

Reference Standards Analysis of Explosives

Individual Standards
including TATP, HMTD,
HNS & others.

EPA Method 8330

EPA Method 529

EPA Method 8095

DIN 38407-21

Custom Standards &
Synthesis



EXPLOSIVES
AccuStandard

Explosive Standards

Explosives reference standards have classically been used for the remediation of soil and water in locations where explosives have been stored. In recent years, these standards have also been used to calibrate luggage screening detectors at airports and secure locations such as embassies. The other major use is to train animals to sniff out explosives, such as the dogs used by police departments and the military.

AccuStandard offers 57 single analyte compounds such as TATP, TEGDN, HMTD, PETN and others. These are offered as dilute solutions.

Widest selection of
Explosives and their
Metabolites

EXCLUSIVELY
from AccuStandard

HMTD,
TATP &
HNS

Explosives					
Compound	CAS No.	Conc.	Matrix	Cat. No.	1 mL
2-Amino-4,6-dinitrotoluene ♦	35572-78-2	1 mg/mL	AcCN:MeOH	M-8330-13	
		0.1 mg/mL	AcCN:MeOH	M-8330-13-0.1X	
4-Amino-2,6-dinitrotoluene ♦	19406-51-0	1 mg/mL	AcCN:MeOH	M-8330-14	
		0.1 mg/mL	AcCN:MeOH	M-8330-14-0.1X	
Ammonium picrate	131-74-8	0.1 mg/mL	AcCN	M-8330-ADD-27	
DEGDN	693-21-0	100 µg/mL	AcCN:MeOH	M-8330-ADD-36	
1,2-Diaminopropane	78-90-0	0.1 mg/mL	MeOH	M-8330-ADD-9	
2,4-Diamino-6-nitrotoluene ♦	6629-29-4	0.1 mg/mL	AcCN	M-8330-ADD-12	
2,6-Diamino-4-nitrotoluene ♦	59229-75-3	0.1 mg/mL	AcCN	M-8330-ADD-13	
2,3-Dimethyl-2,3-dinitrobutane (DMNB)	3964-18-9	100 µg/mL	AcCN	M-8330-ADD-21	
3,5-Dinitroaniline	618-87-1	0.1 mg/mL	AcCN:MeOH	M-8330-ADD-4	
1,2-Dinitrobenzene	528-29-0	1 mg/mL	MeOH	M-8330-SS	
1,3-Dinitrobenzene	99-65-0	1 mg/mL	AcCN:MeOH	M-8330-01	
		0.1 mg/mL	AcCN:MeOH	M-8330-01-0.1X	
1,2-Dinitroglycerin	621-65-8	100 µg/mL	AcCN:MeOH	M-8330-ADD-33	
1,3-Dinitroglycerin	623-87-0	100 µg/mL	AcCN:MeOH	M-8330-ADD-34	
2,4-Dinitrotoluene ♦	121-14-2	1 mg/mL	AcCN:MeOH	M-8330-02	
		0.1 mg/mL	AcCN:MeOH	M-8330-02-0.1X	
2,6-Dinitrotoluene ♦	606-20-2	1 mg/mL	AcCN:MeOH	M-8330-03	
		0.1 mg/mL	AcCN:MeOH	M-8330-03-0.1X	
3,4-Dinitrotoluene	610-39-9	1 mg/mL	MeOH	M-8330-IS	
3,5-Dinitrotoluene ♦	618-85-9	100 µg/mL	AcCN:MeOH	M-8330-ADD-39	
EGDN	628-96-6	0.1 mg/mL	AcCN	M-8330-ADD-5	
Erythritol tetranitrate (ETN) NEW	7297-25-8	0.1 mg/mL	AcCN	M-8330-ADD-47	
		1 mg/mL	AcCN	M-8330-ADD-47-10X	
Guanidine nitrate	506-93-7	0.1 mg/mL	MeOH	M-8330-ADD-10	
Hexahydro-1,3-trinitroso-1,3,5-triazine NEW	13980-04-6	0.1 mg/mL	AcCN	M-8330-ADD-46	
		1 mg/mL	AcCN	M-8330-ADD-46-10X	
Hexamethylene diperoxide diamine (HMDD) NEW		0.1 mg/mL	AcCN	M-8330-ADD-45	
		1 mg/mL	AcCN	M-8330-ADD-45-10X	
Hexanitrodiphenylamine	131-73-7	100 µg/mL	AcCN:MeOH	M-8330-ADD-37	
Hexanitrostilbene (HNS) ♦	20062-22-0	0.1 mg/mL	AcCN	M-8330-ADD-26	
Hexamethylenetriperoxide diamine (HMTD)	283-66-9	0.1 mg/mL	AcCN	M-8330-ADD-25	
HMX	2691-41-0	1 mg/mL	AcCN:MeOH	M-8330-04	
		0.1 mg/mL	AcCN:MeOH	M-8330-04-0.1X	
Hydrazine	302-01-2	0.1 mg/mL	MeOH	M-8330-ADD-8	
2-Hydroxylamino-4,6-dinitrotoluene ♦ (3 month stability)		0.1 mg/mL	AcCN	M-8330-ADD-18	
4-Hydroxylamino-2,6-dinitrotoluene ♦ (3 month stability)		0.1 mg/mL	AcCN	M-8330-ADD-20	
Nitrobenzene ♦	98-95-3	1 mg/mL	AcCN:MeOH	M-8330-06	
		0.1 mg/mL	AcCN:MeOH	M-8330-06-0.1X	
N-Nitrodimethylamine	4164-28-7	100 µg/mL	AcCN	M-8330-ADD-40	
Nitroglycerin	55-63-0	0.1 mg/mL	EtOH	M-8330-ADD-1	
		1.0 mg/mL	EtOH:MeOH (97:3)	M-8330-ADD-1-10X	
1-Nitroglycerin	624-43-1	100 µg/mL	AcCN:MeOH	M-8330-ADD-31	
2-Nitroglycerin	620-12-2	100 µg/mL	AcCN:MeOH	M-8330-ADD-32	
Nitroguanidine	556-88-7	0.1 mg/mL	MeOH	M-8330-ADD-6	
Nitromethane	75-52-5	0.1 mg/mL	MeOH	M-8330-ADD-7	
2-Nitrotoluene ♦	88-72-2	1 mg/mL	AcCN:MeOH	M-8330-07	
		0.1 mg/mL	AcCN:MeOH	M-8330-07-0.1X	
3-Nitrotoluene ♦	99-08-1	1 mg/mL	AcCN:MeOH	M-8330-08	
		0.1 mg/mL	AcCN:MeOH	M-8330-08-0.1X	
4-Nitrotoluene ♦	99-99-0	1 mg/mL	AcCN:MeOH	M-8330-09	
		0.1 mg/mL	AcCN:MeOH	M-8330-09-0.1X	
PETN	78-11-5	0.1 mg/mL	MeOH	M-8330-ADD-2	
		1 mg/mL	MeOH	M-8330-ADD-2-10X	
Picramic acid	831-52-7	100 µg/mL	AcCN:MeOH	M-8330-ADD-22	
Picric acid	88-89-1	0.1 mg/mL	AcCN:MeOH	M-8330-ADD-3	
Propyleneglycol dinitrate	6423-43-4	100 µg/mL	MeOH	M-8330-ADD-35	
PYX	38082-89-2	0.1 mg/mL	AcCN	M-8330-ADD-11	
RDX	121-82-4	1 mg/mL	AcCN:MeOH	M-8330-05	
		0.1 mg/mL	AcCN:MeOH	M-8330-05-0.1X	
TATP	17088-37-8	0.1 mg/mL	AcCN	M-8330-ADD-24	
TEGDN		0.1 mg/mL	AcCN	M-8330-ADD-41	
2,2',6,6'-Tetranitro-4,4'-azotoluene ♦		0.1 mg/mL	AcCN	M-8330-ADD-17	
4,4',6,6'-Tetranitro-2,2'-azotoluene ♦		0.1 mg/mL	AcCN	M-8330-ADD-19	
2,2',6,6'-Tetranitro-4,4'-azoxytoluene ♦		0.1 mg/mL	AcCN	M-8330-ADD-15	
Tetryl	479-45-8	1 mg/mL	AcCN:MeOH	M-8330-10	
		0.1 mg/mL	AcCN:MeOH	M-8330-10-0.1X	
TNT	118-96-7	1 mg/mL	AcCN:MeOH	M-8330-11	
		0.1 mg/mL	AcCN:MeOH	M-8330-11-0.1X	
1,3,5-Triamino-2,4,6-trinitrobenzene	3058-38-6	40 µg/mL	DMF	M-8330-ADD-14-DMF	
2,4,6-Triaminotoluene trihydrochloride	634-87-7	10 mg	NEAT	M-8330-ADD-23N	
Trimethylolethane trinitrate	3032-55-1	100 µg/mL	AcCN:MeOH	M-8330-ADD-28	
1,3,5-Trinitrobenzene ♦	99-35-4	1 mg/mL	AcCN:MeOH	M-8330-12	
		0.1 mg/mL	AcCN:MeOH	M-8330-12-0.1X	
2,4,6-Trinitroresorcinol	82-71-3	1 mg/mL	AcCN:MeOH	M-8330-ADD-29	

Technical Note

These explosives reference standards are shipped in a highly dilute solution form and are in compliance with all regulations from DOT, ATF&E and other authorities.

Matrix Key

(SOLUTIONS in 1 mL
NEATS in mg)

AcCN:MeOH in (1:1 ratio)
AcCN Acetonitrile
DMF Dimethyl formamide
EtOH Ethanol
MeOH Methanol

♦ TNT Metabolites

Explosive Standards

AccuStandard offers mixtures for use when analyzing to US EPA Methods 8330, 8095 and 529, German DIN 38407-21 and others.

AccuStandard also manufactures custom formulations for unique requirements.



Method 8330 Multi-Component Formulations for Explosive Analysis

The following A and B mixes provide better resolution between possible coeluting analytes, assisting the chemist to optimize the HPLC system. We suggest when first performing Method 8330 development, to purchase the high concentration 14 x 1 mL set "M-8330-R-10X-SET".

Mix A

M-8330A * 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (1:1) 7 comps.

M-8330A-10X * 1 x 1 mL

1.0 mg/mL each in AcCN:MeOH (1:1) 7 comps.

1,3-Dinitrobenzene	RDX
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene
HMX	TNT
Nitrobenzene	

Mix B

M-8330B * 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (1:1) 5 comps.

M-8330B-10X * 1 x 1 mL

1.0 mg/mL each in AcCN:MeOH (1:1) 5 comps.

Tetryl	3-Nitrotoluene
2,6-Dinitrotoluene	4-Nitrotoluene
2-Nitrotoluene	

M-8330A-R * 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (1:1) 8 comps.

M-8330A-R-10X * 1 x 1 mL

1.0 mg/mL each in AcCN:MeOH (1:1) 8 comps.

2-Amino-4,6-dinitrotoluene	Nitrobenzene
1,3-Dinitrobenzene	RDX
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene
HMX	TNT

M-8330B-R * 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (1:1) 7 comps.

M-8330B-R-10X * 1 x 1 mL

1.0 mg/mL each in AcCN:MeOH (1:1) 7 comps.

2-Amino-4,6-dinitrotoluene	2-Nitrotoluene
4-Amino-2,6-dinitrotoluene	3-Nitrotoluene
Tetryl	4-Nitrotoluene
2,6-Dinitrotoluene	

Composite Explosive Mixture

M-8330-R 1 x 1 mL

M-8330-R-PAK 5 x 1 mL

1.0 mg/mL each in MeOH:AcCN (1:1) 14 comps.

1,3-Dinitrobenzene	3-Nitrotoluene
2,4-Dinitrotoluene	4-Nitrotoluene
2,6-Dinitrotoluene	Tetryl
HMX	TNT
RDX	1,3,5-Trinitrobenzene
Nitrobenzene	2-Amino-4,6-dinitrotoluene
2-Nitrotoluene	4-Amino-2,6-dinitrotoluene

M-8330B-R2 * 1 x 1 mL

0.1 mg/mL each in AcCN:MeOH (1:1) 6 comps.

M-8330B-R2-10X * 1 x 1 mL

1.0 mg/mL each in AcCN:MeOH (1:1) 6 comps.

4-Amino-2,6-dinitrotoluene	2-Nitrotoluene
Tetryl	3-Nitrotoluene
2,6-Dinitrotoluene	4-Nitrotoluene

Internal Standard

M-8330-IS 1 x 1 mL

M-8330-IS-PAK 5 x 1 mL

1.0 mg/mL in MeOH

3,4-Dinitrotoluene

Surrogate Standard

M-8330-SS 1 x 1 mL

1.0 mg/mL in MeOH

1,2-Dinitrobenzene

Explosives by HPLC Set

M-8330-R-SET * 14 x 1 mL

Each at 100 µg/mL in AcCN:MeOH (1:1)

M-8330-R-10X-SET * 14 x 1 mL

Each at 1000 µg/mL in AcCN:MeOH (1:1)

1,3-Dinitrobenzene (01)	3-Nitrotoluene (08)
2,4-Dinitrotoluene (02)	4-Nitrotoluene (09)
2,6-Dinitrotoluene (03)	Tetryl (10)
HMX (04)	TNT (11)
RDX (05)	1,3,5-Trinitrobenzene (12)
Nitrobenzene (06)	2-Amino-4,6-dinitrotoluene (13)
2-Nitrotoluene (07)	4-Amino-2,6-dinitrotoluene (14)

* To delay premature breakdown of thermally labile products in transit a ColdPAK is required.

Explosive Standards

Method 529 Explosive & Related Compounds by SPE & Capillary Column GC/MS

Method 529 Calibration Curve

All in µg/mL in Ethyl acetate

M-529-	01	02	03	04	05	06	07	08	09
2-Amino-4,6-dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
4-Amino-2,6-dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
3,5-Dinitroaniline	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
1,3-Dinitrobenzene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
2,4-Dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
2,6-Dinitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
RDX	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
Nitrobenzene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
2-Nitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
3-Nitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
4-Nitrotoluene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
1,3,5-Trinitrobenzene	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
Tetryl	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10
TNT	0.025	0.05	0.10	0.25	0.50	1.0	2.0	5.0	10

Internal Standard Stock Solution

M-529-IS

2.0 mg/mL Ethyl acetate

1 x 1 mL

3,4-Dinitrotoluene

Internal Standard Fortification Solution

M-529-ISFS

200 µg/mL each in Ethyl acetate

1 x 1 mL

14 comps.

2-Amino-4,6-dinitrotoluene
4-Amino-2,6-dinitrotoluene
3,5-Dinitroaniline
1,3-Dinitrobenzene
2,4-Dinitrotoluene
2,6-Dinitrotoluene
RDX

Nitrobenzene
2-Nitrotoluene
3-Nitrotoluene
4-Nitrotoluene
1,3,5-Trinitrobenzene
Tetryl
TNT

Surrogate Analyte Stock Solutions

M-529-SS1

M-529-SS1-PAK

1000 µg/mL each in MeOH

1 x 1 mL

5 x 1 mL

2 comps.

SAVE

1,3,5-Trimethyl-2-nitrobenzene

1,2,4-Trimethyl-5-nitrobenzene

M-529-SS2

M-529-SS2-PAK

1000 µg/mL each in CH₂Cl₂

1 x 1 mL

5 x 1 mL

SAVE

Nitrobenzene-d₅

Surrogate Analyte Fortification Solution

M-529-SAFS

100 µg/mL each in MeOH

1 x 1 mL

3 comps.

1,3,5-Trimethyl-2-nitrobenzene

1,2,4-Trimethyl-5-nitrobenzene

Nitrobenzene-d₅



Explosive Standards

Method 8095 Explosives by GC/ECD

This method is a companion to EPA Method 8330, utilizing the sensitivity and selectivity of the ECD.

Explosive Stock Solution A

M-8095-SSA-100X	SAVE	1 x 1 mL
M-8095-SSA-100X-PAK		5 x 1 mL
100 µg/mL each in AcCN:MeOH (1:1)		10 comps.
2-Amino-4,6-dinitrotoluene	1,3,5-Trinitrobenzene	
4-Amino-2,6-dinitrotoluene	TNT	
1,3-Dinitrobenzene	RDX	
2,6-Dinitrotoluene	Tetryl	
2,4-Dinitrotoluene	HMX	

Explosive Stock Solution B

M-8095-SSB-100X	SAVE	1 x 1 mL
M-8095-SSB-100X-PAK		5 x 1 mL
At stated conc. in AcCN:MeOH (1:1)		7 comps.
Nitrobenzene (500 µg/mL)	Nitroglycerin (500 µg/mL)	
3-Nitrotoluene (500 µg/mL)	PETN (500 µg/mL)	
2-Nitrotoluene (500 µg/mL)	3,5-Dinitroaniline (100 µg/mL)	
4-Nitrotoluene (500 µg/mL)		

Explosive Surrogate Standards

M-8095-SS-01	SAVE	1 x 1 mL	M-8095-SS-03	SAVE	1 x 1 mL
M-8095-SS-01-PAK		5 x 1 mL	M-8095-SS-03-PAK		5 x 1 mL
100 µg/mL in AcCN			10 µg/mL in AcCN		
3,4-Dinitrotoluene			2,5-Dinitrotoluene		

M-8095-SS-02	SAVE	1 x 1 mL
M-8095-SS-02-PAK		5 x 1 mL
100 µg/mL in AcCN		
2-Methyl-4-nitroaniline		

Miscellaneous Explosive Standards

DIN 38407-21 Explosives

Examination of water, wastewater, and sludge for determination of selected explosives and related compounds by HPLC with UV detection

DIN38407-21-A 1 x 1 mL
10 µg/mL each in MeOH 12 comps.

Picric acid	Nitroglycerin
HMX	TNT
RDX	2-Nitrotoluene
Tetryl	PETN
EGDN	4-Nitrotoluene
DEGDN	3-Nitrotoluene

DIN 38407-21 Related Compounds

Examination of water, wastewater, and sludge for determination of selected explosives and related compounds by HPLC with UV detection

DIN38407-21-B 1 x 1 mL
10 µg/mL each in MeOH:AcCN (98:2) 8 comps.

1,3,5-Trinitrobenzene
1,3-Dinitrobenzene
4-Amino-2,6-dinitrotoluene
2,2',4,4',6,6'-Hexanitrodiphenylamine
2-Amino-4,6-dinitrotoluene
2,6-Dinitrotoluene
2,4-Dinitrotoluene
Diphenylamine

Gun Surveillance Standard

EXP-GSS 1 x 1 mL
At stated conc. (µg/mL) in AcCN 9 comps.

Dimethyl phthalate	200	2,2'-Dinitrodiphenylamine	50
2,4'-Dinitrodiphenylamine	50	4,4'-Dinitrodiphenylamine	50
2,4-Dinitrodiphenylamine	50	Diphenylamine	200
2-Nitrodiphenylamine	50	N-Nitrosodiphenylamine	75
4-Nitrodiphenylamine	50		

Synthesis Department

We developed the procedures and synthesized these Explosives and Metabolites in response to customer requirements.



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