COATING MATERIALS

NATURAL RUBBER

Found in nature in over 200 plants but most commonly the Hevea Brasiliensis tree. Natural rubber dispersed in water is known as latex. Natural rubber has a very high elasticity compared to other glove materials, excellent cut and tear resistance, and outstanding grip and temperature resistance. While it is flexible and durable over a wide range of temperatures; from -18 °C to 149 °C (0 °F – 300 °F); it has poor flame resistance. In general, natural rubber withstands water, alcohols, and some ketones; but has poor chemical resistance against most hydrocarbon and organic solvents. Natural rubber can also cause an allergic reaction in some people.

CHLOROPRENEA

Well known by its DuPont trade name of Neoprene®; it was the first commercial, synthetic rubber. It has good abrasion and cut resistance and resists degradation due to aging, sunlight, ozone, oxidation, and weather. Neoprene® is also flame resistant and demonstrates heat stability up to 93 °C (200 °F). It provides excellent resistance to a broad range of chemicals, including: acids, alcohols, fats, caustics, refrigerants, ketones, detergents, and fertilizers. Neoprene® is also combined with natural rubber in some glove coating formulations.

NITRILE RUBBER

A copolymer of acrylonitrile and butadiene. Nitrile rubber offers excellent resistance to physical hazards such as: punctures, cuts, snags, and abrasion. While it is not flame-resistant, it demonstrates functional performance in temperatures ranging from -4 °C to 149 °C (25 to 300°F). Nitrile rubber has considerable resistance to oils, fuels, and certain organic solvents. It is commonly used as a coating for dipped gloves and also in the construction of laminated and impregnated cut and sewn gloves. Polyurethane (PU) is a thermoplastic polymer of urethane. Polyurethane provides good abrasion resistance and tensile strength. Polyurethane offers good resistance to oils, some organic solvents, oxidation, and ozone. It has poor resistance to hot water and is not recommended for use above 79 °C (175 °F). Polyurethane has a very low particulate shed, thus making it a good choice for clean room gloves. Polyurethane is also used in some specialty application styles and as a waterproof liner for gloves.

PVA

Polyvinyl alcohol (PVA) is a polymer of vinyl alcohol. PVA offers good resistance to punctures, cuts, snags, and abrasion. This material provides resistance to hydrocarbons, chlorinated solvents, esters, and most ketones; but is not resistant to water, water-based solutions (like acids and bases), or light alcohols. PVA is provided as a coated glove by a limited number of manufacturers.

PVC

Polyvinyl chloride (PVC) is a synthetic thermoplastic polymer of vinyl chloride. PVC offers good abrasion resistance but may be susceptible to punctures, cuts, and snags. While it is flexible, it does not provide the tactile sensitivity associated with most rubber products. PVC starts to soften at approximately 82 °C (180 °F). PVC is effective against water and most aqueous solutions, detergents, as well as diluted bases and acids. It only has limited chemical resistance to organic solvents. PVC is one of the more common coatings for coated work gloves.