

3. CHEMICAL AND PHYSICAL INFORMATION

3.1 CHEMICAL IDENTITY

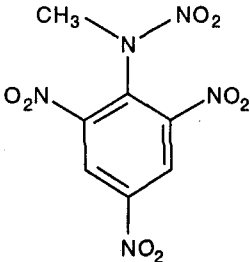
Information regarding the chemical identity of tetryl is located in Table 3-1.

3.2 PHYSICAL AND CHEMICAL PROPERTIES

Information regarding the physical and chemical properties of tetryl is located in Table 3-2.

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TABLE 3-1. Chemical Identity of Tetryl

Characteristic	Information	Reference
Chemical name	N-methyl-N,2,4,6-tetranitro-aniline	HSDB 1994
Synonym(s)	2,4,6-trinitrophenyl-N-methylnitramine; N-methyl-N,2,4,6-tetranitrobenzenamine; N-picryl-N-methyl-nitramine; tetralit; tetralite; tetril; tetryl; trinitrophenyl-methylnitramine; nitramine; CE	HSDB 1994
Registered trade name(s)	No data	
Chemical formula	$C_7H_5N_5O_8$	HSDB 1994
Chemical structure		Merck 1989
Identification numbers:		
CAS Registry	479-45-8	HSDB 1994
NIOSH RTECS	BY6300000	HSDB 1994
EPA Hazardous Waste	No data	
OHM/TADS	No data	
DOT/UN/NA/IMCO	UN0208	HSDB 1994
HSDB	2857	HSDB 1994
NCI	No data	

CAS = Chemical Abstracts Services; DOT/UN/NA/IMCO = Department of Transportation/United Nations/North America/International Maritime Dangerous Goods Code; EPA = Environmental Protection Agency; HSDB = Hazardous Substance Data Bank; NCI = National Cancer Institute; NIOSH = National Institute for Occupational Safety and Health; OHM/TADS = Oil and Hazardous Materials/Technical Assistance Data System; RTECS = Registry of Toxic Effects of Chemical Substances

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TABLE 3-2. Physical and Chemical Properties of Tetryl

Property	Information	Reference
Molecular weight	287.15	Lide 1991
Color	Yellow	Sax and Lewis 1987
Physical state	Solid crystals	Sax and Lewis 1987
Melting point	130–132 °C 129.5 °C	Lide 1991 Meyers 1987
Boiling point	187 °C (explodes)	Lide 1991
Density at 19 °C	1.57	Lide 1991
Odor	Odorless	HSDB 1994
Odor threshold:		
Water	No data	
Air	No data	
Solubility:		
Fresh water at 20 °C	75 mg/L	Army 1987d
Salt water at 25 °C	26 mg/L	Hoffsommer and Rosen 1973 Merck 1989
Organic solvent(s)	Soluble in acetone, alcohol, ether, benzene, glacial acetic acid	
Partition coefficients:		
Log K_{ow}	2.4 ^a	Army 1987d
Log K_{oc}	3.13–3.47 ^b	Army 1987d
Vapor pressure at 20 °C	4×10^{-10} torr ^a	Army 1987d
Henry's law constant: at 25 °C	2.0×10^{-12} atm–m ³ /mol ^a	Army 1987d
Autoignition temperature	No data	
Flashpoint	Explodes	Mackison et al. 1978
Flammability limits at 25 °C	No data	
Conversion factors at 25 °C	1 ppm = 11.74 mg/m ³	HSDB 1994
Explosive limits	Explodes at 187 °C; impact sensitive	HSDB 1994

^a Calculated values^b Estimated values

HSDB = Hazardous Substance Data Bank

