

Explosive standards are traditionally used for the remediation of soil and water in locations where explosives have been stored. These same standards are being used to calibrate baggage screening detectors at airports and other secure locations (embassies and other government buildings). They also are used by police departments, government agencies (i.e. TSA, Homeland Security) and the military in K-9 odor recognition training for explosives. Recent advances in analytical instrumentation have demonstrated detection in the part per trillion range.¹

AccuStandard has working relationships with both government and private sector K-9 training facilities and laboratories that provide valuable information and insight into the latest developments in explosives.

To assist in all aspects of explosive detection and analysis, we synthesize an array of explosives as well as metabolites, degradation products, and raw materials. AccuStandard is the only U.S. commercial source for TATP, HMTD, and HNS. On-going work in this area has resulted in the recent addition of 3,3,6,6-Tetramethyl-1,2,4,5-tetraoxane (Diacetone diperoxide (DADP)) to our list.

In addition to catalog items we offer special formulations for EPA method and customer-specific applications.

Contents	Page
Individual Explosives and their Metabolites UPDATED	1-6
EPA Method 8330 - Formulations for Explosive Analysis	7
EPA Method 529 - Explosive & Related Compounds by SPE & Capillary Column GC/MS	8
EPA Method 8095 - Explosives by GC/ECD	8
DIN 38407-21 - Explosives and Related Compounds	9
Gun Surveillance Standards	9
Inorganic ICP Standards for Gun Shot Residue	9
Organic Compounds for Firearm Discharge Analysis	9

Widest Selection of Explosives and associated Metabolites

Synthesis Department

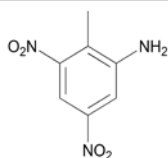
In response to customer requirements, AccuStandard has developed procedures to synthesize explosives and metabolites.



Bomb detection dogs are imprinted and trained to detect various types of explosives using pharmaceutical-type tins. Holes are drilled into the top of the tin to provide an odor cone for each explosive. The dog is repeatedly subjected to each odor and is rewarded when it properly alerts to it. Through this positive reinforcement process, the dog "learns" the odors associated with each explosive.

Individual Explosive Standards

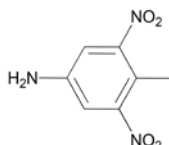
2-Amino-4,6-dinitrotoluene ♦



CAS 35572-78-2 MF C₇H₇N₃O₄ MW 197.15
log Pow 2.2 SG 1.50 g/cm³ MP 174-175 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-13-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-13	1 mL

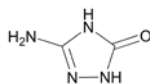
4-Amino-2,6-dinitrotoluene ♦



CAS 19406-51-0 MF C₇H₇N₃O₄ MW 197.15
log Pow 2.2 SG 1.50 g/cm³ MP 171 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-14-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-14	1 mL

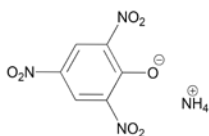
3-Amino-1,2,4-triazol-5-one ♦



CAS N/A MF C₂H₃N₃O MW 100.08 log Pow N/A
SG N/A MP 188-189 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH (70:30)		M-8330-ADD-55	1 mL

Ammonium picrate



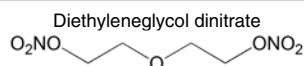
CAS 131-74-8 MF C₆H₆N₄O₇ MW 246.13
log Pow -1.4 SG N/A MP 265-271 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN		M-8330-ADD-27	1 mL

Property Key

CAS	Chemical Abstract Service Number
MF	Molecular Formula
MW	Molecular Weight
log Pow	Partition Coefficient
SG	Specific Gravity (g/cm ³)
MP	Melting Point (°C)

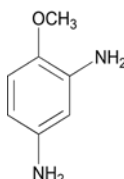
DEGDN



CAS 693-21-0 MF C₄H₈N₂O₇ MW 196.12
log Pow 0.98 SG 1.41 g/cm³ MP N/A

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-ADD-36	1 mL

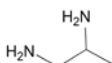
2,4-Diaminoanisole



CAS 615-05-4 MF C₇H₁₀N₂O MW 138.17
log Pow N/A SG N/A MP 67-68 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN		M-8330-ADD-58-CN	1 mL

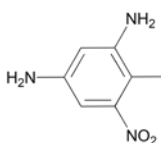
1,2-Diaminopropane



CAS 78-90-0 MF C₃H₁₀N₂ MW 74.12
log Pow -1.20 SG 0.86 g/cm³ MP N/A

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in MeOH		M-8330-ADD-9	1 mL

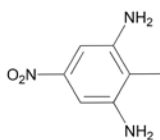
2,4-Diamino-6-nitrotoluene ♦



CAS 6629-29-4 MF C₇H₉N₃O₂ MW 167.17
log Pow -2.23 SG 1.40 g/cm³ MP 211 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN		M-8330-ADD-12	1 mL

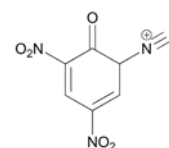
2,6-Diamino-4-nitrotoluene ♦



CAS 59229-75-3 MF C₇H₉N₃O₂ MW 167.17
log Pow -2.23 SG 1.40 g/cm³ MP 219 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN		M-8330-ADD-13	1 mL

Diazodinitrophenol



CAS 4682-03-5 MF C₆H₂N₄O₅ MW 210.10
log Pow 2.09 SG N/A MP 152-154 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN		M-8330-ADD-48	1 mL
1000 µg/mL in AcCN		M-8330-ADD-48-10X	1 mL

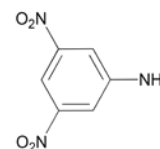
2,3-Dimethyl-2,3-dinitrobutane (DMNB)



CAS 3964-18-9 MF C₆H₁₂N₂O₄ MW 176.17
log Pow -0.24 SG 1.15 g/cm³ MP 214-215 °C (dec)

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN		M-8330-ADD-21	1 mL

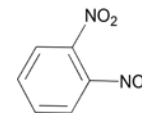
3,5-Dinitroaniline



CAS 618-87-1 MF C₆H₅N₃O₄ MW 183.12
log Pow 1.89 SG 1.59 g/cm³ MP 162 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-ADD-4	1 mL

1,2-Dinitrobenzene



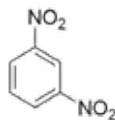
CAS 528-29-0 MF C₆H₄N₂O₄ MW 168.11
log Pow 1.69 SG 1.49 g/cm³ MP 118 °C

Matrix	Ratio 50:50	Cat. No.	Unit
1000 µg/mL in MeOH		M-8330-SS	1 mL

♦ TNT Metabolites

Individual Explosive Standards

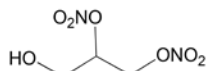
1,3-Dinitrobenzene



CAS 99-65-0 MF C₆H₄N₂O₄ MW 168.11
log Pow 1.49 SG 1.49 g/cm³ MP 89-90 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-01-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-01	1 mL

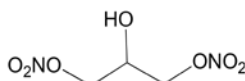
1,2-Dinitroglycerin



CAS 621-65-8 MF C₃H₆N₂O₇ MW 182.09
log Pow 0.83 SG 1.59 g/cm³ MP N/A

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-ADD-33	1 mL

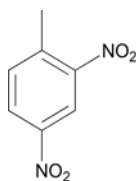
1,3-Dinitroglycerin



CAS 623-87-0 MF C₃H₆N₂O₇ MW 182.09
log Pow 0.71 SG 1.59 g/cm³ MP 26 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-ADD-34	1 mL

2,4-Dinitrotoluene ♦



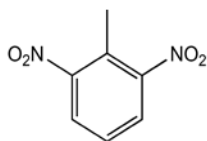
CAS 121-14-2 MF C₇H₆N₂O₄ MW 182.13
log Pow 1.98 SG 1.41 g/cm³ MP 71 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-02-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-02	1 mL

Property Key

CAS	Chemical Abstract Service Number
MF	Molecular Formula
MW	Molecular Weight
log Pow	Partition Coefficient
SG	Specific Gravity (g/cm ³)
MP	Melting Point (°C)

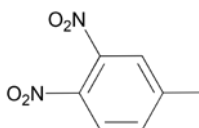
2,6-Dinitrotoluene ♦



CAS 606-20-2 MF C₇H₆N₂O₄ MW 182.13
log Pow 2.10 SG 1.41 g/cm³ MP 66 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-03-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-03	1 mL

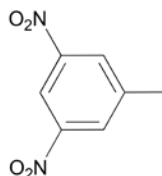
3,4-Dinitrotoluene



CAS 610-39-9 MF C₇H₆N₂O₄ MW 182.13
log Pow 2.08 SG 1.41 g/cm³ MP 58 °C

Matrix	Cat. No.	Unit
1000 µg/mL in MeOH	M-8330-IS	1 mL
	M-8330-IS-PAK	5 x 1 mL

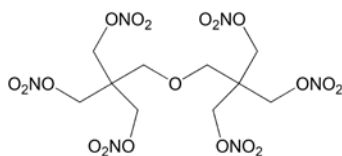
3,5-Dinitrotoluene ♦



CAS 618-85-9 MF C₇H₆N₂O₄ MW 182.13
log Pow 2.18 SG 1.41 g/cm³ MP 93 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN:MeOH	M-8330-ADD-39	1 mL

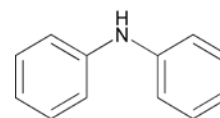
Dipentaerythritol hexanitrate



CAS 13184-80-0 MF C₁₀H₁₆N₆O₁₉ MW 524.26
log Pow 1.23 SG 1.66 g/cm³ MP 75 °C

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-43	1 mL

Diphenylamine

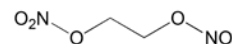


CAS 122-39-4 MF C₁₂H₁₁N MW 169.22
log Pow 3.50 SG 1.09 g/cm³ MP 52-54 °C

Matrix	Cat. No.	Unit
1000 µg/mL in Ethanol	ALR-041S-ET-10X	1 mL

EGDN

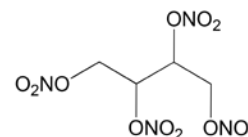
Dinitroethylene glycol



CAS 628-96-6 MF C₂H₄N₂O₆ MW 152.06
log Pow 1.16 SG 1.52 g/cm³ MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in AcCN:MeOH (95:5)	M-8330-ADD-5	1 mL

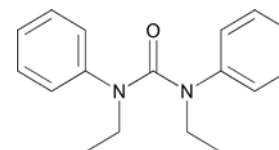
Erythritol tetranitrate (ETN)



CAS 7297-25-8 MF C₄H₈N₄O₁₂ MW 302.11
log Pow 1.85 SG 1.76 g/cm³ MP 61 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-47	1 mL
1000 µg/mL in AcCN	M-8330-ADD-47-10X	1 mL

Ethylcentralite



CAS 85-98-3 MF C₁₇H₂₀N₂O MW 268.35
log Pow 4.20 SG 1.12 g/cm³ MP 79 °C

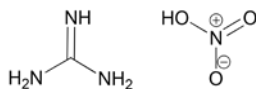
Matrix	Ratio 50:50	Cat. No.	Unit
1000 µg/mL in AcCN:MeOH		M-8330-ADD-50	1 mL

Synthesis Department

In response to customer requirements, AccuStandard has developed procedures to synthesize explosives and metabolites.

Individual Explosive Standards

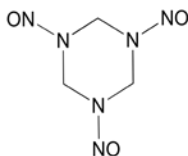
Guanidine nitrate



CAS 506-93-4 MF $\text{CH}_5\text{N}_3 \cdot \text{HNO}_3$ MW 122.08
log Pow -8.35 SG N/A MP 213-214 °C

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-10	1 mL

Hexahydro-1,3,5-trinitroso-1,3,5-triazine



CAS 13980-04-6 MF $\text{C}_3\text{H}_6\text{N}_6\text{O}_3$ MW 174.12
log Pow -1.78 SG 1.92 g/cm³ MP 106-107 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-46	1 mL
1000 µg/mL in AcCN	M-8330-ADD-46-10X	1 mL

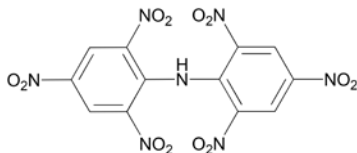
Hexamethylene triperoxide diamine (HMTD)



CAS 283-66-9 MF $\text{C}_6\text{H}_{12}\text{N}_2\text{O}_6$ MW 208.17
log Pow 1.01 SG 1.47 g/cm³ MP 162-164 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-25	1 mL

Hexanitrodiphenylamine

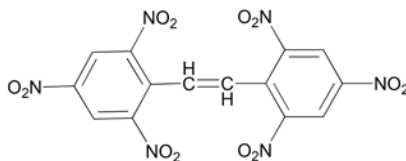


CAS 131-73-7 MF $\text{C}_{12}\text{H}_5\text{N}_7\text{O}_{12}$ MW 439.21
log Pow 3.35 SG 1.94 g/cm³ MP 244 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-ADD-37	1 mL

♦ TNT Metabolites

Hexanitrostilbene (HNS) ♦

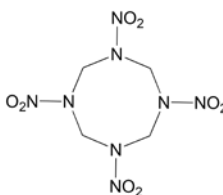


CAS 20062-22-0 MF $\text{C}_{14}\text{H}_6\text{N}_6\text{O}_{12}$ MW 450.23
log Pow 1.23 SG 1.85 g/cm³ MP 320 °C (dec)

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-26	1 mL

HMX

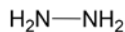
Cyclotetramethylene-tetranitramine



CAS 2691-41-0 MF $\text{C}_4\text{H}_8\text{N}_8\text{O}_8$ MW 296.16
log Pow 0.16 SG 1.95 g/cm³ MP 275 °C (dec)

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-04-0.1X	1 mL
1000 µg/mL in AcCN: MeOH		M-8330-04	1 mL

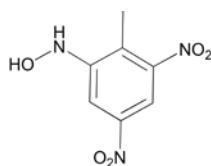
Hydrazine



CAS 302-01-2 MF H_4N_2 MW 32.05 log Pow -2.07
SG 1.01 g/cm³ MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-8	1 mL

2-Hydroxylamino-4,6-dinitrotoluene ♦



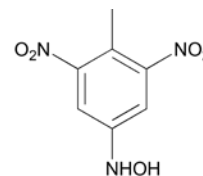
(3 months stability)

CAS 59283-76-0 MF $\text{C}_7\text{H}_7\text{N}_3\text{O}_5$ MW 213.15
log Pow 1.79 SG 1.64 g/cm³ MP 142-143 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-18*	1 mL

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

4-Hydroxylamino-2,6-dinitrotoluene ♦

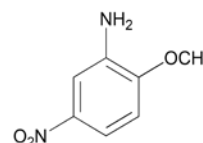


(3 months stability)

CAS 59283-75-9 MF $\text{C}_7\text{H}_7\text{N}_3\text{O}_5$ MW 213.15
log Pow 1.79 SG 1.64 g/cm³ MP 142-143 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-20*	1 mL

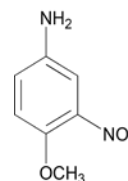
2-Methoxy-5-nitroaniline



CAS 99-59-2 MF $\text{C}_7\text{H}_8\text{N}_2\text{O}_3$ MW 168.15
log Pow 1.16 SG 0.99 g/cm³ MP 117-119 °C

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-56	1 mL

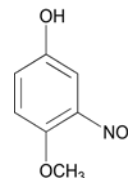
4-Methoxy-3-nitroaniline



CAS 577-72-0 MF $\text{C}_7\text{H}_8\text{N}_2\text{O}_3$ MW 168.15
log Pow N/A SG N/A MP 97 °C

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-57	1 mL

4-Methoxy-3-nitrophenol

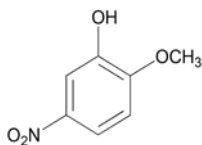


CAS 15174-02-4 MF $\text{C}_7\text{H}_7\text{NO}_4$ MW 169.14
log Pow N/A SG N/A MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-59	1 mL

Individual Explosive Standards

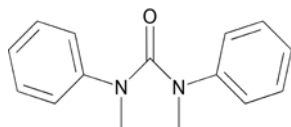
2-Methoxy-5-nitrophenol



CAS 636-93-1 MF C₇H₇NO₄ MW 169.14
log Pow 1.88 SG N/A MP 103-107 °C

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-60	1 mL

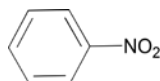
Methylcentralite



CAS 611-92-7 MF C₁₅H₁₆N₂O MW 240.30
log Pow 3.22 SG 1.16 g/cm³ MP 122 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-ADD-49	1 mL

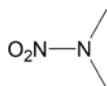
Nitrobenzene ♦



CAS 98-95-3 MF C₆H₅NO₂ MW 123.11
log Pow 1.85 SG 1.22 g/cm³ MP N/A

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-06-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-06	1 mL

N-Nitrodimethylamine



CAS 4164-28-7 MF C₂H₆N₂O₂ MW 90.08
log Pow -0.52 SG 1.10 g/cm³ MP 58 °C

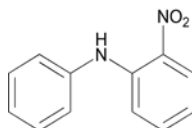
Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-40	1 mL

Property Key

CAS	Chemical Abstract Service Number
MF	Molecular Formula
MW	Molecular Weight
log Pow	Partition Coefficient
SG	Specific Gravity (g/cm ³)
MP	Melting Point (°C)

♦ TNT Metabolites

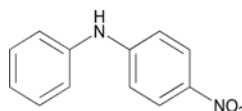
2-Nitrodiphenylamine



CAS 119-75-5 MF C₁₂H₁₀N₂O₂ MW 214.22
log Pow 3.66 SG 1.28 g/cm³ MP 74-76 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-51	1 mL

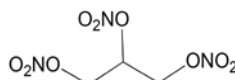
4-Nitrodiphenylamine



CAS 836-30-6 MF C₁₂H₁₀N₂O₂ MW 214.22
log Pow 3.74 SG 1.28 g/cm³ MP 132-136 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-52	1 mL

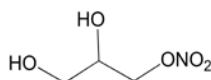
Nitroglycerin



CAS 55-63-0 MF C₃H₅N₃O₉ MW 227.09
log Pow 1.62 SG 1.67 g/cm³ MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in ETOH	M-8330-ADD-1	1 mL
1000 µg/mL in ETOH:MeOH(97:3)	M-8330-ADD-1-10X	1 mL

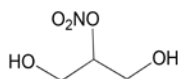
1-Nitroglycerin



CAS 624-43-1 MF C₃H₇NO₅ MW 137.09
log Pow -0.86 SG 1.48 g/cm³ MP 61 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-ADD-31	1 mL

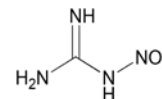
2-Nitroglycerin



CAS 620-12-2 MF C₃H₇NO₅ MW 137.09
log Pow -0.86 SG 1.48 g/cm³ MP 54 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-ADD-32	1 mL

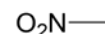
Nitroguanidine



CAS 556-88-7 MF CH₄N₄O₂ MW 104.07
log Pow -0.89 SG 2.01 g/cm³ MP 239 °C (dec)

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-6	1 mL

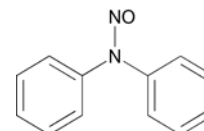
Nitromethane



CAS 75-52-5 MF CH₃NO₂ MW 61.04
log Pow -0.35 SG 1.06 g/cm³ MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-7	1 mL

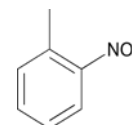
N-Nitrosodiphenylamine



CAS 86-30-6 MF C₁₂H₁₀N₂O MW 198.22
log Pow 3.16 SG 1.23 g/cm³ MP 66-67 °C

Matrix	Cat. No.	Unit
100 µg/mL in DCM	APP-9-150	1 mL
1000 µg/mL in MeOH	APP-9-150-M-10X	1 mL

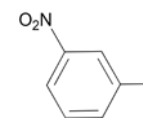
2-Nitrotoluene ♦



CAS 88-72-2 MF C₇H₇NO₃ MW 137.14
log Pow 2.30 SG 1.17 g/cm³ MP N/A

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-07-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-07	1 mL

3-Nitrotoluene ♦

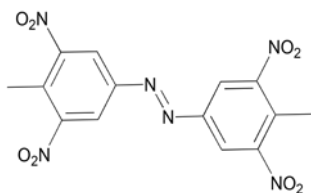


CAS 99-08-1 MF C₇H₇NO₃ MW 137.14
log Pow 2.45 SG 1.16 g/cm³ MP N/A

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-08-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-08	1 mL

Individual Explosive Standards

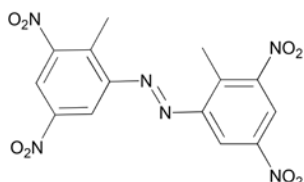
2,2',6,6'-Tetranitro-4,4'-azotoluene ♦



CAS N/A MF $C_{14}H_{10}N_6O_8$ MW 390.26
log Pow N/A SG N/A MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-17	1 mL

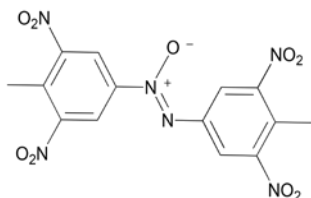
4,4',6,6'-Tetranitro-2,2'-azotoluene ♦



CAS N/A MF $C_{14}H_{10}N_6O_8$ MW 390.26
log Pow N/A SG N/A MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-19	1 mL

2,2',6,6'-Tetranitro-4,4'-azoxytoluene ♦

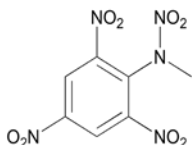


CAS N/A MF $C_{14}H_{10}N_6O_9$ MW 406.26
log Pow N/A SG N/A MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-15	1 mL

Tetryl

N-Methyl-N,2,4,6-tetranitroaniline

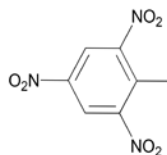


CAS 479-45-8 MF $C_7H_5N_5O_8$ MW 287.14
log Pow 1.64 SG 1.80 g/cm³ MP 130 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-10-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-10	1 mL

TNT

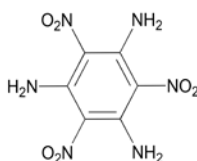
Trinitrotoluene



CAS 118-96-7 MF $C_7H_5N_3O_6$ MW 227.13
log Pow 1.6 SG 1.61 g/cm³ MP 81 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-11-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-11	1 mL

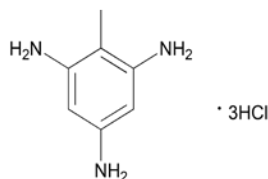
1,3,5-Triamino-2,4,6-trinitrobenzene



CAS 3058-38-6 MF $C_6H_6N_6O_6$ MW 258.15
log Pow -2.93 SG 1.96 g/cm³ MP 278 °C

Matrix	Cat. No.	Unit
40 µg/mL in DMF	M-8330-ADD-14-DMF	1 mL

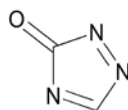
2,4,6-Triaminotoluene trihydrochloride (TNT free)



CAS 634-87-7 MF $C_7H_{11}N_3 \cdot 3HCl$ MW 246.56
log Pow -0.76 SG 1.22 g/cm³ MP 109-110 °C

Matrix	Cat. No.	Unit
NEAT	M-8330-ADD-23N-5MG	5 mg

1,2,4-Triazol-5-one

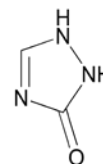


CAS 42131-33-9 MF $C_2H_2N_3O$ MW 83.05
log Pow N/A SG N/A MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-61	1 mL

♦ TNT Metabolites

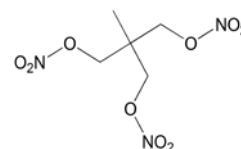
1,2,4-Triazol-3-one



CAS 930-33-6 MF $C_2H_3N_3O$ MW 85.07
log Pow N/A SG N/A MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-62	1 mL

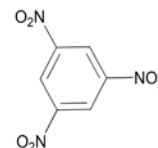
Trimethylolethane trinitrate



CAS 3032-55-1 MF $C_9H_9N_3O_9$ MW 255.14
log Pow 2.46 SG 1.51 g/cm³ MP N/A

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-ADD-28	1 mL

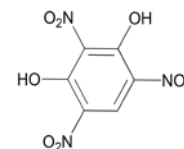
1,3,5-Trinitrobenzene ♦



CAS 99-35-4 MF $C_6H_3N_3O_6$ MW 213.10
log Pow 1.18 SG 1.70 g/cm³ MP 122 °C

Matrix	Ratio 50:50	Cat. No.	Unit
100 µg/mL in AcCN:MeOH		M-8330-12-0.1X	1 mL
1000 µg/mL in AcCN:MeOH		M-8330-12	1 mL

2,4,6-Trinitroresorcinol



CAS 82-71-3 MF $C_6H_3N_3O_8$ MW 245.10
log Pow 1.06 SG 2.01 g/cm³ MP 175-176 °C

Matrix	Ratio 50:50	Cat. No.	Unit
1000 µg/mL in AcCN:MeOH		M-8330-ADD-29	1 mL

Explosive Methods

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

Full Scan MS Calibration Set

M-529-MS-SET 6 x 1 mL
M-529-03, M-529-05, M-529-06,
M-529-07, M-529-08, M-529-09

SIM Calibration Set

M-529-SIM-SET 7 x 1 mL
M-529-01, M-529-02, M-529-03, M-529-04,
M-529-05, M-529-06, M-529-07

Storage Condition.: Freeze (<-10°C)

Internal Standard Stock Solution

M-529-IS 1 x 1 mL
2.0 mg/mL Ethyl acetate
3,4-Dinitrotoluene

Surrogate Analyte Stock Solutions

M-529-SS1 1 x 1 mL
M-529-SS1-PAK 5 x 1 mL
1000 µg/mL each in MeOH 2 comps.
1,3,5-Trimethyl-2-nitrobenzene 1,2,4-Trimethyl-5-nitrobenzene

Internal Standard Fortification Solution

M-529-ISFS 1 x 1 mL
200 µg/mL each in Ethyl acetate:AcCN (96:4) 14 comps.

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

M-529-SS2 1 x 1 mL
M-529-SS2-PAK 5 x 1 mL
1000 µg/mL each in CH₂Cl₂
Nitrobenzene-d₅

Surrogate Analyte Fortification Solution

M-529-SAFS 1 x 1 mL
100 µg/mL each in MeOH 3 comps.
1,3,5-Trimethyl-2-nitrobenzene Nitrobenzene-d₅
1,2,4-Trimethyl-5-nitrobenzene

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 1 x 1 mL
M-8095-SSA-100X-PAK 5 x 1 mL
100 µg/mL each in AcCN:MeOH (50:50) 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 1 x 1 mL
M-8095-SSB-100X-PAK 5 x 1 mL
At stated conc. in AcCN:MeOH (50:50) 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 1 x 1 mL
M-8095-SS-01-PAK 5 x 1 mL
100 µg/mL in AcCN
3,4-Dinitrotoluene

M-8095-SS-03 1 x 1 mL
M-8095-SS-03-PAK 5 x 1 mL
100 µg/mL in AcCN
2,5-Dinitrotoluene

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

Explosive Standards

DIN 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	EGDN	2-Nitrotoluene
HMX	DEGDN	PETN
RDX	Nitroglycerin	4-Nitrotoluene
Tetryl	TNT	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	2-Amino-4,6-dinitrotoluene
1,3-Dinitrobenzene	2,6-Dinitrotoluene
4-Amino-2,6-dinitrotoluene	2,4-Dinitrotoluene
2,2',4,4',6,6'-Hexanitrodiphenylamine	Diphenylamine

Gun Surveillance Standards

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		



Photo courtesy of the Connecticut Department of Emergency Services and Public Protection

Inorganic Standards for Gunshot Residue

Element	Starting Material	Unit	1000 µg/mL Cat. No.	10,000 µg/mL Cat. No.
Antimony		50 mL	-----	ICP-02N-10X-0.5
	Sb 2-5% HNO ₃ tr.	100 mL	ICP-02N-1	ICP-02N-10X-1
	Tartaric acid	500 mL	ICP-02N-5	ICP-02N-10X-5
Barium		50 mL	-----	ICP-04N-10X-0.5
	Ba(NO ₃) ₂	100 mL	ICP-04N-1	ICP-04N-10X-1
	2-5% Nitric acid	500 mL	ICP-04N-5	ICP-04N-10X-5
Lead		50 mL	-----	ICP-29N-10X-0.5
	Pb(NO ₃) ₂	100 mL	ICP-29N-1	ICP-29N-10X-1
	2-5% Nitric acid	500 mL	ICP-29N-5	ICP-29N-10X-5

Technical Note

Gunshot residue standards may be used for ICP, ICP-MS & SEM/EDAX analysis. Organic compounds identified in the discharge of a firearm include the 14 organic compounds listed below. Contact our Technical Department for additional information, including custom solutions.

Organic Compounds for Firearm Discharge Analysis

Compound	Conc.	Matrix	Cat. No. (1 mL)	Compound	Conc.	Matrix	Cat. No. (1 mL)
2,4-Dinitrotoluene C ₇ H ₆ N ₂ O ₄	100 µg/mL	AcCN:MeOH	M-8330-02-0.1X	4-Nitrodiphenylamine C ₁₂ H ₁₀ N ₂ O ₂	100 µg/mL	AcCN	M-8330-ADD-52
	1000 µg/mL	AcCN:MeOH	M-8330-02				
2,6-Dinitrotoluene C ₇ H ₆ N ₂ O ₄	100 µg/mL	AcCN:MeOH	M-8330-03-0.1X	1-Nitroglycerine C ₃ H ₅ N ₃ O ₉	100 µg/mL	AcCN:MeOH	M-8330-ADD-31
	1000 µg/mL	AcCN:MeOH	M-8330-03				
3,4-Dinitrotoluene C ₇ H ₆ N ₂ O ₄	1000 µg/mL	AcCN:MeOH	M-8330-IS	2-Nitroglycerine C ₃ H ₅ N ₃ O ₉	100 µg/mL	AcCN:MeOH	M-8330-ADD-32
Diphenylamine C ₁₂ H ₁₁ N	100 µg/mL	DCM	APP-9-097	N-Nitrosodiphenylamine C ₁₂ H ₁₀ N ₂ O	100 µg/mL	DCM	APP-9-150
Ethylcentralite C ₁₇ H ₂₀ N ₂ O	100 µg/mL	AcCN:MeOH	M-8330-ADD-50	2-Nitrotoluene C ₇ H ₇ NO ₃	1000 µg/mL	AcCN:MeOH	M-8330-07
Methylcentralite C ₁₅ H ₁₆ N ₂ O	100 µg/mL	AcCN:MeOH	M-8330-ADD-49				
2-Nitrodiphenylamine C ₁₂ H ₁₀ N ₂ O ₂	100 µg/mL	AcCN	M-8330-ADD-51	3-Nitrotoluene C ₇ H ₇ NO ₃	1000 µg/mL	AcCN:MeOH	M-8330-08
				4-Nitrotoluene C ₇ H ₇ NO ₃	1000 µg/mL	AcCN:MeOH	M-8330-09

See pages 1-6 for structures and physical data.



Rev. 7/22



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