

### Recommended Minimum Performance Limits for Common DFC Drugs and Metabolites in Urine Samples

Target Analytes	Parent Drug (Uses / Effects / Prevalence)	Trade Names / "Street Names"	Recommended Minimum Performance Limit
<b>Ethanol:</b>			
Ethanol	Ethanol	Alcohol, Ethyl Alcohol, "Booze"	0.01 gm% (g/dL)
<b>GHB and Analogs:</b>			
Gamma-Hydroxybutyrate	Gamma-Hydroxybutyrate	Xyrem , "GHB", Easy Lay", "G", "Georgia Home Boy", "Grievous Bodily Harm", "Liquid Ecstasy", "Liquid E", "Liquid G", "Liquid X", "Salty Water", "Scoop", "Soap"	10 mcg/mL
	1,4-Butanediol	"1,4-BD", "Enliven", "Inner G", "Revitalize Plus", "Serenity", "SomatoPro", "Sucol B", "Thunder Nectar", "Weight Belt Cleaner", "White Magic"	
	Gamma-Butyrolactone	"GBL", "Blue Nitro", "G3", "Gamma G", "G.H. Revitalizer", "Insom-X", "Invigorate", "Remforce", "Renewtrient", "Verve"	
<b>Benzodiazepines:</b>			
Many benzodiazepines are biotransformed into glucuronide-conjugated metabolites. To improve detection limits and times, it is recommended that laboratories use instrumental techniques that will detect the glucuronide metabolites <i>or</i> hydrolyze urine specimens to free the conjugate before extraction.			
Alprazolam $\alpha$ -Hydroxy-alprazolam	Alprazolam	Xanax , Niravam, Barrs,	10 ng/mL
Chlordiazepoxide Nordiazepam	Chlordiazepoxide	Librium , Libritabs	10 ng/mL
Clonazepam 7-Aminoclonazepam	Clonazepam	Clonapin, Klonopin , Rivotril	5 ng/mL
Diazepam Nordiazepam, Oxazepam, Temazepam	Diazepam	Valium , Diastat, Dizac,	10 ng/mL
Flunitrazepam 7-Aminoflunitrazepam	Flunitrazepam	Rohypnol	5 ng/mL
Lorazepam	Lorazepam	Ativan	10 ng/mL
Nordiazepam Oxazepam, Temazeapm	Diazepam, Chlordiazepoxide		10 ng/mL

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Oxazepam	Oxazepam, Diazepam, Chlordiazepoxide, Nordiazepam, Temazepam	Serax	10 ng/mL
Midazolam	Midazolam	Versed	10 ng/mL
Temazepam	Temazepam, Diazepam	Normison, Restoril	10 ng/mL
Triazolam	Triazolam	Halcion	5 ng/mL
4-Hydroxy-triazolam			
Nordiazepam, Oxazepam , Temazepam	Clorazepate	Tranxene, Azene, clorazepic acid	10 ng/mL
Phenazepam	Phenazepam	Fenazepam (used in Russia) available on the internet	10 ng/mL
<b>Marijuana:</b>			
11-carboxy-THC	Tetrahydrocannabinol (THC)	Marinol, Dronabinol, "Marijuana", <i>Cannabis sativa</i>	10 ng/mL
<b>Barbiturates:</b>			
Amobarbital	Amobarbital	Amytal	25 ng/mL
Butalbital	Butalbital	Esgic , Fioricet , Fiorpap , Fiorinal	
Pentobarbital	Pentobarbital, Thiopental	Nembutal	
Phenobarbital	Phenobarbital, Primidone	Luminal, phenobarbitone	
Secobarbital	Secobarbital	Seconal , Tuinal	20 ng/mL
Phenytoin	Phenytoin	Dilantin, diphenylhydantoin	25 ng/mL
<b>Over-the-Counter Medications:</b>			
Brompheniramine	Brompheniramine	Alatapp, Bromaline, Bromanate, Bromfed, Bromphen, Dimetane , Dimetapp , Myphetane, Polytine, Puretane,	10 ng/mL
Chlorpheniramine	Chlorpheniramine	Aller Chlor, Chlor-Trimeton, Coricidin, Deconamine, Efidac, Kronofed, Teldrin	10 ng/mL
Dextromethorphan	Dextromethorphan	Benylin, Romilar, Delsym	10 ng/mL
Diphenhydramine	Diphenhydramine	Banophen, Belix, Benadryl , Dermarest, Excedrin PM, Hydramine, Sleepinal, Sleep-Eze 3, Tylenol PM, Unisom Sleep Gels	
Doxylamine	Doxylamine	Unisom, Bendectin	
<b>Anti-Depressants/Antipsychotics:</b>			

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Amitriptyline	Amitriptyline	Elavil, Endep	10 ng/mL
Nortriptyline			
Nortriptyline	Nortriptyline	Pamelor, Aventyl	
Citalopram, Escitalopram/Norcitalopram	Citalopram	Celexa, Cipramil	10 ng/mL
Clozapine/Norclozapine	Clozapine	Clozaril, Leponex	
Desipramine	Desipramine, Imipramine	Norpramin, Pertofrane	10 ng/mL
Doxepin/Nordoxepin	Doxepin	Sinequan, Adapin, Zonalon, Prudoxin,	
Fluoxetine/Norfluoxetine	Fluoxetine	Prozac, Sarafem	10 ng/mL
Imipramine	Imipramine	Tofranil	10 ng/mL
Paroxetine		Asimia, Paxil	
Quetiapine/Norquetiapine/7-Hydroxyquetiapine	Quetiapine	Seroquel	
Sertraline/Norsertaline	Sertraline	Zoloft	10 ng/mL
Venlafaxine/Norvenlafaxine	Venlafaxine/Norvenlafaxine	Effexor/Pristiq	
<b>Narcotic and Non-Narcotic Analgesics:</b>			
Fentanyl/Norfentanyl	Fentanyl	Duragesic, Actiq, Sublimaze, Fentora	1 ng/mL
Buprenorphine/Norbuprenorphine	Buprenorphine	Buprenex.Suboxone	1 ng/mL
Codeine/Morphine	Codeine	Tylenol 3, Tylex	10 ng/mL
Hydrocodone/Hydromorphone/Hydrocodol/Dihydrocodeinone	Hydrocodone	Anexsia, Hycodan, Lorcet, Lortab, Norco, Panacet, Vicodin, Zydone	
Dihydrocodeine	Dihydrocodeine	Paramol/Remedeine	
Hydromorphone	Hydromorphone	Dilaudid, Palladone	
Meperidine/Normeperidine	Meperidine	Demerol, Mepergan	
Methadone/EDDP	Methadone	Dolophine, Methadose	
Morphine/Hydromorphone	Morphine	Avinza, Astramorph, Duramorph, Kadian, MSIR, MS Contin, Oramorph, Roxanol	
Oxycodone/Oxymorphone	Oxycodone	Oxycontin, Oxyir, Roxicodone, Percodan, Percocet, Percolone, Roxicet, Tylox	
Oxymorphone	Oxymorphone	Opana, Numorphan	
Propoxyphene/Norpropoxyphene	Propoxyphene	Darvocet, Darvon, Wygesic	
Tramadol	Tramadol	Ultram, Ultracet	

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Trazodone	Trazodone	Desyrel	
<b>Miscellaneous Drugs:</b>			
Carisoprodol/Meprobamate	Carisoprodol	Soma	50 ng/mL
Clonidine	Clonidine	Catapres, Combipres, Clorpres, Duraclon	1 ng/mL
Cyclobenzaprine/Norcyclobenzaprine	Cyclobenzaprine	Flexeril	10ng/mL
Ketamine/Norketamine	Ketamine	Ketalar, Ketaject, Special K	10 ng/mL
Hydroxyzine	Hydroxyzine	Vistaril, Atarax	10 ng/mL
Promethazine	Promethazine	Phenergan, Zipan	
Meprobamate	Meprobamate, Carisoprodol	Equagesic, Equanil, Micrainin, Miltown	50 ng/mL
Phencyclidine	Phencyclidine	PCP, Sernyl	10 ng/mL
Scopolamine	Scopolamine	Isopto Hyoscine, Scopace, Transderm Scop	
Valproic Acid	Valproic Acid	Depakote, Depacon, Depakene, Valproate	50 ng/mL
Zolpidem/Zolpidem metabolite	Zolpidem	Ambien	10 ng/mL
Zaleplon	Zaleplon	Sonata, Zerene	10 ng/mL
Zopiclone/Eszopiclone	Zopiclone	Lunesta, Zimovane	10 ng/mL
Ziprasidone	Ziprasidone	Geodon, Zeldox	10 ng/mL
Tetrahydrozoline	Tetrahydrozoline	Visine, Murine	10 ng/mL
<b>Stimulants:</b>			
Acute use of the drugs listed below do not possess the pharmacological effects typically associated with DFC drugs, due to their popularity, it is recommended that screens for these drugs and metabolites be conducted at the detection limits listed or better.			
Amphetamine	Amphetamine, Methamphetamine	Adderall,	50 ng/mL
Cocaine/ Benzoylcegonine	Cocaine	Coke	50 ng/mL
Methamphetamine/Amphetamine	Methamphetamine	Desoxyn, Crystal Meth, ICE, Speed	50 ng/mL
Methylenedioxyamphetamine	Methylenedioxyamphetamine	MDA,MDE, MDEA, Eve	10 ng/mL
Methylenedioxymethamphetamine/Methylenedioxyamphetamine	Methylenedioxymethamphetamine	MDMA, Ecstasy, XTC	10 ng/mL

**This is not a complete list of drugs encountered in DFC, just the more common ones. Use your specific case history and demographics to determine the most likely drug(s) in your case. This list was originally compiled by the DFSA Committee as a guidance document for laboratories performing analyses of samples from alleged DFSA victims. It was published in the**

### **Recommended Minimum Performance Limits for Common DFC Drugs and Metabolites in Urine Samples**

**December 2005 issue of ToxTalk. The DFC Committee continually updates this list as new drugs are reported in DFC case work. The purpose of this list is to improve the consistency in results generated by toxicology laboratories that analyze urine specimens from DFC cases. The detection limits are derived from the published or estimated concentration of single dose administration of these drugs, using analytical instrumentation considered standard in most laboratories today. The goal of this list is to encourage laboratories to evaluate their current capabilities, make improvements where necessary and to communicate to their customers if they cannot meet the recommended detection limits. Questions or comment regarding this list can be directed to the Chairman of the SOFT DFC Committee, Laureen Marinetti at LJTOXIMP@gmail.com**