


Let's mix it up.

Discover the answers to improving your rotational molding applications.



DOW[®]



How can our portfolio of advanced materials help
shape the future of rotomolding?

Resility[™]

innovative
rotomolding resins by

DOW

Revoloop[™]

recycled plastics resins by

DOW

Fresh perspectives. **New potential.**

Put a new spin on **rotational molding**

Long-lasting and great-looking. Strong yet lightweight. Rotomolders are being pushed and pulled in many different directions to create products that satisfy competing demands. Overcoming those challenges isn't always easy.



RESILITY™
Innovative
Rotomolding
Resins were

specifically developed to help you explore new potential and create solutions for the most difficult challenges.

And now, REVOLoop™ Recycled Plastics Resins – our growing family of high-quality, PCR-rich polymers – are creating opportunities to incorporate recycled content while maintaining excellent performance.



Selecting the right materials.

Extraordinary results require extraordinary materials – using the right ones goes a long way. RESILITY™ Innovative Rotomolding Resins – a diverse roster of polyethylene- (PE-) based options – were developed to offer long-lasting performance, improved processing, strong aesthetics, and a greater potential for differentiation through:

- Excellent UV & weathering protection
- Bright white & vibrant colored parts
- Fast cycle times & wide processing windows
- Exceptional resin stability
- Increased regrind incorporation capacity
- Reduced plate out
- Downgauging/lightweighting
- Alternative material options

Good looks that last⁽¹⁾

Exposure to the elements, especially the intense rays of the sun, can rapidly deplete the vibrant colors and lifetime performance of rotomolded products.

RESILITY™ resins offer greater ability to withstand weathering and deterioration than conventional materials thanks to UV stability⁽²⁾ ratings of UV20 and higher. In addition, improved gas fade resistance supports the resiliency of white during pulverization, rotomolding, and storage.

Easier, faster processing⁽¹⁾

These next-generation solutions offer up to 30 percent wider processing windows with the flexibility to optimize temperatures and cycle times. Along with exceptional stability, this creates the potential for increased productivity, reduced scrap rates, and lower overall production costs. Other advantages include faster bubble removal (which also contributes to improved low-temperature performance) and reduced plate out to help minimize downtime.



⁽¹⁾ Typical values, not to be construed as specifications. Users should confirm results by their own tests.

⁽²⁾ The addition of a UV stabilization package to a resin does not completely eliminate the effects of UV exposure. The sole intent is to slow down the rate at which these effects occur. Actual results may vary depending on application and other factors such as resin color, transparency, and additives. Therefore, actual end-use testing is recommended.

Soft touch. **Strong possibilities.**

This is not “your father’s” rotomolding resin. XUS 58441.00 Experimental Soft Touch Copolymer⁽¹⁾ is an innovative elastomeric material that combines soft touch and feel with a UV20+ rating⁽²⁾ and exceptional impact, slip, and abrasion resistance. These attributes – along with easy processing, ambient pulverization capabilities, and outstanding color stability – make an ideal choice for grips, non-slip surfaces, toys, furniture, and any other application that can benefit from enhanced tactility and durability.

Table 1 lists key benefits XUS 58441.00 offers in comparison to a typical, commercially available MDPE.

Figure 1 takes a closer look at impact resistance, showing how parts molded with XUS 58441.00 can absorb more energy and displace further before failing than the MDPE tested. And while our high-quality, soft touch offering works great as a standalone substrate, it can also help increase softness and impact resistance in blends with MDPE (Figure 2).



Table 1: Comparison of XUS 58441.00 and typical MDPE^(1,3)

Key Properties	Typical MDPE	XUS 58441.00 ⁽¹⁾ Experimental Soft Touch Copolymer	XUS 58441.00 ⁽¹⁾ Implication
Melt Index (g/10 min)	5.2	5.0	Familiar processing reduces learning curve for molders
Density (g/cc)	0.935	0.887	Significantly softer than PE
Melting Temperature (°F)	256	246	Similar, lower melt temperature allows blending with PE
Coefficient of Friction Static Kinetic	0.23 0.20	1.01 0.83	Enhanced grip and slip resistance
Shore D Hardness	55.9	30.2	Significantly softer than PE
Flexural Modulus at 1% Secant (psi)	95,000	6,800	Significantly more flexible than PE
ARM Impact Mean Failure Energy (ft.-lbs.) ⁽⁴⁾	180	>230	Exceptional impact resistance

Figure 1: Instrumented dart impact performance comparison of XUS 58441.00 and typical MDPE^(1,3)

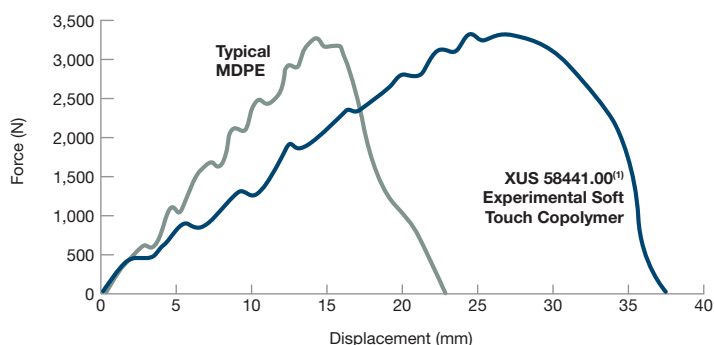
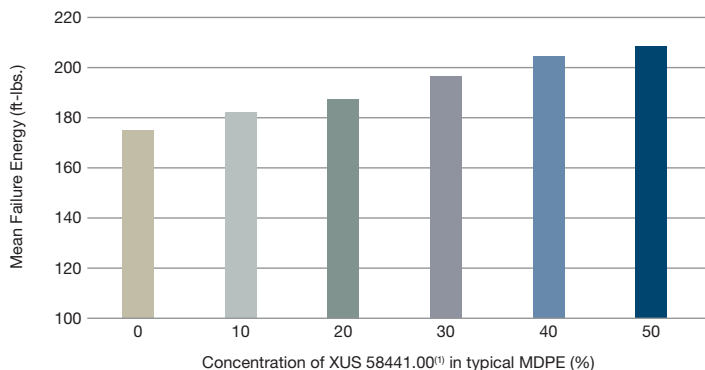


Figure 2: Impact modification of XUS 58441.00 in blends with typical MDPE^(1,3,4)



⁽¹⁾ If products are described as “experimental” or “developmental”: (1) product specifications may not be fully determined; (2) analysis of hazards and caution in handling and use are required; (3) there is greater potential for Dow to change specifications and/or discontinue production; and (4) although Dow may from time to time provide samples of such products, Dow is not obligated to supply or otherwise commercialize such products for any use or application whatsoever.

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⁽⁴⁾ Plaques rotomolded to 0.25 inch and tested via ARM standard method at -40°C.

Quality materials. **Robust options.**

Focused on enhancing sustainability.

Like leading rotomolders, moving toward a more circular economy is extremely important to Dow.

Long-term durability and color fastness help products made with RESILITY™ resins last for generations and stay out of landfills. The inherent strength and toughness of these PE-based materials also create opportunities for downgauging, which can help reduce material usage, part weight, and transportation costs/emissions. And, when they finally reach the end of their useful life, products made with RESILITY™ resins can be recycled in existing PE recycling streams. Please refer to Table 2 for a list of RESILITY™ resins and typical applications.

Adding new ideas to the mix

One of our most recent developments, REVOLoop™ Recycled Plastics Resins, is a growing family of high-quality, fully-formulated polymers that incorporate up to 70% post-consumer recycled (PCR) content. We'd love to talk about what REVOLoop™ resins and PCR can do for your rotomolding applications.

We're also working to develop bio-circular⁽¹⁾ polymers and exploring other technologies, such as advanced recycling. All while maintaining excellent processability, performance, and aesthetics.

Table 2: Preferred resins for rotational molding applications⁽²⁾

GRADE(S)	MELT INDEX (g/10 min)	DENSITY (g/cc)	PRODUCT GROUP	AGRICULTURAL TANKS	CHEMICAL STORAGE TANKS	POTABLE WATER TANKS	INTERMEDIATE BULK CONTAINERS	INDUSTRIAL PRODUCTS	RECREATION/ TOYS	PLAYGROUND EQUIPMENT	HOUSEWARES	CONSUMER GOODS	MARINE PRODUCTS	DUCTWORK	FOOD CONTAINERS
RESILITY™ DPDB-3170 NT 7	7	0.935	MDPE						✓	✓	✓	✓		✓	✓
RESILITY™ DPDB-3162 NT 7	6.2	0.940	MDPE						✓	✓	✓	✓		✓	✓
RESILITY™ DPDB-3152 NT 7	5.2	0.935	MDPE						✓	✓	✓	✓		✓	✓
RESILITY™ DPDB-3135 NT 7	3.5	0.938	MDPE	✓	✓	✓	✓	✓			✓	✓	✓		✓
RESILITY™ DPDB-3220 NT 7	2	0.942	HDPE	✓	✓	✓	✓	✓					✓	✓	✓
XUS 58441.00 Experimental Soft Touch Copolymer ⁽³⁾	5	0.887	Elastomer					✓	✓	✓	✓	✓	✓	✓	

⁽¹⁾ Bio-circular attributed under mass balance chain of custody approach

⁽²⁾ Typical values, not to be construed as specifications. Users should confirm results by their own tests.

⁽³⁾ If products are described as "experimental" or "developmental": (1) product specifications may not be fully determined; (2) analysis of hazards and caution in handling and use are required; (3) there is greater potential for Dow to change specifications and/or discontinue production; and (4) although Dow may from time to time provide samples of such products, Dow is not obligated to supply or otherwise commercialize such products for any use or application whatsoever.

Refer to individual technical data sheets (TDS) for additional information regarding property performance, regulatory compliance, and handling considerations.



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These three words sum up Pack Studios, our global network of technical experts, equipment, and testing capabilities. With exclusive resources located strategically around the world – but accessible from anywhere – we can help you bring innovative technologies and applications to market faster.

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**Let's give it
a whirl!**

Our advanced technologies and resources – including RESILITY™ Innovative Rotomolding Resins and REVOLoop™ Recycled Plastics Resins – are helping rotomolders address the constantly evolving challenges they face.

Ready to get started? Visit dow.com/rotomolding, dow.com/revolooop or contact a Dow representative today for more information!

For more information about Dow, visit www.dow.com/about. To contact a Dow representative, visit, www.dow.com/contact.

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