

Explosive Standards Reference Guide



AccuStandard®

Explosive standards are traditionally used for the remediation of soil and water in locations where explosives have been stored. These same standards are now 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 and the military in K-9 odor recognition training for explosives.

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

To assist in all aspects of explosive detection and analysis, AccuStandard synthesizes 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.

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

Physical properties are for the neat material. However all products are supplied in a solvent in 1 mL size.

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**EXCLUSIVELY
from AccuStandard**



**Widest Selection of
Explosives and associated
Metabolites**

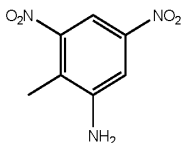
Bomb detection dogs are imprinted and trained to detect various types of explosives using pharmaceutical-type tins. Holes are drilled into the top of the tin to provide an odor cone for each explosive.

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

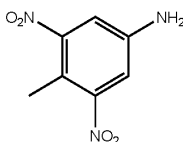
2-Amino-4,6-dinitrotoluene ♦



CAS 35572-78-2 MF C₇H₇N₃O₄ MW 197.15
log Kow -0.36 SG 1.50 g/cm³ MP 174-175 °C

Matrix	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

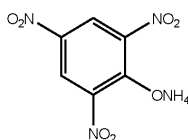
4-Amino-2,6-dinitrotoluene ♦



CAS 19406-51-0 MF C₇H₇N₃O₄ MW 197.15
log Kow -0.36 SG 1.50 g/cm³ MP 171 °C

Matrix	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

Ammonium picrate

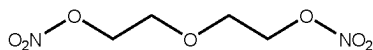


CAS 131-74-8 MF C₆H₆N₄O₇ MW 246.13
log Kow N/A SG N/A MP N/A

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

DEGDN

Diethyleneglycol dinitrate



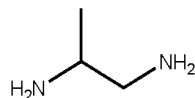
CAS 693-21-0 MF C₄H₈N₂O₇ MW 196.12
log Kow 0.98 SG 1.41 g/cm³ MP -11 °C

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

Property Key

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

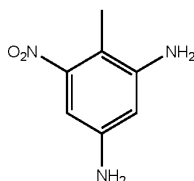
1,2-Diaminopropane



CAS 78-90-0 MF C₃H₁₀N₂ MW 74.12
log Kow -1.20 SG 0.86 g/cm³ MP -22 °C

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

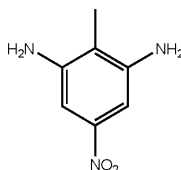
2,4-Diamino-6-nitrotoluene ♦



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

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

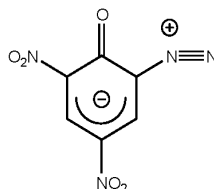
2,6-Diamino-4-nitrotoluene ♦



CAS 59229-75-3 MF C₇H₉N₃O₂ MW 167.17
log Kow -2.23 SG 1.40 g/cm³ MP 211 °C

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

Diazodinitrophenol

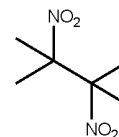


CAS 4682-03-5 MF C₆H₂N₄O₅ MW 210.10
log Kow 2.09 SG N/A MP 230 °C

Matrix	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

♦ TNT Metabolites

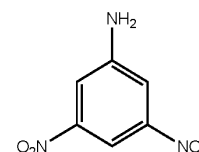
2,3-Dimethyl-2,3-dinitrobutane (DMNB)



CAS 3964-18-9 MF C₆H₁₂N₂O₄ MW 176.17
log Kow -0.24 SG 1.15 g/cm³ MP 174-175 °C

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

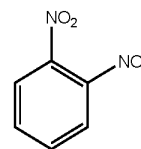
3,5-Dinitroaniline



CAS 618-87-1 MF C₆H₅N₃O₄ MW 183.12
log Kow -0.91 SG 1.59 g/cm³ MP 162 °C

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

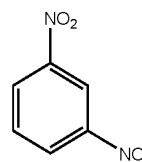
1,2-Dinitrobenzene



CAS 528-29-0 MF C₆H₄N₂O₄ MW 168.11
log Kow -0.57 SG 1.49 g/cm³ MP 192-193 °C

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

1,3-Dinitrobenzene



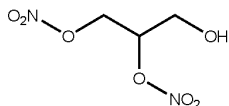
CAS 99-65-0 MF C₆H₄N₂O₄ MW 168.11
log Kow -0.57 SG 1.49 g/cm³ MP 192-193 °C

Matrix	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

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Individual Explosive Standards

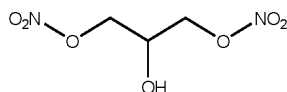
1,2-Dinitrolycerin



CAS 621-65-8 MF $C_3H_6N_2O_7$ MW 182.09
log Kow 0.83 SG 1.59 g/cm³ MP 40-41 °C

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

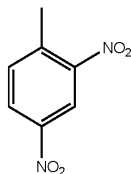
1,3-Dinitrolycerin



CAS 623-87-0 MF $C_3H_6N_2O_7$ MW 182.09
log Kow 0.71 SG 1.59 g/cm³ MP 26 °C

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

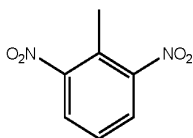
2,4-Dinitrotoluene ♦



CAS 121-14-2 MF $C_7H_6N_2O_4$ MW 182.13
log Kow -0.02 SG 1.41 g/cm³ MP 197-198 °C

Matrix	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

2,6-Dinitrotoluene ♦



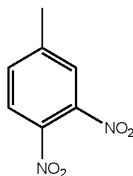
CAS 606-20-2 MF $C_7H_6N_2O_4$ MW 182.13
log Kow -0.02 SG 1.41 g/cm³ MP 197-198 °C

Matrix	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

Property Key

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

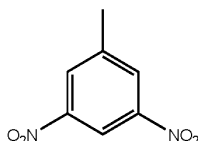
3,4-Dinitrotoluene



CAS 610-39-9 MF $C_7H_6N_2O_4$ MW 182.13
log Kow -0.02 SG 1.41 g/cm³ MP 197-198 °C

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

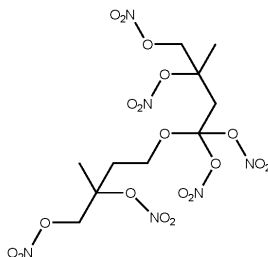
3,5-Dinitrotoluene ♦



CAS 618-85-9 MF $C_7H_6N_2O_4$ MW 182.13
log Kow -0.02 SG 1.41 g/cm³ MP 197-198 °C

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

Dipentaerythritol hexanitrate

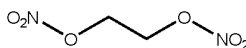


CAS 13184-80-0 MF $C_{10}H_{16}N_6O_{19}$ MW 524.26
log Kow 1.23 SG 1.66 g/cm³ MP N/A

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

EGDN

Dinitroethylene glycol

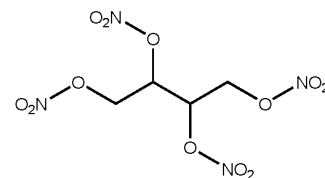


CAS 628-96-6 MF $C_2H_4N_2O_6$ MW 152.06
log Kow 1.16 SG 1.52 g/cm³ MP -10 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-5	1 mL

♦ TNT Metabolites

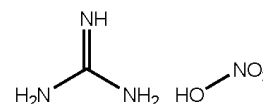
Erythritol tetranitrate (ETN)



CAS 7297-25-8 MF $C_4H_6N_4O_{12}$ MW 302.11
log Kow 1.85 SG 1.76 g/cm³ MP 103-104 °C

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

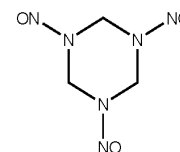
Guanidine nitrate



CAS 506-93-4 MF $CH_5N_3 \cdot HNO_3$ MW 122.08
log Kow N/A SG N/A MP 213-214 °C

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

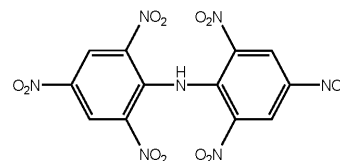
Hexahydro-1,3,5-trinitroso-1,3,5-triazine (R-Salt)



CAS 13980-04-6 MF $C_3H_6N_6O_3$ MW 174.12
log Kow -1.78 SG 1.92 g/cm³ MP 145-146 °C

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

Hexanitrodiphenylamine

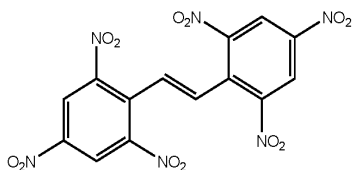


CAS 131-73-7 MF $C_{12}H_5N_7O_{12}$ MW 439.21
log Kow 1.15 SG 1.94 g/cm³ MP 244 °C

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

Individual Explosive Standards

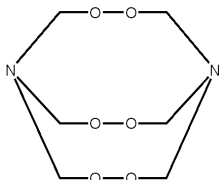
Hexanitrostilbene (HNS) ♦



CAS 20062-22-0 MF $C_{14}H_6N_6O_{12}$ MW 450.23
log Kow 1.23 SG 1.85 g/cm³ MP 332-349 °C

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

Hexamethylene triperoxide diamine (HMTD)

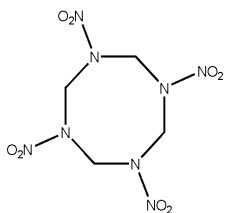


CAS 283-66-9 MF $C_6H_{12}N_2O_6$ MW 208.17
log Kow 1.01 SG 1.47 g/cm³ MP 95-98 °C

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

HMX

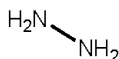
Cyclotetramethylene-tetranitramine



CAS 2691-41-0 MF $C_4H_8N_8O_8$ MW 296.16
log Kow -4.55 SG 1.95 g/cm³ MP 284-285 °C

Matrix	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

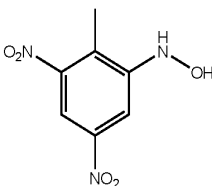
Hydrazine



CAS 302-01-2 MF H_2N_2 MW 32.05 log Kow -1.47
SG 1.01 g/cm³ MP 1-2 °C

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

2-Hydroxylamino-4,6-dinitrotoluene ♦

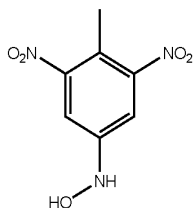


(3 months stability)

CAS 59283-76-0 MF $C_7H_7N_3O_5$ MW 213.15
log Kow 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

4-Hydroxylamino-2,6-dinitrotoluene ♦

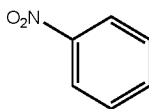


(3 months stability)

CAS 59283-75-9 MF $C_7H_7N_3O_5$ MW 213.15
log Kow 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

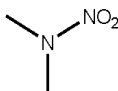
Nitrobenzene ♦



CAS 98-95-3 MF $C_6H_5NO_2$ MW 123.11
log Kow -0.39 SG 1.22 g/cm³ MP 5-6 °C

Matrix	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

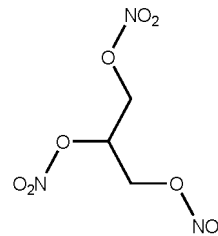
N-Nitrodimethylamine



CAS 4164-28-7 MF $C_2H_6N_2O_2$ MW 90.08
log Kow -2.89 SG 1.10 g/cm³ MP 58 °C

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

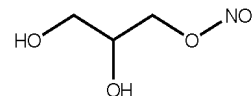
Nitroglycerin



CAS 55-63-0 MF $C_3H_5N_3O_9$ MW 227.09
log Kow 1.62 SG 1.67 g/cm³ MP 50 °C

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

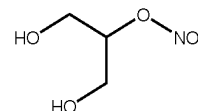
1-Nitroglycerin



CAS 624-43-1 MF $C_3H_7NO_5$ MW 137.09
log Kow -0.86 SG 1.48 g/cm³ MP 61 °C

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

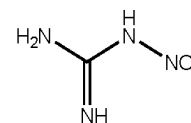
2-Nitroglycerin



CAS 620-12-2 MF $C_3H_7NO_5$ MW 137.09
log Kow -0.86 SG 1.48 g/cm³ MP 54 °C

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

Nitroguanidine



CAS 556-88-7 MF $CH_4N_4O_2$ MW 104.07
log Kow -4.01 SG 2.01 g/cm³ MP 167-168 °C

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

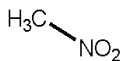
* To delay premature breakdown of thermally labile products in transit a ColdPAK is required.

♦ TNT Metabolites

Continued on next page

Individual Explosive Standards

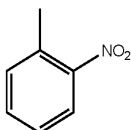
Nitromethane



CAS 75-52-5 MF CH_3NO_2 MW 61.04
log Kow -1.61 SG 1.06 g/cm³ MP 115-116 °C

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

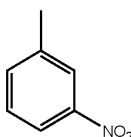
2-Nitrotoluene ♦



CAS 88-72-2 MF $\text{C}_7\text{H}_7\text{NO}_3$ MW 137.14
log Kow 2.30 SG 1.17 g/cm³ MP -9 °C

Matrix	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

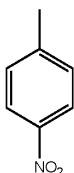
3-Nitrotoluene ♦



CAS 99-08-1 MF $\text{C}_7\text{H}_7\text{NO}_3$ MW 137.14
log Kow 2.30 SG 1.16 g/cm³ MP 15-16 °C

Matrix	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

4-Nitrotoluene ♦



CAS 99-99-0 MF $\text{C}_7\text{H}_7\text{NO}_3$ MW 137.14
log Kow 2.37 SG 1.39 g/cm³ MP 51-54 °C

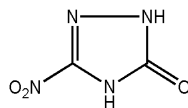
Matrix	Cat. No.	Unit
100 µg/mL in AcCN:MeOH	M-8330-09-0.1X	1 mL
1000 µg/mL in AcCN:MeOH	M-8330-09	1 mL

Property Key

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

♦ TNT Metabolites

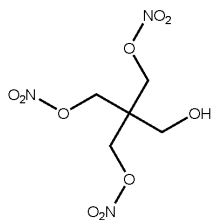
3-Nitro-1,2,4-triazol-5-one (NTO) NEW



CAS 932-64-9 MF $\text{C}_2\text{H}_2\text{O}_3\text{N}_4$ MW 130.10
log Kow -2.72 SG 2.55 g/cm³ MP 161 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN:MeOH	M-8330-ADD-53	1 mL

Pentaerithryl trinitrate

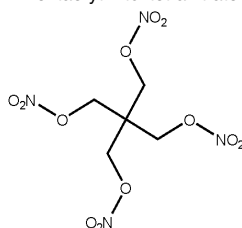


CAS N/A MF $\text{C}_5\text{H}_9\text{N}_3\text{O}_{10}$ MW 271.14

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-44	1 mL

PETN

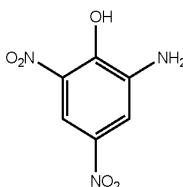
Pentaerythritol tetranitrate



CAS 78-11-5 MF $\text{C}_5\text{H}_8\text{N}_4\text{O}_{12}$ MW 316.14
log Kow 2.38 SG 1.68 g/cm³ MP 119-120 °C

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-2	1 mL
1000 µg/mL in MeOH	M-8330-ADD-2-10X	1 mL

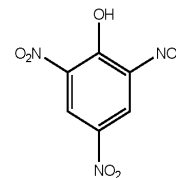
Picramic acid



CAS 96-91-3 MF $\text{C}_6\text{H}_5\text{N}_3\text{O}_5$ MW 199.12
log Kow N/A SG N/A MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in AcCN:MeOH	M-8330-ADD-22	1 mL

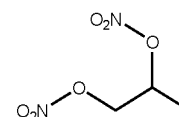
Picric acid



CAS 88-89-1 MF $\text{C}_6\text{H}_3\text{N}_3\text{O}_7$ MW 229.10
log Kow 1.33 SG 1.86 g/cm³ MP 122-123 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN:MeOH	M-8330-ADD-3	1 mL

Propyleneglycol dinitrate

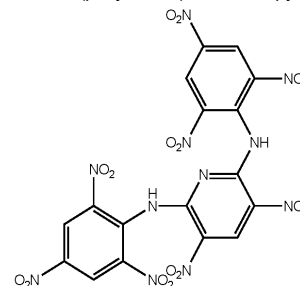


CAS 6423-43-4 MF $\text{C}_3\text{H}_6\text{N}_2\text{O}_6$ MW 166.09
log Kow 1.59 SG 1.42 g/cm³ MP -9 °C

Matrix	Cat. No.	Unit
100 µg/mL in MeOH	M-8330-ADD-35	1 mL

PYX

2-6-bis,bis(picrylamino)-3,5-dinitropyridine

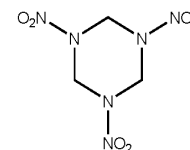


CAS 38082-89-2 MF $\text{C}_{17}\text{H}_{11}\text{N}_7\text{O}_{16}$ MW 621.30
log Kow N/A SG 2.01 g/cm³ MP N/A

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-11	1 mL

RDX

Cyclotrimethylene-trinitramine



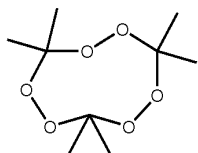
CAS 121-82-4 MF $\text{C}_3\text{H}_6\text{N}_6\text{O}_6$ MW 222.12
log Kow -4.70 SG 1.90 g/cm³ MP 245-246 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN:MeOH	M-8330-05-0.1X	1 mL
1000 µg/mL in AcCN:MeOH	M-8330-05	1 mL

Individual Explosive Standards

TATP

Triacetone triperoxide

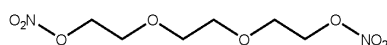


CAS 17088-37-8 MF C₉H₁₈O₆ MW 222.24
log Kow 4.63 SG 1.00 g/cm³ MP 64-65 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN	M-8330-ADD-24	1 mL

TEGDN

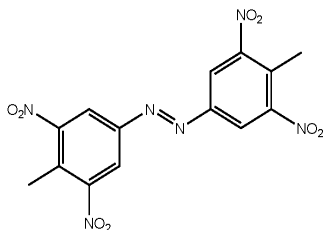
Triethyleneglycol dinitrate



CAS 111-22-8 MF C₆H₁₂N₂O₈ MW 240.17
log Kow 0.62 SG 1.34 g/cm³ MP 65-66 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN:MeOH	M-8330-ADD-41-R1	1 mL

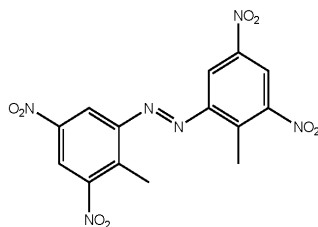
2,2',6,6'-Tetranitro-4,4'-azotoluene ♦



CAS N/A MF C₁₄H₁₀N₆O₈ MW 390.26
log Kow 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 ♦

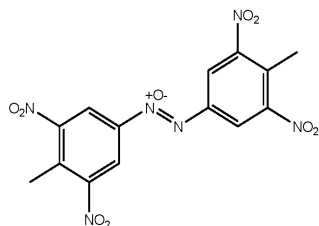


CAS N/A MF C₁₄H₁₀N₆O₈ MW 390.26
log Kow N/A SG N/A MP N/A

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

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

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

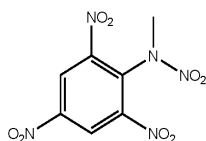


CAS N/A MF C₁₄H₁₀N₆O₉ MW 406.26
log Kow N/A SG N/A MP N/A

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

Tetryl

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

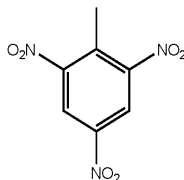


CAS 479-45-8 MF C₇H₅N₅O₈ MW 287.14
log Kow -0.56 SG 1.80 g/cm³ MP 255 °C

Matrix	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

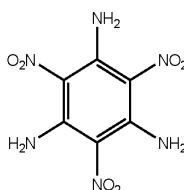
Trinitrotoluene



CAS 118-96-7 MF C₇H₅N₃O₆ MW 227.13
log Kow -0.21 SG 1.61 g/cm³ MP 223-224 °C

Matrix	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

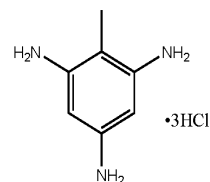
1,3,5-Triamino-2,4,6-trinitrobenzene



CAS 3058-38-6 MF C₆H₆N₆O₆ MW 258.15
log Kow -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

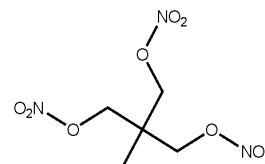
2,4,6-Triaminotoluene trihydrochloride (TNT free)



CAS 634-87-7 MF C₇H₁₁N₃ • 3HCl MW 246.56
log Kow -0.76 SG 1.22 g/cm³ MP 109-110 °C

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

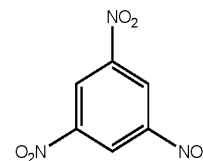
Trimethylolethane trinitrate



CAS 3032-55-1 MF C₅H₉N₃O₉ MW 255.14
log Kow 2.46 SG 1.51 g/cm³ MP 77 °C

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

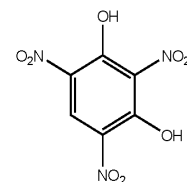
1,3,5-Trinitrobenzene ♦



CAS 99-35-4 MF C₆H₃N₃O₆ MW 213.10
log Kow -0.75 SG 1.70 g/cm³ MP 122 °C

Matrix	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 C₆H₃N₃O₈ MW 245.10
log Kow 1.06 SG 2.01 g/cm³ MP 175-176 °C

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

♦ TNT Metabolites

Explosive Standards

Method 8330 Multi-Component Formulations for Explosive Analysis

The following A and B mixes provide better resolution between possible coeluting analytes to better 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 (50:50)	7 comps.
M-8330A-10X *	1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (50:50)	7 comps.
1,3-Dinitrobenzene	RDX
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene
HMX	TNT
Nitrobenzene	

M-8330A-R *	1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	8 comps.
M-8330A-R-10X *	1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (50:50)	8 comps.
2-Amino-4,6-dinitrotoluene	Nitrobenzene
1,3-Dinitrobenzene	RDX
2,4-Dinitrotoluene	1,3,5-Trinitrobenzene
HMX	TNT

Composite Explosive Mixture

M-8330-R-0.1X	1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	
M-8330-R-0.5X	1 x 1 mL
0.5 mg/mL each in AcCN:MeOH (50:50)	
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

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	

Explosives by HPLC Set

M-8330-R-SET *	14 x 1 mL
Each at 100 µg/mL in AcCN:MeOH (50:50)	
M-8330-R-10X-SET *	14 x 1 mL
Each at 1000 µg/mL in AcCN:MeOH (50:50)	
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.

Mix B

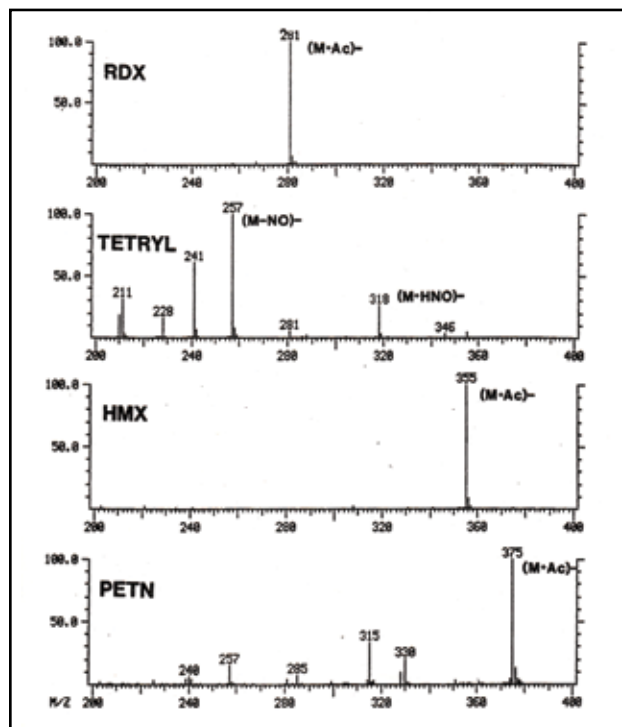
M-8330B *	1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	5 comps.
M-8330B-10X *	1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (50:50)	5 comps.
Tetryl	3-Nitrotoluene
2,6-Dinitrotoluene	4-Nitrotoluene
2-Nitrotoluene	

M-8330B-R *	1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	7 comps.
M-8330B-R-10X *	1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (50:50)	7 comps.
2-Amino-4,6-dinitrotoluene	2-Nitrotoluene
4-Amino-2,6-dinitrotoluene	3-Nitrotoluene
Tetryl	4-Nitrotoluene
2,6-Dinitrotoluene	

M-8330B-R2 *	1 x 1 mL
0.1 mg/mL each in AcCN:MeOH (50:50)	6 comps.
M-8330B-R2-10X *	1 x 1 mL
1.0 mg/mL each in AcCN:MeOH (50:50)	6 comps.
4-Amino-2,6-dinitrotoluene	2-Nitrotoluene
Tetryl	3-Nitrotoluene
2,6-Dinitrotoluene	4-Nitrotoluene

Surrogate Standard

M-8330-SS	1 x 1 mL
1.0 mg/mL in MeOH	
1,2-Dinitrobenzene	



Negative ion thermospray mass spectra for RDX, HMX, PETN and tetryl from Berberich, D.W., Yost, R.A., and Fetterhoff, D.D., J. Forensic Sci., 33, 946, 1988.

Method 8330 Chromatogram with Certificate of Analysis

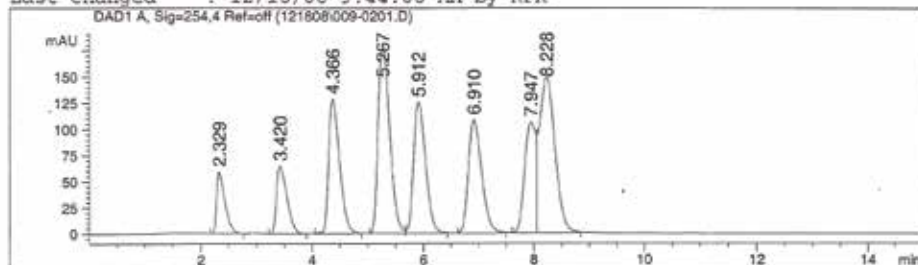
Data File C:\HPCHEM\1\DATA\121808\009-0201.D

Sample Name: M8330AR B3110232

M-8330A-R B3110232-3C UNDILUTED
 10uLAUTO;50%MeOH;1.0ML/MIN;254NM LC-18 150X4.6 MM
 100uL/MIN DRAW/INJ;200uL LOOP

=====
 Injection Date : 12/18/08 10:02:05 AM Seq. Line : 2
 Sample Name : M8330AR B3110232 Vial : 9
 Acq. Operator : RPK Inj : 1
 Inj Volume : 10 µl

Method : C:\HPCHEM\1\METHODS\EXPTEST.M
 Last changed : 12/18/08 9:44:06 AM by RPK



Area Percent Report

Sorted By : Retention Time
 Multiplier : 1.0000
 Dilution : 1.0000

Signal 1: DAD1 A, Sig=254.4 Ref=off

Peak #	RetTime [min]	Sig	Type	Area [mAU*s]	Height [mAU]	Area %
1	2.329	1	PP	618.65326	59.16397	4.4380
2	3.420	1	PB	842.77454	64.60012	6.0458
3	4.366	1	BB	1767.57788	128.49287	12.6800
4	5.267	1	BV	2638.08911	183.48706	18.9247
5	5.912	1	VB	1895.28271	125.48679	13.5961
6	6.910	1	BB	1810.63110	108.50757	12.9888
7	7.947	1	BV	1447.27234	106.23111	10.3822
8	8.228	1	VB	2919.62842	149.48706	20.9444

Totals : 1.39399e4 925.45655

Results obtained with enhanced integrator!

*** End of Report ***



AccuStandard, Inc.
CERTIFICATE OF ANALYSIS

100 Shaker Street
New Haven, CT 06515
USA TEL: 203/784-5335
FAX: 203/784-5337
www.AccuStandard.com

CATALOG NO: M-8330A-R-926 EXPIRATION: Jun 21, 2013
 DESCRIPTION: Method 8330 - Explosives by HPLC DATE CERTIFIED: Jun 21, 2010
 LOT: B3120152-1A Ratio: SAMPLE SIZE: 1 mL
 SOLVENT: Acetonitrile Ratio: STORAGE CONDITION: Refrigerated (0-5° C)
 Methanol 50 HAZARDS: HIGHLY FLAMMABLE

Included on ISO/IEC 17025 Scope of Accreditation
 Included on ISO Guide 34 Scope of Accreditation

Component	Gas Number	Purity %	Prepared Concentration ¹	Certified Analyte Concentration ²
	(GC/FID)	(%)	(µg/mL)	(µg/mL)
1,2-Dichlorobenzene	9644-0	99.9	2000	1992
1,4-Dichlorobenzene	127-14-2	99.9	1000	999
1000	205-45-0	99.9	1000	999
1,4-Dioxane	96-45-1	99.9	1000	999
8000	122-82-9	99.9	2000	1992
1,1,1-Trichloroethane	66-86-4	97.5	1000	980
100	152-96-7	99.9	1000	999
1,4-Dioxane	66-86-4	97.9	1000	980

¹ Components

² Weight composed to 100% parts

For use in routine laboratory analysis

AccuStandard is accredited to ISO Guide 34, ISO/IEC 17025 and certified to ISO 9001

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

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:AcCN (96:4)
3,4-Dinitrotoluene

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

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
1,3,5-Trimethyl-2-nitrobenzene 1,2,4-Trimethyl-5-nitrobenzene

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 (1:1) 10 comps. **SAVE**

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 (1:1) 7 comps. **SAVE**

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 **SAVE**
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 **SAVE**
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 **SAVE**
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	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 Standards

Gun Surveillance Standard

EXP-GSS

At stated conc. (µg/mL) in AcCN

1 x 1 mL
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 ICP Standards for Gun Shot Residue

Starting Material	Unit	1000 µg/mL Cat. No.	10,000 µg/mL Cat. No.
Antimony	50 mL	-----	ICP-02N-10X-0.5
Sb Dilute 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

We offer gunshot residue standards through our "AccuTrace" inorganic products. Custom solutions of Antimony, Barium and Lead are available for use with ICP instrumentation. Organic compounds identified in the discharge of a firearm are also available. These include the 14 organic compounds listed below.

Organic Compounds for Firearm Discharge Analysis

Compound	Conc.	Matrix	Cat. No.	Compound	Conc.	Matrix	Cat. No.
2,4-Dinitrotoluene	100 µg/mL	AcCN:MeOH	M-8330-02-0.1X	1-Nitroglycerine ▶	100 µg/mL	AcCN:MeOH	M-8330-ADD-31
C ₇ H ₆ N ₂ O ₄	1000 µg/mL	AcCN:MeOH	M-8330-02	C ₃ H ₅ N ₃ O ₉			
2,6-Dinitrotoluene	100 µg/mL	AcCN:MeOH	M-8330-03-0.1X	2-Nitroglycerine ▶	100 µg/mL	AcCN:MeOH	M-8330-ADD-32
C ₇ H ₆ N ₂ O ₄	1000 µg/mL	AcCN:MeOH	M-8330-03	C ₃ H ₅ N ₃ O ₉			
3,4-Dinitrotoluene	100 µg/mL	AcCN:MeOH	M-8330-04-0.1X	N-Nitrosodiphenylamine	100 µg/mL	MeOH	APP-9-150
C ₇ H ₆ N ₂ O ₄	1000 µg/mL	AcCN:MeOH	M-8330-04	C ₁₂ H ₁₀ N ₂ O			
Diphenylamine	100 µg/mL	DCM	APP-9-097	2-Nitrotoluene	1000 µg/mL	AcCN:MeOH	M-8330-07
C ₁₂ H ₁₁ N				C ₇ H ₇ NO ₃			
Ethylcentralite	100 µg/mL	AcCN:MeOH	M-8330-ADD-50	3-Nitrotoluene	1000 µg/mL	AcCN:MeOH	M-8330-08
C ₁₇ H ₂₀ N ₂ O				C ₇ H ₇ NO ₃			
Methylcentralite	100 µg/mL	AcCN:MeOH	M-8330-ADD-49	4-Nitrotoluene	1000 µg/mL	AcCN:MeOH	M-8330-09
C ₁₅ H ₁₆ N ₂ O				C ₇ H ₇ NO ₃			
2-Nitrodiphenylamine	100 µg/mL	AcCN:MeOH	M-8330-ADD-51				
C ₁₂ H ₁₀ N ₂ O ₂							
4-Nitrodiphenylamine	100 µg/mL	AcCN:MeOH	M-8330-ADD-52				
C ₁₂ H ₁₀ N ₂ O ₂							

See next page for structure and physical data



AcCN:MeOH Ratio 50:50

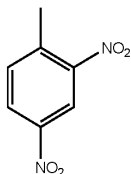
Any compound without ▶ could contain possible isomers

Continued on next page

Explosive Standards

Organic Compounds for Firearm Discharge Analysis - Smokeless Powder Constituents

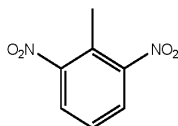
2,4-Dinitrotoluene ♦



CAS 121-14-2 **MF** C₇H₆N₂O₄ **MW** 182.13
log Kow -0.02 **SG** 1.41 g/cm³ **MP** 197-198 °C
BP 299-300 °C

Matrix	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

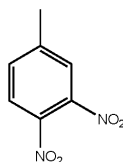
2,6-Dinitrotoluene ♦



CAS 606-20-2 **MF** C₇H₆N₂O₄ **MW** 182.13
log Kow -0.02 **SG** 1.41 g/cm³ **MP** 197-198 °C

Matrix	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

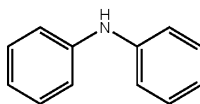
3,4-Dinitrotoluene



CAS 610-39-9 **MF** C₇H₆N₂O₄ **MW** 182.13
log Kow -0.02 **SG** 1.41 g/cm³ **MP** 197-198 °C

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

Diphenylamine

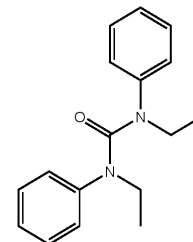


CAS 122-39-4 **MF** C₁₂H₁₁N **MW** 169.22
log Kow 3.50 **SG** 1.09 g/cm³ **MP** 52-54 °C

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

♦ TNT Metabolites

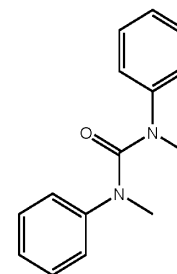
Ethylcentralite



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

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

Methylcentralite



CAS 611-92-7 **MF** C₁₅H₁₆N₂O **MW** 240.30
log Kow 3.22 **SG** 1.16 g/cm³ **MP** 116-117 °C

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

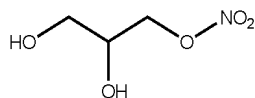


AcCN:MeOH Ratio 50:50

Explosive Standards

Organic Compounds for Firearm Discharge Analysis - Smokeless Powder Constituents (Continued)

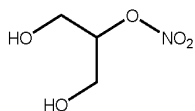
1-Nitroglycerin ▶



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

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

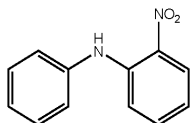
2-Nitroglycerin ▶



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

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

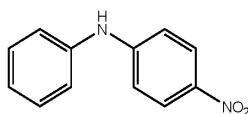
2-Nitrodiphenylamine NEW



CAS 119-75-5 MF C₁₂H₁₀N₂O₂ MW 214.22
log Kow 0.91 SG 1.28 g/cm³ MP 74-76 °C

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

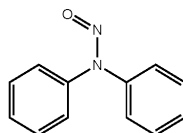
4-Nitrodiphenylamine



CAS 836-30-6 MF C₁₂H₁₀N₂O₂ MW 214.22
log Kow 0.91 SG 1.28 g/cm³ MP 132-136 °C

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

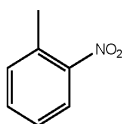
N-Nitrosodiphenylamine



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

Matrix	Cat. No.	Unit
100 µg/mL in AcCN:MeOH	APP-9-150	1 mL

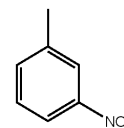
2-Nitrotoluene ◆



CAS 88-72-2 MF C₇H₇NO₃ MW 137.14
log Kow 2.30 SG 1.17 g/cm³ MP -9 °C

Matrix	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

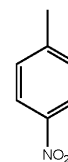
3-Nitrotoluene ◆



CAS 99-08-1 MF C₇H₇NO₃ MW 137.14
log Kow 2.30 SG 1.16 g/cm³ MP 15-16 °C

Matrix	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

4-Nitrotoluene ◆



CAS 99-99-0 MF C₇H₇NO₃ MW 137.14
log Kow 2.37 SG 1.39 g/cm³ MP 51-54 °C

Matrix	Cat. No.	Unit
100 µg/mL in AcCN:MeOH	M-8330-09-0.1X	1 mL
1000 µg/mL in AcCN:MeOH	M-8330-09	1 mL

AcCN:MeOH Ratio 50:50

Any compound without ▶ could contain possible isomers

◆ TNT Metabolites



Property Key

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

Custom Services

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- Brominated Flame Retardants, metabolites and isomers
- PBBs
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- Explosives and metabolites
- Nonyl- and octylphenol ethoxylates
- Mono- and di-phthalate esters
- Organophosphate Flame Retardants

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- Anions / Cations
- Sulfur
- PBDEs



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005 Chemical Reference Standards (Neat or Solution Form)

- VOCs
- SVOCs
- PCBs
- Pesticides
- Explosives
- Sulfur
- PBDEs
- Anions and Cations
- Metals

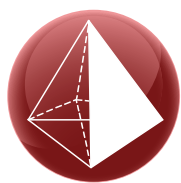
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