

## Rapid Analysis of Drugs (RAD) Compound Class List

Class Name	Definition	Compound Name
Amphetamines	A synthetic, mood-altering drug, used illicitly as a stimulant and medically as a prescription drug to treat children with ADD and adults with narcolepsy.	1,2-Dibromo-4,5-methylenedioxybenzene
		5-APB
		Amphetamine / Dextroamphetamine
		Benzphetamine
		Clobenzorex
		Fenethylamine
		Lisdexamfetamine
		Methamphetamine
		MMDPPA
		N,N-di( $\beta$ -phenylisopropyl)amine
		N,N-Dimethylamphetamine
		N-Acetylmethamphetamine
		N-Ethylamphetamine
		Phentermine
Ritalinic Acid		
$\alpha$ -Benzyl-N-methyl- $\beta$ -phenethylamine		
Anesthetics	A substance that induces insensitivity to pain.	Benzocaine
		Bupivacaine
		Butamben
		Dimethocaine
		Lidocaine
		Pramoxine
		Procaine
		Tetracaine
		Tropacocaine
Arylcyclohexylamines	A class of chemical compounds characterized by having a cyclohexylamine unit attached to an aryl moiety, commonly including PCP and BTCP.	PCC
		PCP
Barbituates	Any of a class of sedative and sleep-inducing drugs derived from barbituric acid.	Pentobarbital
Benzodiazepines	Any of a class of heterocyclic organic compounds used as tranquilizers	Alprazolam
		Bromazolam
		Chlordiazepoxide
		Clonazepam
		Desalkylgidazepam

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		Deschloroetizolam
		Diazepam
		Etizolam
		Flualprazolam
		Flubromazepam
		Lorazepam
		Meclonazepam
		Methylclonazepam
		Phenazolam
		Temazepam
Cocaine	A stimulant derived from coca or prepared synthetically.	Anhydroecgonine methyl ester (AEME)
		Benzoyllecgonine
		Cocaethylene
		Cocaine
		Ecgonine
		Hydroxycocaine
		Methylecgonidine
		Methylecgonine
		Tropinone
Contaminants	Any unwanted materials, compounds, or organisms that are present in a drug product but were not intentionally added during its manufacturing process.	Aniline
		Isopropylbenzylamine
		Phenacetin
Etomidate	A short-acting powerful non-barbiturate hypnotic agent used in general anesthesia.	Etomidate
Fentanyl & Fentanyl Analogs	Fentanyl is a synthetic opioid that is 50 to 100 times more potent than morphine. Fentanyl is the primary driver of overdose death in Maryland. Pharmaceutical fentanyl has been used in healthcare settings since the 1950s. Learn more: <a href="https://www.cdc.gov/stopoverdose/fentanyl/index.html">https://www.cdc.gov/stopoverdose/fentanyl/index.html</a> . This compound class also contains all precursors and byproducts.	3-Methylfentanyl
		Acetyl fentanyl
		Acrylfentanyl
		Carfentanil
		Despropionyl Methylfentanyl
		Fentanyl
		Fentanyl Carbamate (or isomer)
		Fluorofentanyl
		Furanylfentanyl
		Methoxy Valeryl fentanyl

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		Methyl Fentanyl para-Fluoroacetyl fentanyl Valeryl Fentanyl
Fentanyl Byproducts & Precursors	Molecules produced or left behind from chemical reactions of precursors or with intermediates during the production of fentanyl.	1-Phenethyl-4-propionyloxypiperidine 1-Phenethylpiperidin-4-ol 4-Anilino-boc-piperidine 4-Anilinopiperidine 4-ANPP 4-Piperidone Acetyl Norfentanyl Benzyl Carfentanil Butyryl norfentanyl Cyclopropyl norfentanyl Despropionyl Carfentanil Despropionyl Fluorofentanyl Ethyl 4-ANPP fluoro Phenethyl 4-ANPP N-(1-Phenethyl-4-piperidyl)-N-phenethylpropanamide Norfentanyl N-Phenethyl-N-phenylpropionamide NPP N-propionyl Norfentanyl ortho-methyl 4-AP-1-ethyl Carbamate Phenethyl 4-ANPP Piperidone Tetramethyl-4-AP Tetramethyl-4-Piperidinol
Fillers	These compounds are generally used to bulk the drug supply.	Antioxidant 425 Benzyl Benzoate Caprolactam Cholesterol Creatine Creatinine Dibutyl Sebacate

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		Dicalcium Phosphate
		Diethyl Phthalate
		Dimethyl Sulfone (MSM)
		Erucylamide
		Erythritol
		Flour
		Fructose
		Glutamine
		Glycerin
		Inositol
		Lactose
		Magnesium Sulfate
		Mannitol
		Methyl Palmitate
		Methyl Stearate
		Methylamine
		Microcrystalline Cellulose
		MSG
		Neotame
		Palmitic Acid
		Potassium Bitartrate
		Quinine
		Sodium Bicarbonate
		Starch
		Stearic Acid
		Sucrose
		Talc
		Terphenyl
		Tri(butoxyethyl) phosphate
		Triacetin
		Vitamin C
		Xylitol
Heroin & Related Compounds	A analgesic opioid derived from morphine and all precursors and byproducts.	6-Acetylcodeine
		6-Monoacetylmorphine

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		Heroin
		Heterocodeine
		m/z 384 - Not Identified
		Meconin
		N-Acetylnorheroin
		Narceine
		Noscapine
		Papaverine
		Thebaine
Ketamine	A dissociative anesthetic that has some hallucinogenic effects.	Ketamine
Ketamine Analogs	Ketamine analogs are a group of substances that share the arylcyclohexylamine backbone of ketamine, meaning they have a similar basic chemical structure. They are designed to produce similar dissociative effects through their activity on the N-methyl-D-aspartate (NMDA) receptor, which is the primary target of ketamine.	2-Fluorodeschloroketamine
		Deschloroketamine
		Methoxetamine (MXE)
Levamisole	A synthetic compound used as an anthelmintic drug	Levamisole
Lysergamides	A class of ergoline derivatives that are related to ergot alkaloids. These compounds are known for their diverse effects on serotonin.	LSD
Medetomidine	A veterinary sedative and analgesic drug used primarily in animals, particularly dogs. It's a synthetic compound that acts as an alpha-2 adrenergic receptor agonist, with a stronger bonding affinity than xylazine. Dexamedetomidine is approved for human use as a sedative in hospital settings. Learn more at: <a href="https://stopoverdose.maryland.gov/emerging-drugs/">https://stopoverdose.maryland.gov/emerging-drugs/</a>	Medetomidine
Naloxone	Naloxone, also known by a common brand, Narcan®, is a safe and effective antidote to opioid overdose. It has no potential for abuse, no street value, no contraindications, and works without training. Naloxone has saved lives in healthcare since the '70s and in the community since the '90s. Community distribution of naloxone to people likely to witness an overdose is a globally recognized best practice for overdose prevention. The Maryland Department of Health distributes naloxone to eligible ORPs, who provide it to the community at no cost. Find naloxone near you: <a href="https://health.maryland.gov/pha/NALOXONE/Pages/Approved-Entities.aspx">https://health.maryland.gov/pha/NALOXONE/Pages/Approved-Entities.aspx</a>	Naloxone
Nitazenes	A class of synthetic opioids that are emerging as a significant public health concern due to their extreme potency and involvement in drug overdoses.	Etodesnitazene
		Fluetonitazene
		Isotonitazene
		Methylenedioxynitazene
		Metonitazene

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		N-desethyl Etonitazene
		N-desethyl Isotonitazene
		Nitazene (pending confirmation)
		N-Pyrrolidino Etonitazene
		N-Pyrrolidino Fluetonitazene
		Protodesnitazene
		Protonitazene
No Compounds Detected	This DART-MS analysis did not produce results for a specific compound. NIST always performs confirmatory testing on these samples.	No Compounds Detected
No Entry	No recorded entry.	No Entry
Nonopioid Analgesics	Pain relievers that do not work by interacting with opioid receptors in the brain. They are often used for mild to moderate pain and can be helpful when combined with opioids for more severe pain.	Acetaminophen
		Metamizole
		Pregabalin
		Salicylamide
NSAIDS	A class of medications that reduce pain, inflammation, and fever.	Aminopyrine
		Aspirin
		Ibuprofen
		Ketoprofen
		Ketorolac
		Meloxicam
		Naproxen
		Piroxicam
Opioid Treatment Medications	FDA-approved drugs used to treat opioid use disorder (OUD), also known as addiction to opioids. These medications, including methadone, buprenorphine, and naltrexone, help manage the physical and psychological symptoms of OUD by reducing cravings, preventing withdrawal symptoms, and blocking the euphoric effects of opioids.	Buprenorphine
		Methadone
		Naltrexone
Orphine Analogs	An emergent subclass of novel synthetic opioids often referred to as “orphine analogues” (or more simply “orphines”) and bears structural similarity to other benzimidazolones (e.g., borphine, chlorphine). These drugs have ties to pharmaceutical drug discovery conducted in the 1960s and 1970s, beginning with substances like bezitramide and R-6890 (now referred to as “spirochlorphine”). The orphine analogues first emerged in recreational drug markets in 2020 with the proliferation of borphine (a drug first synthesized and published on in 2018). This novel opioid subclass continues to diversify, with at least six analogues confirmed in recent years.	5,6-Dichloro Brorphine (SR-14968)
		Brorphine, 5,6-Dichloro Desmethylchlorphine (SR-17018)
		Chlorphine
		N-Propionitrile Chlorphine
		Spirochlorphine (R-6890)

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Class Name	Definition	Compound Name
Other	<p>Compounds not listed in any above class.</p> <p>Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate (BTMPS) - a UV-light stabilizer that is part of the "Other" compound class. It is currently considered an emerging trend for illicit drugs to have BTMPS in the mixture. We have been reporting this compound separately from the compound class in this case due to the emergent nature of it's presence in MD.</p>	<p>1,4-Butanediol</p> <p>2,6-Xylidine</p> <p>Acephate</p> <p>Albuterol</p> <p>Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate</p> <p>Bromhexine</p> <p>Bulbocapnine</p> <p>Buspirone</p> <p>Carisoprodol</p> <p>Cephalexin</p> <p>Chloroquine</p> <p>Clindamycin</p> <p>Clonidine</p> <p>Clopidogrel</p> <p>Cyclobenzaprine</p> <p>DEET</p> <p>Dehydroabietic acid</p> <p>Diethylene Glycol Dibenzoate</p> <p>Guaifenesin</p> <p>Haloperidol</p> <p>Melatonin</p> <p>Metformin</p> <p>Methocarbamol</p> <p>Methylparaben</p> <p>Metoprolol</p> <p>Metronidazole</p> <p>Miconazole or Isoconazole</p> <p>Mirtazapine</p> <p>Nicotinamide</p> <p>N-Methyl-2-pyrrolidone (NMP)</p> <p>Olanzapine</p> <p>Oleamide</p> <p>Permethrin</p> <p>Phenoxybenzyl alcohol</p>

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		Phenylephrine Piracetam Plasticizers Propranolol Resmethrin Salicylic Acid Sildenafil Sulfamethoxazole Sulfanilamide Tadalafil Tetracycline Theobromine Tilorone Toluenesulfonamide Triethanolamine Triisopropanolamine Trimethoprim Vanillin Yohimbine α-Tocopherol Acetate
Other Novel Synthetic Opioids	A relatively new group of psychoactive substances that have appeared on the illicit drug market. This category is for the non-fentanyl NSO, which are structurally different from fentanyl but also act on opioid receptors.	Furanyl UF-17 U-47700 W-19
Other Opioids	Any drugs that act on the nervous system to relieve pain, not listed above. They can be natural, synthetic, or semi-synthetic.	7-Hydroxy mitragynine Codeine Dihydro-7-hydroxy Mitragynine Hydrocodone Hydromorphone Mitragynine Morphine Norhydrocodone O-Desmethyltramadol Oxycodone Oxymorphone

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		Paynantheine
		Tapentadol
		Tramadol
Other Sedatives	A drug that promotes calm or inducing sleep, not listed separately above.	Amitriptyline
		Dextromethorphan
		Diphenhydramine
		Doxylamine
		Ephedrine
		Gabapentin
		GBL
		GHB
		Hydroxyzine
		Phenibut
		Pheniramine
		Promethazine
		Pyrilamine
		Quetiapine
		Tianeptine
		Trazodone
		Zolpidem
Other Stimulants	Includes any drugs that increase alertness, besides those listed above.	Arterenol Bitartrate
		Bromantane
		Caffeine
		Cotinine
		Ephedrine
		Methylphenidate
		Modafinil
		Nicotine
Phenethylamines	A class of substances with documented psychoactive and stimulant effects.	(±)-threo-4-Fluoromethylphenidate
		2C-B
		2C-E
		2C-H
		2C-I
		2-Phenethylamine

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		Allylescaline
		Hordeanine
		MDA
		MDMA
		Mescaline
		Methallyescaline
		Methylenedioxyethamphetamine (MDEA)
Sample Not Tested	The sample was unable to be tested likely because it contained biohazard material on the swab used for testing.	Sample Not Tested
Steroids	Any of a large class of organic compounds with a characteristic molecular structure containing four rings of carbon atoms. They include many hormones, alkaloids, and vitamins.	17 $\beta$ -Estradiol
		Estradiol Enanthate
		Estradiol Valerate
		Fluoxymesterone
		Methandrostenolone
		Prednisone
		Testosterone
		Testosterone Caproate
		Testosterone Cypionate
		Testosterone Decanoate
		Testosterone Enanthate
		Testosterone Phenylpropionate
		Testosterone Propionate
Synthetic Cannabinoids	A class of lab-made substances that are chemically similar to chemicals found in the cannabis plant.	5-fluoro ADB
		AB-MDMSBA
		ADB-BUTINACA
		JWH-018
		MDMB-4en-PINACA
		MDMB-INACA
Synthetic Cathinones	A class of lab-made stimulants chemically related to substances found in the khat plant, causing a stimulant effect. They are commonly known as bath salts.	2-MMC
		3,4-Methylenedioxy-N-benzylcathinone
		3,4-Methylenedioxy- $\alpha$ -Cyclohexylaminopropiophenone
		3-MMC (Metaphedrone)

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		4-MMC (Mephedrone) 5-MAPB Buphedrone Bupropion Cathinone isomer Chlorocathinone Eutylone MDBP MDPHP MDPV N,N-Cyclohexyl-methyl-3,4-methylenedioxcathinone N,N-Dimethylpentylone N-cyclohexyl Methylone N-ethylheptedrone N-ethylhexedrone N-Ethylpentylone Synthetic Cathinone (m/z 178) Synthetic Cathinone (m/z 192) Synthetic Cathinone (m/z 206) Synthetic Cathinone (m/z 250) Tertylone α-PiHP α-PVP α-Pyrrolidinocyclohexanophenone α-Pyrrolidinoisheptanophenone
THC & Related Compounds	The primary psychoactive compound in cannabis, primarily known for its mind-altering effects, It is a type of cannabinoid	Cannabidiol Cannabidivarin Cannabinol THC (or isomer) THCA-A
Tryptamines	A type of indolamine, a chemical compound derived from the amino acid tryptophan - includes serotonin, melatonin, and the psychedelic drug DMT.	4-AcO-DET 4-AcO-DMT 4-AcO-DPT 4-AcO-EPT

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		4-AcO-MET
		4-AcO-MiPT
		4-HO-DiPT
		4-HO-MALT
		4-HO-MET
		4-HO-MiPT
		4-HO-MPT
		4-HO-NiPT
		4-MeO-DMT
		4-MeO-MiPT
		5-MeO-DiPT
		5-MeO-MALT
		5-MeO-MET
		5-MeO-MiPT (Moxie)
		5-MeO-NiPT
		Dipropyltryptamine (DPT)
		DiPT
		DMT
		DPT
		MALT
		MeO-DMT
		MiPT
		MPT
		N-Methyl-N-Ethyltryptamine
		Psilocin / Psilocybin
		Tryptamine
		Tryptamine (pending confirmation)

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Xylazine	A veterinary sedative used for sedation, muscle relaxation, and pain relief in animals. It's a synthetic compound that acts as an alpha-2 adrenergic receptor agonist. It is not approved for human use due to its potentially harmful effects on the central nervous system, including severe sedation and lowered blood pressure. Often called "tranq". Xylazine is not an opioid. It is often mixed and sold with fentanyl, as well as other opioids, and has been seen with cocaine, methamphetamine, and other illicitly manufactured depressants. Xylazine has been associated with injuries to skin and mucous membranes regardless of the way the substance is used. Learn more at: <a href="https://stopoverdose.maryland.gov/emerging-drugs/">https://stopoverdose.maryland.gov/emerging-drugs/</a>	Xylazine