



HANNA RUBBER COMPANY

Types of Rubber

EPDM (Ethylene Propylene Diene Monomer)

EPDM (Ethylene Propylene Diene Monomer) is a synthetic rubber known for its durability, versatility, and resistance to various environmental factors. Its physical properties make it an ideal material for a wide range of applications, particularly in the automotive, construction, and electrical industries. Some of the key physical properties of EPDM are:

Density: EPDM typically has a density ranging from 0.85 to 0.95 g/cm³, which may vary depending on the specific formulation or type of EPDM.

Hardness: The hardness of EPDM is generally measured in Shore A units, with most commercial grades falling between 40 and 90 Shore A. The hardness can be tailored based on specific applications by adjusting the formulation or processing methods.

Tensile Strength: EPDM exhibits a tensile strength ranging from 7 to 25 MPa (1,000 to 3,600 psi), depending on the specific formulation and type. Its good tensile strength contributes to the material's durability and resistance to tearing.

Elongation at Break: EPDM has a high elongation at break, often ranging from 200% to over 600%. This property indicates the material's ability to stretch without breaking, which contributes to its flexibility and suitability for sealing applications.

Compression Set: EPDM generally has a low compression set, which means it can recover its original shape after being compressed. This property is important for applications requiring long-term sealing performance, such as gaskets and weatherstripping.

Temperature Range: EPDM has a wide operating temperature range, typically between -40°C (-40°F) and 150°C (302°F), with some specialized formulations capable of withstanding higher temperatures. Its ability to maintain its properties at both low and high temperatures makes it suitable for a variety of applications and environments.

Electrical Properties: EPDM has good electrical insulating properties, including high dielectric strength and volume resistivity. This makes it suitable for use in electrical applications such as cable insulation and connectors.

Weather, Ozone, and UV Resistance: EPDM is highly resistant to weathering, ozone, and ultraviolet (UV) radiation. This resistance makes it ideal for outdoor applications where exposure to sunlight and other environmental factors is common.

These physical properties contribute to EPDM's versatility and make it a popular material in a wide range of industries. However, it is important to note that the specific properties of EPDM may vary depending on the formulation, manufacturing process, and any additives used in the material. Some common applications of EPDM include:

Automotive: EPDM is widely used in the automotive industry for hoses, seals, belts, and weatherstripping.

Construction: EPDM roofing membranes are popular due to their durability and weather resistance. The material is also used in window and door seals, expansion joints, and other sealing applications.

Electrical: EPDM's electrical insulating properties make it suitable for use in cable insulation, electrical connectors, and other components.

Pond Liners: EPDM is often used for pond liners and other waterproofing applications due to its resistance to water and weathering.

Overall, EPDM is a versatile and durable synthetic rubber that has found widespread use in various industries due to its unique combination of properties.



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The history of EPDM can be traced back to the early 20th century, but significant developments occurred in the mid-20th century. Here are some key milestones in the history of EPDM:

Early developments (1900-1950): Although the early foundations of synthetic rubber date back to the early 20th century, the development of EPDM specifically began in the 1950s. The early research on synthetic rubbers mainly focused on improving the properties of natural rubber or finding alternatives, as global demand for rubber increased.

Invention of EPDM (1960s): EPDM was first developed in the early 1960s as a result of collaboration between several companies, including Enjay Chemical Company (later Exxon Chemical), Uniroyal Chemical, and US Rubber Company (later Uniroyal Inc.). The invention of EPDM was driven by the need for a material that could withstand extreme weather conditions, heat, and ozone degradation.

Widespread adoption (1970s-present): Since its invention, EPDM has been increasingly adopted in various industries, particularly in automotive and construction sectors. The material's unique properties, such as its resistance to heat, weathering, and ozone, have made it an ideal choice for sealing applications, such as weatherstripping, gaskets, and hoses.

Technological advancements (1980s-present): Over the years, advancements in EPDM manufacturing processes and the development of new formulations have resulted in improved material properties and performance. These advancements have expanded the range of applications for EPDM, including its use in electrical insulation, pond liners, and various automotive components.

Today, EPDM remains a popular material in numerous industries due to its durability, versatility, and resistance to various environmental factors. Ongoing research and development efforts continue to improve the material and expand its range of applications, ensuring that EPDM will remain an important material in the future.

Trade Names EPDM

EPDM (Ethylene Propylene Diene Monomer) is a widely-used synthetic rubber that is manufactured and marketed by various companies under different trade names. Some of the well-known trade names for EPDM are:

Keltan®: Manufactured by Arlanxeo, a global specialty elastomers company, Keltan® is a brand of EPDM used in various applications such as automotive, building and construction, and wire and cable industries.

Nordel®: E. I. Du Pont de Nemours and Company, later assigned to Dow Chemical Company, Nordel® is another trade name for EPDM. It is widely used in applications like automotive weatherstripping, hoses, and belts, as well as roofing and geomembrane materials.

Royalene®: Manufactured by United States Rubber Company later assigned to Lion Elastomers, Royalene® is an EPDM rubber used in automotive, construction, and other industrial applications. It is known for its good resistance to heat, weathering, and chemicals.

Vistalon®: ExxonMobil Chemical produces Vistalon®, an EPDM brand used in various applications, including automotive components, building profiles, and roofing materials. It is known for its durability, flexibility, and resistance to environmental factors.

These are just a few of the trade names for EPDM rubber available in the market. The specific properties and applications of these branded EPDM products may vary slightly due to differences in manufacturing processes and formulations. When choosing an EPDM product, it is important to consult the manufacturer's datasheets and guidelines to ensure that the selected material meets the requirements of the intended application.