tyco Electronics

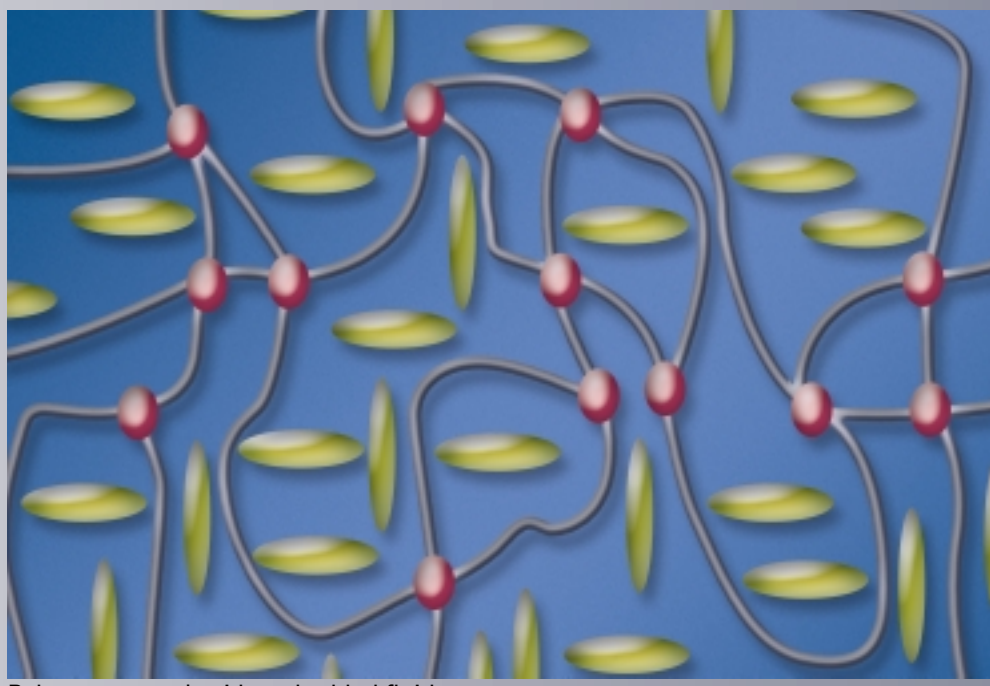
Energy Division

Raychem PowerGel

Low Voltage PowerGel
Raychem PowerGel consists of a high percentage of liquid dispersed in a solid, cross-linked polymer matrix. Like a liquid, a gel will intimately conform to and seal surfaces. Like a solid, a gel has elasticity and shape retention for easy handling.

What are gels made of?
Gels can be made from a variety of polymer materials. However, only a few gels possess the proper combination of properties for use as low-voltage electrical-cable accessories. A proprietary Raychem silicone gel has been developed to meet the mechanical, electrical, temperature, and material compatibility requirements of low voltage applications.

How do gels work?
Gels have the ability to encapsulate substrates without having to be melted, poured or cured. Gels are tacky, so they adhere to substrates and provide an excellent seal against moisture and other contaminants. Additionally, gel can easily and cleanly be removed when re-entry is desired.
When silicone gel comes into contact with a substrate, it lays a protective coating of silicone oil on the target surface, forming a barrier to water or oxygen molecules. This process is called „wetting“ a surface. Without water or oxygen, corrosion cannot occur.



Polymer network with embedded fluid

Why is Raychem PowerGel unique?
Raychem's PowerGel is unique in that it provides an excellent moisture seal over a wide temperature range (-40°C to over 90°C) and is compatible with cable jacket materials. PowerGel also has excellent insulating properties.

How are gels used?
A gel product may be thought of as the gel and its packaging. The packaging provides physical protection, electrical insulation and a convenient means of delivering gel compression, which is essential for the sealing properties of the gel to be achieved.
To apply a gel filled product to a substrate, the product is simply positioned over the substrate and compressed into place. Special tools are not required. Since the gel is pre-cured, the product can immediately be put into service.

Is gel harmful?
Silicone gel is considered a non-hazardous mixture. Silicone gel is not considered to be a skin irritant and is not considered to be toxic by skin absorption. In fact, certain silicone gel sheets are being used for effective treatment of scars that occur from injury and burns to the skin.

PowerGel products are available for a variety of applications for power cables up to 1 kV.

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