02 I | | 1.20E-01 I | | | 0.56 C | 0.052 C | 0.026 C | 48 C | 5.3 C | 7.9 C | 0.2 E |
| Permethrin | 52645531 | 5.00E-02 I | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Phenmedipham | 13684634 | 2.50E-01 I | | | | | 9100 N | 910 N | 340 N | 510000 N | 20000 N | | |
| Phenol | 108952 | 6.00E-01 I | | | | | 22000 N | 2200 N | 810 N | 1E+06 N | 47000 N | 21000 S | 49 E |
| m-Phenylenediamine | 108452 | 6.00E-03 I | | | | | 220 N | 22 N | 8.1 N | 12000 N | 470 N | | |
| p-Phenylenediamine | 106503 | 1.90E-01 H | | | | | 6900 N | 690 N | 260 N | 390000 N | 15000 N | | |
| Phenylmercuric acetate | 62384 | 8.00E-05 I | | | | | 2.9 N | 0.29 N | 0.11 N | 160 N | 6.3 N | | |
| 2-Phenylphenol | 90437 | | | 1.94E-03 H | | | 35 C | 3.2 C | 1.6 C | 3000 C | 330 C | | |
| Phorate | 298022 | 2.00E-04 H | | | | | 7.3 N | 0.73 N | 0.27 N | 410 N | 16 N | | |
| Phosmet | 732116 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Phosphine | 7803512 | 3.00E-04 I | 8.57E-05 I | | | | 11 N | 0.31 N | 0.41 N | 610 N | 23 N | | |
| Phosphoric acid | 7664382 | | 2.86E-03 I | | | | 100 N | 10 N | | | | | |
| Phosphorus (white) | 7723140 | 2.00E-05 I | | | | | 0.73 N | 0.073 N | 0.027 N | 41 N | 1.6 N | | |
| p-Phthalic acid | 100210 | 1.00E+00 H | | | | | 37000 N | 3700 N | 1400 N | 1E+06 N | 78000 N | | |
| Phthalic anhydride | 85449 | 2.00E+00 I | 3.43E-02 H | | | | 73000 N | 130 N | 2700 N | 1E+06 N | 160000 N | | |
| Picloram | 1918021 | 7.00E-02 I | | | | | 2600 N | 260 N | 95 N | 140000 N | 5500 N | | |
| Pirimiphos-methyl | 29232937 | 1.00E-02 I | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| Polybrominated biphenyls | | 7.00E-06 H | | 8.90E+00 H | | | 0.0076 C | 0.0007 C | 0.00035 C | 0.64 C | 0.072 C | | |
| Polychlorinated biphenyls (PCBs) | 1336363 | | | 7.70E+00 I | | | 0.0087 C | 0.00081 C | 0.00041 C | 0.74 C | 0.083 C | | |
| Aroclor 1016 | 12674112 | 7.00E-05 I | | | | | 2.6 N | 0.26 N | 0.095 N | 140 N | 5.5 N | | |
| Aroclor 1254 | 11097691 | 2.00E-05 I | | | | | 0.73 N | 0.073 N | 0.027 N | 41 N | 1.6 N | | |
| Polychlorinated terphenyls (PCTs) | | | | 4.50E+00 E | | | 0.015 C | 0.0014 C | 0.0007 C | 1.3 C | 0.14 C | | |
| Polynuclear aromatic hydrocarbons | | | | | | | | | | | | 110000 S | |
| Acenaphthene | 83329 | 6.00E-02 I | | | | | 2200 N | 220 N | 81 N | 120000 N | 4700 N | 120 S | 200 E |
| Anthracene | 120127 | 3.00E-01 I | | | | | 11000 N | 1100 N | 410 N | 610000 N | 23000 N | 6.8 S | 4300 E |
| Benz[a]anthracene | 56553 | | | 7.30E-01 E | 6.10E-01 E | | 0.092 C | 0.01 C | 0.0043 C | 7.8 C | 0.88 C | 27 S | 0.7 E |

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| Contaminant | CAS | RfDo mg/kg/d | RfDi mg/kg/d | CPSo kg-d/mg | CPSi kg-d/mg | VOC | Risk-Based Concentrations: Tap Water µg/L | Ambient Air µg/m3 | Fish mg/kg | Soil Ingestion: Industrial mg/kg | Soil Ingestion: Residential mg/kg | Soil Screening Levels-Transfers from Soil to: Air mg/kg | Groundwater mg/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Benzo[b]fluoranthene | 205992 | | | 7.30E-01 E | 6.10E-01 E | | 0.092 C | 0.01 C | 0.0043 C | 7.8 C | 0.88 C | 23 S | 4 E |
| Benzo[k]fluoranthene | 207089 | | | 7.30E-02 E | 6.10E-02 E | | 0.92 C | 0.1 C | 0.043 C | 78 C | 8.8 C | | 4 E |
| Benzo[a]pyrene | 50328 | | | 7.30E+00 I | 6.10E+00 W | | 0.0092 C | 0.001 C | 0.00043 C | 0.78 C | 0.088 C | 11 S | 4 E |
| Carbazole | 86748 | | | 2.00E-02 H | | | 3.4 C | 0.31 C | 0.16 C | 290 C | 32 C | 11 S | 0.5 E |
| Chrysene | 218019 | | | 7.30E-03 E | 6.10E-03 E | | 9.2 C | 1 C | 0.43 C | 780 C | 88 C | 3.6 S | 1 E |
| Dibenz[ah]anthracene | 53703 | | | 7.30E+00 E | 6.10E+00 E | | 0.0092 C | 0.001 C | 0.00043 C | 0.78 C | 0.088 C | 7.2 S | 11 E |
| Fluoranthene | 206440 | 4.00E-02 I | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | 68 S | 980 E |
| Fluorene | 86737 | 4.00E-02 I | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | 89 S | 160 E |
| Indeno[1,2,3-cd]pyrene | 193395 | | | 7.30E-01 E | 6.10E-01 E | | 0.092 C | 0.01 C | 0.0043 C | 7.8 C | 0.88 C | 280 S | 35 E |
| Naphthalene | 91203 | 4.00E-02 W | | | | | 1500 N | 150 N | 54 N | 82000 N | 3100 N | 180 S | 30 E |
| Pyrene | 129000 | 3.00E-02 I | | | | | 1100 N | 110 N | 41 N | 61000 N | 2300 N | 56 S | 1400 E |
| Prochloraz | 67747095 | 9.00E-03 I | | 1.50E-01 I | | | 0.45 C | 0.042 C | 0.021 C | 38 C | 4.3 C | | |
| Profluralin | 26399360 | 6.00E-03 H | | | | | 220 N | 22 N | 8.1 N | 12000 N | 470 N | | |
| Prometon | 1610180 | 1.50E-02 I | | | | | 550 N | 55 N | 20 N | 31000 N | 1200 N | | |
| Prometryn | 7287196 | 4.00E-03 I | | | | | 150 N | 15 N | 5.4 N | 8200 N | 310 N | | |
| Pronamide | 23950585 | 7.50E-02 I | | | | | 2700 N | 270 N | 100 N | 150000 N | 5900 N | | |
| Propachlor | 1918167 | 1.30E-02 I | | | | | 470 N | 47 N | 18 N | 27000 N | 1000 N | | |
| Propanil | 709988 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Propargite | 2312358 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Propargyl alcohol | 107197 | 2.00E-03 I | | | | | 73 N | 7.3 N | 2.7 N | 4100 N | 160 N | | |
| Propazine | 139402 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Propham | 122429 | 2.00E-02 I | | | | | 730 N | 73 N | 27 N | 41000 N | 1600 N | | |
| Propiconazole | 60207901 | 1.30E-02 I | | | | | 470 N | 47 N | 18 N | 27000 N | 1000 N | | |
| Propylene glycol | 57556 | 2.00E+01 H | | | | | 730000 N | 73000 N | 27000 N | 1E+06 N | 1000000 N | | |
| Propylene glycol, monoethyl ether | 52125538 | 7.00E-01 H | | | | | 26000 N | 2600 N | 950 N | 1E+06 N | 55000 N | | |
| Propylene glycol, monomethyl ether | 107982 | 7.00E-01 H | 5.71E-01 I | | | | 26000 N | 2100 N | 950 N | 1E+06 N | 55000 N | | |
| Propylene oxide | 75569 | | 8.57E-03 I | 2.40E-01 I | 1.29E-02 I | | 0.28 C | 0.49 C | 0.013 C | 24 C | 2.7 C | | |
| Pursuit | 81335775 | 2.50E-01 I | | | | | 9100 N | 910 N | 340 N | 510000 N | 20000 N | | |
| Pydrin | 51630581 | 2.50E-02 I | | | | | 910 N | 91 N | 34 N | 51000 N | 2000 N | | |
| Pyridine | 110861 | 1.00E-03 I | | | | | 37 N | 3.7 N | 1.4 N | 2000 N | 78 N | | |
| Quinalphos | 13593038 | 5.00E-04 I | | | | | 18 N | 1.8 N | 0.68 N | 1000 N | 39 N | | |
| Quinoline | 91225 | | | 1.20E+01 H | | | 0.0056 C | 0.00052 C | 0.00026 C | 0.48 C | 0.053 C | | |
| Resmethrin | 10463868 | 3.00E-02 I | | | | | 1100 N | 110 N | 41 N | 61000 N | 2300 N | | |
| Ronnel | 299843 | 5.00E-02 H | | | | | 1800 N | 180 N | 68 N | 100000 N | 3900 N | | |
| Rotenone | 83794 | 4.00E-03 I | | | | | 150 N | 15 N | 5.4 N | 8200 N | 310 N | | |
| Savey | 78587050 | 2.50E-02 I | | | | | 910 N | 91 N | 34 N | 51000 N | 2000 N | | |
| Selenious Acid | 7783008 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Selenium | 7782492 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | 3 E |
| Selenourea | 630104 | 5.00E-03 H | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |

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*Basis: C=carcinogenic effects N=noncarcinogenic effects E=EPA draft Soil Screening Level S=soil saturation concentration M=EPA MCL.*

| Contaminant | CAS | RfDo mg/kg/d | | RfDi mg/kg/d | | CPSo kg·d/mg | | CPSi kg·d/mg | | VOC | Risk-Based Concentrations: Tap Water µg/L | | Ambient Air µg/m3 | | Fish mg/kg | | Soil Ingestion: Industrial mg/kg | | Soil Ingestion: Residential mg/kg | | Soil Screening Levels-Transfers from Soil to: Air mg/kg | | Groundwater mg/kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sethoxydim | 74051802 | 9.00E-02 | I | | | | | | | | 3300 | N | 330 | N | 120 | N | 180000 | N | 7000 | N | | | | |
| Silver and compounds | 7440224 | 5.00E-03 | I | | | | | | | | 180 | N | 18 | N | 6.8 | N | 10000 | N | 390 | N | | | | |
| Simazine | 122349 | 5.00E-03 | I | | | 1.20E-01 | H | | | | 0.56 | C | 0.052 | C | 0.026 | C | 48 | C | 5.3 | C | | | | |
| Sodium azide | 26628228 | 4.00E-03 | I | | | | | | | | 150 | N | 15 | N | 5.4 | N | 8200 | N | 310 | N | | | | |
| Sodium diethyldithiocarbamate | 148185 | 3.00E-02 | I | | | 2.70E-01 | H | | | | 0.25 | C | 0.023 | C | 0.012 | C | 21 | C | 2.4 | C | | | | |
| Sodium fluoroacetate | 62748 | 2.00E-05 | I | | | | | | | | 0.73 | N | 0.073 | N | 0.027 | N | 41 | N | 1.6 | N | | | | |
| Sodium metavanadate | 13718268 | 1.00E-03 | H | | | | | | | | 37 | N | 3.7 | N | 1.4 | N | 2000 | N | 78 | N | | | | |
| Strontium, stable | 7440246 | 6.00E-01 | I | | | | | | | | 22000 | N | 2200 | N | 810 | N | 1E+06 | N | 47000 | N | | | | |
| Strychnine | 57249 | 3.00E-04 | I | | | | | | | | 11 | N | 1.1 | N | 0.41 | N | 610 | N | 23 | N | | | | |
| Styrene | 100425 | 2.00E-01 | I | 2.86E-01 | I | | | | | V | 1600 | N | 1000 | N | 270 | N | 410000 | N | 16000 | N | 1400 | E | 2 | E |
| Systhane | 88671890 | 2.50E-02 | I | | | | | | | | 910 | N | 91 | N | 34 | N | 51000 | N | 2000 | N | | | | |
| 2,3,7,8-TCDD (dioxin) | 1746016 | | | | | 1.56E+05 | H | 1.16E+05 | H | | 4E-07 | C | 5E-08 | C | | C | 4E-05 | C | 4E-06 | C | | | | |
| Tebuthiuron | 34014181 | 7.00E-02 | I | | | | | | | | 2600 | N | 260 | N | 95 | N | 140000 | N | 5500 | N | | | | |
| Temephos | 3383968 | 2.00E-02 | H | | | | | | | | 730 | N | 73 | N | 27 | N | 41000 | N | 1600 | N | | | | |
| Terbacil | 5902512 | 1.30E-02 | I | | | | | | | | 470 | N | 47 | N | 18 | N | 27000 | N | 1000 | N | | | | |
| Terbufos | 13071799 | 2.50E-05 | H | | | | | | | | 0.91 | N | 0.091 | N | 0.034 | N | 51 | N | 2 | N | | | | |
| Terbutryn | 886500 | 1.00E-03 | I | | | | | | | | 37 | N | 3.7 | N | 1.4 | N | 2000 | N | 78 | N | | | | |
| 1,2,4,5-Tetrachlorobenzene | 95943 | 3.00E-04 | I | | | | | | | V | 1.8 | N | 1.1 | N | 0.41 | N | 610 | N | 23 | N | 91 | N | 0.69 | N |
| 1,1,1,2-Tetrachloroethane | 630206 | 3.00E-02 | I | | | 2.60E-02 | I | 2.59E-02 | I | V | 0.41 | C | 0.24 | C | 0.12 | C | 220 | C | 25 | C | | | | |
| 1,1,2,2-Tetrachloroethane | 79345 | | | | | 2.00E-01 | I | 2.03E-01 | I | V | 0.052 | C | 0.031 | C | 0.016 | C | 29 | C | 3.2 | C | 0.4 | E | 0.001 | E |
| Tetrachloroethylene (PCE) | 127184 | 1.00E-02 | I | | | 5.20E-02 | E | 2.03E-03 | E | V | 1.1 | C | 3.1 | C | 0.061 | C | 110 | C | 12 | C | 11 | E | 0.04 | E |
| 2,3,4,6-Tetrachlorophenol | 58902 | 3.00E-02 | I | | | | | | | | 1100 | N | 110 | N | 41 | N | 61000 | N | 2300 | N | | | | |
| p,a,a,a-Tetrachlorotoluene | 5216251 | | | | | 2.00E+01 | H | | | V | 0.00053 | C | 0.00031 | C | 0.00016 | C | 0.29 | C | 0.032 | C | | | | |
| Tetrachlorovinphos | 961115 | 3.00E-02 | I | | | 2.40E-02 | H | | | | 2.8 | C | 0.26 | C | 0.13 | C | 240 | C | 27 | C | | | | |
| Tetraethyldithiopyrophosphate | 3689245 | 5.00E-04 | I | | | | | | | | 18 | N | 1.8 | N | 0.68 | N | 1000 | N | 39 | N | | | | |
| Tetraethyl lead | 78002 | 1.00E-07 | I | | | | | | | | 0.0037 | N | 0.00037 | N | 0.00014 | N | 0.2 | N | 0.0078 | N | 0.00068 | N | 0.000034 | N |
| 1,1,1,2-Tetrafluoroethane | 811972 | | I | 2.29E+01 | | | | | | V | 140000 | N | 84000 | N | | | | | | | | | | |
| Thallic oxide | 1314325 | 7.00E-05 | W | | | | | | | | 2.6 | N | 0.26 | N | 0.095 | N | 140 | N | 5.5 | N | | | | |
| Thallium | | | | | | | | | | | | | | | | | | | | | | | 0.4 | E |
| Thallium acetate | 563688 | 9.00E-05 | I | | | | | | | | 3.3 | N | 0.33 | N | 0.12 | N | 180 | N | 7 | N | | | | |
| Thallium carbonate | 6533739 | 8.00E-05 | I | | | | | | | | 2.9 | N | 0.29 | N | 0.11 | N | 160 | N | 6.3 | N | | | | |
| Thallium chloride | 7791120 | 8.00E-05 | I | | | | | | | | 2.9 | N | 0.29 | N | 0.11 | N | 160 | N | 6.3 | N | | | | |
| Thallium nitrate | 10102451 | 9.00E-05 | I | | | | | | | | 3.3 | N | 0.33 | N | 0.12 | N | 180 | N | 7 | N | | | | |
| Thallium selenite | 12039520 | 9.00E-05 | W | | | | | | | | 3.3 | N | 0.33 | N | 0.12 | N | 180 | N | 7 | N | | | | |
| Thallium sulfate | 7446186 | 8.00E-05 | I | | | | | | | | 2.9 | N | 0.29 | N | 0.11 | N | 160 | N | 6.3 | N | | | | |
| Thiobencarb | 28249776 | 1.00E-02 | I | | | | | | | | 370 | N | 37 | N | 14 | N | 20000 | N | 780 | N | | | | |
| 2-(Thiocyanomethylthio)-benzothiazole | 21564170 | 3.00E-02 | H | | | | | | | | 1100 | N | 110 | N | 41 | N | 61000 | N | 2300 | N | | | | |
| Thiofanox | 39196184 | 3.00E-04 | H | | | | | | | | 11 | N | 1.1 | N | 0.41 | N | 610 | N | 23 | N | | | | |
| Thiophanate-methyl | 23564058 | 8.00E-02 | I | | | | | | | | 2900 | N | 290 | N | 110 | N | 160000 | N | 6300 | N | | | | |

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| Contaminant | CAS | RfDo mg/kg/d | RfDi mg/kg/d | CPSo kg-d/mg | CPSi kg-d/mg | VOC | Risk-Based Concentrations: Tap Water µg/L | Ambient Air µg/m3 | Fish mg/kg | Soil Ingestion: Industrial mg/kg | Soil Ingestion: Residential mg/kg | Soil Screening Levels-Transfers from Soil to: Air mg/kg | Soil Screening Levels-Transfers from Soil to: Groundwater mg/kg |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Thiram | 137268 | 5.00E-03 I | | | | | 180 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Tin and compounds | | 6.00E-01 H | | | | | 22000 N | 2200 N | 810 N | 1E+06 N | 47000 N | | |
| Toluene | 108883 | 2.00E-01 I | 1.14E-01 I | | | X | 750 N | 420 N | 270 N | 410000 N | 16000 N | 520 E | 5 E |
| Toluene-2,4-diamine | 95807 | | | 3.20E+00 H | | | 0.021 C | 0.002 C | 0.00099 C | 1.8 C | 0.2 C | | |
| Toluene-2,5-diamine | 95705 | 6.00E-01 H | | | | | 22000 N | 2200 N | 810 N | 1E+06 N | 47000 N | | |
| Toluene-2,6-diamine | 823405 | 2.00E-01 H | | | | | 7300 N | 730 N | 270 N | 410000 N | 16000 N | | |
| p-Toluidine | 106490 | | | 1.90E-01 H | | | 0.35 C | 0.033 C | 0.017 C | 30 C | 3.4 C | | |
| Toxaphene | 8001352 | | | 1.10E+00 I | 1.12E+00 I | | 0.061 C | 0.0056 C | 0.0029 C | 5.2 C | 0.58 C | 5 E | 0.04 E |
| Tralomethrin | 66841256 | 7.50E-03 I | | | | | 270 N | 27 N | 10 N | 15000 N | 590 N | | |
| Triallate | 2303175 | 1.30E-02 I | | | | | 470 N | 47 N | 18 N | 27000 N | 1000 N | | |
| Triasulfuron | 82097505 | 1.00E-02 I | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| 1,2,4-Tribromobenzene | 615543 | 5.00E-03 I | | | | X | 30 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| Tributyltin oxide (TBTO) | 56359 | 3.00E-05 I | | | | | 1.1 N | 0.11 N | 0.041 N | 61 N | 2.3 N | | |
| 2,4,6-Trichloroaniline hydrochloride | 33663502 | | | 2.90E-02 H | | | 2.3 C | 0.22 C | 0.11 C | 200 C | 22 C | | |
| 2,4,6-Trichloroaniline | 634935 | | | 3.40E-02 H | | | 2 C | 0.18 C | 0.093 C | 170 C | 19 C | | |
| 1,2,4-Trichlorobenzene | 120821 | 1.00E-02 I | 5.71E-02 H | | | X | 190 N | 210 N | 14 N | 20000 N | 780 N | 240 E | 2 E |
| **1,1,1-Trichloroethane | 71556 | 3.50E-02 E | 2.86E-01 W | | | X | 790 N | 1000 N | 47 N | 72000 N | 2700 N | 980 E | 0.9 E |
| 1,1,2-Trichloroethane | 79005 | 4.00E-03 I | | 5.70E-02 I | 5.60E-02 I | X | 0.19 C | 0.11 C | 0.055 C | 100 C | 11 C | 0.8 E | 0.01 E |
| Trichloroethylene (TCE) | 79016 | 6.00E-03 E | | 1.10E-02 W | 6.00E-03 E | X | 1.6 C | 1 C | 0.29 C | 520 C | 58 C | 3 E | 0.02 E |
| Trichlorofluoromethane | 75694 | 3.00E-01 I | 2.00E-01 A | | | X | 1300 N | 730 N | 410 N | 610000 N | 23000 N | 790 N | 13 N |
| 2,4,5-Trichlorophenol | 95954 | 1.00E-01 I | | | | | 3700 N | 370 N | 140 N | 200000 N | 7800 N | 8200 S | 120 E |
| 2,4,6-Trichlorophenol | 88062 | | | 1.10E-02 I | 1.09E-02 I | | 6.1 C | 0.57 C | 0.29 C | 520 C | 58 C | 150 C | 0.06 E |
| 2,4,5-Trichlorophenoxyacetic acid | 93765 | 1.00E-02 I | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| 2-(2,4,5-Trichlorophenoxy)propionic acid | 93721 | 8.00E-03 I | | | | | 290 N | 29 N | 11 N | 16000 N | 630 N | | |
| 1,1,2-Trichloropropane | 598776 | 5.00E-03 I | | | | X | 30 N | 18 N | 6.8 N | 10000 N | 390 N | 13 N | 0.14 N |
| 1,2,3-Trichloropropane | 96184 | 6.00E-03 I | | 7.00E+00 I | | X | 0.0015 C | 0.00089 C | 0.00045 C | 0.82 C | 0.091 C | 0.00003 C | 6.000E-06 C |
| 1,2,3-Trichloropropene | 96195 | 5.00E-03 H | | | | X | 30 N | 18 N | 6.8 N | 10000 N | 390 N | | |
| 1,1,2-Trichloro-1,2,2- trifluoroethane | 76131 | 3.00E+01 I | 8.57E+00 H | | | X | 59000 N | 31000 N | 41000 N | 1E+06 N | 1000000 N | 2400 S | 3100 N |
| Tridiphane | 58138082 | 3.00E-03 I | | | | | 110 N | 11 N | 4.1 N | 6100 N | 230 N | | |
| Triethylamine | 121448 | | 2.00E-03 I | | | | 73 N | 7.3 N | | | | | |
| Trifluralin | 1582098 | 7.50E-03 I | | 7.70E-03 I | | | 8.7 C | 0.81 C | 0.41 C | 740 C | 83 C | | |
| 1,2,4-Trimethylbenzene | 95636 | 5.00E-02 E | | | | X | 300 N | 180 N | 68 N | 100000 N | 3900 N | | |
| 1,3,5-Trimethylbenzene | 108678 | 5.00E-02 E | | | | X | 300 N | 180 N | 68 N | 100000 N | 3900 N | 98 S | 0.26 M |
| Trimethyl phosphate | 512561 | | | 3.70E-02 H | | | 1.8 C | 0.17 C | 0.085 C | 150 C | 17 C | | |
| 1,3,5-Trinitrobenzene | 99354 | 5.00E-05 I | | | | | 1.8 N | 0.18 N | 0.068 N | 100 N | 3.9 N | | |
| Trinitrophenylmethylnitramine | 479458 | 1.00E-02 H | | | | | 370 N | 37 N | 14 N | 20000 N | 780 N | | |
| 2,4,6-Trinitrotoluene | 118967 | 5.00E-04 I | | 3.00E-02 I | | | 2.2 C | 0.21 C | 0.11 C | 190 C | 21 C | | |
| Uranium (soluble salts) | 7440611 | 3.00E-03 I | | | | | 110 N | 11 N | 4.1 N | 6100 N | 230 N | | |
| Vanadium | 7440622 | 7.00E-03 H | | | | | 260 N | 26 N | 9.5 N | 14000 N | 550 N | | |

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| Contaminant | CAS | RfDo mg/kg/d | | RfDi mg/kg/d | | CPSo kg·d/mg | CPSi kg·d/mg | VOC | Risk-Based Concentrations: Tap Water µg/L | | Ambient Air µg/m3 | | Fish mg/kg | | Soil Ingestion: Industrial mg/kg | | Soil Ingestion: Residential mg/kg | | Soil Screening Levels-Transfers from Soil to: Air mg/kg | | Soil Screening Levels-Transfers from Soil to: Groundwater mg/kg | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vanadium pentoxide | 1314621 | 9.00E-03 | I | | | | | | 330 | N | 33 | N | 12 | N | 18000 | N | 700 | N | | | | |
| Vanadium sulfate | 36907423 | 2.00E-02 | H | | | | | | 730 | N | 73 | N | 27 | N | 41000 | N | 1600 | N | | | | |
| Vernam | 1929777 | 1.00E-03 | I | | | | | | 37 | N | 3.7 | N | 1.4 | N | 2000 | N | 78 | N | | | | |
| Vinclozolin | 50471448 | 2.50E-02 | I | | | | | | 910 | N | 91 | N | 34 | N | 51000 | N | 2000 | N | | | | |
| Vinyl acetate | 108054 | 1.00E+00 | H | 5.71E-02 | I | | | | 37000 | N | 210 | N | 1400 | N | 1E+06 | N | 78000 | N | 370 | E | 84 | E |
| Vinyl bromide | 593602 | | | 8.57E-04 | I | | | ☒ | 5.2 | N | 3.1 | N | | | | | | | 2 | N | 0.018 | N |
| Vinyl chloride | 75014 | | | | | 1.90E+00 | 3.00E-01 H | ☒ | 0.019 | C | 0.021 | C | 0.0017 | C | 3 | C | 0.34 | C | 0.002 | E | 0.01 | E |
| Warfarin | 81812 | 3.00E-04 | I | | | | | | 11 | N | 1.1 | N | 0.41 | N | 610 | N | 23 | N | 0.046 | N | 1800 | N |
| m-Xylene | 1.08E+05 | 2.00E+00 | H | 2.00E-01 | W | | | ☒ | 1400 | N | 730 | N | 2700 | N | 1E+06 | N | 160000 | N | 950 | S | 2.40E+02 | M |
| o-Xylene | 9.55E+04 | 2.00E+00 | H | 2.00E-01 | W | | | ☒ | 1400 | N | 730 | N | 2700 | N | 1E+06 | N | 160000 | N | 730 | S | 1.50E+02 | M |
| p-Xylene | 1.06E+05 | | | 8.57E-02 | W | | | ☒ | 520 | N | 310 | N | | | | | | | 1000 | S | 2.20E+02 | M |
| Xylene (mixed) | 1.33E+06 | 2.00E+00 | I | | | | | ☒ | 12000 | N | 7300 | N | 2700 | N | 1E+06 | N | 160000 | N | 320 | E | 7.40E+01 | E |
| Zinc | 7.44E+06 | 3.00E-01 | I | | | | | | 11000 | N | 1100 | N | 410 | N | 610000 | N | 23000 | N | | | 4.20E+04 | E |
| Zinc phosphide | 1.31E+06 | 3.00E-04 | I | | | | | | 11 | N | 1.1 | N | 0.41 | N | 610 | N | 23 | N | | | | |
| Zineb | 1.21E+07 | 5.00E-02 | I | | | | | | 1800 | N | 180 | N | 68 | N | 100000 | N | 3900 | N | | | | |