

# Winek's Drug & Chemical Blood-Level Data 2001

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We have gathered the data in the table from the literature and from personal experience. The values are not considered absolute, but are to be used as a guide in evaluating a given case. The values can be affected by dose, route of administration, absorption differences, age and sex, tolerance, method of analysis, pathological or disease state, postmortem redistribution, etc. Users of the table are referred to *Winek's Toxicology Annual* and Chapter 72 in *Forensic Medicine*, Volume III, by Tedeschi, Eckert and Tedeschi for chapters discussing the data, reference to the data, and factors affecting blood-level values. For additional pharmacokinetic information and other tissue levels, users are referred to Baselt's reference, *Disposition of Toxic Drugs and Chemicals in Man*.

Users are cautioned against pharmacists using pharmacokinetics for interpretation of blood-level data when death is involved. It should be obvious that kinetics, even pharmacokinetics, are not applicable to the moribund state.

## Definition of Blood Levels

### Therapeutic Blood Level

Winek defines a therapeutic blood level as that concentration of drug and/or its active metabolite(s) present in the blood (serum or plasma) following therapeutically effective dosage in humans.

### Toxic Blood Level

The concentration of drug and/or its active metabolite(s) or chemical present in the blood (serum or plasma) that is associated with serious toxic symptoms in humans.

### Lethal Blood Level

The concentration of drug and/or its active metabolite(s) or chemical present in the blood (serum or plasma) that has been reported to cause death, or is so far above reported therapeutic or toxic concentrations, that one can judge that it might cause death in humans.

### Normal Blood Level

Some of the values under normal represent normal body constituents and others represent values related to normal environmental exposure. Values can, and do, vary with geographical location.

Suggested additions or corrections can be made by contacting the author at [drwinek@aol.com](mailto:drwinek@aol.com). Recommendations are always welcomed.

## Units

Drugs and chemicals in the table are reported in both mg% and  $\mu\text{g/mL}$ . Drugs are listed by both their trade and generic names. Mg% (milligram percent) is equal to mg/dL (milligram/deciliter);  $\mu\text{g/mL}$  (microgram/milliliter) is equal to mg/L (milligram/liter).

### NOTE:

Divide the mg% level by 100 to obtain mg/mL. Divide the  $\mu\text{g/mL}$  level by 100 to obtain  $\mu\text{g/mL}$ . To convert mg/L or  $\mu\text{g/L}$  to mg% or  $\mu\text{g}\%$ , divide level by 10.

#### Examples:

1mg/L = 0.1mg%

3 $\mu\text{g/L}$  = 0.3 $\mu\text{g}\%$

$\mu\text{g}$  is the representation for microgram (mcg).

Many therapeutic drugs are reported in nanograms/milliliter (ng/mL). To convert the listed mcg/mL in this table to ng/mL, multiply the listed value by 1000. For example, digoxin concentration of 0.0022 mcg/mL would be  $0.0022 \times 1000 = 2.2$  ng/mL. Put simply, you move the decimal point three places to the right.



**Dr. Charles L. Winek**

Dr. Winek is a professor of toxicology at Duquesne University School of Pharmacy and also teaches for the University's School of Education, Graduate School of Arts and Sciences, and the Law School. He is a diplomate of both American Board of Forensic Toxicology and the Academy of Toxicological Sciences.

Dr. Winek is currently the director of Pittsburgh Criminalistics Laboratory and is the former chief toxicologist for the Allegheny County Coroner's Office, positions he held for 32 years. He continues to testify frequently as an expert witness in both criminal and civil cases in Allegheny County and throughout the United States.

Dr. Winek has published 119 articles in scientific journals and authored, co-authored or contributed to 29 books.

Additionally, Dr. Winek is toxicology editor for the scientific journal *Forensic Science International* and a member of the editorial boards of *The Journal of Applied Toxicology* and the journal *Analytical Toxicology*.

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## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
<b>A</b>						
Acebutolol (Spectral)	0.05 - 0.12	0.5 - 1.2	*****	*****	*****	*****
Acetaminophen (Tylenol)	1 - 2	10 - 20	15	150	>16	>160
Acetazolamide (Diamox)	1.0 - 1.5	10 - 15	*****	*****	*****	*****
Acetohexamide ( Dymelor)	2.1 - 5.6	21 - 56	*****	*****	*****	*****
Acetone	*****	*****	20 - 30	200 - 300	55	550
Acetonitrile [met: to Cyanide]	*****	*****	*****	*****	0.077	0.77
Acetylsalicylic Acid [as met: Salicylate-for analgesic use]	2 - 10	20 - 100	15 - 30	150 - 300	50	500
Acetylsalicylic Acid [as met: Salicylate-for rheumatoid arthritis]	2 - 25	20 - 250	*****	*****	*****	*****
Actidil (Triprolidine)	0.0004 - 0.0044	0.004 - 0.044	*****	*****	*****	*****
Actifed (Pseudoephedrine)	0.050 - 0.077	0.50 - 0.77	*****	*****	1.9	19
(Triprolidine)	0.0004 - 0.0044	0.004 - 0.044	*****	*****	*****	*****
Actron (Ketoprofen)	0.5 - 0.15	5 - 1.5	*****	*****	*****	*****
Adalat (Nifedipine, Procardia)	0.0015 - 0.0162	0.015 - 0.162	*****	*****	*****	*****
Alcaine (Proparacaine)	*****	*****	*****	*****	1.5	15
Aldrin	0.00015	0.0015	0.00035	0.0035	*****	*****
Alfenta (Alfentanil)	0.010 - 0.12	0.10 - 1.2	*****	*****	*****	*****
Alfentanil (Alfenta)	0.010 - 0.12	0.10 - 1.2	*****	*****	*****	*****
Allegra (Fexofenadine)	0.018 - 0.021	0.18 - 0.210	*****	*****	*****	*****
Alphaprodine (Nisentil)	0.087 - 0.100	0.87 - 1.00	*****	*****	0.33	3.3
Alprazolam (Xanax)	0.0025 - 0.0102	0.025 - 0.102	*****	*****	0.0122 - 0.039	0.122 - 0.39
Aluminum	0.013	0.13	*****	*****	*****	*****
Amantadine (Symmetrel)	0.006 - 0.031	0.06 - 0.31	0.1 - 0.05	1 - 0.5	0.21 - 0.48	2.1 - 4.8
Ambien (Zolpidem)	0.0029 - 0.0272	0.029 - 0.272	*****	*****	0.05 - 0.112	0.5 - 1.12
Aminophylline (Theophylline)	1 - 2	10 - 20	3 - 4	30 - 40	5 - 25	50 - 250
Amitriptyline (Elavil)	0.012 - 0.025	0.12 - 0.25	>0.05	>0.5	0.2 - 2.0	2 - 20
Amitriptyline (Elavil)	0.012 - 0.025	0.12 - 0.25	>0.05	>0.5	*****	*****
[+met: Nortriptyline]						
Ammonia	0.05 - 0.17	0.5 - 1.7	*****	*****	*****	*****
Amobarbital (Amytal)	0.1 - 0.5	1 - 5	1 - 3	10 - 30	1.3 - 9.6	13 - 96
Amoxapine (Asendin)	0.0017 - 0.021	0.017 - 0.21	*****	*****	0.295 - 2.0	2.95 - 20
Amoxapine (Asendin)	0.02 - 0.04	0.2 - 0.4	*****	*****	*****	*****
[+met: 8-OH-amoxapine]						
Amphetamine	0.003 - 0.011	0.03 - 0.11	>0.05	>0.5	>0.1	>1
Amytal (Amobarbital)	0.1 - 0.5	1 - 5	1 - 3	10 - 30	1.3 - 9.6	13 - 96
Anafranil (Clomipramine)	0.01 - 0.045	0.1 - 0.45	*****	*****	*****	*****
Anaprox (Naproxen)	3.1 - 12	31 - 120	40	400	*****	*****
Analeridine (Leritine)	<0.05	<0.5	*****	*****	0.09 - 0.70	0.9 - 7.0
Aniline	*****	*****	*****	*****	0.63	6.3
Ansaid (Flubiprofen)	1 - 2.2	10 - 22	*****	*****	*****	*****
Antabuse (Disulfiram)	0.038 - 0.25	0.38 - 2.5	*****	*****	37 - 58	370 - 580
Antipyrine	0.5 - 2.5	5-25	*****	*****	11	110
Aralen (Chloroquine)	0.002 - 0.040	0.02 - 0.40	*****	*****	0.3 - 9.9	3 - 99
Arsenic	0.002 - 0.0062	0.02 - 0.062	0.1	1	0.9 - 1.5	9 - 15
Asendin (Amoxapine)	0.0017 - 0.021	0.017 - 0.21	*****	*****	0.295 - 2.0	2.95 - 20

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Asendin (Amoxapine)	0.02 - 0.04	0.2 - 0.4	*****	*****	*****	*****
[+met: 8-OH-amoxapine]						
Astemizole (Hismanal)	0.00004	0.0004				
Atarax (Hydroxyzine, Vistaril)	0.0022 - 0.008	0.022 - 0.08	*****	*****	0.4 -3.9	4.2 - 39
Atenolol (Tenorim)	0.02 - 0.07	0.20 - 0.70	3.5	35	*****	*****
Ativan (Lorazepam)	0.001 - 0.024	0.01 - 0.24	0.03 - 0.06	0.3 - 0.6	*****	*****
Atromid (Clofibrate)	12.2	122	*****	*****	*****	*****
Atropine	0.0035 - 0.0200	0.035 - 0.200	*****	*****	0.02	0.2
Avelox (Moxifloxacin)	0.45 - 1.44	4.5 - 14.4	*****	*****	*****	*****
Aventyl (Nortriptyline)	0.005 - 0.0375	0.05 - 0.375	0.05	0.5	1.3	13
[met: Amitriptyline (Elavil)]						
AZT (Retrovir, Zidovadine)	0.027 - 0.08	0.27 - 0.8	*****	*****	*****	*****
<b>B</b>						
Baclofen (Lioresal)	0.01 - 0.06	0.1 - 0.6	0.11 - 0.35	1.1 - 3.5	*****	*****
Barbital	1 - 2.6	10 - 26	6 - 8	60 - 80	>10	>100
Barbiturates (intermediate acting)	0.1 - 0.5	1 - 5	1 - 3	10 - 30	>3	>30
Barbiturates (long acting)	1 - 4	10 - 40	4 - 6	40 - 60	>8	>80
Barbiturates (short acting)	0.1	1	0.7	7	1	10
Benadryl (Diphenhydramine)	0.0025 - 0.0112	0.025 - 0.112	0.5	5	>0.8	>8
Benemid (Probenecid)	10 - 20	100 - 200	*****	*****	*****	*****
Bentyl (Dicyclomine)	0.002 - 0.008	0.02 - 0.08	*****	*****	*****	*****
Benzedrex (Propylhexedrine)	0.001	0.01	*****	*****	0.2 - 0.3	2 - 3
Benzene	*****	*****	>0	>0	0.090 - 0.12	0.90 - 1.2
Benzphetamine (Didrex)	0.0025 - 0.0500	0.025 - 0.500	>0.05	>0.5	1.4	14
Benztropine (Cogentin)	0.008 - 0.0126	0.08 - 0.126	0.0048	0.048	0.02 - 0.07	0.2 - 0.7
Bethanid (Bethanidine)	0.002 - 0.050	0.02 - 0.50	*****	*****	*****	*****
Bethanidine (Bethanid)	0.002 - 0.050	0.02 - 0.50	*****	*****	*****	*****
Bismuth	0.004 - 0.008	0.04 - 0.08				
Blocadren (Timolol)	0.004 - 0.023	0.04 - 0.23	*****	*****	*****	*****
Boron	0.08	0.8	4	40	5	50
Brethine (Terbutaline)	0.0002 - 0.0006	0.002 - 0.006	*****	*****	0.004	0.04
Brevibloc (Esmolol)	0.11 - 0.159	1.1 - 1.59	*****	*****	*****	*****
Bromide	0.30 - 23	3 - 230	50-150	500-1500	200	2000
Bromide [met: Carbromal (Carbital)]	0.6	6	40 - 125	400 - 1250	128.5 - 245.0	1285 - 2450
Bropheniramine (Dimetane)	0.0008 - 0.0015	0.008 - 0.015	*****	*****	*****	*****
Bupivacaine (Marcaïne)	0.022 - 0.345	0.22 - 3.45	1	10	*****	*****
Buprenex (Buprenorphine)	0.0014 - 0.011	0.014 - 0.11	*****	*****	*****	*****
Buprenorphine (Buprenex)	0.0014 - 0.011	0.014 - 0.11	*****	*****	*****	*****
Bupropion (Wellbutrin)	0.0025 - 0.0100	0.025 - 0.100	*****	*****	0.73	7.3
Buspar (Buspirone)	0.0088 - 0.0147	0.088 - 0.147	*****	*****	*****	*****
Buspirone (Buspar)	0.0088 - 0.0147	0.088 - 0.147	*****	*****	0.73	7.3
Butabarbital (Butisol)	0.76 - 1.69	7.6 - 16.9	*****	*****	>3	>30
Butalbital (Sandoptal, Fioricet, Fiorinal)	0.17 - 0.26	1.7 - 2.6	0.7 - 4	7 - 40	1.3 - 2.6	13 - 26
Butanediol	*****	*****	*****	*****	28	280
Butaperazine (Repoise)	0.002 - 0.069	0.02 - 0.69	*****	*****	*****	*****
Butazolidin (Phenylbutazone)	1.6 - 15.0	16 - 150	20	200	40	400
Butisol (Butabarbital)	0.76 - 1.69	7.6 - 16.9	*****	*****	>3	>30

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Butorphanol (Stadol)	0.00011-0.00017	0.0011 - 0.0017	*****	*****	*****	*****
Butyl Nitrite (Nitrite)	0.05 - 0.40	0.50 - 4	*****	*****	2.2	22
<b>C</b>						
Cadmium	0.00005-0.00040	0.0005 - 0.0040	0.005	0.05	0.11	1.1
Caffeine	0.2 - 1.0	2-10	*****	*****	>10	>100
Calan (Isoprin, Verapamil)	0.0055 - 0.0355	0.055 - 0.355	0.09	0.9	0.09 - 8.5	0.9 - 85
Captopril (Capoten)	0.051 - 0.131	0.51 - 1.31	*****	*****	2 - 6	20 - 60
Capoten (Captopril)	0.051 - 0.131	0.51 - 1.31	*****	*****	2 - 6	20 - 60
Carbamazepine (Tegretol)	0.14 - 1.2	1.4 - 12	>1.5	>15	>5	>50
Carbital (Carbromal) [as met: Bromide]	0.6	6	40 - 125	400 - 1250	128.5 - 245.0	1285 - 2450
Carbocaine (Mepivacaine)	0.028 - 0.550	0.28 - 5.50	1	10	5	50
Carbon Monoxide	1 - 2%	*****	15 - 35%	*****	48-95%	*****
[% Hemoglobin as Carboxyhemoglobin]						
Carbon Tetrachloride	*****	*****	2 - 5	20 - 50	10 - 20	100 - 200
Carbromal (Carbital) [as met: Bromide]	0.6	6	40 - 125	400 - 1250	128.5 - 245.0	1285 - 2450
Cardene (Nicardipine)	0.0036 - 0.015	0.036 - 0.150	*****	*****	*****	*****
Cardizem (Diltiazem)	0.005 - 0.04	0.05 - 0.40	0.37 - 0.61	3.7 - 6.1	0.67	6.7
Carisoprodol (Soma)	1 - 4	10 - 40	3 - 5	30 - 50	11	110
Cataflam (Voltaren, Diclofenac)	0.075 - 0.20	0.75 - 2.0	0.6	6	*****	*****
Catapres (Clonidine)	0.00003-0.00015	0.0003-0.0015	0.0006	0.006	0.023	0.23
Celexa (Citalopram)	0.0081 - 0.016	0.081 - 0.16	*****	*****	0.024 - 0.13	0.24 - 1.3
Celontin (Methsuximide)	1.0 - 4	10 - 40	4.4	>44	*****	*****
[as met: Desmethylmethsuximide]						
Centrax (Prazepam)	0.001 - 0.004	0.01 - 0.04	*****	*****	*****	*****
China White (Methylfentanyl)	*****	*****	*****	*****	0.0002 - 0.0011	0.002 - 0.011
Chlor-Trimeton (Chlorpheniramine)	0.0017	0.017	2 - 3	20 - 30	*****	*****
Chloral Hydrate (Noctec)	0.2 - 1.2	2 - 12	10	100	25	250
[as met: Trichloroethanol]						
Chloramphenicol (Chloromycetin)	1 - 2	10 - 20	*****	*****	20	200
Chlorcyclizine	0.005 - 0.010	0.05 - 0.10				
Chlormepramine	*****	*****	*****	*****	0.015 - 0.055	0.15 - 0.55
(plus metabolite - Norchlormepramine)						
Chlordane	0.0001	0.001	0.00025	0.0025	0.17 - 0.49	1.7 - 4.9
Chlordiazepoxide (Librium)	0.067 - 0.31	0.67 - 3.1	0.5	5	2	20
Chlormezanone (Trancopal)	0.25 - 0.88	2.5 - 8.8	*****	*****	*****	*****
Chloromycetin (Chloramphenicol)	1 - 2	10 - 20	*****	*****	20	200
Chloroform	2 - 50	20 - 500	7 - 25	70 - 250	39	390
Chlorophen (Chlorphentermine)	0.032	0.32	*****	*****	*****	*****
Chloroprocaine (Nesacaine)	0.2 - 0.4	2 - 4	*****	*****	*****	*****
Chloroquine (Aralen)	0.002 - 0.040	0.02 - 0.40	*****	*****	0.3 - 9.9	3 - 99
Chlorothiazide	0.6	6	*****	*****	*****	*****
Chlorpheniramine (Chlor-Trimeton)	0.001 - 0.0017	0.01 - 0.017	*****	*****	0.05 - 0.11	0.5 - 1.1
Chlorphentermine (Chlorophen)	0.032	0.32	*****	*****	*****	*****
Chlorpromazine (Thorazine)	0.001 - 0.050	0.01 - 0.50	0.1 - 0.2	1 - 2	0.3 - 1.2	3 - 12
Chlorpropamide (Diabinese)	3.0 - 36.3	30 - 363	20 - 75	200 - 750	*****	*****
Chlorprothixene (Taractan)	0.004 - 0.030	0.04 - 0.30	0.04 - 0.08	0.4 - 0.8	*****	*****
Chlor-Trimeton (Chlorpheniramine)	0.001 - 0.0017	0.01 - 0.017	*****	*****	0.05 - 0.11	0.5 - 1.1

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Chlorthalidone (Combipress)	0.021 - 0.140	0.21 - 1.40	*****	*****	*****	*****
Cimetidine (Tagamet)	0.05 - 0.45	0.5 - 4.5	*****	*****	*****	*****
Citalopram (Celexa)	0.0081 - 0.016	0.081 - 0.16	*****	*****	0.024 - 0.13	0.24 - 1.3
Citanest (Prilocaine)	0.1 - 0.5	1 - 5	*****	*****	*****	*****
Claritin (Loratidine)	0.0007 - 0.0028	0.007 - 0.028	0.046	0.46	*****	*****
[metabolite: descarboethoxyloratadine]	0.0007 - 0.0028	0.007 - 0.028	0.046	0.46	*****	*****
Clinoril (Sulindac)	0.4 - 0.5	4 - 5	*****	*****	*****	*****
Clofibrate (Atromid)	12.2	122	*****	*****	*****	*****
Clomipramine (Anafranil)	0.01 - 0.045	0.1 - 0.45	*****	*****	*****	*****
Clonazepam (Klonopin)	0.0007 - 0.0075	0.007 - 0.075	*****	*****	*****	*****
Clonidine (Catepres)	0.00003-0.00015	0.0003-0.0015	0.0006	0.006	0.023	0.23
Clorazepate (Tranxene)	0.01 - 0.16	0.1 - 1.6	>0.5	>5.0	*****	*****
[as met: N-Desmethyldiazepam]						
Clozapine (Clozaril)	0.0102 - 0.0771	0.102 - 0.771	*****	*****	*****	*****
Clozaril (Clozapine)	0.0102 - 0.0771	0.102 - 0.771	*****	*****	*****	*****
Cocaine	0.005 - 0.093	0.05 - 0.930	0.09	0.9	0.1 - 2.0	1 - 20
Codeine	0.003 - 0.034	0.03 - 0.34	*****	*****	>0.16	>1.6
Cogentin (BENZTROPINE)	0.008 - 0.0126	0.08 - 0.126	0.0048	0.048	0.02 - 0.07	0.2 - 0.7
Colbenemid (Colchicine)	0.00003-0.00300	0.0003-0.0300	*****	*****	0.0021 - 0.025	0.021 - 0.25
Colchicine (Colbenemid)	0.00003-0.00300	0.0003-0.0300	*****	*****	0.0021 - 0.025	0.021 - 0.25
Combipress (Chlorthalidone)	0.021 - 0.140	0.21 - 1.40	*****	*****	*****	*****
Compazine (Prochlorperazine)	*****	*****	>0.1	>1	0.5	5
Copper	0.10 - 0.15	1.0 - 1.5	0.54	5.4	0.25 - 6.30	2.5 - 63.0
Coumadin (Warfarin)	0.10 - 0.31	1.0 - 3.1	*****	*****	*****	*****
Cresol	*****	*****	*****	*****	0.90 - 1.90	9-19
Cyanide	0.0004 - 0.0041	0.004 - 0.041	*****	*****	0.11 - 5.3	1.1 - 53
Cylert (Pemoline)	0.07 - 0.62	0.70 - 6.2	*****	*****	*****	*****
Cyclizine	0.003 - 0.030	0.03 - 0.30	0.076	0.76	1.5	15
Cyclobenzaprine (Flexeril)	0.0015 - 0.0036	0.015 - 0.036	*****	*****	>0.04	>0.4
Cyclopropane	8 - 18	80 - 180	*****	*****	*****	*****
Cyclosporine (Sandimmune)	0.005 - 0.0045	0.05 - 0.045	*****	*****	*****	*****
<b>D</b>						
Dalmane (Flurazepam)	0.00005-0.00280	0.0005 - 0.0280	0.02	0.2	0.05 - 0.40	0.5 - 4.0
Dalmane (Flurazepam)	0.0033 - 0.0144	0.033 - 0.144	*****	*****	*****	*****
[+met: N-Desalkylflurazepam]						
Dantrium (Dantrolene)	0.1 - 0.3	1 - 3	*****	*****	*****	*****
Dantrolene (Dantrium)	0.1 - 0.3	1 - 3	*****	*****	*****	*****
Darvon (Propoxyphene)	0.023 - 0.107	0.23 - 1.07	0.03 - 0.06	0.3 - 0.6	0.1 - 1.7	1-17
Darvon (Propoxyphene)	0.104 - 0.371	1.04 - 3.71	0.28 - 1.2	2.8 - 12	0.27 - 4.7	2.7 - 47
[+ met: Norpropoxyphene]						
DDT	0.0013	0.013	*****	*****	*****	*****
Demerol (Meperidine)	0.007 - 0.080	0.07 - 0.80	0.5	5	0.8 - 2.0	8 - 20
Depakene (Valproic Acid)	5 - 10	50 - 100	0.71 - 20.0	7.1 - 200	*****	*****
Desipramine (Norpramin)	0.005 - 0.0684	0.05 - 0.684	>0.05	>0.5	1 - 2	10 - 20
[met: Imipramine (Tofranil)]						
Desmethylmethsuximide	1.6 - 4	16 - 40	4.4	>44	*****	*****
[met: Celontin (Methsuximide)]						

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Desyrel (Trazodone)	0.07 - 0.489	0.7 - 4.89	*****	*****	1.5	15
Dextromethorphan	0.038	0.38	*****	*****	>0.3	>3
Diabinese (Chlorpropamide)	3.0 - 36.3	30 - 363	20 - 75	200 - 750	*****	*****
Diacetalol	0.063 - 0.433	0.63 - 4.33	*****	*****	*****	*****
Diamox (Acetazolamide)	1.0 - 1.5	10 - 15	*****	*****	*****	*****
Diazepam (Valium)	0.002 - 0.400	0.02 - 4.00	0.5 - 2.0	5 - 20	>3	>30
Diazepam (Valium)	0.031 - 0.600	0.31 - 6.00	*****	*****	>3.4	>34
[+ met: N-Desmethyldiazepam]						
Diazoxide (Hyperstat)	1.5 - 2.0	15 - 20	>10	>100	*****	*****
Diazinon	*****	*****	*****	*****	0.07 - 27.7	0.7 - 277
Dichloromethane (Methylene Chloride)	*****	*****	*****	*****	9.5 - 60	95 - 600
Diclofenac (Voltaren, Cataflam)	0.075 - 0.20	0.75 - 2.0	0.6	6	*****	*****
Dicumarol	0.8 - 5.9	8 - 59	7	70	*****	*****
Dicyclomine (Bentyl)	0.002 - 0.008	0.02 - 0.08	*****	*****	*****	*****
Didrex (Benzphetamine)	0.0025 - 0.0500	0.025 - 0.500	>0.05	>0.5	1.4	14
Dieldrin	0.00015 - 0.002	0.0015 - 0.02	0.015 - 0.0303	0.15 - 0.303	0.05 - 0.116	0.5 - 1.16
Diethylpropion (Tenuate)	0.0007 - 0.0200	0.007 - 0.200	*****	*****	0.54	5.4
Difenoxin (Motofen)	0.016	0.160	*****	*****	*****	*****
Diflucan (Fluconazol)	0.5 - 1.5	5 - 15	*****	*****	*****	*****
Diflunisal (Dolobid)	0.9 - 13	9 - 130	*****	*****	37 - 58	370 - 580
Digoxin	0.00007-0.0022	0.0007 - 0.022	0.00030-0.00040	0.0030 - 0.0040	0.0035 - 0.02	0.035 - 0.20
Dihydrocodeinone (Hydrocodone)	0.003 - 0.025	0.03 - 0.25	0.05 - 0.2	0.5 - 2	0.07 - 1.2	0.7 - 12
Dilantin (Phenytoin, Diphenylhydantoin)	1 - 2	10 - 20	2 - 5	20 - 50	>10	>100
Dilaudid (Hydromorphone)	0.0008 - 0.0049	0.008 - 0.049	****	*****	0.03	0.3
Diltiazem (Cardizem)	0.005 - 0.04	0.05 - 0.40	0.37 - 0.61	3.7 - 6.1	0.67	6.7
Dimetane (Brompheniramine)	0.0008 - 0.0015	0.008 - 0.015	*****	*****	*****	*****
Dimethylsulfoxide (DMSO)	5.04 - 338	50.4 - 3380	*****	*****	160 - 300	1600 - 3000
Dimethyltryptamine	0.0001 - 0.0100	0.001 - 0.100	*****	*****	*****	*****
Dinitro-O-Cresol	*****	*****	3 - 6	30 - 60	7.5	75
Diphenhydramine (Benadryl)	0.0025 - 0.0112	0.025 - 0.112	0.5	5	>0.8	>8
Diphenoxylate (Lomotil)	0.001 - 0.004	0.01 - 0.04	*****	*****	*****	*****
Diphenylhydantoin (Phenytoin, Dilantin)	1 - 2	10 - 20	2 - 5	20 - 50	>10	>100
Diprivan (Propofol)	0.2 - 1.6	2 - 16	*****	*****	*****	*****
Disopyramide (Norpace)	0.2 - 0.6	2 - 6	0.7	7	2.6	26
Disulfiram (Antabuse)	0.038 - 0.25	0.38 - 2.5	*****	*****	37 - 58	370 - 580
Divinyl Oxide	*****	*****	*****	*****	70	700
DMSO (Dimethylsulfoxide)	5.04 - 338	50.4 - 3380	*****	*****	160 - 300	1600 - 3000
Dolobid (Diflunisal)	0.9 - 13	9 - 130	*****	*****	37 - 58	370 - 580
Dolophine (Methadone)	0.0075 - 0.110	0.075 - 1.10	0.02 - 0.2	0.20 - 2.0	0.04 - 0.18	0.4 - 1.8
Dopram (Doxapram)	0.27 - 0.52	2.7 - 5.2	*****	0.04 - 0.8	*****	*****
Doral (Quazepam)	1.1 - 14.8	11 - 148	*****	*****	*****	*****
Doriden (Glutethimide)	0.2 - 1.2	2 - 12	1 - 8	10 - 80	3 - 10	30 - 100
Dothiepin (Prothiaden)	0.0017 - 0.0420	0.017 - 0.420	*****	*****	0.03 - 0.25	0.3 - 2.5
Doxapram (Dopram)	0.27 - 0.52	2.7 - 5.2	*****	*****	*****	*****
Doxepin (Sinequan)	0.010 - 0.025	0.10 - 0.25	0.012 - 0.43	0.12 - 4.3	0.2 - 2.6	2 - 26
Doxepin (Sinequan)	0.010 - 0.025	0.10 - 0.25	>0.05	>0.5	0.8 - 3.5	8 - 35
[+met: N-Desmethyldoxepin]						

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Doxylamine (Unisom)	0.0069 - 0.0138	0.069 - 0.138	*****	*****	0.07 - 1.2	0.7 - 12
Duranest (Etidocaine)	0.05 - 0.15	0.5 - 1.5	*****	*****	*****	*****
Dymelor (Acetohexamide)	2.1 - 5.6	21 - 56	*****	*****	*****	*****
Dyphylline	0.65 - 1.43	6.5 - 14.3	3.6	36	*****	*****
<b>E</b>						
Effexor (Venlafaxine)	0.007 - 0.393	0.07 - 3.93	*****	*****	*****	*****
[met: O-Desmethylvenlafaxine]	0.0061 - 0.075	0.061 - 0.75	0.1 - 0.15	1 - 1.5	*****	*****
Elavil (Amitriptyline)	0.012 - 0.025	0.12 - 0.25	>0.05	>0.5	0.2 - 2.0	2 - 20
Elavil (Amitriptyline)	0.012 - 0.025	0.12 - 0.25	>0.05	>0.5	0.2 - 2.0	2 - 20
[+met: Nortriptyline]						
Eldepryl (Selegiline)	0.0009 - 0.0019	0.009 - 0.019	*****	*****	*****	*****
Emetine	0.005 - 0.0075	0.05 - 0.075	*****	*****	0.24	2.4
Enalapril (Vasotec)	0.0063 - 0.007	0.063 - 0.070	*****	*****	*****	*****
Encainide (Enkaid)	0.01 - 0.03	0.1 - 0.3	*****	*****	*****	*****
[as met: O-Demethylencaïnide]						
Encainide (Enkaid)	0.006 - 0.028	0.06 - 0.28	*****	*****	*****	*****
[as met: Methoxy-O-demethylencaïnide]						
Endrin	0.0003	0.003	0.0007 - 0.0032	0.007 - 0.032	0.045	0.45
Ephedrine	0.0068 - 0.01	0.068 - 0.10	*****	*****	0.35 - 2.1	3.5 - 21
Estazolam (Prosom)	0.0042 - 0.0100	0.042 - 0.100	0.125	1.25	*****	*****
Ethanol (listed toxic concentration is legal intoxication for driving in most states)	*****	*****	80 - 100	800 - 1000	>350	>3500
Ethchlorvynol (Placidyl)	0.05 - 0.88	0.5 - 8.8	*****	*****	2.2 - 21.3	22 - 213
Ethinamate (Valmid)	0.4 - 1.1	4 - 11	*****	*****	10 - 20	100 - 200
Ethosuximide (Zarontin)	4 - 10	40 - 100	*****	*****	25	250
Ethyl Chloride	20 - 30	200 - 300	*****	*****	40	400
Ethyl Ether	90 - 100	900 - 1000	*****	*****	140 - 189	1400 - 1890
Ethylene Glycol	*****	*****	150.0	1500.0	200 - 400	2000 - 4000
Etidocaine (Duranest)	0.05 - 0.15	0.5 - 1.5	*****	*****	*****	*****
Etodolac (Lodine)	1.2 - 4.7	12 - 47	*****	*****	*****	*****
<b>F</b>						
Famotidine (Pepcid)	0.0007 - 0.0035	0.007 - 0.035	*****	*****	*****	*****
Felbamate (Felbatol)	0.27 - 3.3	2.7 - 33	14 - 20	140 - 200	*****	*****
Felbatol (Felbamate)	0.27 - 3.3	2.7 - 33	14 - 20	140 - 200	*****	*****
Feldene (Piroxicam)	0.085 - 0.8	0.85 - 8.00	*****	*****	*****	*****
Felodipine (Plendil)	0.00015 - 0.00088	0.0015 - 0.0088	0.001 - 0.0015	0.01 - 0.015	*****	*****
Fenfluramine (Pondimin)	0.004 - 0.030	0.04 - 0.3	0.07 - 0.09	0.7 - 0.9	0.6 - 1.5	6 - 15
Fenopropfen (Nalfon)	2.7 - 6.6	27 - 6.6	*****	*****	71	710
Fentanyl (Sublimaze)	0.001 - 0.010	0.01 - 0.10	*****	*****	*****	*****
Fexofenadine (Allegra)	0.018 - 0.021	0.18 - 0.210	*****	*****	*****	*****
Fioricet (Butalbital)	0.17 - 0.26	1.7 - 2.6	0.7 - 4	7 - 40	1.3 - 2.6	13 - 26
Fiorinal (Butalbital)	0.17 - 0.26	1.7 - 2.6	0.7 - 4	7 - 40	1.3 - 2.6	13 - 26
Flecainide (Tambocar)	0.02 - 0.10	0.2 - 1.0	*****	*****	*****	*****
Flexeril (Cyclobenzaprine)	0.0015 - 0.0036	0.015 - 0.036	*****	*****	>0.04	>0.4
Flexin (Zoxazolamine)	0.3 - 1.3	3 - 13	*****	*****	*****	*****
Flubiprofen (Ansaid)	1 - 2.2	10 - 22	*****	*****	*****	*****
Flucanazol (Diflucan)	0.5 - 1.5	5 - 15	*****	*****	*****	*****

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Flumazenil (Mazicon, Romazicon)	0.0006 - 0.0039	0.006 - 0.039	*****	*****	*****	*****
Flunitrazepam (Rohypnol)	0.006 - 0.0052	0.06 - 0.052	0.001 - 0.005	0.01 - 0.05	*****	*****
Fluoride	0.0014 - 0.04	0.014 - 0.4	*****	*****	1.5 - 20	15 - 200
Fluothane (Halothane)	2.2 - 26.0	22 - 260	*****	*****	20	200
Fluoxetine (Prozac)	0.009 - 0.040	0.09 - 0.40	*****	*****	0.13 - 0.68	1.3 - 6.8
Fluphenazine (Prolixin)	0.00009-0.00170	0.0009 - 0.0170	*****	*****	*****	*****
Flurazepam (Dalmane)	0.00005-0.00280	0.0005 - 0.0280	0.02	0.2	0.05 - 0.40	0.5 - 4.0
Flurazepam (Dalmane) [+met: N-Desalkylflurazepam]	0.0033 - 0.0144	0.033 - 0.144	*****	*****	*****	*****
Fluvoxamine (Luvox)	0.0031 - 0.0087	0.031 - 0.087	*****	*****	*****	*****
Forane (Isoflurane)	2.0 - 7.0	20.0 - 70.0	*****	*****	*****	*****
Furadantoin (Nitrofurantoin)	0.18	1.8	*****	*****	*****	*****
Fortavase, Invirase (Saquinavir)	0.011 - 0.11	0.11 - 1.1	*****	*****	*****	*****
Furosemide (Lasix)	0.1 - 1.0	1 - 10	>2	>20	*****	*****
<b>G</b>						
Gabapentin (Neurontin)	0.2 - 1.0	2 - 10	*****	*****	*****	*****
Gabitol (Tiagabine)	0.0001 - 0.0234	0.001 - 0.234	*****	*****	*****	*****
Gamma-Hydroxybutyrate (GHB)	<0.1	<1.0	2.6 - 36	26 - 360	>75	>750
GHB (Gamma-Hydroxybutyrate)	<0.1	<1.0	2.6 - 36	26 - 360	>75	>750
Glucophage (Metformin)	0.1 - 0.4	1 - 4	4.5 - 7.0	45 - 70	*****	*****
Glutethimide (Doriden)	0.2 - 1.2	2 - 12	1 - 8	10 - 80	3 - 10	30 - 100
Glycopyrrolate (Robinul)	0.005 - 0.0076	0.050 - 0.076	*****	*****	*****	*****
Gold (Sodium Aurothiomalate)	0.3 - 0.8	3 - 8	*****	*****	*****	*****
Guaifenesin (Robitussin)	0.04 - 0.14	0.4 - 1.4	21	210	*****	*****
Guanethidine (Ismelin)	0.001	0.01	*****	*****	*****	*****
<b>H</b>						
Habitrol (transdermal) (Nicotine)	0.0004 - 0.0444	0.004 - 0.444	*****	*****	0.14	1.4
Halcion (Triazolam)	0.002	0.02	*****	*****	*****	*****
Haldol (Haloperidol)	0.0006 - 0.0245	0.006 - 0.245	0.005 - 0.050	0.05 - 0.50	*****	*****
Haloperidol (Haldol)	0.0006 - 0.0245	0.006 - 0.245	0.005 - 0.050	0.05 - 0.50	*****	*****
Halothane (Fluothane)	2.2 - 26.0	22 - 260	*****	*****	20	200
Hexachlorophene (Phisohex)	0.0003 - 0.0650	0.003 - 0.650	*****	*****	0.22 - 3.5	2.2 - 35
Hismanol (Astemizole)	0.00004	0.0004	*****	*****	*****	*****
Hydralazine	0.02 - 0.09	0.2 - 0.9	*****	*****	*****	*****
Hydrochlorothiazide (Hydrodiuril)	0.007 - 0.038	0.07 - 0.38	*****	*****	*****	*****
Hydrocodone (Lortab, Vicodin)	0.003 - 0.025	0.03 - 0.25	0.05 - 0.2	0.5 - 2	0.07 - 1.2	0.7 - 12
Hydrodiuril (Hydrochlorothiazide)	0.007 - 0.038	0.07 - 0.38	*****	*****	*****	*****
Hydrogen Sulfide	*****	*****	*****	*****	0.092	0.92
Hydromorphone (Dilaudid)	0.0008 - 0.0049	0.008 - 0.049	****	*****	0.03	0.3
Hydroxychloroquine (Plaquenil)	0.0019 - 0.0210	0.019 - 0.210	*****	*****	6.1	61
Hydroxyzine (Atarax, Vistaril)	0.0022 - 0.008	0.022 - 0.08	*****	*****	0.4 - 3.9	4.2 - 39
Hyoscine (Scopolamine)	0.00003 - 0.0019	0.0003 - 0.019	*****	*****	0.189	1.89
Hyperstat (Diazoxide)	1.5 - 2.0	15 - 20	>10	>100	*****	*****
<b>I</b>						
Ibuprofen (Motrin)	1.7 - 4.9	17 - 49	8.4 - 70	84 - 700	*****	*****
Imitrex (Sumatriptan)	0.0024 - 0.0095	0.024 - 0.095	*****	*****	*****	*****
Imipramine (Tofranil)	0.015 - 0.0105	0.15 - 0.105	0.05 - 0.15	0.5 - 1.5	0.28 - 0.85	2.8 - 8.5



## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Imipramine (Tofranil)	0.015 - 0.025	0.15 - 0.25	*****	*****	*****	*****
[+met: Desipramine]						
Inderal (Propranolol)	0.001 - 0.034	0.01 - 0.34	0.2	2	0.8 - 1.2	8 - 12
Indocin (Indomethacin)	0.01 - 0.40	0.1 - 4	0.6	6	*****	*****
Indomethacin (Indocin)	0.01 - 0.40	0.1 - 4	0.6	6	*****	*****
INH (Isoniazid)	0.06 - 2.0	0.6 - 20	2 - 14.3	20 - 143	6.5 - 16.8	65 - 168
Invirase, Fortovase (Saquinavir)	0.011 - 0.11	0.11 - 1.1	*****	*****	*****	*****
Ionamin (Phentermine)	0.009 - 0.051	0.09 - 0.51	*****	*****	0.15 - 0.76	1.5 - 7.6
Iron	0.027 - 0.293	0.27 - 2.93	0.28 - 2.5	2.8 - 25	2 - 5	20 - 50
Ismelin (Guanethidine)	0.001	0.01	*****	*****	*****	*****
Isoflurane (Forane)	2.0 - 7.0	20.0 - 70.0	*****	*****	*****	*****
Isoniazid (INH)	0.06 - 2.0	0.6 - 20	2 - 14.3	20 - 143	6.5 - 16.8	65 - 168
Isopropanol	*****	*****	>40	>400	>150	>1500
Isoptin (Calan, Verapamil)	0.0055 - 0.0355	0.055 - 0.355	0.09	0.9	0.09 - 8.5	0.9 - 85
Isordil (Isosorbide Dinitrate)	0.0008 - 0.0038	0.008 - 0.038	*****	*****	*****	*****
Isosorbide Dinitrate (Isordil)	0.0008 - 0.0038	0.008 - 0.038	*****	*****	*****	*****
<b>K</b>						
Kemadrin (Procyclidine)	0.008 - 0.063	0.08 - 0.63	*****	*****	*****	*****
Ketamine	0.02 - 0.63	0.2 - 6.3	*****	*****	*****	*****
Ketoprofen (Orudis, Actron)	0.5 - 0.15	5 - 1.5	*****	*****	*****	*****
Ketorolac (Toradol)	0.087 - 0.45	0.87 - 4.5	*****	*****	*****	*****
Klonopin (Clonazepam)	0.0007 - 0.0075	0.007 - 0.075	*****	*****	*****	*****
Kwell (Lindane)	0.0001 - 0.0031	0.001 - 0.031	0.05	0.5	0.13	1.3
<b>L</b>						
Labetalol (Normodyne, Trandate)	0.0036 - 0.0271	0.036 - 0.271	*****	*****	*****	*****
Lamactal ( <i>Lamotrigine</i> )	0.20 - 1.90	2 - 19	1.5 - 3.6	15 - 36	*****	*****
Lamotrigine (Lamactal)	0.20 - 1.90	2 - 19	1.5 - 3.6	15 - 36	*****	*****
Lasix (Furosemide)	0.1 - 1.0	1 - 10	>2	>20	*****	*****
Lead	0.04	0.4	0.04 - 1.37	0.4 - 13.7	0.11 - 0.53	1.1 - 5.3
Leritine (Anileridine)	<0.05	<0.5	*****	*****	0.09 - 0.70	0.9 - 7.0
Levo-Dromoran (Levorphanol)	0.0007 - 0.0021	0.007 - 0.021	*****	*****	0.08 - 0.27	0.8 - 2.7
Levoprome (Methotrimeprazine)	0.002 - 0.0271	0.02 - 0.271	*****	*****	*****	*****
Levorphanol (Levo-Dromoran)	0.0007 - 0.0021	0.007 - 0.021	*****	*****	0.08 - 0.27	0.8 - 2.7
Librium (Chlordiazepoxide)	0.067 - 0.31	0.67 - 3.1	0.5	5	2	20
Lidocaine (Xylocaine)	0.15 - 0.50	1.5 - 5.0	0.7 - 2	7 - 20	>2.5	>25
Lindane (Kwell)	0.0001 - 0.0031	0.001 - 0.031	0.05	0.5	0.13	1.3
Lioresal (Baclofen)	0.01 - 0.06	0.1 - 0.6	0.11 - 0.35	1.1 - 3.5	*****	*****
Lisinopril (Prinivil, Zestril)	0.002 - 0.0082	0.02 - 0.082	*****	*****	*****	*****
Lithium	0.42 - 0.97	4.2 - 9.7	1.39	13.9	>3.47	>34.7
Lodine (Etodolac)	1.2 - 4.7	12 - 47	*****	*****	*****	*****
Lomotil (Diphenoxylate)	0.001 - 0.004	0.01 - 0.04	*****	*****	*****	*****
Lopressor (Metoprolol)	0.003 - 0.027	0.03 - 0.27	*****	*****	0.47 - 14.2	4.7 - 142
Loratadine (Claritin)	0.0007 - 0.0028	0.007 - 0.028	0.046	0.46	*****	*****
metabolite: descarboethoxyloratadine)	0.0007 - 0.0028	0.007 - 0.028	0.046	0.46	*****	*****
Lorazepam (Ativan)	0.001 - 0.024	0.01 - 0.24	0.03 - 0.06	0.3 - 0.6	*****	*****
Lortab (Hydrocodone, Vicodin)	0.003 - 0.025	0.03 - 0.25	0.05 - 0.2	0.5 - 2	0.07 - 1.2	0.7 - 12
Loxapine (Loxitane)	0.001 - 0.003	0.01 - 0.03	*****	*****	0.19 - 0.77	1.9 - 7.7

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Loxitan (Lorazepam)	0.001 - 0.003	0.01 - 0.03	*****	*****	0.19 - 0.77	1.9 - 7.7
LSD (Lysergic Acid Diethylamide, Lysergide)	*****	*****	0.0001 - 0.0009	0.001 - 0.009	*****	*****
Ludiomil (Maprotiline)	0.005 - 0.0718	0.05 - 0.718	0.024 - 0.080	0.24 - 0.80	0.2 - 1.3	2-13
Luvox (Fluvoxamine)	0.0031 - 0.0087	0.031 - 0.087				
Lysergic Acid Diethylamide (LSD, Lysergide)	*****	*****	0.0001 - 0.0009	0.001 - 0.009	*****	*****
Lysergide (LSD, Lysergic Acid Diethylamide)	*****	*****	0.0001 - 0.0009	0.001 - 0.009	*****	*****
<b>M</b>						
Magnesium	1.2 - 3.2	12 -32	8 - 12	80 -120	20 - 32	200 -320
Malathion	0.0 - 0.35	0.0 - 3.5	*****	*****	0.05 - 0.35	0.5 - 3.5
Manganese [serum values]	0.00002-0.00011	0.0002 - 0.0011	0.46	4.6	*****	*****
Maprotiline (Ludiomil)	0.005 - 0.0718	0.05 - 0.718	0.024 - 0.080	0.24 - 0.80	0.2 - 1.3	2-13
Marcaine (Bupivacaine)	0.022 - 0.345	0.22 - 3.45	1	10	*****	*****
Mazicon (Flumazenil, Romazicon)	0.0006 - 0.0039	0.006 - 0.039	*****	*****	*****	*****
MDA (3,4-Methylenedioxyamphetamine)	*****	*****	*****	*****	0.18 - 2.6	1.8 - 26
Mebaral (Mephobarbital)	0.05 - 0.35	0.5 - 3.5	*****	*****	*****	*****
Mefenamic Acid (Ponstel)	0.03 - 2.00	0.3 - 20.0	1.1 - 11.0	11 - 110	*****	*****
Mellaril (Thioridazine)	0.01 - 0.26	0.1 - 2.6	0.24 - 1.18	2.4 - 11.8	0.1 - 1.8	1 - 18
Mellaril (Thioridazine) [+met: Mesoridazine]	0.03 - 0.40	0.3 - 4.0	*****	*****	*****	*****
Meperidine (Demerol)	0.007 - 0.080	0.07 - 0.80	0.5	5	0.8 - 2.0	8 - 20
Mephenytoin (Mesantoin) [+met: N-Desmethyilmephenytoin]	2.5 - 4.0	25 - 40	5	50	*****	*****
Mephobarbital (Mebaral)	0.05 - 0.35	0.5 - 3.5	*****	*****	*****	*****
Mepivacaine (Carbocaine)	0.028 - 0.550	0.28 - 5.50	1	10	5	50
Meprobamate	0.2 - 2.6	2 - 26	6 - 10	60 -100	14 - 35	140 - 350
Mercury (Inorganic)	*****	*****	0.018 - 0.062	0.18 - 0.62	0.04 - 2.20	0.4 - 22.0
Mercury (Organic)	<0.008	<0.08	>0.02	>0.2	>0.06	>0.6
Mesantoin (Mephenytoin) [+met: N-Desmethyilmephenytoin]	2.5 - 4.0	25 - 40	5	50	*****	*****
Mesoridazine (Serentil)	0.118 - 0.352	1.18 - 3.52	*****	*****	0.3	3
Mestinon (Pyridostigmine)	40	400	*****	*****	*****	*****
Metaclopramide (Reglan)	0.0072 - 0.075	0.072 - 0.75	*****	*****	*****	*****
Metaxalone (Skelaxin)	29.6	296	*****	*****	*****	*****
Metformin (Glucophage)	0.1 - 0.4	1 - 4	4.5 - 7.0	45 - 70	*****	*****
Methadone (Dolophine)	0.0075 - 0.110	0.075 - 1.10	0.02 - 0.2	0.20 - 2.0	0.04 - 0.18	0.4 - 1.8
Methamphetamine	0.001 - 0.005	0.01 - 0.05	0.06 - 0.50	0.6 - 5.0	>1	>10
Methanol	*****	*****	20	200	>89	>890
Methaqualone (Quaalude)	0.04 - 0.80	0.4 - 8.0	1 - 3	10 - 30	>0.5	>5
Methazolamide (Neptazane)	4	40	*****	*****	*****	*****
Methocarbamol (Robaxin)	2.6 - 4.1	26 - 41	*****	*****	*****	*****
Methohexital	0.34 - 1.07	3.4 - 10.7	*****	*****	9.8	98
Methotrimeprazine (Levoprome)	0.002 - 0.0271	0.02 - 0.271	*****	*****	0.08 - 0.41	0.8 - 4.1
Methoxy-O-demethylencaïnide [met: Encainide]	0.006 - 0.028	0.06 - 0.28	*****	*****	*****	*****

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Methsuximide (Celontin)	1.0 - 4	10 - 40	4.4	>44	*****	*****
[as met: Desmethylnmethsuximide]						
Methyldopa	0.10 - 0.75	1.0 - 7.5	1	10	*****	*****
Methylene Chloride (Dichloromethane)	*****	*****	*****	*****	9.5 - 60	95 - 600
3-4-Methylenedioxyamphetamines (MDA)	*****	*****	*****	*****	0.18 - 2.6	1.8 - 26
Methylfentanyl (China White)	*****	*****	*****	*****	0.0002 - 0.0011	0.002 - 0.011
Methylphenidate (Ritalin)	0.001 - 0.006	0.01 - 0.06	0.08	0.8	0.23	2.3
Methyprylon (Noludar)	0.5 - 1.5	5 - 15	3 - 6	30 - 60	10	100
Metoprolol (Lopressor)	0.003 - 0.027	0.03 - 0.27	*****	*****	0.47 - 14.2	4.7 - 142
Mexiletine (Mexitil)	0.05 - 0.20	0.5 - 2.0	*****	*****	2.1 - 4.5	21 - 45
Mexitil (Mexiletine)	0.05 - 0.20	0.5 - 2.0	*****	*****	2.1 - 4.5	21 - 45
Mianserin	0.001 - 0.016	0.01 - 0.16	0.011 - 0.050	0.11 - 0.50	0.01 - 0.26	0.1 - 2.6
Midazolam (Versed)	0.008 - 0.025	0.08 - 0.25	*****	*****	*****	*****
Milontin (Phensuximide)	0.4 - 1.4	4 - 14	8 - 15	80 - 150	*****	*****
Mirtazapine (Remeron)	0.0039 - 0.018	0.039 - 0.18	*****	*****	*****	*****
Moclobemide	0.3	3	*****	*****	5.6 - 9.0	56 - 90
Molybdenum	0.0015	0.015	*****	*****	*****	*****
Morphine	0.01	0.10	*****	*****	0.005 - 0.400	0.05 - 4.00
Motrin (Ibuprofen)	1.7 - 4.9	17 - 49	8.4 - 70	84 - 700	*****	*****
Motofen (Difenoxin)	0.016	0.160	*****	*****	*****	*****
Moxifloxacin (Avelox)	0.45 - 1.44	4.5 - 14.4	*****	*****	*****	*****
Mysoline (Primidone)	0.2 - 1.9	2 - 19	5 - 8	50 - 80	10	100
<b>N</b>						
N-Acetylprocainamide (NAPA)	0.2 - 1.2	2 - 12	1.6	16	*****	*****
[met: Procainamide (Pronestyl)]						
N-Desalkylflurazepam	0.001 - 0.014	0.01 - 0.14	*****	*****	*****	*****
[met: Flurazepam (Dalmane)]						
N-Desmethyldiazepam (Nordiazepam)	0.01 - 0.26	0.1 - 2.6	>0.5	>5	*****	*****
[met: Clorazepate (Tranxene)]						
N-Desmethyldiazepam (Nordiazepam)	0.002 - 0.180	0.02 - 1.80	*****	*****	*****	*****
[met: Diazepam (Valium)]						
Nalfon (Fenoprofen)	2.7 - 6.6	27 - 66	*****	*****	71	710
Naloxone (Narcan)	0.001	0.01	*****	*****	*****	*****
NAPA (N-Acetylprocainamide)	0.2 - 1.2	2 - 12	1.6	16	*****	*****
[met: Procainamide (Pronestyl)]						
Naprosyn (Naproxen)	3.1 - 12	31 - 120	40	400	*****	*****
Naproxen (Anaprox)	3.1 - 12	31 - 120	40	400	*****	*****
Narcan (Naloxone)	0.001	0.01	*****	*****	*****	*****
Nardil (Phenelzine)	0.0001 - 0.0002	0.001 - 0.002	*****	*****	>0.15	>1.5
Navane (Thiothixene)	0.001 - 0.010	0.01 - 0.10	*****	*****	*****	*****
Nebcin (Tobramycin)	0.16 - 0.78	1.6 - 7.8	*****	*****	*****	*****
Nefazodone (Serzone)	0.01 - 0.12	0.1 - 1.2	*****	*****	*****	*****
Nembutal (Pentobarbital)	0.1 - 0.3	1 - 3	>0.5	>5	1.0 - 16.9	10 - 169
Neo-Synephrine (Phenylephrine)	0.003	0.03	*****	*****	*****	*****
Neptazane (Methazolamide)	4	40	*****	*****	*****	*****
Nesacaine (Chloroprocaine)	0.2 - 0.4	2 - 4	*****	*****	*****	*****
Neurontin (Gabapentin)	0.2 - 1.0	2 - 10	*****	*****	*****	*****

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Nicardipine (Cardene)	0.0036 - 0.015	0.036 - 0.150	*****	*****	*****	*****
Nickel	0.011	0.11	*****	*****	*****	*****
Nicotine	0.0004 - 0.0444	0.004 - 0.444	*****	*****	0.14	1.4
Nicotine (Transdermal)	0.0004 - 0.0031	0.004 - 0.031	*****	*****	*****	*****
(Prostep, Habitrol, Nicotrol)						
Nicotrol (Transdermal, Nicotine)	0.0004 - 0.0031	0.004 - 0.031	*****	*****	*****	*****
Nifedipine (Adalat, Procardia)	0.0015 - 0.0162	0.015 - 0.162	*****	*****	*****	*****
Nisentil (Alphaprodine)	0.087 - 0.100	0.87 - 1.00	*****	*****	*****	*****
Nitrite (Butyl Nitrite)	0.05 - 0.40	0.5 - 4	*****	*****	2.2	22
Nitro-Bid (Nitro-Dur, Nitroglycerin)	0.0002 - 0.0013	0.002 - 0.013	*****	*****	*****	*****
Nitro-Dur (Nitro-Bid, Nitroglycerin)	0.0002 - 0.0013	0.002 - 0.013	*****	*****	*****	*****
Nitrofurantoin (Furadantoin)	0.18	1.8	*****	*****	*****	*****
Nitroglycerin (Nitro-Bid, Nitro-Dur)	0.0002 - 0.0013	0.002 - 0.013	*****	*****	*****	*****
Nitroprusside [as met: Thiocyanate]	0.55 - 2.9	5.5 - 29	>10	>100	20	200
Nitrous Oxide	29 - 44	290 - 440	*****	*****	35	350
Noctec (Chloral Hydrate)	0.2 - 1.2	2 - 12	10	100	25	250
[as met: Trichloroethanol]						
Noludar (Methpyrlyon)	0.5 - 1.5	5 - 15	3 - 6	30 - 60	10	100
Nordiazepam (N-Desmethyldiazepam)	0.01 - 0.26	0.1 - 2.6	>0.5	>5.0	*****	*****
[met: Clorazepate (Tranxene)]						
Nordiazepam (N-Desmethyldiazepam)	0.002 - 0.180	0.02 - 1.80	*****	*****	*****	*****
[met: Diazepam (Valium)]						
Norfex (Orphenadrine)	0.003 - 0.085	0.03 - 0.85	0.2	2	0.4 - 0.8	4.0 - 8.0
Norfluoxetine [met: Fluoxetine (Prozac)]	0.0018 - 0.0466	0.018 - 0.466	*****	*****	0.09 - 0.5	0.9 - 5.0
Normodyne ( Labetalol, Trandate)	0.0036 - 0.0271	0.036 - 0.271	*****	*****	*****	*****
Norpace (Disopyramide)	0.2 - 0.6	2 - 6	0.7	7	2.6	26
Norpramin (Desipramine)	0.005 - 0.0684	0.05 - 0.684	>0.05	>0.5	1 - 2	10 - 20
[met: Imipramine (Tofranil)]						
Nortriptyline (Aventyl)	0.005 - 0.0375	0.05 - 0.375	0.05	0.5	1.3	13
[met: Amitriptyline (Elavil)]						
Norverapamil	0.0160 - 0.0207	0.160 - 0.207	*****	*****	*****	*****
[met: Verapamil (Calan, Isoptin)]	0.4 - 0.8	4 - 8	1	10	>2	>20
Norvir (Ritonavir)	1.1 - 6.6	11.2 - 66.0	*****	*****	*****	*****
Novocaine (Procaine)	0.02 - 1.30	0.2 - 13.0	>2.1	>21	*****	*****
<b>0</b>						
O-Demethylencaïnide [met: Encainide]	0.01 - 0.03	0.1 - 0.3	*****	*****	*****	*****
Olanzapine (Zyprexa)	0.0009 - 0.0023	0.009 - 0.023	*****	*****	0.12	1.2
Ondansetron (Zofran)	0.0022 - 0.0114	0.022 - 0.114	*****	*****	*****	*****
Orinase (Tolbutamide)	4.3 - 9.6	43 - 96	*****	*****	64	640
Orphenadrine (Norflex)	0.003 - 0.085	0.03 - 0.85	0.2	2	0.4 - 0.8	4.0 - 8.0
Orudis (Ketoprofen)	0.5 - 0.15	5 - 1.5	*****	*****	*****	*****
Oxalate	0.2	2	*****	*****	1 - 11	10 - 110
Oxaprozin (Daypro)	0.01 - 0.04	0.1 - 0.4				
Oxazepam (Serax)	0.015 - 0.140	0.15 - 1.4	>0.2	>2	*****	*****
Oxycodone (Percodan, Oxycontin)	0.001 - 0.010	0.01 - 0.10	0.02 - 0.50	0.2 - 5.0	*****	*****
Oxycontin (Oxycodone, Percodan)	0.001 - 0.010	0.01 - 0.10	0.02 - 0.50	0.2 - 5.0	*****	*****
Oxyphenbutazone (Tandearil)	1.1 - 11.8	11 - 118	*****	*****	*****	*****

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
<b>P</b>						
Pancuronium (Pavulon)	0.009 - 0.022	0.09 - 0.22	*****	*****	0.16	1.6
Papaverine	0.025 - 0.400	0.25 - 4.00	*****	*****	*****	*****
Paradione (Paramethadione)	0.11 - 0.50	1.1 - 5.0	*****	*****	*****	*****
Paraldehyde	2.0 - 33.2	20 - 332	20 - 40	200 - 400	>50	>500
Paramethadione (Paradione)	0.11 - 0.50	1.1 - 5.0	*****	*****	*****	*****
Para-Methoxyamphetamine (PMA)	*****	*****	*****	*****	0.02 - 0.49	0.2 - 4.9
Paraquat	*****	*****	0.06 - 0.32	0.6 - 3.2	>1.5	>15
Parathion	*****	*****	*****	*****	0.05 - 3.40	0.5 - 34.0
Parnate (Tranlycypromine)	0.005	0.05	*****	*****	*****	*****
Paroxetine (Paxil)	0.0031 - 0.0062	0.031 - 0.062	*****	*****	0.14 - 0.34	1.4 - 3.4
Pavulon (Pancuronium)	0.009 - 0.022	0.09 - 0.22	*****	*****	0.16	1.6
Paxil (Paroxetine)	0.0031 - 0.0062	0.031 - 0.062	*****	*****	0.14 - 0.34	1.4 - 3.3
PCP (Phencyclidine)	*****	*****	0.0007 - 0.0240	0.007 - 0.240	0.1 - 0.5	1 - 5
Pemoline (Cylert)	0.07 - 0.62	0.70 - 6.2	*****	*****	*****	*****
Pentachlorophenol	*****	*****	*****	*****	>4.6	>46
Pentazocine (Talwin)	0.003 - 0.100	0.03 - 1.00	0.2 - 0.5	2 - 5	>0.03	>0.3
Pentobarbital (Nembutal)	0.1 - 0.3	1 - 3	>0.5	>5	1.0 - 16.9	10 - 169
Pentothal (Thiopental)	0.1 - 4.2	1 - 42	>0.7	>7	1 - 40	10 - 400
Pentoxifylline (Trental)	0.006 - 0.16	0.06 - 1.6	*****	*****	>0.6	>6.0
Pepcid (Famotidine)	0.0007 - 0.0035	0.007 - 0.035	*****	*****	*****	*****
Percodan (Oxycodone)	0.001 - 0.010	0.01 - 0.10	0.02 - 0.50	0.2 - 5.0	*****	*****
Perphenazine (Trilafon)	0.00004-0.00300	0.0004 - 0.0300	0.1	1	*****	*****
Phenacetin	0.01 - 2.00	0.1 - 20.0	>3	>30	*****	*****
Phencyclidine (PCP)	*****	*****	0.0007 - 0.0240	0.007 - 0.240	0.1 - 0.5	1 - 5
Phendimetrazine	0.002 - 0.024	0.02 - 0.24	*****	*****	*****	*****
Phenelzine (Nardil)	0.0001 - 0.0002	0.001 - 0.002	*****	*****	>0.15	>1.5
Phenergan (Promethazine)	0.0006 - 0.0099	0.006 - 0.099	*****	*****	0.24 - 1.2	2.4 - 12
Phenmetrazine	0.004 - 0.024	0.04 - 0.24	*****	*****	0.4	4
Phenobarbital	1 - 4	10 - 40	4 - 6	40 - 60	>8	>80
Phenol	*****	*****	*****	*****	>4.6	>46
Phensuximide (Milontin)	0.4 - 1.4	4 - 14	8 - 15	80 - 150	*****	*****
Phentermine (Ionamin)	0.009 - 0.051	0.09 - 0.51	*****	*****	0.15 - 0.76	1.5 - 7.6
Phenylbutazone (Butazolidin)	1.6 - 15.0	16 - 150	20	200	40	400
Phenylephrine (Neo-Synephrine)	0.003	0.03	*****	*****	*****	*****
Phenylpropranolamine	0.003 - 0.048	0.03 - 0.48	*****	*****	>1	>10
Phenytoin (Dilantin, Diphenylhydantoin)	1 - 2	10 - 20	2 - 5	20 - 50	>10	>100
Phisoex (Hexachlorophene)	0.0003 - 0.0650	0.003 - 0.650	*****	*****	0.22 - 3.5	2.2 - 35
Phosphorus (Adult)	2.0 - 4.8	20 - 48	*****	*****	*****	*****
Phosphorus (Child)	4 - 7	40 - 70	*****	*****	*****	*****
Piroxicam (Feldene)	0.085 - 0.8	0.85 - 8.00	*****	*****	*****	*****
Placidyl (Ethchlorvynol)	0.05 - 0.88	0.5 - 8.8	*****	*****	2.2 - 21.3	22 - 213
Plaquenil (Hydroxychloroquine)	0.0019 - 0.0210	0.019 - 0.210	*****	*****	6.1	61
Plendil (Felodipine)	0.00015-0.00088	0.0015 - 0.0088	0.001 - 0.0015	0.01 - 0.015	*****	*****
PMA (Para-Methoxyamphetamine)	*****	*****	*****	*****	0.02 - 0.49	0.2 - 4.9
Polythiazide (Renese)	0.2 - 0.7	2 - 7	*****	*****	*****	*****
Pondimin (Fenfluramine)	0.004 - 0.030	0.04 - 0.3	0.07 - 0.09	0.7 - 0.9	0.6 - 1.5	6 - 15

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Ponstel (Mefenamic Acid)	0.03 - 2.00	0.3 - 20.0	1.1 - 11.0	11 - 110	*****	*****
Prazepam (Centrax)	0.001 - 0.004	0.01 - 0.04	*****	*****	*****	*****
Preludin (Phenmetrazine)	0.004 - 0.024	0.04 - 0.24	*****	*****	0.4	4
Prilocaine (Citanest)	0.1 - 0.5	1 - 5	*****	*****	*****	*****
Primidone (Mysoline)	0.2 - 1.9	2 - 19	5 - 8	50 - 80	10	100
Prinivil (Lisinopril, Zestril)	0.002 - 0.0082	0.02 - 0.082				
Probenecid (Benemid)	10 - 20	100 - 200	*****	*****	*****	*****
Procainamide (Pronestyl)	0.4 - 0.8	4 - 8	1	10	>2	>20
Procaine (Novocaine)	0.02 - 1.30	0.2 - 13.0	>2.1	>21	*****	*****
Procardia (Adalat, Nifedipine)	0.0015 - 0.0162	0.015 - 0.162	*****	*****	*****	*****
Prochlorperazine (Compazine)	*****	*****	>0.1	>1	0.5	5
Procyclidine (Kemadrin)	0.008 - 0.063	0.08 - 0.63	*****	*****	*****	*****
Prolixin (Fluphenazine)	0.00009-0.00170	0.0009 - 0.0170	*****	*****	*****	*****
Prograf (Tacrolimus)	0.0005 - 0.002	0.005 - 0.02	>0.003	>0.03	*****	*****
Promazine (Sparine)	*****	*****	>0.1	>1	>0.5	>5
Promethazine (Phenergan)	0.0006 - 0.0099	0.006 - 0.099	*****	*****	0.24 - 1.2	2.4 - 12
Pronestyl (Procainamide)	0.4 - 0.8	4 - 8	1	10	>2	>20
Propafenone (Rythmol)	0.0176 - 0.165	0.17 - 1.65	*****	*****	*****	*****
Proparacaine (Alcaine)	0.2 - 1.6	2 - 16	*****	*****	*****	*****
Propofal (Diprivan)	0.023 - 0.107	0.23 - 1.07	0.03 - 0.06	0.3 - 0.6	0.1 - 1.7	1-17
Propoxyphene (Darvon)	0.023 - 0.107	0.23 - 1.07	0.03 - 0.06	0.3 - 0.6	0.1 - 1.7	1-17
Propoxyphene (Darvon)	0.104 - 0.371	1.04 - 3.71	0.28 - 1.2	2.8 - 12	0.27 - 4.7	2.7 - 47
[+met: Norpropoxyphene						
Propranolol (Inderal)	0.6 - 71.1	6 - 711	*****	*****	*****	*****
Propylene Glycol	0.01 - 0.034	0.1 - 0.34	0.2	2	0.8 - 1.2	8 - 12
Propylhexedrine (Benzedrex)	0.001	0.01	*****	*****	0.2 - 0.3	2 - 3
Prosom (Estazolam)	0.0042 - 0.0100	0.042 - 0.100	0.125	1.25	*****	*****
Prostep (transdermal) (Nicotine)	0.0004 - 0.0031	0.004 - 0.031	*****	*****	*****	*****
Prothiaden (Dothiepin)	0.0017 - 0.0420	0.017 - 0.420	*****	*****	0.03 - 0.25	0.3 - 2.5
Protriptyline (Vivactil)	0.007 - 0.038	0.07 - 0.38	0.05 - 0.20	0.5 - 2.0	>0.1	>1
Prozac (Fluoxetine)	0.009 - 0.040	0.09 - 0.40	*****	*****	0.13 - 0.68	1.3 - 6.8
Pseudoephedrine (Sudafed)	0.050 - 0.077	0.50 - 0.77	*****	*****	1.9	19
Pyribenzamine (Tripelennamine)	0.006	0.06	*****	*****	1	10
Pyridostigmine (Mestinon)	40	400	*****	*****	*****	*****
<b>Q</b>						
Quaalude (Methaqualone)	0.04 - 0.80	0.4 - 8.0	1 - 3	10 - 30	>0.5	>5
Quazepam	1.1 - 14.8	11 - 148	*****	*****	*****	*****
Quetiapine (Serogrel)	0.0195 - 0.0632	0.195 - 0.632	1.3	13	*****	*****
Quinidine	0.10 - 0.60	1 - 6	1	10	3 - 5	30 - 50
Quinine	0.17 - 0.97	1.7 - 9.7	>1	>10	1.2	12
<b>R</b>						
Rantidine (Zantac)	0.0036 - 0.0094	0.036 - 0.094	*****	*****	*****	*****
Reglan (Metaclopramide)	0.0072 - 0.075	0.072 - 0.75	*****	*****	*****	*****
Remeron (Mirtazapine)	0.0039 - 0.018	0.039 - 0.18	*****	*****	*****	*****
Remifentanil (Ultiva)	0.0003 - 0.005	0.003 - 0.05	*****	*****	*****	*****
Renese (Polythiazide)	0.2 - 0.7	2 - 7	*****	*****	*****	*****
Repoise (Butaperazine)	0.002 - 0.069	0.02 - 0.69	*****	*****	*****	*****

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Restoril (Temazepam )	0.04 - 0.09	0.4 - 0.9	*****	*****	*****	*****
Retrovir (AZT, Zidovadine)	0.027 - 0.08	0.27 - 0.8	*****	*****	*****	*****
Rezulin (Troglitazone)	0.1 - 0.3	1 - 3	*****	*****	*****	*****
Risperdal (Risperidone)	0.0003 - 0.0012	0.003 - 0.012	*****	*****	*****	*****
Risperidone (Risperdal)	0.0003 - 0.0012	0.003 - 0.012	*****	*****	*****	*****
9-Hydroxy Risperidone	0.099	0.990	*****	*****	*****	*****
Ritalin (Methylphenidate)	0.001 - 0.006	0.01 - 0.06	0.08	0.8	0.23	2.3
Ritonavir (Norvir)	1.1 - 6.6	11.2 - 66.0	*****	*****	*****	*****
Robaxin (Methocarbamol)	2.6 - 4.1	26 - 41	*****	*****	*****	*****
Robinul (Glycopyrrolate)	0.005 - 0.0076	0.050 - 0.076	*****	*****	*****	*****
Robitussin (Guaifenesin)	0.04 - 0.14	0.4 - 1.4	21	210	*****	*****
Rofecoxib (Vioxx)	0.016 - 0.032	0.16 - 0.32	*****	*****	*****	*****
Rohypnol (Flunitrazepam)	0.006 - 0.0052	0.06 - 0.052	0.001 - 0.005	0.01 - 0.05	*****	*****
Romazicon (Flumazenil, Mazicon)	0.0006 - 0.0039	0.006 - 0.039	*****	*****	*****	*****
Rythmol (Propafenone)	0.0176 - 0.165	0.17 - 1.65	*****	*****	*****	*****
<b>S</b>						
Salicylamide	0.5	5.0	*****	*****	4	40
Salicylate	2 - 10	20 - 100	15 - 30	150 - 300	50	500
[met: Acetylsalicylic Acid - for normal usage]						
Salicylate	2 - 25	20 - 250	*****	*****	*****	*****
[met: Acetylsalicylic Acid-for rheumatoid arthritis]						
Sandimmune (Cyclosporine)	0.005 - 0.045	0.050 - 0.045	*****	*****	*****	*****
Sandoptal (Butalbital)	0.17 - 0.26	1.7 - 2.6	0.7 - 4	7 - 40	1.3 - 2.6	13 - 26
Saquinavir (Invirase, Fortovase)	0.011 - 0.11	0.11 - 1.1	*****	*****	*****	*****
Scopolamine (Hyoscine)	0.00003 - 0.0019	0.0003 - 0.019	*****	*****	0.189	1.89
Secobarbital (Seconal)	0.1 - 0.22	1 - 2.2	>0.3	>3	0.5 - 5.2	5 - 52
Seconal(Secobarbital)	0.1 - 0.22	1 - 2.2	>0.3	>3	0.5 - 5.2	5 - 52
Sectral (Acebutolol)	0.05 - 0.12	0.5 - 1.2	*****	*****	*****	*****
Seldane (Terfenadine) [as active metabolite]	0.0133 - 0.0423	0.133 - 0.423	*****	*****	*****	*****
Selegine (Eldepryl)	0.0009 - 0.0019	0.009 - 0.019	*****	*****	*****	*****
Serax (Oxazepam)	0.015 - 0.140	0.15 - 1.40	>0.2	>2	*****	*****
Serentil (Mesoridazine)	0.118 - 0.352	1.18 - 3.52	*****	*****	0.3	3
Seroflurane (Serofrane)	1.34	13.4	*****	*****	*****	*****
Serofrane (Seroflurane)	1.34	13.4	*****	*****	*****	*****
Serognel (Quetiapine)	0.0195 - 0.0632	0.195 - 0.632	1.3	13	*****	*****
Sertraline (Zoloft)	0.0055 - 0.025	0.055 - 0.25	*****	*****	*****	*****
Serzone (Nefazodone)	0.01 - 0.12	0.1 - 1.2	*****	*****	*****	*****
Sildenafil (Viagra)	0.0127 - 0.115	0.127 - 1.15	*****	*****	*****	*****
Simvastatin (Zocor)	0.00027-0.00056	0.0027 - 0.0056	*****	*****	*****	*****
Sinequan (Doxepin)	0.010 - 0.025	0.10 - 0.25	0.012 - 0.43	0.12 - 4.3	0.2 - 2.6	2 -26
Sinequan (Doxepin)	0.010 - 0.025	0.10 - 0.25	>0.05	>0.5	0.8 - 3.5	8 - 35
[+met: N-Desmethyldoxepin]						
Skelaxin (Metaxalone)	29.6	296	*****	*****	*****	*****
Sodium Aurothiomalate (Gold)	0.3 - 0.8	3 - 8	*****	*****	*****	*****
Soma (Carisoprodol)	1 - 4	10 - 40	3 - 5	30 - 50	11	110
Sparine (Promazine)	*****	*****	>0.1	>1	>0.5	>5
Stadol (Butorphanol)	0.00011-0.00017	0.0011 - 0.0017	*****	*****	*****	*****

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Stelazine (Trifluoperazine)	0.05 - 0.20	0.5 - 2.0	0.12 - 0.30	1.2 - 3.0	0.3 - 0.8	3 - 8
Strychnine	*****	*****	0.2	2	0.28 - 1.20	2.8 - 12.0
Sublimaze (Fentanyl)	0.001 - 0.010	0.01 - 0.10	*****	*****	*****	*****
Sudafed (Pseudoephedrine)	0.050 - 0.077	0.50 - 0.77	*****	*****	1.9	19
Sufenta (Sufentanil)	0.0001 - 0.0011	0.001 - 0.011	*****	*****	*****	*****
Sufentanil (Sufenta)	0.0001 - 0.0011	0.001 - 0.011	*****	*****	*****	*****
Sulfadiazine	8 - 15	80 - 150	*****	*****	*****	*****
Sulfaguanidine	3 - 5	30 - 50	*****	*****	*****	*****
Sulfanilamide	10 - 15	100 - 150	*****	*****	*****	*****
Sulfisoxazole	9 - 10	90 - 100	*****	*****	*****	*****
Sulindac (Clinoril)	0.4 - 0.5	4 - 5	*****	*****	*****	*****
Sumatriptan (Imitrex)	0.0024 - 0.0095	0.024 - 0.095	*****	*****	*****	*****
Surmontil (Trimipramine)	0.001 - 0.030	0.01 - 0.30	*****	*****	0.87 - 1.20	8.7 - 12.0
Symmetrel (Amantadine)	0.006 - 0.031	0.06 - 0.31	0.1 - 0.05	1 - 0.5	0.21 - 0.48	2.1 - 4.8
<b>T</b>						
Tacrolimus (Prograf)	0.0005 - 0.002	0.005 - 0.02	>0.003	>0.03	*****	*****
Tagamet (Cimetidine)	0.05 - 0.45	0.5 - 4.5	*****	*****	*****	*****
Talwin (Pentazocine)	0.003 - 0.100	0.03 - 1.00	0.2 - 0.5	2 - 5	>0.03	>0.3
Tambocar (Flecainide)	0.02 - 0.10	0.2 - 1.0	*****	*****	*****	*****
Tandearil (Oxyphenbutazone)	1.1 - 11.8	11 - 118	*****	*****	*****	*****
Taractan (Chlorprothixene)	0.004 - 0.030	0.04 - 0.30	0.04 - 0.08	0.4 - 0.8	*****	*****
Tegretol (Carbamazepine)	0.14 - 1.2	1.4 - 12	>1.5	>15	>5	>50
Temazepam (Restoril)	0.04 - 0.09	0.4 - 0.9	*****	*****	*****	*****
Tenormin (Atenolol)	0.02 - 0.07	0.20 - 0.70	3.5	35	*****	*****
Tenuate (Diethylpropion)	0.0007 - 0.0200	0.007 - 0.200	*****	*****	0.54	5.4
Terbutaline (Brethine)	0.0002 - 0.0006	0.002 - 0.006	*****	*****	0.004	0.04
Terfenadine (Seldane) [as active metabolite]	0.0133 - 0.0423	0.133 - 0.423	*****	*****	*****	*****
Tetrachloroethylene	*****	*****	*****	*****	0.45 - 4.0	4.5 - 44.0
Tetrahydrocannabinol (THC)	<0.019	<0.19	*****	*****	*****	*****
Thallium	<0.008	<0.08	>0.1	>1	0.05 - 1.10	0.5 - 11.0
THC (Tetrahydrocannabinol)	<0.019	<0.19	*****	*****	*****	*****
Theophylline (Aminophylline)	1 - 2	10 - 20	3 - 4	30 - 40	5 - 25	50 - 250
Thiocyanate	0.6 - 2.9	6 - 29	*****	*****	*****	*****
Thiocyanate [met: Nitroprusside]	0.55 - 2.9	5.5 - 29	>10	>100	20	200
Thiopental (Pentothal)	0.1 - 4.2	1 - 42	>0.7	>7	1 - 40	10 - 400
Thioridazine (Mellaril)	0.01 - 0.26	0.1 - 2.6	>0.5	>5	0.1 - 1.8	1 - 18
Thioridazine (Mellaril)	0.03 - 0.40	0.3 - 4.0	*****	*****	*****	*****
[+met: Mesoridazine]						
Thiothixene (Navane)	0.001 - 0.010	0.01 - 0.10	*****	*****	*****	*****
Thorazine (Chlorpromazine)	0.001 - 0.050	0.01 - 0.50	0.1 - 0.2	1 - 2	0.3 - 1.2	3 - 12
Tiagabine (Gabitol)	0.0001 - 0.0234	0.001 - 0.234	*****	*****	*****	*****
Tigan (Trimethobenzamide)	0.1 - 0.2	1 - 2	*****	*****	*****	*****
Timolol (Blocadren)	0.004 - 0.023	0.04 - 0.23	*****	*****	*****	*****
Tin	0.012 - 0.014	0.12 - 0.14	*****	*****	*****	*****
Tobramycin (Nebcin)	0.16 - 0.78	1.6 - 7.8	*****	*****	*****	*****
Tocainide (Tonocard)	0.4 - 1.0	4 - 10	*****	*****	*****	*****
Tofranil (Imipramine)	0.015 - 0.0105	0.15 - 0.105	0.05 - 0.15	0.5 - 1.5	0.28 - 0.85	2.8 - 8.5



## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
Tofranil (Imipramine) [+met: Desipramine]	0.015 - 0.025	0.15 - 0.25	*****	*****	*****	*****
Tolbutamide (Orinase)	4.3 - 9.6	43 - 96	*****	*****	64	640
Tolectin (Tolmetin)	3.7	37	>6	>60	*****	*****
Tolmetin (Tolectin)	3.7	37	>6	>60	*****	*****
Toluene	*****	*****	*****	*****	1	10
Tonocard (Tocainide)	0.4 - 1.0	4 - 10	*****	*****	*****	*****
Toradol (Ketorolac)	0.087 - 0.45	0.87 - 4.5	*****	*****	*****	*****
Tramadol (Ultram)	0.01 - 0.06	0.1 - 0.6				
Trancopal (Chlormezanone)	0.25 - 0.88	2.5 - 8.8	*****	*****	*****	*****
Trandate ( Labetalol, Normodyne)	0.0036 - 0.0271	0.036 - 0.271	*****	*****	*****	*****
Tranxene (Chlorazepate)	0.01 - 0.16	0.1 - 1.6	>0.5	>5.0	*****	*****
[as met: N-Desmethyldiazepam]						
Tranlycypromine (Parnate)	0.005	0.05	*****	*****	*****	*****
Trazodone (Desyrel)	0.07 - 0.489	0.7 - 4.89	*****	*****	1.5	15
Trental (Pentoxifylline)	0.006 - 0.16	0.06 - 1.6	*****	*****	>0.6	>6.0
Triazolam (Halcion)	0.002	0.02	*****	*****	*****	*****
Tribromoethanol	*****	*****	*****	*****	9	90
Trichloroethane	*****	*****	*****	*****	10 - 100	100 - 1000
Trichloroethanol	0.2 - 1.2	2 - 12	10	100	25	250
[met: Chloral Hydrate (Noctec)]						
Trichloroethylene	0.1 - 9.0	1 - 90	*****	*****	0.3 - 11.0	3 - 110
Tridione (Trimethadione)	1 - 3	10 - 30	*****	*****	*****	*****
Trifluoperazine (Stelazine)	0.05 - 0.20	0.5 - 2.0	0.12 - 0.30	1.2 - 3.0	0.3 - 0.8	3 - 8
Trilafon (Perphenazine)	0.00004-0.00300	0.0004 - 0.0300	0.1	1	*****	*****
Trimethadione (Tridione)	1 - 3	10 - 30	*****	*****	*****	*****
Trimethobenzamide (Tigan)	0.1 - 0.2	1 - 2	*****	*****	*****	*****
Trimethoprim (Trimpex)	0.1 - 0.2	1 - 2	*****	*****	*****	*****
Trimipramine (Surmontil)	0.001 - 0.030	0.01 - 0.30	*****	*****	0.87 - 1.20	8.7 - 12.0
Trimpex (Trimethoprim)	0.1 - 0.2	1 - 2	*****	*****	*****	*****
Tripelennamine (Pyribenzamine)	0.006	0.06	*****	*****	1	10
Tripolidine (Actidil)	0.0004 - 0.0044	0.004 - 0.044	*****	*****	*****	*****
Tubocurarine	0.004 - 0.600	0.04 - 6.00	*****	*****	*****	*****
Tylenol (Acetaminophen)	1 - 2	10 - 20	15	150	>16	>160
<b>U</b>						
Ultiva (Remifentanil)	0.0003 - 0.005	0.003 - 0.05	*****	*****	*****	*****
Ultram (Tramadol)	0.01 - 0.06	0.1 - 0.6				
Unisom ( Doxylamine)	0.0069 - 0.0138	0.069 - 0.138	*****	*****	0.07 - 1.2	0.7 - 12
Uric Acid	3 - 7	30 - 70	*****	*****	*****	*****
<b>V</b>						
Valium (Diazepam)	0.002 - 0.400	0.02 - 4.00	0.5 - 2.0	5 - 20	>3	>30
Valium (Diazepam)	0.031 - 0.600	0.31 - 6.00	*****	*****	>3.4	>34
[+met: N-Desmethyldiazepam]						
Valmid (Ethinamate)	0.4 - 1.1	4 - 11	*****	*****	10 - 20	100 - 200
Valproic Acid (Depakene)	5 - 10	50 - 100	0.71 - 20.0	7.1 - 200	*****	*****
Vancomycin	3 - 4	30 - 40	*****	*****	*****	*****
Vasotec (Enalapril)	0.00063 - 0.007	0.0063 - 0.070	*****	*****	*****	*****
Venlafaxine (Effexor)	0.007 - 0.393	0.07 - 3.93	*****	*****	*****	*****

## Drug and Chemical Blood Level Data - 2001

DRUG	Therapeutic or Normal		Toxic		Lethal	
	mg%	ug/ml	mg%	ug/ml	mg%	ug/ml
[met: O-Desmethylvenlafaxine]	0.0061 - 0.075	0.061 - 0.75	0.1 - 0.15	1 - 1.5	*****	*****
Verapamil (Calan, Isoptin)	0.0055 - 0.0355	0.055 - 0.355	0.09	0.9	0.09 - 8.5	0.9 - 85
Versed (Midazolam)	0.008 - 0.025	0.08 - 0.25	*****	*****	*****	*****
Viagra (Sildenafil)	0.0127 - 0.115	0.127 - 1.15				
Vicodin (Hydrocodone, Lortab)	0.003 - 0.025	0.03 - 0.25	0.05 - 0.2	0.5 - 2	0.07 - 1.2	0.7 - 12
Vioxx (Rofecoxib)	0.016 - 0.032	0.16 - 0.32	*****	*****	*****	*****
Vivactil (Protriptyline)	0.007 - 0.038	0.07 - 0.38	0.05 - 0.20	0.5 - 2.0	>0.1	>1
Vistaril (Atarax, Hydroxyzine,)	0.0022 - 0.008	0.022 - 0.08	*****	*****	0.4 - 3.9	4.2 - 39
Vistazine (Hydroxyzine)	0.008	0.08	1.3	13	3.9	39
Voltaren (Diclofenac, Cataflam)	0.075 - 0.20	0.75 - 2.0	0.6	6	*****	*****
<b>W</b>						
Warfarin (Coumadin)	0.10 - 0.31	1.0 - 3.1	*****	*****	*****	*****
Wellbutrin (Bupropion)	0.0025 - 0.0100	0.025 - 0.100	*****	*****	0.73	7.3
<b>X</b>						
Xanax (Alprazolam)	0.0025 - 0.0102	0.025 - 0.102	*****	*****	0.0122 - 0.039	0.122 - 0.390
Xylene	*****	*****	*****	*****	0.3 - 11.0	3 - 110
Xylocaine (Lidocaine)	0.15 - 0.50	1.5 - 5.0	0.7 - 2	7 - 20	>2.5	>25
<b>Y</b>						
Yocon (Yohimbine)	0.0046 - 0.029	0.046 - 0.290	*****	*****	*****	*****
Yohimbine (Yocon)	0.0046 - 0.029	0.046 - 0.290	*****	*****	*****	*****
<b>Z</b>						
Zantac (Rantidine)	0.0036 - 0.0094	0.036 - 0.094	*****	*****	*****	*****
Zarontin (Ethosuximide)	4 - 10	40 - 100	*****	*****	25	250
Zestril (Lisinopril, Prinivil)	0.002 - 0.0082	0.02 - 0.082				
Zidovadine (AZT, Retrovir)	0.027 - 0.08	0.27 - 0.8	*****	*****	*****	*****
Zilenton (Zyflo)	0.04 - 0.31	0.4 - 3.1	*****	*****	*****	*****
Zinc	0.068 - 0.136	0.68 - 1.36	*****	*****	*****	*****
Zocor (Simvastatin)	0.00027-0.00056	0.0027 - 0.0056	*****	*****	*****	*****
Zofran (Ondansetron)	0.0022 - 0.0114	0.022 - 0.114	*****	*****	*****	*****
Zolmitriptan (Zomig)	0.0029 - 0.0272	0.029 - 0.272	*****	*****	0.05 - 0.112	0.5 - 1.12
Zoloft (Sertraline)	0.0055 - 0.025	0.055 - 0.25	*****	*****	*****	*****
Zolpidem (Ambien)	0.0003 - 0.0018	0.003 - 0.018	*****	*****	*****	*****
Zomig (Zolmitriptan)	0.0029 - 0.0272	0.029 - 0.272	*****	*****	0.05 - 0.112	0.5 - 1.12
Zoxazolamine (Flexin)	0.3 - 1.3	3 - 13	*****	*****	*****	*****
Zyflo (Zilenton)	0.04 - 0.31	0.4 - 3.1	*****	*****	*****	*****
Zyprexa (Olanzapine)	0.0009 - 0.0023	0.009 - 0.023	*****	*****	0.12	1.2