# Mobil Thermrex™ Series

Mobil Industrial , United States

Metalworking Quench Oils

## Product Description

The Thermrex Series is a family of three quench oils for the heat treatment of steel and alloy steels. They are comprised of selected solvent-refined base stocks and additives to provide optimum demulsibility and chemical and thermal stability. The use of such ingredients results in quench oils that provide uniform steel hardness, long batch life, resistance to sludge formation, and minimum deformation.

## Features and Potential Benefits

Thermrex D-10, R-21, and V-32 are mineral-oil blends carefully selected from controlled distillation ranges base stocks to approximate 100 SUS at 100°F. They yield consistent Relative Cooling Indices (RCI) of 95 to 160.

## Applications

The Thermrex Series oils are excellent media for rapidly cooling steel and alloy steels to achieve optimum strength and toughness. The selection of the particular grade of quench oil depends on the cooling rate desired to prevent cracking and distortion. Thermrex D-10, R-21 and V-32 are most effective with agitation at batch temperatures of less than 150°F.

For safety, it is recommended the flash point of Thermrex D-10 through V-32 should be 150°F above the batch temperature. Minimize water contamination by following effective monitoring and removal procedures.

## Typical Properties

| | D-10 | R-21 | V-32 |
|---|---|---|---|
| Density @ 15.6 C, ASTM D4052 | 6.95 | 7.19 | 7.12 |
| Kinematic Viscosity, ASTM D445 | | | |
| cSt at 100°C | 4.1 | 4.13 | 3.82 |
| cSt at 40°C | 20.2 | 21 | 15.3 |
| Relative Cooling Index %, M 1442 | 95/105 | 120/130 | 148/162 |
| Pour Point, °C, ASTM D97 | –18 | -12 | –3 |
| Flash Point, ASTM D 92, °C | 194 | 172 | 176 |
| Cooling Characteristics, ASTM D6200 | | | |
| Maximum Cooling Rate, °C/s | 54.4 | 64.6 | 72.2 |
| Temperature at Max. Cooling Rate, °C | 513 | 587 | 609 |
| Time to 600°C, s | 13.4 | 10.6 | 10.4 |
| Time to 400°C, s | 19.8 | 15.1 | 14.5 |
| Time to 200°C, s | 49.7 | 54.4 | 47.9 |

## Health and Safety

Based on available toxicological information, it has been determined that this product poses no significant health risk when used and handled properly. Information on use and handling, as well as health and safety information, can be found in the Material Safety Data Sheet which can be obtained from

your local distributor; via the Internet on http://www.msds.exxonmobil.com.

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