

# COPPERHEAD CHEMICAL COMPANY®

120 RIVER ROAD • TAMAQUA, PA 18252  
TEL: (570) 386-6123 • FAX: (570) 386-6158

Product Information Bulletin for:

## TRIMETHYLOLETHANE TRINITRATE (METRIOL TRINITRATE)

Trimethylolethane Trinitrate (TMETN), also called Metriol Trinitrate (MTN), is a nitrate ester used in propellants and explosives. Stabilizers such as ethyl centralite and 2NDPA are commonly used.

### Physical Properties

|                                   |   |                            |  |
|-----------------------------------|---|----------------------------|--|
| Physical State                    | Oily liquid   | Detonation Velocity        | 7050 m/s   |
| Color                             | Colorless   | Heat of Explosion          | 1122 cal/g   |
| Chemical Formula                  | CH <sub>3</sub> C(CH <sub>2</sub> ONO <sub>2</sub> ) <sub>3</sub> | Heat of Combustion         | 2642 cal/g   |
| Molecular Weight                  | 255.15  | Viscosity @ 20°C           | 156 cP   |
| Specific Gravity @ 20°C           | 1.47  | Soluble In                 | Acetone, ethyl ether, methanol, styrene, toluene, xylene |
| Freezing Point                    | -3°C  | Solubility in Water @ 25°C | <0.015g/100g H <sub>2</sub> O                            |
| Oxygen Balance as CO <sub>2</sub> | -34.5%  |                            |  |

### Sensitivity and Stability

|                                |                                  |
|--------------------------------|----------------------------------|
| Impact                         | 47 cm (2 kg), 20" (PA apparatus) |
| Friction                       | Explodes, steel or fiber shoe    |
| Explosion Temperature (5 Sec.) | 235°C                            |
| Decomposition Temperature      | 182°C                            |

### Typical Specifications

|                       |                    |
|-----------------------|--------------------|
| Purity                | 98% minimum        |
| Acidity/Alkalinity    | 0.002% maximum     |
| Moisture              | 0.20% maximum      |
| KI Stability (82.2°C) | 10 minutes minimum |

Please contact us regarding special requirements.

### Shipping Information

| Designation | Composition                             | DOT Classification                                   | Standard Packages  |
|-------------|---|--|--|
| RXL 624     | TMETN (Stabilized)                      | Substances, Explosive, n.o.s.,<br>Class 1.1D, UN0475 | <ul style="list-style-type: none"><li>5 gallon inner packaging with a 1A2 outer packaging</li></ul>  |
| RXL 624a    | 66/31/3<br>TMETN / Toluene / Stabilizer | Substances, Explosive, n.o.s.,<br>Class 1.3C, UN0477 | <ul style="list-style-type: none"><li>30 gallon inner packaging with a 1A2 outer packaging</li><li>Palletized drums or desiccators authorized under DOT-SP2709</li></ul> |

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](mailto:sales@copperheadchemical.com). For additional information and handling instructions, refer to the Safety Data Sheet.

Rev. Oct., 2021

#### FOR YOUR PROTECTION:

The information and recommendations in this publication are, to the best of our knowledge, reliable. Suggestions made concerning uses or applications are only the opinion of Copperhead Chemical Company Inc. and users should make their own tests to determine the suitability of these products for their own particular purposes. However, because of numerous factors affecting results, Copperhead makes no warranty of any kind, express or implied, including those of merchantability and fitness for particular purpose, other than the material conforms to its applicable current standard specifications. Statements herein, therefore, should not be construed as representations or warranties. The responsibility of Copperhead for claims arising out of breach of warranty, negligence, strict liability, or otherwise is limited to the purchase price of the material. Copperhead shall, in no event, be liable for special, incidental, or consequential damages, including loss of profits. Statements concerning the use of the products or formulations described herein are not to be construed as recommending the infringement of any patent and seller assumes no liability for infringement arising out of any such use. Standard specifications, although current at the time of publication, are subject to change without notice.