



Cleaner, Greener,  
Performance Polyols

Enabled by Breakthrough Technology from Dow

**RENUVA**<sup>TM</sup>  
Renewable Resource Technology



# Natural Oil-Based Performance Polyols Enabled by Breakthrough Technology

Looking to fill a specialty market or get ahead of the competition? Search no further. Dow Polyurethanes is committed to expanding markets and transforming technologies into solutions that help customers differentiate themselves from competitors. Dow Polyurethanes does more than create products – the business develops solutions to satisfy specific customer needs, drawing on more than 50 years of polyurethanes expertise.

## Cleaner\*, Greener Solutions

Dow is building better polyols so you can build better products. Working together, we can build a sustainable future – both environmentally and economically. With natural oil-based polyols, you can differentiate your company while reducing its impact on the environment.



According to life cycle analysis conducted by Dow researchers, RENUVA™ Renewable Resource Technology is greenhouse gas neutral and uses up to 60% fewer fossil fuels than conventional polyol technology. Even better, the technology allows you to create products with high levels of renewable content and delivers the performance you expect from Dow, without the odor typically associated with other bio-based polyols.

## Building a Better Polyol

Producing polyurethanes from natural oil sources isn't a new concept, but Dow's approach is. While some producers process soybean oil with simple processes to manufacture one or two natural polyols with little advantage over unmodified castor oil, RENUVA™ Renewable Resource Technology gives birth to an enhanced generation of performance-based polyols.

RENUVA technology breaks down vegetable oil and functionalizes it, then uses a distinct, proprietary process to reconstruct the molecules for greater quality and consistency. The result is a better natural oil-based polyol with features that rival conventional polyols, all without the odor typically associated with other bio-based polyols.

What's more, this new chemistry allows Dow and its customers to be polyol architects, actually designing polyols with a variety of specifications and attributes that help to achieve consistent, desired performance.

\*Versus conventional processing methods

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No matter the application, using bio-based polyols made with RENUVA™ Renewable Resource Technology from Dow can help to ensure excellent performance and enable customers to create products with high levels of renewable content.

## Applications for Bio-based Polyols from Dow

RENUVA™ Renewable Resource Technology offers distinctive performance attributes in a variety of applications. In addition to renewable content, this new technology eliminates the odor often associated with soy polyols. In coatings, adhesives, sealants, and elastomers applications, RENUVA technology brings improved chemical and water resistance. In memory foam, RENUVA technology creates a true open cell foam that is visco-elastic over a wide temperature range, which provides enhanced comfort. Improved compression set and enhanced hardness lead to greater durability in conventional foams. The technology also reduces the need for adhesion promoters for applications requiring flame lamination. These are just a few of the performance benefits RENUVA Renewable Resource Technology can bring to your applications. From foams and cushions to concrete coatings, many applications can benefit from natural oil-based polyols made with RENUVA™ technology.

## A Sustainable Future Is a Better Future

Dow recognizes that the scarcity of petroleum-based resources, growth in population, and the influence of human activity on the environment are potential causes for concern to future generations. Dow believes that being a good corporate neighbor and a responsible steward of the world's resources means providing innovative solutions to help address these issues. Using the Triple Bottom Line of Sustainable Development, Dow focuses on three fundamental areas – economics, environment, and society – where companies impact the quality of life. The Triple Bottom Line provides a framework that directs Dow activities to ensure that we continue on the course prescribed by our

mission statement, to “constantly improve what is essential to human progress by mastering science and technology.”

The introduction of bio-based performance polyols via RENUVA™ Renewable Resource Technology from Dow further demonstrates our commitment to this mission and to helping our customers find ways to create more sustainable products and a more sustainable future.

## The Future Starts Today

Dow is ready to work with you today, and the sooner we begin collaborating, the quicker you can bring your products to market. Our exceptional process technology and our standing as a reliable global supply source help us to provide you with the materials you need for economic and environmental sustainability. In addition, our ongoing research and development promises the potential for even more exciting possibilities. So contact us today to discuss how Dow Polyurethanes' customized natural oil-based polyols created by RENUVA™ Renewable Resource Technology can meet your needs for performance and sustainability that will help you differentiate your product offerings well into the future.

## Market Segments & Applications for RENUVA™ Technology

### Transportation

- Energy-absorbing counter measure foam
- Fascia
- Foams for seating, arm rests and head rests
- Foams for instrument panels, door panels and consoles
- Headliners
- Metal coatings
- Noise, Vibration, and Harshness (NVH)
- Steering Wheels

### Bedding and Furniture

- Conventional and specialty foams
- Visco-elastic foams

### Carpet

- Backing

### CASE

- Binders
- Concrete coatings
- Metal coatings
- Plastic coatings
- Melamine-cured coatings
- One- and two-component urethane adhesives and sealants
- Spray elastomers
- Waterborne urethanes
- Wood coatings

## Building a Better Polyol



RENUVA™ Renewable Resource Technology breaks down vegetable oil and functionalizes it, then uses a distinct, proprietary process to reconstruct the molecules for greater quality and consistency – without the odor typically associated with other bio-based polyols.

## Dow Polyurethanes

Dow Polyurethanes, a business group of The Dow Chemical Company, offers a broad product catalog comprising rigid and flexible foams, coatings, adhesives, sealants, and more. Dow Polyurethanes serves a variety of markets, including appliances, automotive, bedding, carpet backing, construction, furniture, packaging, and recreation. As a world-leading supplier of innovative polyurethane solutions, Dow

Polyurethanes is committed to customer success. This is realized every day through products that meet the quality, consistency, and performance needs of customers around the world. It's shown through on-time delivery and a focus on safety and the environment, and it's demonstrated through local sales and technical support that offer the potential to help our customers grow.

For technical assistance and sampling information, please contact our Customer Information Group (CIG).

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