



# AUTOMOTIVE

Inventing *the Future* of Wire and Cable

## EXRAD 150UT

### Powertrain Wire

-55 - 150°C

EXRAD 150UT is a high performance wire built to handle the increasingly brutal environment under the hood. It is an irradiation cross-linked polyolefin with impressive properties. It significantly reduces wire and harness routing headaches because it is more heat resistant, tougher and more fluid resistant than TXL. EXRAD 150UT is rated at 150°C, but it survives temperatures to 240°C and higher. It is safer in overload conditions because it will not melt.

EXRAD 150 UT creates opportunities to eliminate unnecessary and expensive convolute tubing, tapes and heat shields that protect inferior wire systems. Given today's longer warranties you need a wire that will last longer than ever before. New standards are now requiring 10,000 hour heat age tests. EXRAD 150UT has a life expectancy over 10,000 hours at 125°C.

EXRAD 150UT processes very well on automated high speed cut and strip equipment. The end result is an automotive wire ideally suited to applications where heat protection, long life and less expensive wiring harnesses are required.

#### **Benefits and Features**

- Excellent Cut-Through Resistance
- Excellent Abrasion Resistance
- Very Fluid Resistant
- 55°C to 150°C Temperature Range
- Superior Cut and Strip Processing
- RoHs Compliant

#### **Applications**

- Including but not limited to:
- Under-hood
- Coil on plug
- Sensors
- Locations near exhaust manifolds or other high temperature areas

| Part Number   | Standard Conductors Bare Copper | Nom. Dia of Conductor |      | Insulation Thickness |     | Nom. OD |      | Finished Weight (lbs/mft) | Ampacity |
|---------------|---------------------------------|-----------------------|------|----------------------|-----|---------|------|---------------------------|----------|
|               |                                 | in.                   | mm.  | in.                  | mm. | in.     | mm.  |                           |          |
| EXRAD-UT24-XX | 24 (7/32)                       | .024                  | .61  | .016                 | .41 | .054    | 1.37 | 2.40                      | 6        |
| ERAD-UT22-XX  | 22 (7/30)                       | .031                  | .79  | .016                 | .41 | .063    | 1.60 | 3.28                      | 11       |
| EXRAD-UT20-XX | 20 (7/28)                       | .035                  | .89  | .016                 | .41 | .070    | 1.78 | 4.85                      | 15       |
| EXRAD-UT18-XX | 18 (19/.0092)                   | .047                  | 1.19 | .016                 | .41 | .078    | 1.98 | 6.51                      | 21       |
| EXRAD-UT16-XX | 16 (19/29)                      | .057                  | 1.44 | .016                 | .41 | .089    | 2.26 | 9.32                      | 28       |
| EXRAD-UT14-XX | 14 (19/27)                      | .071                  | 1.85 | .016                 | .41 | .103    | 2.62 | 14.15                     | 46       |
| EXRAD-UT12-XX | 12 (105/32)                     | .095                  | 2.41 | .018                 | .46 | .128    | 3.25 | 23.50                     | 60       |
| EXRAD-UT10-XX | 10 (105/30)                     | .112                  | 2.84 | .018                 | .46 | .156    | 3.96 | 38.90                     | 80       |

\* Ampacity 150°C rated single-insulated conductor in free air at 40°C ambient air temperature.

[www.champcable.com](http://www.champcable.com)



Champlain Cable Corporation  
175 Hercules Drive  
Colchester, Vermont 05446

P 800.451.5162  
F 802.654.4224  
sales@champcable.com



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## EXRAD 150UT

| Property / Attribute         |  |            | SAE J-1128<br>TXL<br>Req. | EXRAD 150 UT<br>18 AWG<br>Typical Performance |
|------------------------------|--|------------|---------------------------|---|
| <b>Flex Life</b>             |  |            |                           |   |
| Flex Test                    | Per Modified ISO 14572   |            | NA                        | NA  |
| <b>Dielectric Strength</b>   |  |            |                           |   |
| Dielectric Test              | Wet Dielectric after 5 hour soak                                 |            | 1 kV 1 min.               | 5 kV 30 min.                                  |
| <b>Flame Resistance</b>      |  |            |                           |   |
| Flame Test                   | Maximum time after burn  |            | 70 Sec                    | 9 sec   |
| <b>Thermal Performance</b>   |  |            |                           |   |
| Cold Bend                    | 4 hours at temperature no cracks / breakdown                     |            | -40°C                     | -55°C   |
| Temperature Rating           | 240 Hours @180°C heat aging                                      |            | 155°C                     | 180°C   |
| Temperature Rating           | 3000 Hours @150°C  |            | 125°C                     | 150°C   |
| Temperature Rating           | 10000 Hours @125°C   |            | NA                        | 125°C   |
| <b>Mechanical Properties</b> |  |            |                           |   |
| Tensile                      | Minimum psi  |            | 1500                      | 3000  |
| Elongation                   | Minimum %  |            | 150                       | 375   |
| Abrasion                     | Sand Paper Resistance Length in.                                 |            | 10                        | 75  |
| Abrasion                     | Scrape Cycles  |            | None                      | NA  |
| Pinch                        | Pounds   |            | None                      | 10.2  |
| <b>Ozone Resistance</b>      |  |            |                           |   |
| Ozone Test                   | 192 Hours @ 65°C 100 pphm no cracks                              |            | Pass                      | Pass  |
| <b>Fluids</b>                |  |            |                           |   |
| Engine Oil                   | ASTM D471, IRM-902   | 50 +/-3 °C | 15% Max.                  | 1%  |
| Gasoline                     | ASTM D471 Ref. Fuel C  | 23 +/-5 °C | 15% Max.                  | 2%  |
| Brake Fluid                  | SAE-J-1703   | 50 +/-5 °C | None                      | 2%  |
| Ethanol                      | 85% Ethanol + 15% ASTM D471, Ref. Fuel C                         | 23 +/-5 °C | 15% Max.                  | 2%  |
| Diesel Fuel                  | ASTM D471, 90% IRM-903 + 10% p-xylene                            | 23 +/-5 °C | None                      | 2%  |
| Power Steering               | ASTM D471, IRM-903   | 50 +/-3 °C | 30% Max.                  | 1%  |
| Auto Transmission            | Citgo #33123 SAE-J311  | 50 +/-3 °C | 25% Max.                  | 3%  |
| Methanol                     |  |            | 15% Max.                  | 1%  |
| Engine Coolant               | 50% Ethylene Glyco + 50% distilled Water                         | 50 +/-3 °C | 15% Max.                  | <1%   |
| Battery Acid                 | H <sub>2</sub> SO <sub>4</sub> Specific Gravity = 1.260 +/- .005 | 23 +/-5 °C | 5% Max.                   | <1%   |

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