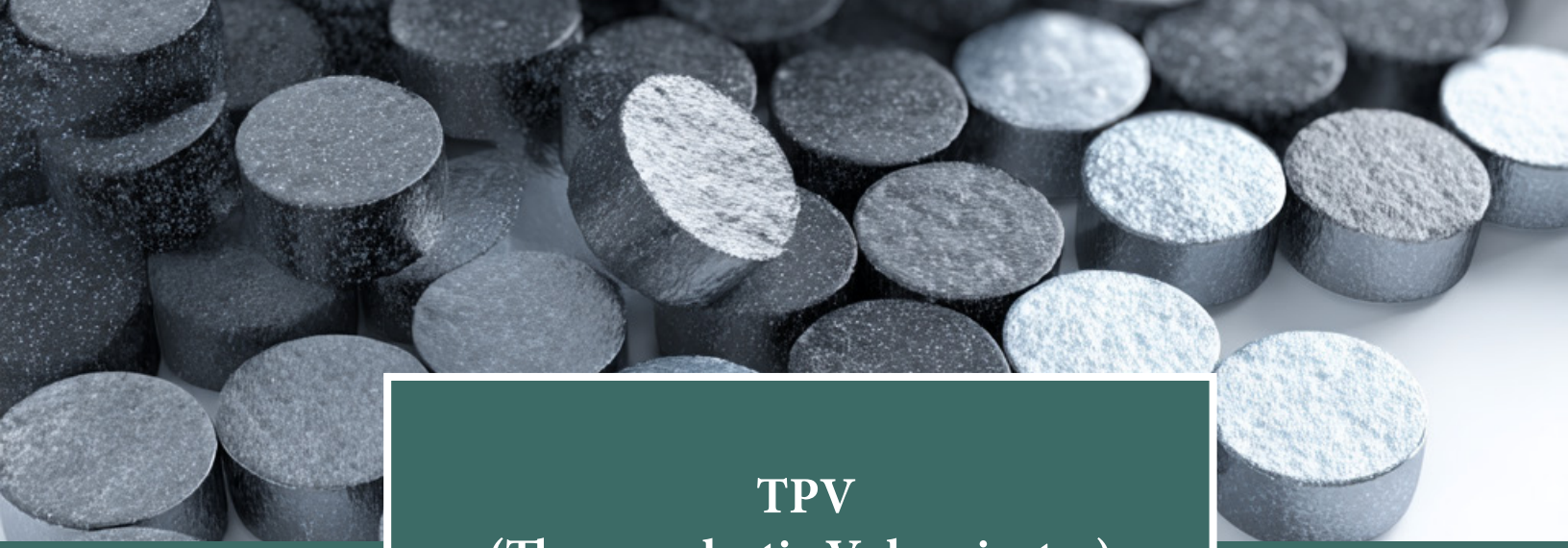

TPV (Thermoplastic Vulcanizates)

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Thermoplastic Vulcanizates (TPVs) are a class of thermoplastic elastomers that combine the flexibility of rubber with the processing ease of plastics. They provide rubber-like performance while being recyclable and easier to manufacture..

What is TPV?

TPVs are created through dynamic vulcanization, where rubber particles are finely dispersed within a thermoplastic matrix. This unique structure gives TPVs elasticity, resilience, and chemical resistance, along with the ability to be processed under conventional thermoplastic methods

Common Applications

TPVs are used in demanding environments that require durability and flexibility:

- Automotive seals, gaskets, and weatherstripping
- Grips and handles for tools and consumer products
- Appliance seals and tubing
- Outdoor and industrial profiles exposed to stress and weather
- Wire and cable jacketing
- Industrial equipment and enclosures
- Rigid packaging and structural parts
- Profiles requiring enhanced stiffness at a low cost

Benefits

1. Combines the strengths of multiple resins in one material
2. Enhanced toughness, flexibility, or chemical resistance
3. Versatile formulations for specific performance needs
4. Good dimensional stability
5. Cost-effective compared to many high-end engineering plastics

Limitations

1. Rubber-like flexibility and resilience
2. Not as soft as some thermoset rubbers
3. Properties depend on formulation and rubber content
4. Limited transparency compared to other elastomers