

# COPPERHEAD CHEMICAL COMPANY<sup>®</sup>

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Product Information Bulletin for:

## DIETHYLENEGLYCOL DINITRATE (DEGDN)

Diethyleneglycol Dinitrate is a nitrate ester used in double base and triple base propellants and in various propulsion systems. DEGDN is typically stabilized with 0.5% ethyl centralite, however, other stabilizers can be used.

### Physical Properties

Physical State	Oily liquid	Heat of Explosion	1358 cal/g
Color	Colorless	Heat of Combustion	2798 cal/g
Chemical Formula	C <sub>4</sub> H <sub>8</sub> N <sub>2</sub> O <sub>7</sub>	Viscosity @ 20°C	8.1 cP
Molecular Weight	196.1	Vapor Pressure @ 20°C	0.0036 mm Hg
Specific Gravity @ 20°C	1.38	Soluble In	Methanol, ether, acetone, chloroform, benzene, toluene
Freezing Point	2°C (36°F)	Solubility in Water @ 25°C	0.4g/100g H <sub>2</sub> O
Oxygen Balance as CO <sub>2</sub>	-40.8%		
Detonation Velocity	6600 m/s		

### Sensitivity and Stability

Impact	160 cm (2 kg weight)
Explosion Temperature	200°C
Decomposition Temperature	160°C

### Typical Specifications

Nitrogen	14.1 to 14.53
Moisture	0.75% maximum
Acidity	0.01% maximum
Alkalinity	0.004% maximum
KI Stability (82.2°C)	10 minutes minimum

### Shipping Information

Designation	Composition	DOT Classification	Standard Packages
RXL 666	85/15 DEGDN / Acetone	Substances, Explosive, n.o.s., Class 1.1D, UN0475, PGII	5 gallon inner packaging with a 1A2 outer packaging
RXL 669	75/25 DEGDN / Diethyleneglycol	Substances, Explosive, n.o.s., Class 1.3C, UN0477, PGII	30 gallon inner packaging with a 1A2 outer packaging
X-E-4	75/25 DEGDN / Triethyleneglycol	Substances, Explosive, n.o.s., Class 1.3C, UN0477, PG11	30 gallon plastic inner packaging with a UN1H2 outer packaging
X-E-14	DEGDN (Stabilized)	Substances, Explosive, n.o.s., Class 1.1D, UN0475, PGII	
RXL 1002	67.6/32 DEGDN / Acetone (Stabilized)	Substances, Explosive, n.o.s., Class 1.3C, UN0477, PGII	Packages authorized under DOT-SP2709

If you are looking for a responsive, reliable, and cost effective manufacturer, contact us via telephone at (570) 386-6123 or via e-mail at sales@copperheadchemical.com. For additional information and handling instructions, refer to the Safety Data Sheet.

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