We make it easy to make things tough.

Adiprene®/ Vibrathane® hot-cast polyurethane elastomers.

Chemtura

High-performance products and people.

High-performance urethane elastomers

Adiprene®/Vibrathane® are the world's leading high-performance, hot-cast urethane prepolymers. These resins form unusually tough thermoset elastomers when mixed with an appropriate curative. In one material, you get both the resilience of rubber and the toughness of engineering plastics. These unique properties make Adiprene®/Vibrathane® the ideal choice for some of the most demanding applications in the world. Their superior toughness, abrasion resistance, greater load-bearing capacity, cut resistance, heat build-up resistance, and versatility make them popular replacements for steel, plastic, and other rubber materials.

Innovative manufacturers and scientists are embracing Adiprene®/Vibrathane® prepolymers as the better-performing alternatives. The experience, expertise, helpfulness, accessibility, ingenuity, and dedication of Crompton people added together, make the step up to urethane performance and versatility easy and cost-effective.

One source worldwide

Crompton manufactures Adiprene®/Vibrathane® hot-cast urethane prepolymers around the world. Our customers can count on product consistency, availability, and favorable logistics just about anywhere. Crompton plants in the U.S., Canada, Brazil, Italy, Australia, and Korea share uniform technologies, procedures, and policies.

Crompton fully supports Adiprene®/Vibrathane® customers with people and services located locally across the globe. That means our customers get full-time support from local scientists who care about local issues, yet are backed by Crompton's worldwide resources. Make us a vital part of your operations and we will surely add to your success.

Crompton is firmly committed to quality and environmental responsibility everywhere in the world. We are signatories of the American Chemistry Council's Responsible Care® program, and our major manufacturing facilities are certified according to ISO 9001 and ISO 14001 standards.

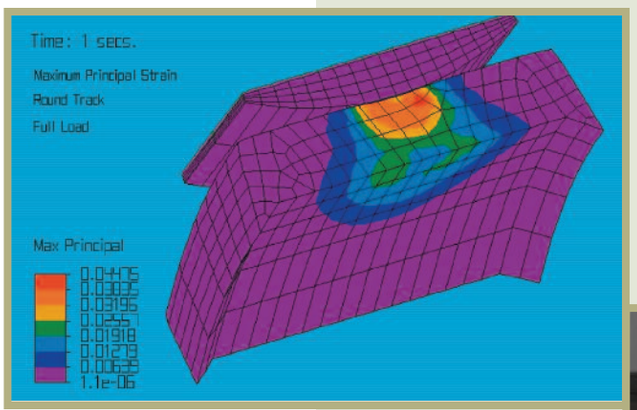
Experience and flexibility to pass the test.

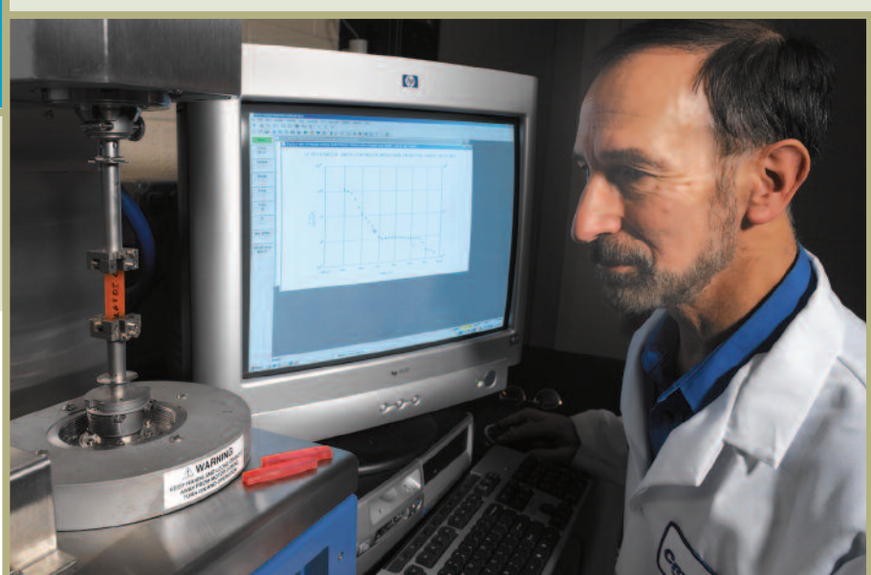
Fine tuning product attributes to every individual application

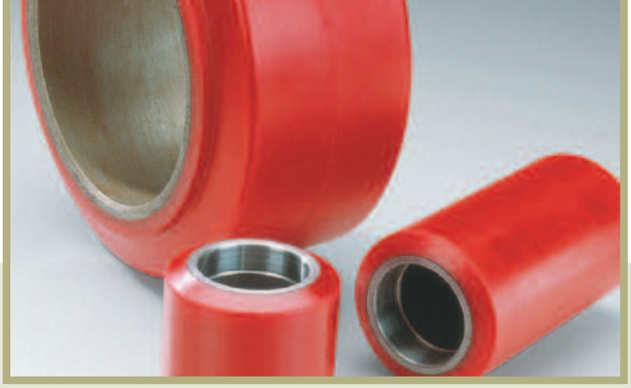
Optimal use of polyurethane elastomers requires more than a list of performance specifications. Demanding applications also call for expertise in elastomer mechanical design – the ability to determine the key performance attributes of the material and measure properties that relate to these attributes. You get that in-depth level of support from Crompton. Data sheet properties simply don't give you the insight for ideal formulation.

Adiprene®/Vibrathane® products have a very wide variety of performance attributes. Selecting the best material for the job depends heavily on the individual needs of the application. One application may need the best abrasion resistance, another may need the best resistance to heat buildup, and yet another may have flex-cracking resistance as its main objective. Our technical service team can help with the right material selection and customization for your demanding applications.

For example, when replacing a 65 Shore A rubber material, it is often beneficial to specify a harder polyurethane such as an 80 Shore A, 85 Shore A, or even harder material. The rubber may not have been used at such a high hardness because the properties may not be good with so much filler. However, polyurethane has excellent elastomeric performance at 80-95 Shore A, and the higher hardness may also allow for part design using less elastomer. Often, this also requires considering other performance requirements like buckling load, friction and fatigue resistance. This is the kind of analysis our mechanical engineers can provide for you.







Our expertise is supported and fine-tuned through special testing. Crompton testing capabilities include Texus Flex fatigue testing, DMT (dynamic-mechanical testing), testing of friction and PV limits under high load, IR and NMR testing, and more. We also perform special testing or modeling for particular segments of the polyurethane industry. For example, a proprietary Crompton computer model that predicts solid polyurethane tire failure from heat buildup is often used to determine appropriate tire design to handle a given load and speed.

Put it all together and you'll see Crompton has the right polyurethane for the job, *and* the expertise to apply it for optimal performance.

Make the tough stuff easy

Adiprene®/Vibrathane® urethane prepolymers are helping businesses on six continents improve their products. We have the expertise, products, and personal commitment to make things better. Call your local Crompton office or visit www.cromptoncorp.com and we'll show you how easy the tough stuff can be.

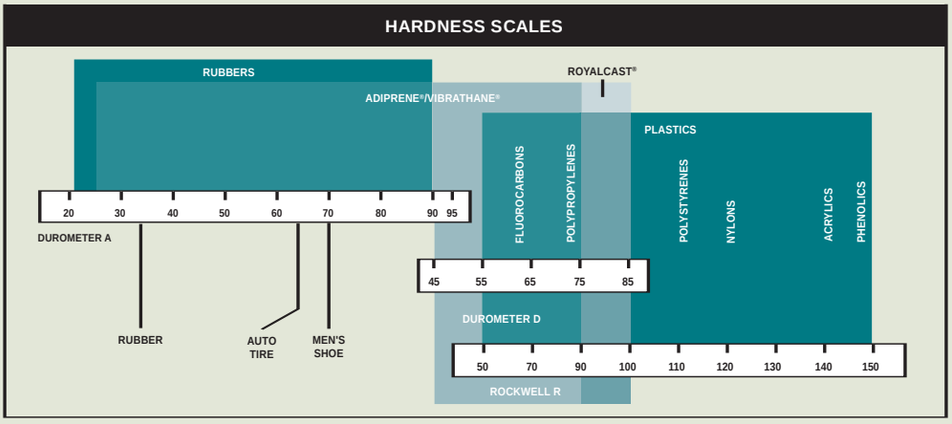
Adiprene®/Vibrathane® – A complete cast of products custom formulated to strengthen your business.

Adiprene®/Vibrathane® MDI and TDI prepolymers

Adiprene®/Vibrathane® MDI and TDI prepolymers can be used with Vibracure® curatives to produce elastomers of outstanding toughness, abrasion resistance, load-bearing capacity, cut resistance, and heat buildup resistance. Crompton scientists can work with you to customize the precise formula for your ideal combination of properties. Instead of a material that's close to what you need, you get the perfect solution.

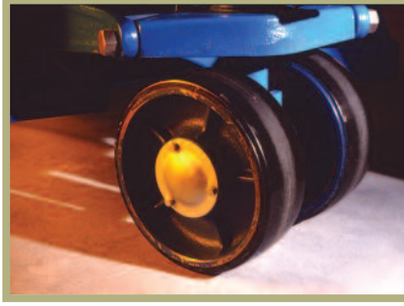
The hardness range covered by our MDI and TDI prepolymers is broader than for any other elastomeric material, providing you unmatched versatility for your applications.

- High-performance TDI prepolymers come in both ether and ester types, with hardnesses ranging from 70 Shore A to 75 Shore D, and special formulations available to reach hardnesses outside of this range.
- High-performance MDI prepolymers are available in ether and ester types, with hardnesses ranging from 60 Shore A to 55 Shore D, and special formulations available to reach hardnesses outside of this range.



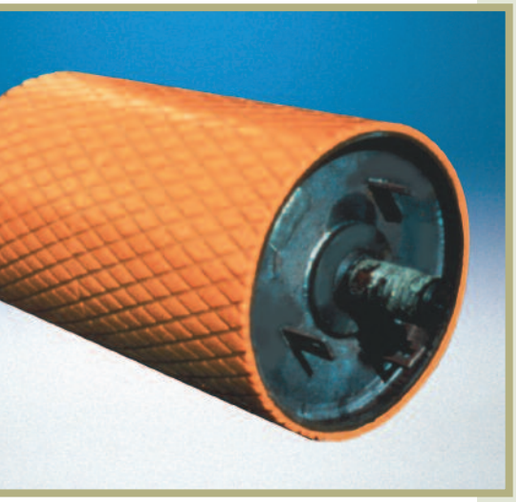
Adiprene®/Vibrathane® MDI and TDI prepolymers are renowned for their performance in demanding applications. For example:

- Mining applications, where they are more abrasion resistant than steel.
- Wheels, where they carry more load at higher speed and provide lower rolling resistance than other elastomers.
- Golf balls, where they withstand cutting by the club and provide superior distance.
- Countless other applications that require outstanding toughness.



Adiprene® Low-Free TDI Systems
for easy processing and excellent dynamics

Now you can get TDI Systems' outstanding combination of excellent toughness, dynamic performance, and easy processing, without excessive exposure to TDI fumes from residual TDI monomer. Crompton's Adiprene® LF (low-free) TDI products take TDI technology to the next level of performance and safety. Reducing free TDI levels to a maximum of 01%, they greatly improve workplace safety and allow us to produce polyurethane systems with lower viscosity, longer pour life, faster demolding, and lower hysteretic heat buildup than with conventional technology. For even more versatility, Adiprene® LF TDI Systems are available in both ether and ester types in the hardness range of 70 Shore A to 75 Shore D, with special formulations outside of this range.

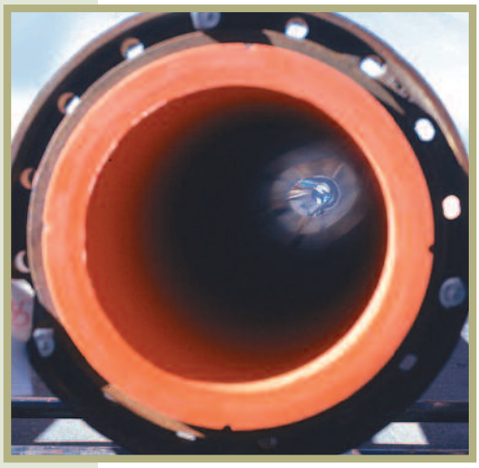


Adiprene® PPDI Systems
for high-temperature performance and fatigue resistance

Hot-cast systems, based on the specialty monomer PPDI (para-phenylene diisocyanate), are opening up new application areas to the benefits of urethanes by providing levels of performance never before seen in a commercial polyurethane elastomer. Adiprene® PPDI Systems have the lowest heat buildup from hysteresis, outstanding fatigue resistance, and the best retention of properties at high temperatures ever seen in a commercial polyurethane elastomer. Comparison of properties vs. HNBR at temperatures as high as 150°C also shows that PPDI has far better properties than this established high-temperature elastomer. Various ether and ester types are available in both conventional prepolymer form (Adiprene® PP products) or in low-free monomer form (Adiprene® LFP products).

Adiprene® LFH and LW Aliphatic Systems
for outstanding pour life and UV light resistance

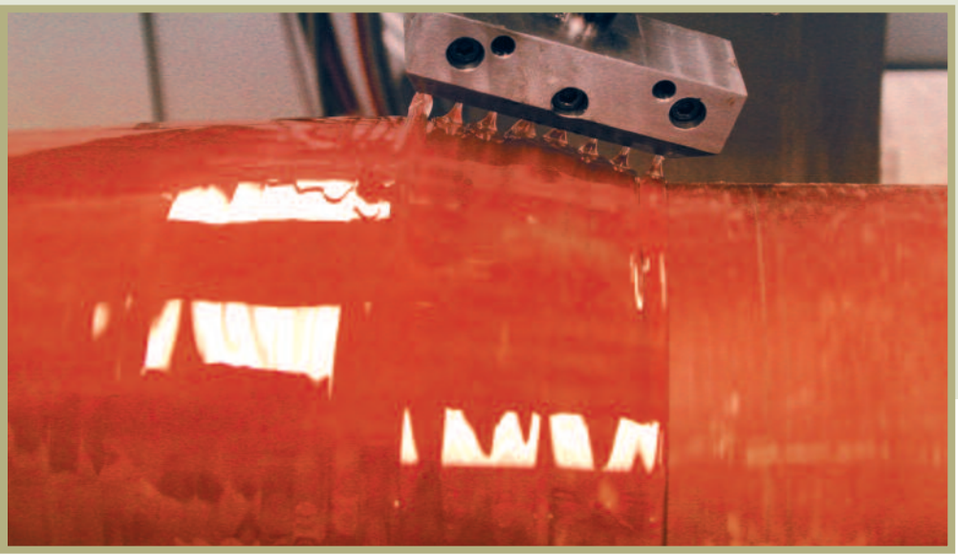
Adiprene® LFH Systems provide the best physical properties of any aliphatic system, making them an excellent building block for coatings formulators. As our newest aliphatic products, they utilize the monomer HDI and our proprietary LF technology to produce systems that have less than 0.1% free HDI monomer. This allows HDI use where it was previously not practical because the high vapor pressure of HDI would generate unacceptable levels of fumes.



Adiprene® LW Aliphatic Systems have very long pour lives and outstanding resistance to UV light. They also have excellent resistance to hydrolysis by water at elevated temperatures.

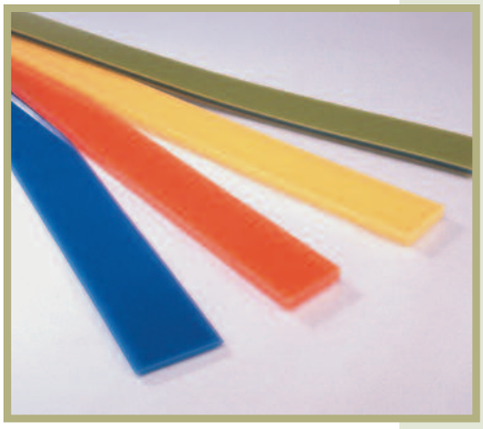
Adiprene® Ribbon Flow® Systems
for fast, moldless roll covering

Adiprene® Ribbon Flow® Systems are short pour life systems used with a meter mix machine and a lathe to coat to the core of a roll (or other cylindrical object) without the need for a mold. Material cures on the rotating core as it is applied, and the mix head of the meter mix machine slowly traverses the length of the core until the coating is complete. Ribbon Flow® casting delivers tooling savings (no molds), less overbuild, faster turnaround, and lower production cost than conventional casting. Available in both ether and ester types, Ribbon Flow® can be applied in coatings of up to one inch thick in a single traverse of the head, and to hardnesses from 60 Shore A to 67 Shore D. Ribbon Flow® Systems have excellent physical and dynamic properties.



Royalcast® Castable Plastics
for tough, impact-resistant rigid materials

Royalcast® Castable Plastics provide the hardness, toughness, and impact resistance of engineering plastics such as cast nylon, in a two-component urethane system. Unlike thermoplastics, Royalcast® is economical for short runs because of low tooling costs, making it a good system for prototyping. Systems vary from clear to opaque white and are easily pigmented, with hardness ranges from 80 Shore D to 85 Shore D (up to 300,000 psi modulus), and heat deflection temperatures as high as 225°F.

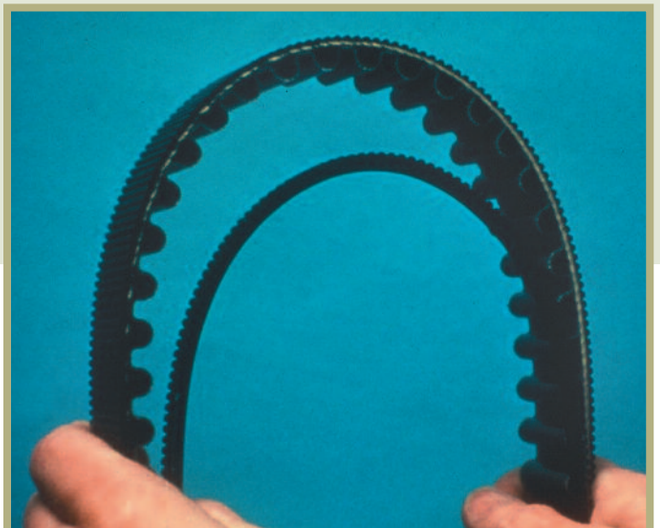


Vibracure® and Caytur® Curatives

Curing Adiprene®/Vibrathane® prepolymers is easy with our wide range of curatives, including:

- MOCA, Ethacure® 300, Butanediol, and HQEE – standard curatives for curing Adiprene®/Vibrathane® into tough, thermoset elastomers.
- Vibracure® A157 – a specialty amine curative that can be used to make FDA dry food approved elastomers with TDI prepolymers.
- Caytur® 21 and 31 curatives – blocked curatives designed to give latency at room temperature and extremely fast cure when heat activated – ideal for producing thin parts such as polyurethane belts.

Crompton can also custom formulate curatives to meet your needs, from a particular hardness to a particular performance attribute. We understand that curatives are an integral part of the performance package, so we give them careful consideration when designing the right system to meet your needs.



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