



**DOW**

®

# NORDEL™ XFC EPDM for faster curing, high performance weatherstripping

Extra fast cure NORDEL™ EPDM products by Dow are paving the way for automotive suppliers to produce a new generation of weatherstripping that meets and exceeds requirements to isolate the vehicle cabin from external elements such as wind, rain, noise, and road vibration.

## Answering the challenge

“Voice of customer” feedback from OEMs and weatherstrip manufacturers challenged Dow R&D teams to develop NORDEL™ EPDM products that:

- Mix more efficiently in rubber compounds and maintain performance with high levels of filler
- Cure rapidly to keep up with increased production demand and line speeds, and work universally across fabrication processes and equipment
- Offer improved shape and compressive properties, allowing automotive seal designers to focus on innovative, lightweight designs
- Contribute positively to sustainability and environmental goals

NORDEL™ XFC EPDM — a robust family of easy-to-use, extra fast cure (XFC) solutions — address these issues by offering higher performing, sustainable replacements for mature technologies produced with rapidly aging assets. NORDEL™ XFC EPDM products are specially designed for use in dynamic and static weatherstripping, including primary and secondary door, body, window glass, hood, and trunk seals.

## Breakthrough technology

NORDEL™ XFC EPDM is made possible by Dow’s proprietary advanced molecular catalyst (AMC) technology and solution process, which enable the tailored design of EPDM molecular architecture — including composition distribution and molecular weight distribution. This breakthrough allows NORDEL™ XFC EPDM polymers to mix and cure rapidly in synthetic rubber compounds while offering an optimum balance of surface sealing and aesthetics, part strength, and improved elastic and compressive properties. As a result, manufacturers are able to achieve enhanced levels of part quality and design, extrusion and injection molding throughput, and ultimate physical properties in the end-use product.<sup>(1)</sup>

<sup>(1)</sup>Data per tests conducted by Dow. Additional information available upon request. Properties shown are typical, not to be construed as specifications. Users should confirm results by their own tests.



## Smooth sailing ahead

NORDEL™ 6555 OE EPDM is a high viscosity polymer that can be used in the sponge/foam bulb of weatherstripping to produce smoother, sleeker door profiles for better sealing and cabin isolation (i.e., a quieter vehicle interior).

Control and tailoring of its molecular architecture allow NORDEL™ 6555 OE EPDM to offer significantly higher dynamic elasticity than previous NORDEL™ EPDM products. Combined with high diene content and high molecular weight polymer chains, this allows efficient mixing and fast curing at high line speeds to form ultra-smooth Class A surfaces in complex foamed geometries. In recent trials, NORDEL™ 6555 OE EPDM was used to produce door profiles that improved both appearance and sealing performance with a significant reduction in surface roughness compared to the incumbent EPDM.

By focusing on emerging transportation industry needs, Dow is able to deliver EPDM solutions with improved quality, efficiency, and sustainable supply options.

### Versatile options

The NORDEL™ XFC EPDM family consists of three products that can be used alone or in blends:

- **NORDEL™ 6555 OE EPDM** – A high viscosity, oil-extended (OE) amorphous EPDM primarily designed for foamed, fast cure extrusion applications such as Class A profiles (see above).
- **NORDEL™ 6565 XFC EPDM** – Medium viscosity, high diene product primarily intended for fast cure, solid/dense/microdense profiles and other extruded applications.
- **NORDEL™ 6530 XFC EPDM** – An amorphous, fast cure EPDM well suited for extrusion and injection molded applications like corner molds and joining seals. Its low viscosity and broad molecular weight distribution also help enhance processability.

These materials offer rubber formulators the flexibility to develop custom tailored compounds that not only meet the flow and performance specifications of simple and complex part geometries, but also enable new, lightweight weatherstripping designs that promote fuel efficiency to reach NHTSA CAFE 2022-2025 targets.

For example, NORDEL™ 6555 OE EPDM and 6565 XFC EPDM can be blended to produce sponge foam structures for a wide range of dynamic sealing applications including:

- On-door seals (primary)
- On-body seals (secondary)
- Trunk/liftgate and deck lid seals
- Hood seals (radiator, cowl, etc.)

Likewise, NORDEL™ 6565 XFC and 6530 XFC EPDM can be combined to develop solid/dense/microdense structures for static sealing products such as:

- Glass window runs
- Interior trim
- Outer trim
- Glass encapsulation
- Appliqués
- Sun roofs

### Lead the way with NORDEL™ XFC EPDM

For more information on how the next generation of NORDEL™ EPDM can benefit your weatherstripping applications, please contact your Dow representative or call the nearest location listed below.

