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Some information on Drug Testing

Under the Federal guidelines, drug testing has two cutoff levels for positive detection. That is, labs that follow the guidelines consider drug testing to be negative if detection is below *either* cutoff level. In the case of urine analysis, drug testing cutoff levels are measured in nanograms per milliliter (ng/ml). For example, an initial screening for marijuana must show at least 50 ng/ml, and then confirmatory tests must prove at least 15 ng/ml. If the initial screening doesn't show at least at least 50 ng/ml, then it's considered to be negative and the confirmatory tests aren't performed.

But, to put it into perspective, a gram is only thirty-five thousandths (0.035) of an ounce, and a nanogram is a mere one-billionth (0.000000001 or 10^{-9}) of a gram. So, we're talking about microscopic particles measurable in only a few drops of urine. Molecules. Consequently, even infrequent, recreational drug use might cause employees to fail drug testing.

Basic testing typically screens for the following, commonly-abused drugs.

- Amphetamines (speed, meth, crank, ecstasy)
- Cannabinoids (marijuana, hash)
- Cocaine (coke, crack)
- Opiates (heroin, morphine, opium, codeine)
- Phencyclidine (PCP)

Extended testing might also screen for some or all of the following, but basic testing is the most common.

- Barbiturates (phenobarbital, butalbital, secobarbital)
- Benzodiazepines (tranquilizers like Valium, Librium, Xanax)
- Ethanol (ethyl alcohol, booze)
- Hallucinogens (LSD, mushrooms, mescaline, peyote)
- Inhalants (paint, glue, hair spray)
- Anabolic Steroids (synthesized, muscle-building hormones)

The tables below are compiled from public-domain information in the Mandatory Guidelines for Federal Workplace Drug Testing Programs. They are for urine analysis of the commonly-abused types of drugs known as the "SAMHSA Five."

Initial Drug Cutoff Levels	
Drug	**Nanograms per Milliliter (ng/ml)**
Marijuana metabolites	50
Cocaine metabolites	150
Opiate metabolites [1]	2000
Phencyclidine (PCP)	25
Amphetamines [2]	500

[1] Labs are permitted to initial test all specimens for 6-acetylmorphine at a 10 ng/ml cutoff
[2] Target analyte must be d-methamphetamine and the test must significantly cross-react with MDMA, MDA, and MDEA

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Confirmatory Drug Cutoff Levels	
Drug	**Nanograms per Milliliter (ng/ml)**
Marijuana metabolite [1]	15
Cocaine metabolite [2]	100
Opiates	
Morphine	2000
Codeine	2000
6-acetylmorphine [4]	10
Phencyclidine (PCP)	25
Amphetamines	
Amphetamine	250
Methamphetamine [3]	250
MDMA	250
MDA	250
MDEA	250

[1] Delta-9-tetrahydrocannabinol-9-carboxylic acid
[2] Benzoylecgonine
[3] Specimen must also contain d-amphetamine at a concentration ≥ 100 ng/ml
[4] Labs test for 6-acetylmorphine when the morphine concentration exceeds 2,000 ng/ml

Notes

As of September 3, 2001, SAMHSA last revised these cutoff levels in 1998 and considers them sound.

Other government entities might have their own specifications that differ from those above.

If you've never or rarely abused drugs, but happen to get some into your system close to the time you submit your specimen, like at a party where pot smoke fills the air, you'll come in at only about 5 ng/ml for marijuana metabolites. That's well below the cutoff level of 50 ng/ml, so you're safe. The tests are only for illegal drug use, too. If you're on legit prescription medications and have normal levels for such, you have nothing to fear. But if you're royally screwing up on the job because of your medication or the condition you're medicating, you might have to take medical or disability leave.

6-acetylmorphine (6-AM) is a heroin metabolite and also called 6-monoacetylmorphine (6-MAM). 6-AM is rapidly metabolized to morphine, so will not likely be detected in most urine specimens. But of course, morphine will likely be detected after recent heroin use. Because codeine is a naturally-occurring alkaloid in the opium poppy juice that is the source of morphine and heroin, it too might be in the urine of heroin users.

Codeine is rapidly metabolized and excreted in urine as codeine, morphine, or both. Morphine is a metabolite of codeine, but not the other way around, so ingestion of morphine will not account for the presence of codeine.

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The table below was published in September, 1999, by the National Institute on Drug Abuse (NIDA) It includes commonly-abused drugs, such as marijuana, cocaine, hash, methamphetamine and other amphetamines. The type of specimen (blood, hair or urine) to which the table refers is not clear. But the drug detection times are within the ranges reported by other sources for urine analysis, and it's the most commonly-used drug testing method by Federal government.

Commonly Abused Drugs					
Substance	Proprietary or **Street Names**	Medical Uses	Route of Administration	DEA Schedule	Drug Detection Times
Stimulants					
Amphet-amine	Biphetamine, Dexedrine; **Black Beauties, Crosses, Hearts**	Attention deficit hyperactivity disorder (ADHD), obesity, narcolepsy	Injected, oral, smoked, sniffed	II	1-2 days
Cocaine	**Coke, Crack, Flake, Rocks, Snow**	Local anesthetic, vasoconstrictor	Injected, smoked, sniffed	II	1-4 days
Metham-phetamine	Desoxyn; **Crank, Crystal, Glass, Ice, Speed**	ADHD, obesity, narcolepsy	Injected, oral, smoked, sniffed	II	1-2 days
Methyl-phenidate	Ritalin	ADHD, narcolepsy	Injected, oral	II	1-2 days
Nicotine	Habitrol patch, Nicorette gum, Nicotrol spray, Prostep patch; **Cigars, Cigarettes, Smokeless tobacco, Snuff, Spit tobacco**	Treatment for nicotine dependence	Smoked, sniffed, oral, transdermal	Not Scheduled	1-2 days
Hallucinogens and Other Compounds					
LSD	**Acid, Microdot**	None	Oral	I	8 hours
Mescaline	**Buttons, Cactus, Mesc, Peyote**	None	Oral	I	2-3 days
Phencyclidine & Analogs	PCP; **Angel Dust, Boat, Hog, Love Boat**	Anesthetic (veterinary)	Injected, oral, smoked	I, II	2-8 days
Psilocybin	**Magic Mushroom, Purple Passion, Shrooms**	None	Oral	I	8 hours
Amphet-amine variants	DOB, DOM, MDA, MDMA; **Adam, Ecstasy, STP, XTC**	None	Oral	I	1-2 days
Marijuana	**Blunt, Grass, Herb, Pot, Reefer, Sinsemilla, Smoke, Weed**	None	Oral, smoked	I	1 day - 5 weeks
Hashish	**Hash**	None	Oral, smoked	I	1 day - 5 weeks
Tetrahydro-cannabinol	Marinol, THC	Antiemetic	Oral, smoked	I, II	1 day - 5 weeks
Anabolic Steroids	Testosterone (T/E ratio), Stanazolol, Nandrolene	Hormone Replacement Therapy	Oral, injected	III	Oral: up to 3 weeks (for testosterone and others); Injected: up to 3 months (Nandrolene up to 9 months)
Opioids and Morphine Derivatives					
Codeine	Tylenol w/codeine, Robitussin A-C, Empirin w/codeine, Fiorinal w/codeine	Analgesic, antitussive	Injected, oral	II, III, IV	1-2 days
Heroin	Diacetylmorphine; **Horse, Smack**	None	Injected, smoked, sniffed	I	1-2 days
Methadone	Amidone, Dolophine, Methadose	Analgesic, treatment for opiate dependence	Injected, oral	II	1 day - 1 week
Morphine	Roxanol, Duramorph	Analgesic	Injected, oral, smoked	II, III	1-2 days

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Commonly Abused Drugs					
Substance	Proprietary or **Street Names**	Medical Uses	Route of Administration	DEA Schedule	Drug Detection Times
Opium	Laudanum, Paregoric; **Dover's Powder**	Analgesic, antidiarrheal	Oral, smoked	II, III, V	1-2 days
Depressants					
Alcohol	Beer, Wine, Liquor	Antidote for methanol poisoning	Oral	Not Scheduled	6-10 hours
Barbiturates	Amytal, Nembutal, Seconal, Phenobarbital; **Barbs**	Anesthetic, anticonvulsant, hypnotic, sedative	Injected, oral	II, III, IV	2-10 days
Benzo-diazepines	Ativan, Halcion, Librium, Rohypnol, Valium; **Roofies, Tranks, Xanax**	Antianxiety, anticonvulsant, hypnotic, sedative	Injected, oral	IV	1-6 weeks
Meth-aqualone	**Quaalude, Ludes**	None	Oral	I	2 weeks

* Drug Enforcement Agency (DEA) Schedule I and II drugs have a high potential for abuse. They require greater storage security and have a quota on manufacture among other restrictions. Schedule I drugs are available for research only and have no approved medical use. Schedule II drugs are available only through prescription, cannot have refills and require a form for ordering. Schedule III and IV drugs are available with prescription, may have 5 refills in 6 months and may be ordered orally. Most Schedule V drugs are available over the counter.