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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3. CHEMICAL AND PHYSICAL INFORMATION

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 ₇ H ₅ N ₅ O ₈	HSDB 1994
Chemical structure	CH ₃ NO ₂ NO ₂ NNO ₂	Merck 1989
	NO ₂	
Identification numbers: CAS Registry NIOSH RTECS EPA Hazardous Waste OHM/TADS DOT/UN/NA/IMCO HSDB NCI	479-45-8 BY6300000 No data No data UN0208 2857 No data	HSDB 1994 HSDB 1994 HSDB 1994 HSDB 1994

TABLE 3-1. Chemical Identity of Tetryl

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

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 ℃ 129.5 ℃	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 Air	No data No data	
Solubility: Fresh water at 20 °C Salt water at 25 °C Organic solvent(s)	75 mg/L 26 mg/L Soluble in acetone, alcohol, ether, benzene,	Army 1987d Hoffsommer and Rosen 1973 Merck 1989
. 	glacial acetic acid	
Partition coefficients:	a 18	
Log K _{ow} Log K _{oc}	2.4 ^a 3.13–3.47 ^b	Army 1987d Army 1987d
Vapor pressure at 20 °C	4x10 ¹⁰ torr ^a	Army 1987d
Henry's law constant: at 25 °C	2.0x10 ⁻¹² atm-m ³ /mol ^a	Army 1987d
Autoignition temperature	No data	
Flashpoint	Explodes	Mackison et al. 1978
	.	

No data

 $1 \text{ ppm} = 11.74 \text{ mg/m}^3$

Explodes at 187 °C;

impact sensitive

TABLE 3-2. Physical and Chemical Properties of Tetryl

Explosive limits

Flammability limits at 25 °C

Conversion factors at 25 °C

^a Calculated values

^b Estimated values

HSDB = Hazardous Substance Data Bank

HSDB 1994

HSDB 1994