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SELECTING EXPOSURE ROUTES AND CONTAMINANTS OF CONCERN BY RISK - BASED SCREENING, REGION III TECHNICAL GUIDANCE MANUAL - (USED AS A REFERENCE IN OU1 AND OU5 RI REPORTS)

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Region III
Technical Guidance Manual
Risk Assessment

Selecting Exposure Routes and Contaminants of Concern by Risk-Based Screening

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EPA
Region III

Hazardous Waste Management Division
Office of Superfund Programs
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Human health risk assessment includes effort-intensive steps which require many detailed calculations by experts. Most baseline risk assessments are dominated by a few chemicals and a few routes of exposure. Effort expended on minor contaminants and exposure routes, i.e., those which do not influence overall risk, is essentially wasted. This guidance is intended to identify and focus on dominant contaminants of concern and exposure routes at the earliest feasible point in the baseline risk assessment. Use of these methods will decrease effort and time spent assessing risk, without loss of protectiveness. This guidance is not intended for other risk assessment activities, such as determining preliminary remediation goals.

SELECTING CONTAMINANTS AND EXPOSURE ROUTES OF CONCERN

Most samples from hazardous waste sites are analyzed for 103 target compounds and analytes recommended by the EPA Superfund program. Semi-volatile analysis can detect additional tentatively identified compounds not on the target lists. Special analytical services procedures, if used, may find still more contaminants. The combined number of contaminants detected at a site sometimes exceeds one hundred.

While EPA considers it necessary to gather information on many contaminants, very little of this data actually influences the overall quantitative assessment of health risk. For most sites, baseline risk assessments are dominated by a few contaminants and a few routes of exposure. The remaining tens, or hundreds, of detected contaminants have a minimal influence on total risk. This small impact is lost by rounding. Entire environmental media may contain not a single contaminant at a concentration which could adversely affect public health. Quantitative risk calculations using data from such "risk-free" media have no effect on the overall risk estimate for the site.

The EPA baseline risk assessment process at several points requires careful data evaluation by scientific experts. These evaluations, which are contaminant-specific, include: (1) statistical comparisons between site-related and background samples, (2) special handling of undetected contaminants, (3) calculation of toxicity equivalence, (4) evaluation of frequency of detection, and (5) comparison with ARARs. Because overall risk is usually driven by a few contaminants and exposure routes, effort spent in detailed evaluation of minor contaminants and routes of exposure is essentially wasted. For some sites, this wasted effort exceeds 90% of the total.

The baseline risk assessment process can be made more efficient by focusing on dominant contaminants and routes of exposure at the earliest feasible stage. The mechanisms recommended for this are (1) a re-ordering of the process of eliminating contaminants and routes of exposure, and (2) use of a risk-based concentration screen. Appropriately used, this process can dramatically reduce the effort of risk assessment, while not changing the result significantly.

EXISTING GUIDANCE

Chapter 5 of "RAGS IA" (Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A); EPA, 1989) provides a detailed procedure for evaluating data for a baseline risk assessment. This

procedure includes steps by which the risk assessor selects contaminants of concern in each exposure medium. These steps are summarized in Table 1.

There are two major limitations to the RAGS procedure. First, the eliminating step (a concentration toxicity screen) comes late in the process. Many of the preceding steps (e.g., evaluation of quantitation limits, comparison with background, calculation of toxicity equivalence, and evaluation of frequency of detection) are contaminant- and medium-specific. They require the sustained attention of an expert, and cannot be automated. If the contaminant is eliminated, this work is wasted.

The second limitation is that the concentration toxicity screen compares only relative risk among contaminants in the same medium. While very efficient at selecting dominant contaminants in each medium, this method does not evaluate significance of total risk for the medium. Thus, the concentration toxicity screen can eliminate contaminants, but not routes of exposure.

RECOMMENDED METHODOLOGY

This guidance makes two changes intended to remove the limitations in existing guidance. These recommendations are intended for baseline risk assessments.

*1. **Re-ordering of steps.** The eliminating screen is moved forward in the data evaluation process to a point immediately following data quality evaluation. The new process is shown in Table 2. Effort-intensive steps such as evaluation of quantitation limits and comparison with background now follow the eliminating screen. The steps are divided into four categories: data quality evaluation, initial data set reduction, re-inclusion of special cases, and optional final data set reduction.*

The data quality evaluation steps (evaluating appropriateness of methods and qualifiers, significance of blank contamination, and need for special analyses) should be done as described in RAGS IA, Chapter 5. Next, the risk assessor should consult with the RPM to discuss the use of the risk-based concentration table (described in item [2] below) as a screening mechanism. With the RPM's approval, the risk assessor should reduce the data set and document the rationale for eliminating contaminants and routes of exposure from further analysis.

After the initial data set reduction, the risk assessor and RPM should consider re-including specific contaminants on the basis of historical data, toxicity, mobility, persistence, bioaccumulation, special exposure routes, special treatability problems, or exceedance of ARARs. These activities should proceed as described in Section 5.9 of RAGS IA.

Finally, optional further reductions in the data set may be justified, based on the status of a contaminant as an essential nutrient, low frequency of detection, or no statistical difference between site and background levels. These evaluations, the most complicated and contaminant-specific, are saved for last.

*2. **Screening by risk-based concentrations.** The screening method is changed from the relative concentration toxicity screen of RAGS IA to an absolute comparison of risk. This is done by means of a table of risk-based concentrations (Appendix I). This table contains levels of nearly 600 contaminants in air, drinking water, fish tissue, and soil, which correspond to a systemic hazard quotient of 0.1 or a lifetime cancer risk of 10^{-6}. The risk-based concentrations were developed using protective default exposure scenarios suggested by EPA (1991) and the best available reference doses and carcinogenic potency slopes (see the table for sources), and represent relatively protective environmental concentrations at which EPA would typically not take action.*

The risk-based concentration screen is used as follows:

(a) The risk assessor extracts the maximum concentration of each substance detected in each medium.

(b) If the maximum concentration exceeds the risk-based concentration for that medium, the contaminant is retained for risk assessment, for all routes of exposure involving that medium. Otherwise the contaminant is dropped for that medium.

(c) If a specific contaminant does not exceed its risk-based concentration for any medium, the contaminant is dropped from the risk assessment.

(d) If no contaminant in a specific medium exceeds its risk-based concentration, the medium is dropped from the risk assessment.

(e) All contaminants and exposure routes which are dropped are kept on a sub-list and considered for re-inclusion, based on special properties.

(f) If the risk assessor wants to include a route of exposure not covered in the risk-based concentration table, the equations provided in Appendix I can serve as the basis for new risk-

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based concentrations. Similarly, the risk assessor can use the same equations to calculate alternate risk levels (i.e., other than a systemic hazard quotient of 0.1 and lifetime cancer risk of 10^{-6}) to be the basis for screening.

SUMMARY

The process by which contaminants and exposure routes are selected in quantitative risk assessment can be made less effort-intensive by two simple changes. First, high-effort steps should be postponed until later in the selection process, because performing these operations on trivial contaminants and exposure routes is pointless. Second, changing from a relative concentration toxicity screen to an absolute risk-based concentration screen improves the risk assessor's ability to focus on dominant contaminants and exposure routes at an earlier stage.

REFERENCES

EPA, 1991. Human Health Evaluation Manual, Supplemental Guidance: "Standard Default Exposure Factors". OSWER Directive 9285.6-03, Office of Emergency and Remedial Response, March 25, 1991.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). Office of Emergency and Remedial Response, December, 1989. EPA/540/1-89/002.

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Table 1. Summary of existing EPA guidance on selecting contaminants of concern (EPA, 1989, chapter 5)
Section 5.1: Combining data from site investigations
1. Determine if methods are appropriate
2. Evaluate quantitation limits
3. Determine if qualifiers are appropriate
4. Determine if significant blank contamination exists
5. Determine if special analyses for tentatively identified compounds are needed
6. Compare site samples to background
Section 5.9: Further reduction in the number of chemicals (optional)
7. Consult with RPM
8. Document rationale for eliminating chemicals
9. Examine historical information
10. Consider exceptional toxicity, mobility, persistence, or bioaccumulation
11. Consider special exposure routes
12. Consider special treatability problems
13. Determine if contaminants exceed ARARs
14. Group chemicals by class, evaluate toxicity equivalence
15. Evaluate frequency of detection
16. Evaluate essentiality
17. Use a concentration toxicity screen

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Table 2. EPA Region III guidance on selecting contaminants and exposure routes of concern
A. Data quality evaluation
1. Determine if methods are appropriate 2. Determine if qualifiers are appropriate 3. Determine if significant blank contamination exists 4. Determine if special analyses for tentatively identified compounds are needed
B. Reduce data set using risk-based concentration screen
5. Consult with RPM 6. Use risk-based concentration table to screen contaminants and exposure routes of concern 7. Document rationale for eliminating chemicals and exposure routes
C. Consider re-including eliminated chemicals and routes, based on:
8. Historical information 9. Exceptional toxicity, mobility, persistence, or bioaccumulation 10. Special exposure routes 11. Special treatability problems 12. ARARs exceedance 13. Toxicity equivalence of chemical class (*e.g.*, CDD/CDFs, PAHs)
D. Make further specific reductions in data set (optional)
14. Evaluate essentiality 15. Evaluate frequency of detection 16. Compare site samples to background

Appendix I:
EPA Region III Risk-Based Screening Table
Background Information

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:

VARIABLE	UNITS	VALUE	LABEL
1-General:			
Carcinogenic potency slope oral	kg-d/mg	*	CPSo
Carcinogenic potency slope inhaled	kg-d/mg	*	CPSi
Reference dose oral	mg/kg/d	*	RfDo
Reference dose inhaled	mg/kg/d	*	RfDi
Target cancer risk	unitless	1.00e-06	TR
Target hazard quotient	unitless	0.1	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 x 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, child	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, child	mg/d	200	IRSc
Soil ingestion factor, age adjusted	mg-y/kg-d	114.29	IFSadj
2-Residential			
Exposure frequency, residential	d/y	350	EFr
Exposure duration, residential	y	30	EDtot

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VARIABLE	UNITS	VALUE	LABEL
Exposure duration, age 1-6	y	6	EDc
Volatilization factor	L/m3	0.5	VF
3-Occupational			
Exposure frequency, occupational	d/y	250	EFo
Exposure duration, occupational	y	25	EDo
* = Contaminant-specific toxicity parameters			

The priority among sources of toxicological constants was as follows: (1) IRIS, (2) HEAST, (3) HEAST alternative method, (4) ECAO-Cincinnati, (5) withdrawn from IRIS, (6) withdrawn from HEAST, and (7) other EPA documents. Each source was used only if numbers from higher-priority sources were unavailable.

Algorithms:

1. 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.

a. Air inhalation ([$m^3 \cdot y$]/[kg· d]):

$$IFAadj = \frac{EDc \cdot IRAc}{BWc} + \frac{(EDtot - EDc) \cdot IRAa}{BWa}$$

b. Tap water ingestion ([L· y]/[kg· d]):

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

c. Soil ingestion ([mg· y]/[kg· d]):

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

2. Residential water use ($\mu g/L$). Volatilization terms were calculated only for compounds with "***" 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 (VF, 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.

a. Carcinogens: Calculations were based on combined childhood and adult exposure.

$$\frac{TR \cdot ATc \cdot 1000\frac{ug}{mg}}{EFr \cdot ([VF \cdot IFAadj \cdot CPSi] + [IFWadj \cdot CPSo])}$$

b. Non-carcinogens: Calculations were based on adult exposure.

$$\frac{THQ \cdot BWa \cdot ATn \cdot 1000\frac{ug}{mg}}{EFr \cdot EDtot \cdot \left(\frac{VF \cdot IRAa}{RfDi} + \frac{IRWa}{RfDo}\right)}$$

3. Air ($\mu g/m^3$). Oral potency slopes and references were used where inhalation values were not available.

a. Carcinogens: Calculations were based on combined childhood and adult exposure.

$$\frac{TR \cdot ATc \cdot 1000\frac{ug}{mg}}{EFr \cdot IFAadj \cdot CPSi}$$

b. Non-carcinogens: Calculations were based on adult exposure.

$$\frac{THQ \cdot RfDi \cdot BWa \cdot ATn \cdot 1000\frac{ug}{mg}}{EFr \cdot EDtot \cdot IRAa}$$

4. Fish (mg/kg):

a. Carcinogens: Calculations were based on adult exposure.

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

b. Non-carcinogens: Calculations were based on adult exposure.

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

5. Soil commercial/industrial (mg/kg): The default exposure assumption that only 50% of incidental soil ingestion occurs at work has been omitted. Calculations were based on adult occupational exposure.

a. Carcinogens:

$$\frac{TR \cdot BWa \cdot ATc}{EFo \cdot EDo \cdot \frac{IRSa}{10^6 \frac{mg}{kg}} \cdot CPSo}$$

b. Non-carcinogens:

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

6. Soil residential (mg/kg):

a. Carcinogens: Calculations were based on combined childhood and adult exposure.

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

b. Non-carcinogens: Calculations were based on childhood exposure only.

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

Sources: i=IRIS h=HEAST a=HEAST alt. w=Withdrawn from IRIS or HEAST e=EPA-ECAO o=Other EPA documents *F=final D=draft P=proposed T=tentative | c=carcinogen n=noncarcinogen*

Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg•d/mg	CPSi kg•d/mg	VOC	MCL mg/L	Tap water µg/L	Ambient air µg/m3	Fish mg/kg	Industrial soil mg/kg	Residential soil mg/kg
Acephate	30560191	4.00E-03 *i*		8.70E-03 *i*				7.7 *c*	0.72 *c*	0.36 *c*	330 *c*	31 *n*
Acetaldehyde	75070		2.57E-03 *i*		7.70E-03 *i*			9.4 *n*	0.81 *c*			
Acetochlor	34256821	2.00E-02 *i*						73 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
Acetone	67641	1.00E-01 *i*						370 *n*	37 *n*	14 *n*	10000 *n*	780 *n*
Acetone cyanohydrin	75865	7.00E-02 *h*	2.86E-03 *h*					260 *n*	1 *n*	9.5 *n*	7200 *n*	550 *n*
Acetonitrile	75078	6.00E-03 *i*	1.43E-02 *h*					22 *n*	5.2 *n*	0.81 *n*	610 *n*	47 *n*
Acetophenone	98862	1.00E-01 *i*	5.71E-06 *w*			***		0.0042 *n*	0.0021 *n*	14 *n*	10000 *n*	780 *n*
Acifluorfen	62476599	1.30E-02 *i*						47 *n*	4.7 *n*	1.8 *n*	1300 *n*	100 *n*
Acrolein	107028	2.00E-02 *h*	5.71E-06 *i*					73 *n*	0.0021 *n*	2.7 *n*	2000 *n*	160 *n*
Acrylamide	79061	2.00E-04 *i*		4.50E+00 *i*	4.55E+00 *i*			0.015 *c*	0.0014 *c*	0.0007 *c*	0.64 *c*	0.14 *c*
Acrylic acid	79107	8.00E-02 *i*	8.57E-05 *i*					290 *n*	0.031 *n*	11 *n*	8200 *n*	630 *n*
Acrylonitrile	107131		5.71E-04 *i*	5.40E-01 *i*	2.38E-01 *i*			0.12 *c*	0.026 *c*	0.0058 *c*	5.3 *c*	1.2 *c*
Alachlor	15972608	1.00E-02 *i*		8.00E-02 *h*			0.002 *F*	0.84 *c*	0.078 *c*	0.039 *c*	36 *c*	8 *c*
Alar	1596845	1.50E-01 *i*						550 *n*	55 *n*	20 *n*	15000 *n*	1200 *n*
Aldicarb	116063	1.00E-03 *i*					0.007 *D*	3.7 *n*	0.37 *n*	0.14 *n*	100 *n*	7.8 *n*
Aldicarb sulfone	1646884	1.00E-03 *i*					0.007 *D*	3.7 *n*	0.37 *n*	0.14 *n*	100 *n*	7.8 *n*
Aldrin	309002	3.00E-05 *i*		1.70E+01 *i*	1.71E+01 *i*			0.004 *c*	0.00037 *c*	0.00019 *c*	0.17 *c*	0.038 *c*
Ally	74223646	2.50E-01 *i*						910 *n*	91 *n*	34 *n*	26000 *n*	2000 *n*
Allyl alcohol	107186	5.00E-03 *i*						18 *n*	1.8 *n*	0.68 *n*	510 *n*	39 *n*
Allyl chloride	107051	5.00E-02 *w*	2.86E-04 *i*					180 *n*	0.1 *n*	6.8 *n*	5100 *n*	390 *n*
Aluminum	7429905	2.90E+00 *o*						11000 *n*	1100 *n*	390 *n*	300000 *n*	23000 *n*
Aluminum phosphide	20859738	4.00E-04 *i*						1.5 *n*	0.15 *n*	0.054 *n*	41 *n*	3.1 *n*
Amdro	67485294	3.00E-04 *i*						1.1 *n*	0.11 *n*	0.041 *n*	31 *n*	2.3 *n*
Ametryn	834128	9.00E-03 *i*						33 *n*	3.3 *n*	1.2 *n*	920 *n*	70 *n*
m-Aminophenol	591275	7.00E-02 *h*						260 *n*	26 *n*	9.5 *n*	7200 *n*	550 *n*
4-Aminopyridine	504245	2.00E-05 *h*						0.073 *n*	0.0073 *n*	0.0027 *n*	2 *n*	0.16 *n*
Amitraz	33089611	2.50E-03 *i*						9.1 *n*	0.91 *n*	0.34 *n*	260 *n*	20 *n*
Ammonia	7664417		2.86E-02 *i*					100 *n*	10 *n*			
Ammonium sulfamate	7773060	2.00E-01 *i*						730 *n*	73 *n*	27 *n*	20000 *n*	1600 *n*
Aniline	62533		2.86E-04 *i*	5.70E-03 *i*				1 *n*	0.1 *n*	0.55 *c*	500 *c*	110 *c*
Antimony and compounds	7440360	4.00E-04 *i*					0.006 *F*	1.5 *n*	0.15 *n*	0.054 *n*	41 *n*	3.1 *n*
Antimony pentoxide	1314609	5.00E-04 *h*						1.8 *n*	0.18 *n*	0.068 *n*	51 *n*	3.9 *n*
Antimony potassium tartrate	304610	9.00E-04 *h*						3.3 *n*	0.33 *n*	0.12 *n*	92 *n*	7 *n*
Antimony tetroxide	1332316	4.00E-04 *h*						1.5 *n*	0.15 *n*	0.054 *n*	41 *n*	3.1 *n*
Antimony trioxide	1309644	4.00E-04 *h*						1.5 *n*	0.15 *n*	0.054 *n*	41 *n*	3.1 *n*
Apollo	74115245	1.30E-02 *i*						47 *n*	4.7 *n*	1.8 *n*	1300 *n*	100 *n*
Aramite	140578	5.00E-02 *h*		2.50E-02 *i*	2.49E-02 *i*			2.7 *c*	0.25 *c*	0.13 *c*	110 *c*	26 *c*
Arsenic	7440382	3.00E-04 *i*					0.05 *	1.1 *n*	0.11 *n*	0.041 *n*	31 *n*	2.3 *n*
Arsenic (as carcinogen)	744032	3.00E-04		1.75E+00 *i*	1.51E+01 *i*		0.05 *	0.038 *c*	0.00041 *c*	0.0018 *c*	1.6 *c*	0.37 *c*

Sources: i=IRIS h=HEAST a=HEAST alt. w=Withdrawn from IRIS or HEAST e=EPA-ECAO o=Other EPA documents *F=final D=draft P=proposed T=tentative | c=carcinogen n=noncarcinogen*

Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg•d/mg	CPSi kg•d/mg	VOC	MCL mg/L	Tap water µg/L	Ambient air µg/m3	Fish mg/kg	Industrial soil mg/kg	Residential soil mg/kg
Assure	76578148	9.00E-03 *i*						33 *n*	3.3 *n*	1.2 *n*	920 *n*	70 *n*
Asulam	3337711	5.00E-02 *i*						180 *n*	18 *n*	6.8 *n*	5100 *n*	390 *n*
Atrazine	1912249	3.50E-02 *i*		2.22E-01 *h*			0.003 *F*	0.3 *c*	0.028 *c*	0.014 *c*	13 *c*	2.9 *c*
Avermectin B1	65195553	4.00E-04 *i*						1.5 *n*	0.15 *n*	0.054 *n*	41 *n*	3.1 *n*
Azobenzene	103333			1.10E-01 *i*	1.08E-01 *i*			0.61 *c*	0.058 *c*	0.029 *c*	26 *c*	5.8 *c*
Barium and compounds	7440393	7.00E-02 *i*	1.43E-04 *h*				2 *F*	260 *n*	0.052 *n*	9.5 *n*	7200 *n*	550 *n*
Baygon	114261	4.00E-03 *i*						15 *n*	1.5 *n*	0.54 *n*	410 *n*	31 *n*
Bayleton	43121433	3.00E-02 *i*						110 *n*	11 *n*	4.1 *n*	3100 *n*	230 *n*
Baythroid	68359375	2.50E-02 *i*						91 *n*	9.1 *n*	3.4 *n*	2600 *n*	200 *n*
Benefin	1861401	3.00E-01 *i*						1100 *n*	110 *n*	41 *n*	31000 *n*	2300 *n*
Benomyl	17804352	5.00E-02 *i*						180 *n*	18 *n*	6.8 *n*	5100 *n*	390 *n*
Bentazon	25057890	2.50E-03 *i*						9.1 *n*	0.91 *n*	0.34 *n*	260 *n*	20 *n*
Benzaldehyde	100527	1.00E-01 *i*				***		61 *n*	37 *n*	14 *n*	10000 *n*	780 *n*
Benzene	71432		1.43E-04 *e*	2.90E-02 *i*	2.90E-02 *i*	***	0.005 *F*	0.087 *n*	0.052 *n*	0.11 *c*	99 *c*	22 *c*
Benzidine	92875	3.00E-03 *i*		2.30E+02 *i*	2.35E+02 *i*			0.00029 *c*	0.00003 *c*	0.00001 *c*	0.012 *c*	0.0028 *c*
Benzoic acid	65850	4.00E+00 *i*						15000 *n*	1500 *n*	540 *n*	410000 *n*	31000 *n*
Benzotrichloride	98077			1.30E+01 *i*				0.0052 *c*	0.00048 *c*	0.00024 *c*	0.22 *c*	0.049 *c*
Benzyl alcohol	100516	3.00E-01 *h*						1100 *n*	110 *n*	41 *n*	31000 *n*	2300 *n*
Benzyl chloride	100447			1.70E-01 *i*		***		0.062 *c*	0.037 *c*	0.019 *c*	17 *c*	3.8 *c*
Beryllium and compounds	7440417	5.00E-03 *i*		4.30E+00 *i*	8.40E+00 *i*		0.004 *F*	0.016 *c*	0.00075 *c*	0.00073 *c*	0.67 *c*	0.15 *c*
Bidrin	141662	1.00E-04 *i*						0.37 *n*	0.037 *n*	0.014 *n*	10 *n*	0.78 *n*
Biphenthrin (Talstar)	82657043	1.50E-02 *i*						55 *n*	5.5 *n*	2 *n*	1500 *n*	120 *n*
1,1-Biphenyl	92524	5.00E-02 *i*						180 *n*	18 *n*	6.8 *n*	5100 *n*	390 *n*
Bis(2-chloroethyl)ether	111444			1.10E+00 *i*	1.16E+00 *i*	***		0.0092 *c*	0.0054 *c*	0.0029 *c*	2.6 *c*	0.58 *c*
Bis(2-chloroisopropyl)ether	39638329	4.00E-02 *i*		7.00E-02 *h*	3.50E-02 *h*	***		0.26 *c*	0.18 *c*	0.045 *c*	41 *c*	9.1 *c*
Bis(chloromethyl)ether	542881			2.20E+02 *i*	2.17E+02 *i*	***		0.00005 *c*	0.00003 *c*	0.00001 *c*	0.013 *c*	0.0029 *c*
Bis(2-chloro-1-methylethyl)ether				7.00E-02 *w*	7.00E-02 *w*			0.96 *c*	0.089 *c*	0.045 *c*	41 *c*	9.1 *c*
Bis(2-ethylhexyl)phthalate (DEHP)	117817	2.00E-02 *i*		1.40E-02 *i*			0.006 *F*	4.8 *c*	0.45 *c*	0.23 *c*	200 *c*	46 *c*
Bisphenol A	80057	5.00E-02 *i*						180 *n*	18 *n*	6.8 *n*	5100 *n*	390 *n*
Boron (and borates)	7440428	9.00E-02 *i*	5.71E-03 *h*					330 *n*	2.1 *n*	12 *n*	9200 *n*	700 *n*
Boron trifluoride	7637072		2.00E-04 *h*					0.73 *n*	0.073 *n*			
Bromodichloromethane	75274	2.00E-02 *i*		6.20E-02 *i*		***	0.1 *T*	0.17 *c*	0.1 *c*	0.051 *c*	46 *c*	10 *c*
Bromoethene	593602				1.10E-01 *h*	***		0.096 *c*	0.057 *c*			
Bromoform (tribromomethane)	75252	2.00E-02 *i*		7.90E-03 *i*	3.85E-03 *i*	***	0.1 *T*	2.4 *c*	1.6 *c*	0.4 *c*	360 *c*	81 *c*
Bromomethane	74839	1.40E-03 *i*	1.43E-03 *i*			***		0.87 *n*	0.52 *n*	0.19 *n*	140 *n*	11 *n*
4-Bromophenyl phenyl ether	101553	5.80E-02 *o*						210 *n*	21 *n*	7.8 *n*	5900 *n*	450 *n*
Bromophos	2104963	5.00E-03 *h*						18 *n*	1.8 *n*	0.68 *n*	510 *n*	39 *n*
Bromoxynil	1689845	2.00E-02 *i*						73 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
Bromoxynil octanoate	1689992	2.00E-02 *i*						73 *n*	7.3 *n*	2.7 *n*	2000 *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	MCL mg/L	Tap water µg/L	Ambient air µg/m3	Fish mg/kg	Industrial soil mg/kg	Residential soil mg/kg
1,3-Butadiene	106990				9.80E-01 *i*	***		0.011 *c*	0.0064 *c*			
1-Butanol	71363	1.00E-01 *i*						370 *n*	37 *n*	14 *n*	10000 *n*	780 *n*
Butyl benzyl phthalate	85687	2.00E-01 *i*					0.1 *P*	730 *n*	73 *n*	27 *n*	20000 *n*	1600 *n*
Butylate	2008415	5.00E-02 *i*						180 *n*	18 *n*	6.8 *n*	5100 *n*	390 *n*
sec-Butylbenzene	135988	1.00E-02 *e*				***	0.002 *F*	6.1 *n*	3.7 *n*	1.4 *n*	1000 *n*	78 *n*
tert-Butylbenzene	104518	1.00E-02 *e*				***	0.002 *F*	6.1 *n*	3.7 *n*	1.4 *n*	1000 *n*	78 *n*
Butylphthalyl butylglycolate	85701	1.00E+00 *i*						3700 *n*	370 *n*	140 *n*	100000 *n*	7800 *n*
Cacodylic acid	75605	3.00E-03 *h*						11 *n*	1.1 *n*	0.41 *n*	310 *n*	23 *n*
Cadmium and compounds	7440439	5.00E-04 *i*			6.30E+00 *i*		0.005 *F*	1.8 *n*	0.00099 *c*	0.068 *n*	51 *n*	3.9 *n*
Caprolactam	105602	5.00E-01 *i*						1800 *n*	180 *n*	68 *n*	51000 *n*	3900 *n*
Captafol	2425061	2.00E-03 *i*		8.60E-03 *h*				7.3 *n*	0.73 *c*	0.27 *n*	200 *n*	16 *n*
Captan	133062	1.30E-01 *i*		3.50E-03 *h*				19 *c*	1.8 *c*	0.9 *c*	820 *c*	180 *c*
Carbaryl	63252	1.00E-01 *i*						370 *n*	37 *n*	14 *n*	10000 *n*	780 *n*
Carbazole	86748			2.00E-02 *h*				3.4 *c*	0.31 *c*	0.16 *c*	140 *c*	32 *c*
Carbofuran	1563662	5.00E-03 *i*					0.04 *F*	18 *n*	1.8 *n*	0.68 *n*	510 *n*	39 *n*
Carbon disulfide	75150	1.00E-01 *i*	2.86E-03 *h*			***		2.1 *n*	1 *n*	14 *n*	10000 *n*	780 *n*
Carbon tetrachloride	56235	7.00E-04 *i*	5.71E-04 *e*	1.30E-01 *i*	5.25E-02 *i*	***	0.005 *F*	0.16 *c*	0.12 *c*	0.024 *c*	22 *c*	4.9 *c*
Carbosulfan	55285148	1.00E-02 *i*						37 *n*	3.7 *n*	1.4 *n*	1000 *n*	78 *n*
Carboxin	5234684	1.00E-01 *i*						370 *n*	37 *n*	14 *n*	10000 *n*	780 *n*
Chloral	75876	2.00E-03 *i*						7.3 *n*	0.73 *n*	0.27 *n*	200 *n*	16 *n*
Chloramben	133904	1.50E-02 *i*						55 *n*	5.5 *n*	2 *n*	1500 *n*	120 *n*
Chloranil	118752			4.03E-01 *h*				0.17 *c*	0.016 *c*	0.0078 *c*	7.1 *c*	1.6 *c*
Chlordane	57749	6.00E-05 *i*		1.30E+00 *i*	1.29E+00 *i*		0.002 *F*	0.052 *c*	0.0049 *c*	0.0024 *c*	2.2 *c*	0.47 *n*
Chlorimuron-ethyl	90982324	2.00E-02 *i*						73 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
Chlorine dioxide	10049044		5.71E-05 *i*					0.21 *n*	0.021 *n*			
Chloroacetaldehyde	107200	6.90E-03 *o*						25 *n*	2.5 *n*	0.93 *n*	710 *n*	54 *n*
Chloroacetic acid	79118	2.00E-03 *h*						7.3 *n*	0.73 *n*	0.27 *n*	200 *n*	16 *n*
2-Chloroacetophenone	532274		8.57E-06 *i*					0.031 *n*	0.0031 *n*			
4-Chloroaniline	106478	4.00E-03 *i*						15 *n*	1.5 *n*	0.54 *n*	410 *n*	31 *n*
Chlorobenzene	108907	2.00E-02 *i*	5.71E-03 *h*			***	0.1 *F*	3.9 *n*	2.1 *n*	2.7 *n*	2000 *n*	160 *n*
Chlorobenzilate	510156	2.00E-02 *i*		2.70E-01 *h*	2.70E-01 *h*			0.25 *c*	0.023 *c*	0.012 *c*	11 *c*	2.4 *c*
p-Chlorobenzoic acid	74113	2.00E-01 *h*						730 *n*	73 *n*	27 *n*	20000 *n*	1600 *n*
4-Chlorobenzotrifluoride	98566	2.00E-02 *h*						73 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
2-Chloro-1,3-butadiene	126998	2.00E-02 *h*	2.00E-03 *h*			***		1.4 *n*	0.73 *n*	2.7 *n*	2000 *n*	160 *n*
1-Chlorobutane	109693	4.00E-01 *h*				***		240 *n*	150 *n*	54 *n*	41000 *n*	3100 *n*
Chlorodifluoromethane	75456		1.43e+01 *i*			***	0.002 *F*	8700 *n*	5200 *n*			
Chloroethane	75003	2.00E-02 *e*	2.86E+00 *i*			***		71 *n*	1000 *n*	2.7 *n*	2000 *n*	160 *n*
2-Chloroethyl vinyl ether	110758	2.50E-02 *o*				***		15 *n*	9.1 *n*	3.4 *n*	2600 *n*	200 *n*
Chloroform	67663	1.00E-02 *i*		6.10E-03 *i*	8.05E-02 *i*	***	0.1 *T*	0.15 *c*	0.078 *c*	0.52 *c*	470 *c*	78 *n*

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Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg•d/mg	CPSi kg•d/mg	VOC	MCL mg/L	Tap water µg/L	Ambient air µg/m3	Fish mg/kg	Industrial soil mg/kg	Residential soil mg/kg
Chloromethane	74873			1.30E-02 h	6.30E-03 h	***		1.4 c	0.99 c	0.24 c	220 c	49 c
4-Chloro-2,2-methylaniline hydrochloride	3165933			4.60E-01 h				0.15 c	0.014 c	0.0069 c	6.2 c	1.4 c
4-Chloro-2-methylaniline	95692			5.80E-01 h				0.12 c	0.011 c	0.0054 c	4.9 c	1.1 c
beta-Chloronaphthalene	91587	8.00E-02 i						290 n	29 n	11 n	8200 n	630 n
o-Chloronitrobenzene	88733			2.50E-02 h		***		0.42 c	0.25 c	0.13 c	110 c	26 c
p-Chloronitrobenzene	121733			1.80E-02 h		***		0.59 c	0.35 c	0.18 c	160 c	35 c
2-Chlorophenol	95578	5.00E-03 i						18 n	1.8 n	0.68 n	510 n	39 n
2-Chloropropane	75296		2.86E-02 h			***		17 n	10 n			
Chlorothalonil	1897456	1.50E-02 i		1.10E-02 h				6.1 c	0.57 c	0.29 c	260 c	58 c
o-Chlorotoluene	95498	2.00E-02 i				***		12 n	7.3 n	2.7 n	2000 n	160 n
Chlorpropham	101213	2.00E-01 i						730 n	73 n	27 n	20000 n	1600 n
Chlorpyrifos	2921882	3.00E-03 i						11 n	1.1 n	0.41 n	310 n	23 n
Chlorpyrifos-methyl	5598130	1.00E-02 h						37 n	3.7 n	1.4 n	1000 n	78 n
Chlorsulfuron	64902723	5.00E-02 i						180 n	18 n	6.8 n	5100 n	390 n
Chlorthiophos	60238564	8.00E-04 h						2.9 n	0.29 n	0.11 n	82 n	6.3 n
Chromium III and compounds	16065831	1.00E+00 i	5.71E-07 w				0.1 F	3700 n	0.00021 n	140 n	100000 n	7800 n
Chromium VI and compounds	7440473	5.00E-03 i			4.20E+01 i		0.1 F	18 n	0.00015 c	0.68 n	510 n	39 n
Coal tar	8001589				2.20E+00 w				0.0028 c			
Coke Oven Emissions	8007452				2.17E+00 i				0.0029 c			
Copper and compounds	7440508	3.71E-02 h						140 n	14 n	5 n	3800 n	290 n
Crotonaldehyde	123739	1.00E-02 w		1.90E+00 h	1.90E+00 w			0.035 c	0.0033 c	0.0017 c	1.5 c	0.34 c
Cumene	98828	4.00E-02 i	2.57E-03 h					150 n	0.94 n	5.4 n	4100 n	310 n
Cyanides:							0.2 P					
Barium cyanide	542621	1.00E-01 h						370 n	37 n	14 n	10000 n	780 n
Calcium cyanide	592018	4.00E-02 i						150 n	15 n	5.4 n	4100 n	310 n
Copper cyanide	544923	5.00E-03 i						18 n	1.8 n	0.68 n	510 n	39 n
Cyanazine	21725462	2.00E-03 h		8.40E-01 h				0.08 c	0.0075 c	0.0038 c	3.4 c	0.76 c
Cyanogen	460195	4.00E-02 i						150 n	15 n	5.4 n	4100 n	310 n
Cyanogen bromide	506683	9.00E-02 i						330 n	33 n	12 n	9200 n	700 n
Cyanogen chloride	506774	5.00E-02 i						180 n	18 n	6.8 n	5100 n	390 n
Free cyanide	57125	2.00E-02 i						73 n	7.3 n	2.7 n	2000 n	160 n
Hydrogen cyanide	74908	2.00E-02 i						73 n	7.3 n	2.7 n	2000 n	160 n
Potassium cyanide	151508	5.00E-02 i						180 n	18 n	6.8 n	5100 n	390 n
Potassium silver cyanide	506616	2.00E-01 i						730 n	73 n	27 n	20000 n	1600 n
Silver cyanide	506649	1.00E-01 i						370 n	37 n	14 n	10000 n	780 n
Sodium cyanide	143339	4.00E-02 i						150 n	15 n	5.4 n	4100 n	310 n
Zinc cyanide	557211	5.00E-02 i						180 n	18 n	6.8 n	5100 n	390 n
Cyclohexanone	108941	5.00E+00 i				***		3000 n	1800 n	680 n	510000 n	39000 n
Cyclohexlamine	108918	2.00E-01 i						730 n	73 n	27 n	20000 n	1600 n

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EPA Region III COC Screening Table: R.L. Smith (18-Mar-94)

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Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg•d/mg	CPSi kg•d/mg	VOC	MCL mg/L	Tap water µg/L	Ambient air µg/m3	Fish mg/kg	Industrial soil mg/kg	Residential soil mg/kg
Cyhalothrin/Karate	68085858	5.00E-03 *i*						18 *n*	1.8 *n*	0.68 *n*	510 *n*	39 *n*
Cypermethrin	52315078	1.00E-02 *i*						37 *n*	3.7 *n*	1.4 *n*	1000 *n*	78 *n*
Cyromazine	66215278	7.50E-03 *i*						27 *n*	2.7 *n*	1 *n*	770 *n*	59 *n*
Dacthal	1861321	5.00E-01 *i*						1800 *n*	180 *n*	68 *n*	51000 *n*	3900 *n*
Dalapon	75990	3.00E-02 *i*					0.2 *F*	110 *n*	11 *n*	4.1 *n*	3100 *n*	230 *n*
Danitol	39515418	5.00E-04 *w*						1.8 *n*	0.18 *n*	0.068 *n*	51 *n*	3.9 *n*
DDD	72548			2.40E-01 *i*				0.28 *c*	0.026 *c*	0.013 *c*	12 *c*	2.7 *c*
DDE	72559			3.40E-01 *i*				0.2 *c*	0.018 *c*	0.0093 *c*	8.4 *c*	1.9 *c*
DDT	50293	5.00E-04 *i*		3.40E-01 *i*	3.40E-01 *i*			0.2 *c*	0.018 *c*	0.0093 *c*	8.4 *c*	1.9 *c*
Decabromodiphenyl ether	1163195	1.00E-02 *i*				***		6.1 *n*	3.7 *n*	1.4 *n*	1000 *n*	78 *n*
Demeton	8065483	4.00E-05 *i*						0.15 *n*	0.015 *n*	0.0054 *n*	4.1 *n*	0.31 *n*
Diallate	2303164			6.10E-02 *h*		***		0.17 *c*	0.1 *c*	0.052 *c*	47 *c*	10 *c*
Diazinon	333415	9.00E-04 *h*						3.3 *n*	0.33 *n*	0.12 *n*	92 *n*	7 *n*
1,4-Dibromobenzene	106376	1.00E-02 *i*				***		6.1 *n*	3.7 *n*	1.4 *n*	1000 *n*	78 *n*
Dibromochloromethane	124481	2.00E-02 *i*		8.40E-02 *i*		***	0.1 *T*	0.13 *c*	0.075 *c*	0.038 *c*	34 *c*	7.6 *c*
1,2-Dibromo-3-chloropropane	96128		5.71E-05 *i*	1.40E+00 *h*	6.90E-07 *h*	***	0.0002 *F*	0.035 *n*	0.021 *n*	0.0023 *c*	2 *c*	0.46 *c*
1,2-Dibromoethane	106934		5.71E-05 *h*	8.50E+01 *i*	7.70E-01 *i*	***	0.00005 *F*	0.00075 *c*	0.0081 *c*	0.00004 *c*	0.034 *c*	0.0075 *c*
Dibutyl phthalate	84742	1.00E-01 *i*						370 *n*	37 *n*	14 *n*	10000 *n*	780 *n*
Dicamba	1918009	3.00E-02 *i*						110 *n*	11 *n*	4.1 *n*	3100 *n*	230 *n*
1,2-Dichlorobenzene	95501	9.00E-02 *i*	5.71E-02 *h*			***	0.6 *F*	37 *n*	21 *n*	12 *n*	9200 *n*	700 *n*
1,3-Dichlorobenzene	541731	8.90E-02 *o*				***	0.6 *F*	54 *n*	32 *n*	12 *n*	9100 *n*	700 *n*
1,4-Dichlorobenzene	106467		2.29E-01 *i*	2.40E-02 *h*		***	0.075 *F*	0.44 *c*	0.26 *c*	0.13 *c*	120 *c*	27 *c*
3,3'-Dichlorobenzidine	91941			4.50E-01 *i*				0.15 *c*	0.014 *c*	0.007 *c*	6.4 *c*	1.4 *c*
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 *h*			***		39 *n*	21 *n*	27 *n*	20000 *n*	1600 *n*
1,1-Dichloroethane	75343	1.00E-01 *h*	1.43E-01 *h*			***		81 *n*	52 *n*	14 *n*	10000 *n*	780 *n*
1,2-Dichloroethane (EDC)	107062		2.86E-03 *e*	9.10E-02 *i*	9.10E-02 *i*	***	0.005 *F*	0.12 *c*	0.069 *c*	0.035 *c*	31 *c*	7 *c*
1,1-Dichloroethylene	75354	9.00E-03 *i*		6.00E-01 *i*	1.75E-01 *i*	***	0.007 *F*	0.044 *c*	0.036 *c*	0.0053 *c*	4.8 *c*	1.1 *c*
1,2-Dichloroethylene (cis)	156592	1.00E-02 *h*				***	0.07 *F*	6.1 *n*	3.7 *n*	1.4 *n*	1000 *n*	78 *n*
1,2-Dichloroethylene (trans)	156605	2.00E-02 *i*				***	0.1 *F*	12 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
1,2-Dichloroethylene (mixture)	540590	9.00E-03 *h*				***		5.5 *n*	3.3 *n*	1.2 *n*	920 *n*	70 *n*
2,4-Dichlorophenol	120832	3.00E-03 *i*						11 *n*	1.1 *n*	0.41 *n*	310 *n*	23 *n*
2,4-Dichlorophenoxyacetic Acid (2,4-D)	94757	1.00E-02 *i*				***	0.07 *F*	6.1 *n*	3.7 *n*	1.4 *n*	1000 *n*	78 *n*
4-(2,4-Dichlorophenoxy)butyric Acid	94826	8.00E-03 *i*						29 *n*	2.9 *n*	1.1 *n*	820 *n*	63 *n*
1,2-Dichloropropane	78875		1.14E-03 *i*	6.80E-02 *h*		***	0.005 *F*	0.16 *c*	0.092 *c*	0.046 *c*	42 *c*	9.4 *c*
2,3-Dichloropropanol	616239	3.00E-03 *i*						11 *n*	1.1 *n*	0.41 *n*	310 *n*	23 *n*
1,3-Dichloropropene	542756	3.00E-04 *i*	5.71E-03 *i*	1.80E-01 *h*	1.30E-01 *h*	***		0.077 *c*	0.048 *c*	0.018 *c*	16 *c*	2.3 *n*
Dichlorvos	62737	5.00e-04 *i*		2.90E-01 *i*				0.23 *c*	0.022 *c*	0.011 *c*	9.9 *c*	2.2 *c*
Dicofol	115322			4.40E-01 *w*				0.15 *c*	0.014 *c*	0.0072 *c*	6.5 *c*	1.5 *c*

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Dicyclopentadiene	77736	3.00E-02 h	5.71E-05 h			***		0.042 n	0.021 n	4.1 n	3100 n	230 n
Dieldrin	60571	5.00E-05 i		1.60E+01 i	1.61E+01 i			0.0042 c	0.00039 c	0.0002 c	0.18 c	0.04 c
Diesel emissions			1.43E-03 i					5.2 n	0.52 n			
Diethyl phthalate	84662	8.00E-01 i						2900 n	290 n	110 n	82000 n	6300 n
Diethylene glycol, monobutyl ether	112345		5.71E-03 h					21 n	2.1 n			
Diethylene glycol, monoethyl ether	111900	2.00E+00 h						7300 n	730 n	270 n	200000 n	16000 n
Diethylforamide	617845	1.10E-02 h						40 n	4 n	1.5 n	1100 n	86 n
Di(2-ethylhexyl)adipate	103231	6.00E-01 i		1.20E-03 i			0.4 F	56 c	5.2 c	2.6 c	2400 c	530 c
Diethylstilbestrol	56531			4.70E+03 h				0.00001 c	1E-06 c	7E-07 c	0.00061 c	0.00014 c
Difenzoquat (Avenge)	43222486	8.00E-02 i						290 n	29 n	11 n	8200 n	630 n
Diflubenzuron	35367385	2.00E-02 i						73 n	7.3 n	2.7 n	2000 n	160 n
Diisopropyl methylphosphonate (DIMP)	1445756	8.00E-02 i						290 n	29 n	11 n	8200 n	630 n
Dimethipin	55290647	2.00E-02 i						73 n	7.3 n	2.7 n	2000 n	160 n
Dimethoate	60515	2.00E-04 i						0.73 n	0.073 n	0.027 n	20 n	1.6 n
3,3'-Dimethoxybenzidine	119904			1.40E-02 h				4.8 c	0.45 c	0.23 c	200 c	46 c
Dimethyl phthalate	131113	1.00E+01 h						37000 n	3700 n	1400 n	1000000 n	78000 n
Dimethyl terephthalate	120616	1.00E-01 i						370 n	37 n	14 n	10000 n	780 n
Dimethylamine	124403		5.71E-06 w					0.021 n	0.0021 n			
2,4-Dimethylaniline hydrochloride	21436964			5.80E-01 h				0.12 c	0.011 c	0.0054 c	4.9 c	1.1 c
2,4-Dimethylaniline	95681			7.50E-01 h				0.09 c	0.0083 c	0.0042 c	3.8 c	0.85 c
N-N-Dimethylaniline	121697	2.00E-03 i						7.3 n	0.73 n	0.27 n	200 n	16 n
3,3'-Dimethylbenzidine	119937			9.20E+00 h				0.0073 c	0.00068 c	0.00034 c	0.31 c	0.069 c
N,N-Dimethylformamide	68122	1.00E-01 h	8.57E-03 i					370 n	3.1 n	14 n	10000 n	780 n
1,1-Dimethylhydrazine	57147			2.60E+00 h	3.50E+00 h			0.026 c	0.0018 c	0.0012 c	1.1 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	0.077 c	0.017 c
2,4-Dimethylphenol	105679	2.00E-02 i						73 n	7.3 n	2.7 n	2000 n	160 n
2,6-Dimethylphenol	576261	6.00E-04 i						2.2 n	0.22 n	0.081 n	61 n	4.7 n
3,4-Dimethylphenol	95658	1.00E-03 i						3.7 n	0.37 n	0.14 n	100 n	7.8 n
1,2-Dinitrobenzene	528290	4.00E-04 h						1.5 n	0.15 n	0.054 n	41 n	3.1 n
1,3-Dinitrobenzene	99650	1.00E-04 i						0.37 n	0.037 n	0.014 n	10 n	0.78 n
1,4-Dinitrobenzene	100254	4.00E-04 h						1.5 n	0.15 n	0.054 n	41 n	3.1 n
4,6-Dinitro-o-cyclohexyl phenol	131895	2.00E-03 i						7.3 n	0.73 n	0.27 n	200 n	16 n
2,4-Dinitrophenol	51285	2.00E-03 i						7.3 n	0.73 n	0.27 n	200 n	16 n
Dinitrotoluene mixture				6.80E-01 i				0.099 c	0.0092 c	0.0046 c	4.2 c	0.94 c
2,4-Dinitrotoluene	121142	2.00E-03 i						7.3 n	0.73 n	0.27 n	200 n	16 n
2,6-Dinitrotoluene	606202	1.00E-03 h						3.7 n	0.37 n	0.14 n	100 n	7.8 n
Dinoseb	88857	1.00E-03 i					0.007 F	3.7 n	0.37 n	0.14 n	100 n	7.8 n
di-n-Octyl phthalate	117840	2.00E-02 h						73 n	7.3 n	2.7 n	2000 n	160 n
1,4-Dioxane	123911			1.10E-02 i				6.1 c	0.57 c	0.29 c	260 c	58 c

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Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg•d/mg	CPSi kg•d/mg	VOC	MCL mg/L	Tap water µg/L	Ambient air µg/m3	Fish mg/kg	Industrial soil mg/kg	Residential soil mg/kg
Diphenamid	957517	3.00E-02 *i*						110 *n*	11 *n*	4.1 *n*	3100 *n*	230 *n*
Diphenylamine	122394	2.50E-02 *i*						91 *n*	9.1 *n*	3.4 *n*	2600 *n*	200 *n*
1,2-Diphenylhydrazine	122667			8.00E-01 *i*	7.70E-01 *i*			0.084 *c*	0.0081 *c*	0.0039 *c*	3.6 *c*	0.8 *c*
Diquat	85007	2.20E-03 *i*					0.02 *F*	8 *n*	0.8 *n*	0.3 *n*	220 *n*	17 *n*
Direct black 38	1937377			8.60E+00 *h*				0.0078 *c*	0.00073 *c*	0.00037 *c*	0.33 *c*	0.074 *c*
Direct blue 6	2602462			8.10E+00 *h*				0.0083 *c*	0.00077 *c*	0.00039 *c*	0.35 *c*	0.079 *c*
Direct brown 95	16071866			9.30E+00 *h*				0.0072 *c*	0.00067 *c*	0.00034 *c*	0.31 *c*	0.069 *c*
Disulfoton	298044	4.00E-05 *i*						0.15 *n*	0.015 *n*	0.0054 *n*	4.1 *n*	0.31 *n*
1,4-Dithiane	505293	1.00E-02 *i*						37 *n*	3.7 *n*	1.4 *n*	1000 *n*	78 *n*
Diuron	330541	2.00E-03 *i*						7.3 *n*	0.73 *n*	0.27 *n*	200 *n*	16 *n*
Dodine	2439103	4.00E-03 *i*						15 *n*	1.5 *n*	0.54 *n*	410 *n*	31 *n*
Endosulfan	115297	6.00E-03 *h*						22 *n*	2.2 *n*	0.81 *n*	610 *n*	47 *n*
Endothall	145733	2.00E-02 *i*					0.1 *F*	73 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
Endrin	72208	3.00E-04 *i*					0.002 *F*	1.1 *n*	0.11 *n*	0.041 *n*	31 *n*	2.3 *n*
Epichlorohydrin	106898	2.00E-03 *h*	2.86E-04 *i*	9.90E-03 *i*	4.20E-03 *i*			6.8 *c*	0.1 *n*	0.27 *n*	200 *n*	16 *n*
1,2-Epoxybutane	106887		5.71E-03 *i*					21 *n*	2.1 *n*			
Ethephon (2-chloroethyl phosphonic acid)	16672870	5.00E-03 *i*						18 *n*	1.8 *n*	0.68 *n*	510 *n*	39 *n*
Ethion	563122	5.00E-04 *i*						1.8 *n*	0.18 *n*	0.068 *n*	51 *n*	3.9 *n*
2-Ethoxyethanol acetate	111159	3.00E-01 *h*						1100 *n*	110 *n*	41 *n*	31000 *n*	2300 *n*
2-Ethoxyethanol	110805	4.00E-01 *h*	5.71E-02 *i*					1500 *n*	21 *n*	54 *n*	41000 *n*	3100 *n*
Ethyl acrylate	140885			4.80E-02 *h*				1.4 *c*	0.13 *c*	0.066 *c*	60 *c*	13 *c*
EPTC (S-Ethyl dipropylthiocarbamate)	759944	2.50E-02 *i*						91 *n*	9.1 *n*	3.4 *n*	2600 *n*	200 *n*
Ethyl ether	60297	2.00E-01 *i*				•••		120 *n*	73 *n*	27 *n*	20000 *n*	1600 *n*
Ethyl methacrylate	97632	9.00E-02 *h*						330 *n*	33 *n*	12 *n*	9200 *n*	700 *n*
Ethyl acetate	141786	9.00E-01 *i*						3300 *n*	330 *n*	120 *n*	92000 *n*	7000 *n*
Ethylbenzene	100414	1.00E-01 *i*	2.86E-01 *i*			•••	0.7 *F*	130 *n*	100 *n*	14 *n*	10000 *n*	780 *n*
Ethylene cyanohydrin	109784	3.00E-01 *h*						1100 *n*	110 *n*	41 *n*	31000 *n*	2300 *n*
Ethylene diamine	107153	2.00E-02 *h*						73 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
Ethylene glycol	107211	2.00E+00 *i*						7300 *n*	730 *n*	270 *n*	200000 *n*	16000 *n*
Ethylene glycol, monobutyl ether	111762		5.71E-03 *h*					21 *n*	2.1 *n*			
Ethylene oxide	75218			1.02E+00 *h*	3.50E-01 *h*			0.066 *c*	0.018 *c*	0.0031 *c*	2.8 *c*	0.63 *c*
Ethylene thiourea (ETU)	96457	8.00E-05 *i*		6.00E-01 *h*				0.11 *c*	0.01 *c*	0.0053 *c*	4.8 *c*	0.63 *n*
Ethyl p-nitrophenyl phenylphosphorothioate	2104645	1.00E-05 *i*						0.037 *n*	0.0037 *n*	0.0014 *n*	1 *n*	0.078 *n*
Ethylnitrosourea	759739			1.40E+02 *w*				0.00048 *c*	0.00005 *c*	0.00002 *c*	0.02 *c*	0.0046 *c*
Ethylphthalyl ethyl glycolate	84720	3.00E+00 *i*						11000 *n*	1100 *n*	410 *n*	310000 *n*	23000 *n*
Express	10120	8.00E-03 *i*						29 *n*	2.9 *n*	1.1 *n*	820 *n*	63 *n*
Fenamiphos	22224926	2.50E-04 *i*						0.91 *n*	0.091 *n*	0.034 *n*	26 *n*	2 *n*
Fluometuron	2164172	1.30E-02 *i*						47 *n*	4.7 *n*	1.8 *n*	1300 *n*	100 *n*
Fluoride	7782414	6.00E-02 *i*						220 *n*	22 *n*	8.1 *n*	6100 *n*	470 *n*

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Fluoridone	59756604	8.00E-02 i						290 n	29 n	11 n	8200 n	630 n
Flurprimidol	56425913	2.00E-02 i						73 n	7.3 n	2.7 n	2000 n	160 n
Flutolanil	66332965	6.00E-02 i						220 n	22 n	8.1 n	6100 n	470 n
Fluvalinate	69409945	1.00E-02 i						37 n	3.7 n	1.4 n	1000 n	78 n
Folpet	133073	1.00E-01 i		3.50E-03 i				19 c	1.8 c	0.9 c	820 c	180 c
Fomesafen	72178020			1.90E-01 i				0.35 c	0.033 c	0.017 c	15 c	3.4 c
Fonofos	944229	2.00E-03 i						7.3 n	0.73 n	0.27 n	200 n	16 n
Formaldehyde	50000	2.00E-01 i			4.55E-02 i			730 n	0.14 c	27 n	20000 n	1600 n
Formic Acid	64186	2.00E+00 h						7300 n	730 n	270 n	200000 n	16000 n
Fosetyl-al	39148248	3.00E+00 i						11000 n	1100 n	410 n	310000 n	23000 n
Furan	110009	1.00E-03 i						3.7 n	0.37 n	0.14 n	100 n	7.8 n
Furazolidone	67458			3.80E+00 h				0.018 c	0.0016 c	0.00083 c	0.75 c	0.17 c
Furfural	98011	3.00E-03 i	1.43E-02 h					11 n	5.2 n	0.41 n	310 n	23 n
Furium	531828			5.00E+01 h				0.0013 c	0.00013 c	0.00006 c	0.057 c	0.013 c
Furmecyclox	60568050			3.00E-02 i				2.2 c	0.21 c	0.11 c	95 c	21 c
Glufosinate-ammonium	77182822	4.00E-04 i						1.5 n	0.15 n	0.054 n	41 n	3.1 n
Glycidaldehyde	765344	4.00E-04 i	2.86E-04 h					1.5 n	0.1 n	0.054 n	41 n	3.1 n
Glyphosate	1071836	1.00E-01 i					0.7 F	370 n	37 n	14 n	10000 n	780 n
Haloxyfop-methyl	69806402	5.00E-05 i						0.18 n	0.018 n	0.0068 n	5.1 n	0.39 n
Harmony	79277273	1.30E-02 i						47 n	4.7 n	1.8 n	1300 n	100 n
HCH (alpha)	319846			6.30E+00 i	6.30E+00 i			0.011 c	0.00099 c	0.0005 c	0.45 c	0.1 c
HCH (beta)	319857			1.80E+00 i	1.80E+00 i			0.037 c	0.0035 c	0.0018 c	1.6 c	0.35 c
HCH (gamma) Lindane	58899	3.00E-04 i		1.30E+00 h			0.0002 F	0.052 c	0.0048 c	0.0024 c	2.2 c	0.49 c
HCH-technical	608731			1.80E+00 i	1.79E+00 i			0.037 c	0.0035 c	0.0018 c	1.6 c	0.35 c
Heptachlor	76448	5.00E-04 i		4.50E+00 i	4.55E+00 i	***	0.0004 F	0.0023 c	0.0014 c	0.0007 c	0.64 c	0.14 c
Heptachlor epoxide	1024573	1.30E-05 i		9.10E+00 i	9.10E+00 i	***	0.0002 F	0.0012 c	0.00069 c	0.00035 c	0.31 c	0.07 c
Hexabromobenzene	87821	2.00E-03 i				***		1.2 n	0.73 n	0.27 n	200 n	16 n
Hexachlorobenzene	118741	8.00E-04 i		1.60E+00 i	1.61E+00 i	***	0.001 F	0.0066 c	0.0039 c	0.002 c	1.8 c	0.4 c
Hexachlorobutadiene	87683	2.00E-04 h		7.80E-02 i	7.70E-02 i	***		0.12 n	0.073 n	0.027 n	20 n	1.6 n
Hexachlorocyclopentadiene	77474	7.00E-03 i	2.00E-05 h			***	0.05 F	0.015 n	0.0073 n	0.95 n	720 n	55 n
Hexachlorodibenzo-p-dioxin mixture	19408743			6.20E+03 i	4.55E+03 i			0.00001 c	1E-06 c	5E-07 c	0.00046 c	0.0001 c
Hexachloroethane	67721	1.00E-03 i		1.40E-02 i	1.40E-02 i	***		0.61 n	0.37 n	0.14 n	100 n	7.8 n
Hexachlorophene	70304	3.00E-04 i						1.1 n	0.11 n	0.041 n	31 n	2.3 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	26 c	5.8 c
n-Hexane	110543	6.00E-02 h	5.71E-02 i			***		35 n	21 n	8.1 n	6100 n	470 n
Hexazinone	51235042	3.30E-02 i						120 n	12 n	4.5 n	3400 n	260 n
Hydrazine, hydrazine sulfate	302012			3.00E+00 i	1.71E+01 i			0.022 c	0.00037 c	0.0011 c	0.95 c	0.21 c
Hydrogen chloride	7647010		2.00E-03 i					7.3 n	0.73 n			
Hydrogen sulfide	7783064	3.00E-03 i	2.57E-04 i					11 n	0.094 n	0.41 n	310 n	23 n

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Hydroquinone	123319	4.00E-02 h						150 n	15 n	5.4 n	4100 n	310 n
Imazalil	35554440	1.30E-02 i						47 n	4.7 n	1.8 n	1300 n	100 n
Imazaquin	81335377	2.50E-01 i						910 n	91 n	34 n	26000 n	2000 n
Iprodione	36734197	4.00E-02 i						150 n	15 n	5.4 n	4100 n	310 n
Isobutanol	78831	3.00E-01 i				•••		180 n	110 n	41 n	31000 n	2300 n
Isophorone	78591	2.00E-01 i		9.50E-04 i				71 c	6.6 c	3.3 c	3000 c	670 c
Isopropalin	33820530	1.50E-02 i						55 n	5.5 n	2 n	1500 n	120 n
Isopropyl methyl phosphonic acid	1832548	1.00E-01 i						370 n	37 n	14 n	10000 n	780 n
Isoxaben	82558507	5.00E-02 i						180 n	18 n	6.8 n	5100 n	390 n
Kepone	143500			1.80E+01 e				0.0037 c	0.00035 c	0.00018 c	0.16 c	0.035 c
Lactofen	77501634	2.00E-03 i						7.3 n	0.73 n	0.27 n	200 n	16 n
Lead (tetraethyl)	78002	1.00E-07 i						0.00037 n	0.00004 n	0.00001 n	0.01 n	0.00078 n
Linuron	330552	2.00E-03 i						7.3 n	0.73 n	0.27 n	200 n	16 n
Lithium	7439932	2.00E-02 e						73 n	7.3 n	2.7 n	2000 n	160 n
Londax	83056996	2.00E-01 i						730 n	73 n	27 n	20000 n	1600 n
Malathion	121755	2.00E-02 i						73 n	7.3 n	2.7 n	2000 n	160 n
Maleic anhydride	108316	1.00E-01 i						370 n	37 n	14 n	10000 n	780 n
Maleic hydrazide	123331	5.00E-01 i						1800 n	180 n	68 n	51000 n	3900 n
Malononitrile	109773	2.00E-05 h						0.073 n	0.0073 n	0.0027 n	2 n	0.16 n
Mancozeb	8018017	3.00E-02 h						110 n	11 n	4.1 n	3100 n	230 n
Maneb	12427382	5.00E-03 i						18 n	1.8 n	0.68 n	510 n	39 n
Manganese and compounds	7439965	5.00E-03 i	1.43e-05 i					18 n	0.0052 n	0.68 n	510 n	39 n
Mephosfolan	950107	9.00E-05 h						0.33 n	0.033 n	0.012 n	9.2 n	0.7 n
Mepiquat chloride	24307264	3.00E-02 i						110 n	11 n	4.1 n	3100 n	230 n
Mercury (inorganic)	7439976	3.00E-04 h	8.57E-05 h				0.002 F	1.1 n	0.031 n	0.041 n	31 n	2.3 n
Mercury (methyl)	22967926	3.00E-04 i					0.002 F	1.1 n	0.11 n	0.041 n	31 n	2.3 n
Merphos	150505	3.00E-05 i						0.11 n	0.011 n	0.0041 n	3.1 n	0.23 n
Merphos oxide	78488	3.00E-05 i						0.11 n	0.011 n	0.0041 n	3.1 n	0.23 n
Metalaxyl	57837191	6.00E-02 i						220 n	22 n	8.1 n	6100 n	470 n
Methacrylonitrile	126987	1.00E-04 i	2.00E-04 h					0.37 n	0.073 n	0.014 n	10 n	0.78 n
Methamidophos	10265926	5.00E-05 i						0.18 n	0.018 n	0.0068 n	5.1 n	0.39 n
Methanol	67561	5.00E-01 i						1800 n	180 n	68 n	51000 n	3900 n
Methidathion	950378	1.00E-03 i						3.7 n	0.37 n	0.14 n	100 n	7.8 n
Methomyl	16752775	2.50E-02 i						91 n	9.1 n	3.4 n	2600 n	200 n
Methoxychlor	72435	5.00E-03 i					0.04 F	18 n	1.8 n	0.68 n	510 n	39 n
2-Methoxyethanol acetate	110496	2.00E-03 h						7.3 n	0.73 n	0.27 n	200 n	16 n
2-Methoxyethanol	109864	1.00E-03 h	5.71E-03 i					3.7 n	2.1 n	0.14 n	100 n	7.8 n
2-Methoxy-5-nitroaniline	99592			4.60E-02 h				1.5 c	0.14 c	0.069 c	62 c	14 c
Methyl acetate	79209	1.00E+00 h						3700 n	370 n	140 n	100000 n	7800 n

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Methyl acrylate	96333	3.00E-02 h						110 n	11 n	4.1 n	3100 n	230 n
2-Methylaniline hydrochloride	636215			1.80E-01 h				0.37 c	0.035 c	0.018 c	16 c	3.5 c
2-Methylaniline	95534			2.40E-01 h				0.28 c	0.026 c	0.013 c	12 c	2.7 c
Methyl chlorocarbonate	79221	1.00E+00 w						3700 n	370 n	140 n	100000 n	7800 n
4-(2-Methyl-4-chlorophenoxy) butyric acid	94815	1.00E-02 i						37 n	3.7 n	1.4 n	1000 n	78 n
2-Methyl-4-chlorophenoxyacetic acid	94746	5.00E-04 i						1.8 n	0.18 n	0.068 n	51 n	3.9 n
2-(2-Methyl-14-chlorophenoxy)propionic acid	93652	1.00E-03 i						3.7 n	0.37 n	0.14 n	100 n	7.8 n
Methylcyclohexane	108872		8.57E-01 h					3100 n	310 n			
Methylene bromide	74953	1.00E-02 h				***		6.1 n	3.7 n	1.4 n	1000 n	78 n
Methylene chloride	75092	6.00E-02 i	8.57E-01 h	7.50E-03 i	1.64E-03 i	***	0.005 F	4.1 c	3.8 c	0.42 c	380 c	85 c
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	22 c	4.9 c
4,4'-Methylenebisbenzeneamine	101779			2.50E-01 h				0.27 c	0.025 c	0.013 c	11 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	62 c	14 c
4,4'-Methylenediphenyl isocyanate	101688		5.71E-06 h			***		0.0035 n	0.0021 n			
Methyl ethyl ketone	78933	6.00E-01 i	2.86E-01 i					2200 n	100 n	81 n	61000 n	4700 n
Methyl hydrazine	60344			1.10E+00 h				0.061 c	0.0057 c	0.0029 c	2.6 c	0.58 c
Methyl isobutyl ketone	108101	5.00E-02 h	2.29E-02 h					180 n	8.4 n	6.8 n	5100 n	390 n
Methyl methacrylate	80626	8.00E-02 h						290 n	29 n	11 n	8200 n	630 n
2-Methyl-5-nitroaniline	99558			3.30E-02 h				2 c	0.19 c	0.096 c	87 c	19 c
Methyl parathion	298000	2.50E-04 i						0.91 n	0.091 n	0.034 n	26 n	2 n
2-Methylphenol (o-cresol)	95487	5.00E-02 i						180 n	18 n	6.8 n	5100 n	390 n
3-Methylphenol (m-cresol)	103394	5.00E-02 i						180 n	18 n	6.8 n	5100 n	390 n
4-Methylphenol (p-cresol)	106445	5.00E-03 h						18 n	1.8 n	0.68 n	510 n	39 n
Methyl styrene (mixture)	25013154	6.00E-03 h	1.14E-02 h			***		6 n	4.2 n	0.81 n	610 n	47 n
Methyl styrene (alpha)	98839	7.00E-02 h				***		43 n	26 n	9.5 n	7200 n	550 n
Methyl tertbutyl ether (MTBE)	1634044	5.00E-03 e	8.57E-01 i			***		18 n	310 n	0.68 n	510 n	39 n
Metolaclor (Dual)	51218452	1.50E-01 i						550 n	55 n	20 n	15000 n	1200 n
Metribuzin	21807649	2.50E-02 i						91 n	9.1 n	3.4 n	2600 n	200 n
Mirex	2385855	2.00E-04 i		1.80E+00 h				0.037 c	0.0035 c	0.0018 c	1.6 c	0.35 c
Molinate	2212671	2.00E-03 i						7.3 n	0.73 n	0.27 n	200 n	16 n
Molybdenum	7439987	5.00E-03 i						18 n	1.8 n	0.68 n	510 n	39 n
Monochloramine	10599903	1.00E-01 i						370 n	37 n	14 n	10000 n	780 n
Naled	300765	2.00E-03 i						7.3 n	0.73 n	0.27 n	200 n	16 n
Napropamide	15299997	1.00E-01 i						370 n	37 n	14 n	10000 n	780 n
Nickel refinery dust					8.40E-01 i				0.0075 c			
Nickel (soluble salts)	7440020	2.00E-02 i					0.1 F	73 n	7.3 n	2.7 n	2000 n	160 n
Nickel subsulfide	12035722				1.70E+00 i				0.0037 c			
Nitrapyrin	1929824	1.50E-03 w						5.5 n	0.55 n	0.2 n	150 n	12 n
Nitrate	14797558	1.60E+00 i					10 F	5800 n	580 n	220 n	160000 n	13000 n

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Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg•d/mg	CPSi kg•d/mg	VOC	MCL mg/L	Tap water µg/L	Ambient air µg/m3	Fish mg/kg	Industrial soil mg/kg	Residential soil mg/kg
Nitric Oxide	10102439	1.00E-01 i						370 n	37 n	14 n	10000 n	780 n
Nitrite	14797650	1.00E-01 i					1 F	370 n	37 n	14 n	10000 n	780 n
2-Nitroaniline	88744	6.00E-05 w	5.71E-05 h					0.22 n	0.021 n	0.0081 n	6.1 n	0.47 n
3-Nitroaniline	99092	3.00E-03 o						11 n	1.1 n	0.41 n	310 n	23 n
4-Nitroaniline	100016	3.00E-03 o						11 n	1.1 n	0.41 n	310 n	23 n
Nitrobenzene	98953	5.00E-04 i	5.71E-04 h			•••		0.34 n	0.21 n	0.068 n	51 n	3.9 n
Nitrofurantoin	67209	7.00E-02 h						260 n	26 n	9.5 n	7200 n	550 n
Nitrofurazone	59870			1.50E+00 h	9.40E+00 h			0.045 c	0.00067 c	0.0021 c	1.9 c	0.43 c
Nitrogen dioxide	10102440	1.00E+00 i						3700 n	370 n	140 n	100000 n	7800 n
Nitroguanidine	556887	1.00E-01 i						370 n	37 n	14 n	10000 n	780 n
4-Nitrophenol	100027	6.20E-02 o						230 n	23 n	8.4 n	6300 n	480 n
2-Nitropropane	79469		5.71E-03 i		9.40E+00 h			21 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	0.53 c	0.12 c
N-Nitrosodiethanolamine	1116547			2.80E+00 i				0.024 c	0.0022 c	0.0011 c	1 c	0.23 c
N-Nitrosodiethylamine	55185			1.50E+02 i	1.51E+02 i			0.00045 c	0.00004 c	0.00002 c	0.019 c	0.0043 c
N-Nitrosodimethylamine	62759			5.10E+01 i	4.90E+01 i			0.0013 c	0.00013 c	0.00006 c	0.056 c	0.013 c
N-Nitrosodiphenylamine	86306			4.90E-03 i				14 c	1.3 c	0.64 c	580 c	130 c
N-Nitroso di-n-propylamine	621647			7.00E+00 i				0.0096 c	0.00089 c	0.00045 c	0.41 c	0.091 c
N-Nitroso-N-methylethylamine	10595956			2.20E+01 i				0.0031 c	0.00028 c	0.00014 c	0.13 c	0.029 c
N-Nitrosopyrrolidine	930552			2.10E+00 i	2.13E+00 i			0.032 c	0.0029 c	0.0015 c	1.4 c	0.3 c
m-Nitrotoluene	99081	1.00E-02 h				•••		6.1 n	3.7 n	1.4 n	1000 n	78 n
o-Nitrotoluene	88722	1.00E-02 h				•••		6.1 n	3.7 n	1.4 n	1000 n	78 n
p-Nitrotoluene	99990	1.00E-02 h				•••		6.1 n	3.7 n	1.4 n	1000 n	78 n
Norflurazon	27314132	4.00E-02 i						150 n	15 n	5.4 n	4100 n	310 n
NuStar	85509199	7.00E-04 i						2.6 n	0.26 n	0.095 n	72 n	5.5 n
Octabromodiphenyl ether	32536520	3.00E-03 i						11 n	1.1 n	0.41 n	310 n	23 n
Octahydro-1357-tetranitro-1357-tetrazocine	2691410	5.00E-02 i						180 n	18 n	6.8 n	5100 n	390 n
Octamethylpyrophosphoramide	152169	2.00E-03 h						7.3 n	0.73 n	0.27 n	200 n	16 n
Oryzalin	19044883	5.00E-02 i						180 n	18 n	6.8 n	5100 n	390 n
Oxadiazon	19666309	5.00E-03 i						18 n	1.8 n	0.68 n	510 n	39 n
Oxamyl	23135220	2.50E-02 i					0.2 F	91 n	9,1 n	3.4 n	2600 n	200 n
Oxyfluorfen	42874033	3.00E-03 i						11 n	1.1 n	0.41 n	310 n	23 n
Paclobutrazol	76738620	1.30E-02 i						47 n	4.7 n	1.8 n	1300 n	100 n
Paraquat	1910425	4.50E-03 i						16 n	1.6 n	0.61 n	460 n	35 n
Parathion	56382	6.00E-03 h						22 n	2.2 n	0.81 n	610 n	47 n
Pebulate	1114712	5.00E-02 h						180 n	18 n	6.8 n	5100 n	390 n
Pendimethalin	40487421	4.00E-02 i						150 n	15 n	5.4 n	4100 n	310 n
Pentabromo-6-chloro cyclohexane	87843			2.30E-02 h				2.9 c	0.27 c	0.14 c	120 c	28 c
Pentabromodiphenyl ether	32534819	2.00E-03 i						7.3 n	0.73 n	0.27 n	200 n	16 n

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Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg•d/mg	CPSi kg•d/mg	VOC	MCL mg/L	Tap water µg/L	Ambient air µg/m3	Fish mg/kg	Industrial soil mg/kg	Residential soil mg/kg
Pentachlorobenzene	608935	8.00E-04 *i*				***		0.49 *n*	0.29 *n*	0.11 *n*	82 *n*	6.3 *n*
Pentachloronitrobenzene	82688	3.00E-03 *i*		2.60E-01 *h*		***		0.041 *c*	0.024 *c*	0.012 *c*	11 *c*	2.5 *c*
Pentachlorophenol	87865	3.00E-02 *i*		1.20E-01 *i*			0.001 *F*	0.56 *c*	0.052 *c*	0.026 *c*	24 *c*	5.3 *c*
Permethrin	52645531	5.00E-02 *i*						180 *n*	18 *n*	6.8 *n*	5100 *n*	390 *n*
Phenmedipham	13684634	2.50E-01 *i*						910 *n*	91 *n*	34 *n*	26000 *n*	2000 *n*
Phenol	108952	6.00E-01 *i*						2200 *n*	220 *n*	81 *n*	61000 *n*	4700 *n*
m-Phenylenediamine	108452	6.00E-03 *i*						22 *n*	2.2 *n*	0.81 *n*	610 *n*	47 *n*
o-Phenylenediamine	95545	6.00E-03 *h*						22 *n*	2.2 *n*	0.81 *n*	610 *n*	47 *n*
p-Phenylenediamine	106503	1.90E-01 *h*						690 *n*	69 *n*	26 *n*	19000 *n*	1500 *n*
Phenylmercuric acetate	62384	8.00E-05 *i*						0.29 *n*	0.029 *n*	0.011 *n*	8.2 *n*	0.63 *n*
2-Phenylphenol	90437			1.94E-03 *h*				35 *c*	3.2 *c*	1.6 *c*	1500 *c*	330 *c*
Phorate	298022	2.00E-04 *h*						0.73 *n*	0.073 *n*	0.027 *n*	20 *n*	1.6 *n*
Phosmet	732116	2.00E-02 *i*						73 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
Phosphine	7803512	3.00E-04 *i*	8.57E-06 *h*					1.1 *n*	0.0031 *n*	0.041 *n*	31 *n*	2.3 *n*
Phosphorus (white)	7723140	2.00E-05 *i*						0.073 *n*	0.0073 *n*	0.0027 *n*	2 *n*	0.16 *n*
p-Phthalic acid	100210	1.00E+00 *h*						3700 *n*	370 *n*	140 *n*	100000 *n*	7800 *n*
Phthalic anhydride	85449	2.00E+00 *i*	3.43E-01 *h*					7300 *n*	130 *n*	270 *n*	200000 *n*	16000 *n*
Picloram	1918021	7.00E-02 *i*					0.5 *F*	260 *n*	26 *n*	9.5 *n*	7200 *n*	550 *n*
Pirimiphos-methyl	29232937	1.00E-02 *i*						37 *n*	3.7 *n*	1.4 *n*	1000 *n*	78 *n*
Polybrominated biphenyls		7.00E-06 *h*		8.90E+00 *h*				0.0076 *c*	0.0007 *c*	0.00035 *c*	0.32 *c*	0.055 *n*
Polychlorinated biphenyls (PCBs)	1336363			7.70E+00 *i*			0.0005 *F*	0.0087 *c*	0.00081 *c*	0.00041 *c*	0.37 *c*	0.083 *c*
Aroclor 1016	12674112	7.00E-05 *i*						0.26 *n*	0.026 *n*	0.0095 *n*	7.2 *n*	0.55 *n*
Polychlorinated terphenyls (PCTs)				4.50E+00 *e*				0.015 *c*	0.0014 *c*	0.0007 *c*	0.64 *c*	0.14 *c*
Polynuclear aromatic hydrocarbons												
Acenaphthene	83329	6.00E-02 *i*						220 *n*	22 *n*	8.1 *n*	6100 *n*	470 *n*
Anthracene	120127	3.00E-01 *i*						1100 *n*	110 *n*	41 *n*	31000 *n*	2300 *n*
Benzo[a]pyrene	50328			7.30E+00 *i*	6.10E+00 *h*		0.0002 *F*	0.0092 *c*	0.001 *c*	0.00043 *c*	0.39 *c*	0.088 *c*
Benzo[b]fluoranthene	205992			7.30E-01 *e*	6.10E-01 *e*		0.0002 *P*	0.092 *c*	0.01 *c*	0.0043 *c*	3.9 *c*	0.88 *c*
Benzo[k]fluoranthene	207089			7.30E-02 *e*	6.10E-02 *e*		0.0002 *P*	0.92 *c*	0.1 *c*	0.043 *c*	39 *c*	8.8 *c*
Benz[a]anthracene	56553			7.30E-01 *e*	6.10E-01 *e*		0.0001 *P*	0.092 *c*	0.01 *c*	0.0043 *c*	3.9 *c*	0.88 *c*
Chrysene	218019			7.30E-03 *e*	6.10E-03 *e*		0.0002 *P*	9.2 *c*	1 *c*	0.43 *c*	390 *c*	88 *c*
Dibenz[ah]anthracene	53703			7.30E+00 *e*	6.10E+00 *e*		0.0003 *P*	0.0092 *c*	0.001 *c*	0.00043 *c*	0.39 *c*	0.088 *c*
Fluoranthene	206440	4.00E-02 *i*						150 *n*	15 *n*	5.4 *n*	4100 *n*	310 *n*
Fluorene	86737	4.00E-02 *i*						150 *n*	15 *n*	5.4 *n*	4100 *n*	310 *n*
Indeno[1,2,3-cd]pyrene	193395			7.30E-01 *e*	6.10E-01 *e*		0.0004 *P*	0.092 *c*	0.01 *c*	0.0043 *c*	3.9 *c*	0.88 *c*
Naphthalene	91203	4.00E-02 *w*						150 *n*	15 *n*	5.4 *n*	4100 *n*	310 *n*
Pyrene	129000	3.00E-02 *i*						110 *n*	11 *n*	4.1 *n*	3100 *n*	230 *n*
Prochloraz	67747095	9.00E-03 *i*		1.50E-01 *i*				0.45 *c*	0.042 *c*	0.021 *c*	19 *c*	4.3 *c*
Profluralin	26399360	6.00E-03 *h*						22 *n*	2.2 *n*	0.81 *n*	610 *n*	47 *n*

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Prometon	1610180	1.50E-02 *i*						55 *n*	5.5 *n*	2 *n*	1500 *n*	120 *n*
Prometryn	7287196	4.00E-03 *i*						15 *n*	1.5 *n*	0.54 *n*	410 *n*	31 *n*
Pronamide	23950585	7.50E-02 *i*						270 *n*	27 *n*	10 *n*	7700 *n*	590 *n*
Propachlor	1918167	1.30E-02 *i*						47 *n*	4.7 *n*	1.8 *n*	1300 *n*	100 *n*
Propanil	709988	5.00E-03 *i*						18 *n*	1.8 *n*	0.68 *n*	510 *n*	39 *n*
Propargite	2312358	2.00E-02 *i*						73 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
Propargyl alcohol	107197	2.00E-03 *i*						7.3 *n*	0.73 *n*	0.27 *n*	200 *n*	16 *n*
Propazine	139402	2.00E-02 *i*						73 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
Propham	122429	2.00E-02 *i*						73 *n*	7.3 *n*	2.7 *n*	2000 *n*	160 *n*
Propiconazole	60207901	1.30E-02 *i*						47 *n*	4.7 *n*	1.8 *n*	1300 *n*	100 *n*
Propylene glycol	57556	2.00E+01 *h*						73000 *n*	7300 *n*	2700 *n*	1000000 *n*	160000 *n*
Propylene glycol, monoethyl ether	52125538	7.00E-01 *h*						2600 *n*	260 *n*	95 *n*	72000 *n*	5500 *n*
Propylene glycol, monomethyl ether	107982	7.00E-01 *h*	5.71E-01 *i*					2600 *n*	210 *n*	95 *n*	72000 *n*	5500 *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*	12 *c*	2.7 *c*
Pursuit	81335775	2.50E-01 *i*						910 *n*	91 *n*	34 *n*	26000 *n*	2000 *n*
Pydrin	51630581	2.50E-02 *i*						91 *n*	9.1 *n*	3.4 *n*	2600 *n*	200 *n*
Pyridine	110861	1.00E-03 *i*						3.7 *n*	0.37 *n*	0.14 *n*	100 *n*	7.8 *n*
Quinalphos	13593038	5.00E-04 *i*						1.8 *n*	0.18 *n*	0.068 *n*	51 *n*	3.9 *n*
Quinoline	91225			1.20E+01 *h*				0.0056 *c*	0.00052 *c*	0.00026 *c*	0.24 *c*	0.053 *c*
Resmethrin	10463868	3.00E-02 *i*						110 *n*	11 *n*	4.1 *n*	3100 *n*	230 *n*
Ronnel	299843	5.00E-02 *h*						180 *n*	18 *n*	6.8 *n*	5100 *n*	390 *n*
Rotenone	83794	4.00E-03 *i*						15 *n*	1.5 *n*	0.54 *n*	410 *n*	31 *n*
Savey	78587050	2.50E-02 *i*						91 *n*	9.1 *n*	3.4 *n*	2600 *n*	200 *n*
Selenious Acid	7783008	5.00E-03 *i*						18 *n*	1.8 *n*	0.68 *n*	510 *n*	39 *n*
Selenium	7782492	5.00E-03 *i*					0.05 *F*	18 *n*	1.8 *n*	0.68 *n*	510 *n*	39 *n*
Selenourea	630104	5.00E-03 *h*						18 *n*	1.8 *n*	0.68 *n*	510 *n*	39 *n*
Sethoxydim	74051802	9.00E-02 *i*						330 *n*	33 *n*	12 *n*	9200 *n*	700 *n*
Silver and compounds	7440224	5.00E-03 *i*						18 *n*	1.8 *n*	0.68 *n*	510 *n*	39 *n*
Simazine	122349	5.00E-03 *i*		1.20E-01 *h*			0.004 *F*	0.56 *c*	0.052 *c*	0.026 *c*	24 *c*	5.3 *c*
Sodium azide	26628228	4.00E-03 *i*						15 *n*	1.5 *n*	0.54 *n*	410 *n*	31 *n*
Sodium diethyldithiocarbamate	148185	3.00E-02 *i*		2.70E-01 *h*				0.25 *c*	0.023 *c*	0.012 *c*	11 *c*	2.4 *c*
Sodium fluoroacetate	62748	2.00E-05 *i*						0.073 *n*	0.0073 *n*	0.0027 *n*	2 *n*	0.16 *n*
Sodium metavanadate	13718268	1.00E-03 *h*						3.7 *n*	0.37 *n*	0.14 *n*	100 *n*	7.8 *n*
Strontium, stable	7440246	6.00E-01 *i*						2200 *n*	220 *n*	81 *n*	61000 *n*	4700 *n*
Strychnine	57249	3.00E-04 *i*						1.1 *n*	0.11 *n*	0.041 *n*	31 *n*	2.3 *n*
Styrene	100425	2.00E-01 *i*	2.86E-01 *i*			***	0.1 *F*	160 *n*	100 *n*	27 *n*	20000 *n*	1600 *n*
Systhane	88671890	2.50E-02 *i*						91 *n*	9.1 *n*	3.4 *n*	2600 *n*	200 *n*
2,3,7,8-TCDD (dioxin)	1746016			1.50E+05 *h*	1.50E+05 *h*		3E-08 *F*	5E-07 *c*	4E-08 *c*	2E-08 *c*	0.00002 *c*	4.30E-06 *c*
Tebuthiuron	34014181	7.00E-02 *i*						260 *n*	26 *n*	9.5 *n*	7200 *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	MCL mg/L	Tap water µg/L	Ambient air µg/m3	Fish mg/kg	Industrial soil mg/kg	Residential soil mg/kg
Temephos	3383968	2.00E-02 h						73 n	7.3 n	2.7 n	2000 n	160 n
Terbacil	5902512	1.30E-02 i						47 n	4.7 n	1.8 n	1300 n	100 n
Terbufos	13071799	2.50E-05 h						0.091 n	0.0091 n	0.0034 n	2.6 n	0.2 n
Terbutryn	886500	1.00E-03 i						3.7 n	0.37 n	0.14 n	100 n	7.8 n
1,2,4,5-Tetrachlorobenzene	95943	3.00E-04 i				***		0.18 n	0.11 n	0.041 n	31 n	2.3 n
1,1,1,2-Tetrachloroethane	630206	3.00E-02 i		2.60E-02 i	2.59E-02 i	***		0.41 c	0.24 c	0.12 c	110 c	25 c
1,1,2,2-Tetrachloroethane	630206			2.00E-01 i	2.03E-01 i	***		0.052 c	0.031 c	0.016 c	14 c	3.2 c
Tetrachloroethylene (PCE)	127184	1.00E-02 i		5.20E-02 e	2.03E-03 e	***	0.005 F	1.1 c	3.1 c	0.061 c	55 c	12 c
2,3,4,6-Tetrachlorophenol	58902	3.00E-02 i						110 n	11 n	4.1 n	3100 n	230 n
p,a,a,a-Tetrachlorotoluene	5216251			2.00E+01 h		***		0.00053 c	0.00031 c	0.00016 c	0.14 c	0.032 c
Tetrachlorovinphos	961115	3.00E-02 i		2.40E-02 h				2.8 c	0.26 c	0.13 c	120 c	27 c
Tetraethyldithiopyrophosphate	3689245	5.00E-04 i						1.8 n	0.18 n	0.068 n	51 n	3.9 n
Thallic oxide	1314325	7.00E-05 h						0.26 n	0.026 n	0.0095 n	7.2 n	0.55 n
Thallium							0.002 F					
Thallium acetate	563688	9.00E-05 i						0.33 n	0.033 n	0.012 n	9.2 n	0.7 n
Thallium carbonate	6533739	8.00E-05 i						0.29 n	0.029 n	0.011 n	8.2 n	0.63 n
Thallium chloride	7791120	8.00E-05 i						0.29 n	0.029 n	0.011 n	8.2 n	0.63 n
Thallium nitrate	10102451	9.00E-05 i						0.33 n	0.033 n	0.012 n	9.2 n	0.7 n
Thallium selenite	12039520	9.00E-05 w						0.33 n	0.033 n	0.012 n	9.2 n	0.7 n
Thallium sulfate	7446186	8.00E-05 i						0.29 n	0.029 n	0.011 n	8.2 n	0.63 n
Thiobencarb	28249776	1.00E-02 i						37 n	3.7 n	1.4 n	1000 n	78 n
2-(Thiocyanomethylthio)-benzothiazole	21564170	3.00E-02 h						110 n	11 n	4.1 n	3100 n	230 n
Thiofanox	39196184	3.00E-04 h						1.1 n	0.11 n	0.041 n	31 n	2.3 n
Thiophanate-methyl	23564058	8.00E-02 i						290 n	29 n	11 n	8200 n	630 n
Thiram	137268	5.00E-03 i						18 n	1.8 n	0.68 n	510 n	39 n
Tin and compounds		6.00E-01 h						2200 n	220 n	81 n	61000 n	4700 n
Toluene	108883	2.00E-01 i	1.14E-01 w			***	1 F	75 n	42 n	27 n	20000 n	1600 n
Toluene-2,4-diamine	95807			3.20E+00 h				0.021 c	0.002 c	0.00099 c	0.89 c	0.2 c
Toluene-2,5-diamine	95705	6.00E-01 h						2200 n	220 n	81 n	61000 n	4700 n
Toluene-2,6-diamine	823405	2.00E-01 h						730 n	73 n	27 n	20000 n	1600 n
p-Toluidine	106490			1.90E-01 h				0.35 c	0.033 c	0.017 c	15 c	3.4 c
Toxaphene	8001352			1.10E+00 i	1.12E+00 i		0.003 F	0.061 c	0.0056 c	0.0029 c	2.6 c	0.58 c
Tralomethrin	66841256	7.50E-03 i						27 n	2.7 n	1 n	770 n	59 n
Triallate	2303175	1.30E-02 i						47 n	4.7 n	1.8 n	1300 n	100 n
Triasulfuron	82097505	1.00E-02 i						37 n	3.7 n	1.4 n	1000 n	78 n
1,2,4-Tribromobenzene	615543	5.00E-03 i				***		3 n	1.8 n	0.68 n	510 n	39 n
Tributyltin oxide (TBTO)	56359	3.00E-05 i						0.11 n	0.011 n	0.0041 n	3.1 n	0.23 n
2,4,6-Trichloroaniline hydrochloride	33663502			2.90E-02 h				2.3 c	0.22 c	0.11 c	99 c	22 c
2,4,6-Trichloroaniline	634935			3.40E-02 h				2 c	0.18 c	0.093 c	84 c	19 c

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Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg•d/mg	CPSi kg•d/mg	VOC	MCL mg/L	Tap water µg/L	Ambient air µg/m3	Fish mg/kg	Industrial soil mg/kg	Residential soil mg/kg
1,2,4-Trichlorobenzene	120821	1.00E-02 i	2.57E-03 h			***	0.07 F	1.8 n	0.94 n	1.4 n	1000 n	78 n
1,1,1-Trichloroethane	71556	9.00E-02 w	2.86E-01 w			***	0.2 F	130 n	100 n	12 n	9200 n	700 n
1,1,2-Trichloroethane	79005	4.00E-03 i		5.70E-02 i	5.60E-02 i	***	0.005 F	0.19 c	0.11 c	0.055 c	50 c	11 c
Trichloroethylene (TCE)	79016	6.00E-03 e		1.10E-02 w	6.00E-03 e	***	0.005 F	1.6 c	1 c	0.29 c	260 c	47 n
Trichlorofluoromethane	75694	3.00E-01 i	2.00E-01 h			***		130 n	73 n	41 n	31000 n	2300 n
2,4,5-Trichlorophenol	95954	1.00E-01 i						370 n	37 n	14 n	10000 n	780 n
2,4,6-Trichlorophenol	88062			1.10E-02 i	1.09E-02 i			6.1 c	0.57 c	0.29 c	260 c	58 c
2,4,5-Trichlorophenoxyacetic acid	93765	1.00E-02 i					0.05 F	37 n	3.7 n	1.4 n	1000 n	78 n
2-(2,4,5-Trichlorophenoxy)propionic acid	93721	8.00E-03 i						29 n	2.9 n	1.1 n	820 n	63 n
1,1,2-Trichloropropane	598776	5.00E-03 i				***		3 n	1.8 n	0.68 n	510 n	39 n
1,2,3-Trichloropropane	96184	6.00E-03 i				***		3.7 n	2.2 n	0.81 n	610 n	47 n
1,2,3-TCP as carcinogen	96184			2.70E+00 e		***		0.0039 c	0.0023 c	0.0012 c	1.1 c	0.24 c
1,2,3-Trichloropropene	96195	5.00E-03 h				***		3 n	1.8 n	0.68 n	510 n	39 n
1,1,2-Trichloro-1,2,2- trifluoroethane	76131	3.00E+01 i	8.57E+00 h			***		5900 n	3100 n	4100 n	1000000 n	230000 n
Tridiphane	58138082	3.00E-03 i						11 n	1.1 n	0.41 n	310 n	23 n
Triethylamine	121448		2.00E-03 i					7.3 n	0.73 n			
Trifluralin	1582098	7.50E-03 i		7.70E-03 i				8.7 c	0.81 c	0.41 c	370 c	59 n
1,2,4-Trimethylbenzene	95636	5.00e-04 e				***	0.002 F	0.3 n	0.18 n	0.068 n	51 n	3.9 n
1,3,5-Trimethylbenzene	108678	4.00e-04 e				***	0.002 F	0.24 n	0.15 n	0.054 n	41 n	3.1 n
Trimethyl phosphate	512561			3.70E-02 h				1.8 c	0.17 c	0.085 c	77 c	17 c
1,3,5-Trinitrobenzene	99354	5.00E-05 i						0.18 n	0.018 n	0.0068 n	5.1 n	0.39 n
Trinitrophenylmethylnitramine	479458	1.00E-02 h						37 n	3.7 n	1.4 n	1000 n	78 n
2,4,6-Trinitrotoluene	118967	5.00E-04 i		3.00E-02 i				1.8 n	0.18 n	0.068 n	51 n	3.9 n
Uranium (soluble salts)	7440611	3.00E-03 i						11 n	1.1 n	0.41 n	310 n	23 n
Vanadium	7440622	7.00E-03 h						26 n	2.6 n	0.95 n	720 n	55 n
Vanadium pentoxide	1314621	9.00E-03 i						33 n	3.3 n	1.2 n	920 n	70 n
Vanadium sulfate	36907423	2.00E-02 h						73 n	7.3 n	2.7 n	2000 n	160 n
Vernam	1929777	1.00E-03 i						3.7 n	0.37 n	0.14 n	100 n	7.8 n
Vinclozolin	50471448	2.50E-02 i						91 n	9.1 n	3.4 n	2600 n	200 n
Vinyl acetate	108054	1.00E+00 h	5.71E-02 i					3700 n	21 n	140 n	100000 n	7800 n
Vinyl bromide	593602		8.57E-04 i			***		0.52 n	0.31 n			
Vinyl chloride	75014			1.90E+00 h	3.00E-01 h	***	0.002 F	0.019 c	0.021 c	0.0017 c	1.5 c	0.34 c
Warfarin	81812	3.00E-04 i						1.1 n	0.11 n	0.041 n	31 n	2.3 n
m-Xylene	108323	2.00E+00 h	2.00E-01 w			***	10 F	140 n	73 n	270 n	200000 n	16000 n
o-Xylene	95476	2.00E+00 h	2.00E-01 w			***	10 F	140 n	73 n	270 n	200000 n	16000 n
p-Xylene	106423		8.57E-02 w			***	10 F	52 n	31 n			
Xylene (mixed)	1330207	2.00E+00 i				***	10 F	1200 n	730 n	270 n	200000 n	16000 n
Zinc	7440666	3.00E-01 i						1100 n	110 n	41 n	31000 n	2300 n
Zinc phosphide	1314847	3.00E-04 i						1.1 n	0.11 n	0.041 n	31 n	2.3 n

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Zineb	12122677	5.00E-02 *i*						180 *n*	18 *n*	6.8 *n*	5100 *n*	390 *n*