

Stimulant Analytical Standards

Stimulants belong to a diverse group of psychoactive drugs whose function exerts a constant contribution to hyperactivity and impulse control. Illegal stimulant derivatives including amphetamines, arylcyclohexylamines, cathinones, cocaine/tropanes, phenethylamines, and piperazines are among the most widely abused across the US and Europe. However, the popularity of each substance, particularly in party culture settings, is frequently changing. Cayman offers more than 850 analytical standards for the identification of stimulants and is dedicated to working with the forensic community to quickly make reference standards available for new psychoactive substances (NPS). A library of GC-MS spectral data containing many of Cayman's emerging stimulant standards is freely available for download at www.caymanchem.com/CSL.



ACCREDITED
ISO/IEC 17025 #AT-1773
ISO 17034 #AR-1774

More than 850 Stimulant Standards Available for:

- Amphetamines
- Arylcyclohexylamines
- Cathinones
- Cocaine & Tropanes
- Indanes
- Phenethylamines
- Piperazines
- And More

Tools for Rapid Screening of Stimulants

NEW: Amphetamine Analytical Standards Panel

Item No. 31615

- Contains 150 analytical reference materials and standards categorized as stimulants, including amphetamines, amphetamine metabolites, and precursors in the synthesis of amphetamines
- 100 µg/well in a 96-well plate format for rapid screening or cataloging
- Use with our Cathinone, Phenethylamine, and Atypical Stimulants analytical standards panels (Item Nos. 31616, 31617, 31618) to expand your testing to 586 analytes



See pages 3 and 4 for more information on the Cathinone and Phenethylamine Analytical Standards Panels

Mass Spec Mixtures

Item No.	Product Name	Contains	Applications
9002346	Chloropseudoephedrine (hydrochloride)/ Chloroephedrine (hydrochloride) Mixture	A mixture of two diastereomer contaminants produced during the illicit manufacture of (+)-methamphetamine from pseudoephedrine or ephedrine	HPLC-UV, GC-MS
9002662	Cocaine/Heroin/Methamphetamine Mixture (CRM)	A CRM mixture of cocaine, heroin, and methamphetamine	LC-MS, GC-MS

Custom Stimulant Mixtures, Screening Panels, and Plates Available
Email sales@caymanchem.com to discuss your specific project needs

Amphetamines

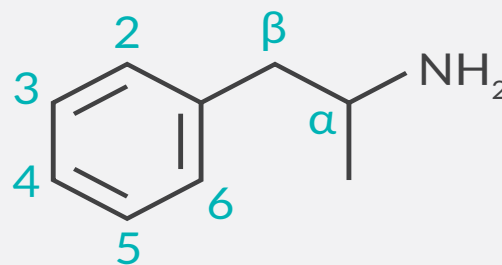
Amphetamine is a synthetic derivative of phenylethylamine, a naturally occurring substance found in chocolate, cheeses, and some wines that looks similar in structure to dopamine. The addition of a methyl group attached to the α -carbon of the phenylethylamine side chain protects amphetamine from degradation by monoamine oxidases, which enables the effects of amphetamine to persist. While variations of the amphetamine scaffold have been developed by pharmaceutical companies for treatment of ADHD, appetite suppression, or to slow the progression of Parkinson's disease (e.g., Adderall, phentermine, and selegiline), designer drug chemists attempting to skirt DEA regulations have also made modifications to the basic amphetamine structure.

Parent Compounds

Item No.	Product Name
ISO60188	(\pm)-Amphetamine (hydrochloride) (CRM) *
11556	N,N-DMA (hydrochloride)
12038	4-chloro-2,5-DMA (hydrochloride)
13885	DOI (hydrochloride)
14143	(+)-Ephedrine (hydrochloride)
13896	(\pm)- <i>threo</i> -Ethylphenidate (hydrochloride)
11420	2-Fluoromethamphetamine (hydrochloride)
9001070	4-Fluoromethamphetamine (hydrochloride)
17208	3-Fluorophenmetrazine (hydrochloride)
26305	N-Isopropylbenzylamine (hydrochloride)
27044	Lisdexamfetamine (mesylate) (CRM) *
ISO60189	(\pm)-MDA (hydrochloride) (CRM) *
ISO60196	3,4-MDEA (hydrochloride) (CRM) *
13970	2,3-MDMA (hydrochloride)
ISO60190	3,4-MDMA (hydrochloride) (CRM) *
9002345	N-hydroxy MDMA (hemioxalate)
ISO60168	(\pm)-Methamphetamine (hydrochloride) (CRM) *
26615	(+)-Methamphetamine (hydrochloride) (CRM) *
26616	(-)-Methamphetamine (hydrochloride) (CRM) *
11639	(\pm)- <i>threo</i> -Methylphenidate (hydrochloride)
ISO60198	Phentermine (hydrochloride) (CRM) *
12058	Propylhexedrine (hydrochloride)

* Compound also available as a neat or crystalline solid

Common Modifications of the Amphetamine Core



Amino group can be:

- Mono-alkylated (with methyl, ethyl, etc.) to form a secondary amine
- Di-alkylated (symmetrically or asymmetrically) with alkyl groups to form a tertiary amine

Phenyl ring can be:

- Mono-substituted or multi-substituted with alkyl groups, alkoxy groups, halogens, etc.
- Fused with another ring system such as methylenedioxo, furan, pyrrole, etc.

Metabolites

Item No.	Product Name
14204	D-Amphetamine (hydrochloride)
9001830	4-hydroxy Amphetamine (hydrochloride)
9002853	4-hydroxy Amphetamine Glucuronide (trifluoroacetate salt)
30531	3,4-Dihydroxyamphetamine (hydrochloride)
19208	N-Formylamphetamine (CRM)
14195	HMMA (hydrochloride)
9002128	4-Hydroxymethamphetamine (hydrochloride)
14196	4-hydroxy-3-Methoxyamphetamine (hydrochloride)
9001345	4-Methylmethamphetamine (hydrochloride)
15915	Ritalinic Acid
22604	3-Trifluoromethylamphetamine (hydrochloride)

Discover Our Article Series: Stimulant Use and Abuse: From Past to Present
www.caymanchem.com/amphetamines

Cathinones

Parent Compounds

Item No.	Product Name
36884	N-cyclohexyl Butylone (hydrochloride)
17394	3-Chloromethcathinone (hydrochloride)
35165	3,4-Methylenedioxy- α -Cyclohexylaminopropiophenone (hydrochloride)
24432	4-chloro-N,N-Dimethylcathinone (hydrochloride)
31085	N,N-Dimethylpentylone (hydrochloride) (CRM) *
27239	bk-DMBDB (hydrochloride) (CRM) *
29672	Eutylone (hydrochloride) (CRM) *
14280	α -Ethylaminopentiophenone (hydrochloride)
35366	3,4-Methylenedioxy- α -Isopropylaminobutiophenone (hydrochloride)
11224	3-Methylmethcathinone (hydrochloride)
36426	N-cyclohexyl-N-methyl Methylone (hydrochloride)
21651	2-methyl-4 ¹ -(methylthio)-2-Morpholinopropiophenone
36334	N-methyl-N-propyl Methylone (hydrochloride)
24337	N-ethyl Pentylone (hydrochloride) (CRM) *
30892	3,4-Methylenedioxy- α -propylaminobutiophenone (hydrochloride)
29146	α -Pyrrolidinohexanophenone (hydrochloride) (CRM) *
31719	α -Pyrrolidino-2-phenylacetophenone (hydrochloride)
21682	α -Pyrrolidinoisohexanophenone (hydrochloride)
16361	3,4-Methylenedioxy- α -Pyrrolidinohexanophenone (hydrochloride)
31050	4-fluoro-3-methyl- α -Pyrrolidinovalerophenone (hydrochloride)

* Compound also available as a neat solid

High-throughput Cathinone Screening & Cataloging

Cathinone Analytical Standards Panel

Item No. 31616

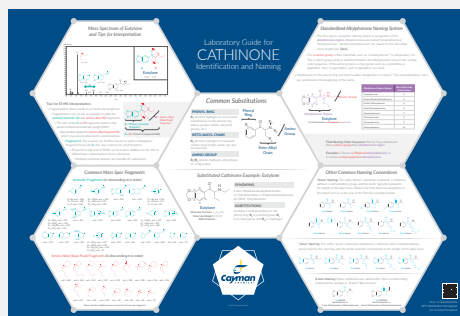
- Contains 239 analytical reference materials and standards categorized as cathinones and cathinone metabolites
- 100 μ g/well in a 96-well plate format for rapid screening or cataloging



Cathinone Lab Guide Wall Poster

In this laboratory guide for cathinone identification and naming, we cover:

- Common Substitutions
- Mass Spectrum of Eutylone and Tips for Interpretation
- Common Mass Spec Fragments
- A Standardized Alkylphenone Naming System
- Other Common Naming Conventions



Download PDF or request a physical copy of this poster at

www.caymanchem.com/cathinoneposter

Metabolites

Item No.	Product Name
35016	Butylone (hydrochloride) (CRM) *
14756	Mephedrone metabolite (hydrochloride) ((\pm)-Ephedrine stereochemistry)
9001434	Mephedrone metabolite (hydrochloride) ((\pm)-Pseudoephedrine stereochemistry)
9000940	nor-Mephedrone (hydrochloride)
31346	α -Pyrrolidinohexanophenone metabolite (hydrochloride)
14093	α -Pyrrolidinopentiophenone metabolite 1 (trifluoroacetate salt)

* Compound also available as a neat solid

Isotopically Labeled Standards

Item No.	Product Name
22487	Bupropion-d ₉ (hydrochloride) (CRM) *
28819	Butylone-d ₃ (hydrochloride) (CRM) *
31629	Eutylone-d ₅ (hydrochloride)
26246	Mephedrone-d ₃ (hydrochloride) (CRM)
18732	Methylone-d ₃ (hydrochloride) (CRM)
19204	α -Pyrrolidinopentiophenone-d ₈ (hydrochloride) (CRM) *

* Compound also available as a neat solid

Arylcyclohexylamines, Phenethylamines, & More

Arylcyclohexylamines

Item No.	Product Name
33962	Deoxymethoxetamine (hydrochloride)
25688	Deschloroketamine (hydrochloride) (CRM) *
35118	Fluorexetamine (hydrochloride)
19389	Ketamine (hydrochloride) (CRM) *
14105	deschloro-N-ethyl-Ketamine (hydrochloride)
30248	Methoxpropamine (hydrochloride)
36722	2-fluoro-2-oxo PCE (hydrochloride)
26877	3-hydroxy PCE (hydrochloride)
ISO60194	PCP (hydrochloride) (CRM) *
31042	3-fluoro PCP (hydrochloride)
14421	3-hydroxy PCP (hydrochloride)
17014	Tenocyclidine (hydrochloride)

* Compound also available as a neat solid

Phenethylamines

Item No.	Product Name
11734	2C-B (hydrochloride)
11889	2C-H (hydrochloride)
11113	2C-I (hydrochloride)
18327	Ephedrine (hydrochloride)
11473	2C-B-FLY (hydrochloride)
31132	2C-I-FLY (hydrochloride)
11950	Mescaline (hydrochloride)
18328	25B-NBOH (hydrochloride)
14909	25I-NBOH (hydrochloride)
ISO60117	25I-NBOMe (hydrochloride) (CRM) *
14206	2-Phenethylamine (hydrochloride)
14476	Sibutramine (hydrochloride)

* Compound also available as a neat solid

High-throughput Phenethylamine Screening & Cataloging

Phenethylamine Analytical Standards Panel

Item No. 31617

- Contains 71 analytical reference materials and standards categorized as phenethylamines
- 100 µg/well in a 96-well plate format for rapid screening or cataloging



Piperazines

Item No.	Product Name
25523	BZP (hydrochloride) (CRM) *
14793	2C-B-BZP (hydrochloride)
13949	1-(3-Chlorophenyl)piperazine (hydrochloride)
19273	1-(3-Methoxyphenyl)piperazine
11205	1-(3-Trifluoromethylphenyl)piperazine (hydrochloride)
11206	1,4-Dibenzylpiperazine (hydrochloride)
14296	2,3-Dichlorophenylpiperazine (hydrochloride)
11203	Phenylpiperazine (hydrochloride)
18165	Trimetazidine (hydrochloride)

* Compound also available as a neat solid

Cocaine, Tropanes, & Metabolites

Item No.	Product Name
ISO60186	Benzoylcegonine (CRM) *
20860	Benzoylcegonine-d ₃ (CRM)
28820	Cocaethylene (CRM)
ISO60176	Cocaine (CRM) *
19423	Cocaine-d ₃ (CRM)
20062	2'-hydroxy Cocaine
28492	Norcocaine (hydrochloride)
14108	Scopolamine (hydrobromide)
18063	Tropacocaine (hydrochloride)

* Compound also available as a neat solid

View a complete list of stimulants at www.caymanchem.com/forensics