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## Anderson Development Company

### Recent New Product Additions

Here are some recent new developmental products from the Urethane R&D group:

#### *Andur XP-212:*

Polybutadiene-based prepolymer with excellent resistance to acids/bases, water, and bleach. It needs to be cured with Curene 107 and is a 70A elastomer.

#### *Andurs XP-196 & XP-191:*

These two products are based on a renewable (corn) resource. The 191 is a conventional TDI give a 95A with MBOCA and the 196 is a LFTDI that is also 95A when cast with MBOCA.

#### *Andur XP-184:*

TODI-PTMEG based “semi quasi” prepolymer that when

cured with blend of 1,4 BDO and PTMEG, a hardness range of 75A-60D can be obtained.

### Recently Commercialized Products:

#### *Andur BD 78 AP*

TDI-polybutadiene based prepolymer that is 78A when cured with Curene 107

#### *Andur 80 DPLF:*

LFTDI-PTMEG prepolymer that forms an 80D elastomer when cured with MBOCA or Curene 107.

#### *Andur 2-77 AP:*

TDI-PTMEG based prepolymer that gives a 76A elastomer when cured with MBOCA

#### *Andurset M-77D:*

This system is a Part A and Part B that will give a 77D castable plastic with a relatively long potlife.

As always, our focus is to help the customer to be successful in their application and if that means developing new products, whether it be prepolymer or a curative, or both, then that’s what we do.

“D” is for Development!

### A Word on Temperature

Temperature is a very important part of chemistry. When it comes to polyurethane elastomer casting, temperature influences pot life, demold time, viscosity, and even hardness.

As most people know, when the temperature is raised, the reaction goes faster, thus pot-life and demold time are shorter if the temperature is

raised. This can be used both ways if you want to slow down the system as well to a point.

Viscosity is how thick a material is and the warmer it is, the more flowable and lower viscosity it is. Especially at lower temperatures (RT-175F), the viscosity curve for most prepolymers is steep.

Hardness is lesser known for its dependency on temperature, but can be influenced greatly with mold temperature changes. Specifically, low % NCO polyester prepolymers can be harder when cured at a lower temperatures and softer when cured at a higher temperatures. This can also happen with other softer systems. So, mold temperature is important to stay consistent so as to maintain a consistent hardness.

### **EPA Proposes Rules for Burn-Off Ovens**

Air emissions from industrial and commercial incinerators are regulated by the EPA according to 40 CFR Part 60, Subparts CCCC and DDDD. Currently, burn-off ovens used by processors to strip materials off of metal parts for the purpose of reclaiming the metal are exempt. This summer the EPA issued proposed air emission regulations that would eliminate the exemption for burn-off ovens.

If the proposed rules are adopted, owners and operators of existing and new burn-off ovens would be required to conduct emissions tests for the following pollutants: hydrogen chloride, carbon monoxide, lead, cadmium, mercury, particulate matter, dioxins and furans, NO<sub>x</sub>, SO<sub>2</sub>, and opacity. In addition to this initial test, annual performance tests would be required for the following pollutants: hydrogen chloride, particulate matter, fugitive ash and opacity.

The emissions standard for new burn-off ovens would be significantly lower than the standards for existing units. To comply with the new regulations, if promulgated in their current form, facilities will either have to install air pollution control devices such as scrubbers and baghouses

or, more likely, will be forced to shut down their ovens and switch to an alternative treatment such as abrasive blasting. The proposed rules would also establish inspection, monitoring and recordkeeping requirements for both existing and new units.

The EPA has received numerous comments against the proposed regulation changes which state the following concerns. The EPA has seriously underestimated the impact of the proposed regulations on industry as a whole. Secondly, there is no exemption for small burn-off ovens that would have to install costly air pollution controls in order to comply with the emission standards. We believe that the high cost to comply is simply not justified given the modest emission reductions anticipated from the rule. We are hopeful that the EPA will likely address the proposed burn-off oven standards to lessen the impact on small businesses. There is no timetable for adoption of a final rule at this time. We will monitor future EPA actions and will report on any developments.

**Source:**



### **R&D Capabilities**

When sampling different products, we are very versatile and responsive. From one quart to a couple of drums, our R&D and pilot plant facilities can cover any sample size needed. We also can make prototype parts in our applications lab which houses a meter, mix, and dispense machine, a large Vortex mixer, two large ovens, and a large hot table. These facilities are there for serving your needs and we would be happy to accommodate. Our team is knowledgeable and experienced in many different casting techniques either by hand or machine, and we can help your company succeed in cast-

ing difficult parts. We can also analyze and identify unknown urethane materials you may want to know about or mimic. Many times we will analyze known parts that maybe have failed in the field and do some failure analysis. Quite often a stoichiometric problem is found that is simple to determine by doing X-ray fluorescence on the part. We can perform a wide spectrum of physical testing including dynamic mechanical analysis. So, if a new opportunity arises, or you just want to change a good product into a better product, give us a call.



**ADC's Meter, Mix, and Dispense machine: A two component machine with a dynamic mixhead**

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## Mission Statement

Anderson Development will be a global supplier of innovative specialty chemical products, striving for continual improvement in all of our operations. It is our goal to be personal, efficient, and responsive to our customers and employees. We will provide a team-oriented atmosphere while allowing for individual diversity among our employees.

We're on the web!

[www.andersondevelopment.com](http://www.andersondevelopment.com)

## New Faces

Jordan Duckett recently joined the Urethane R&D group replacing Geoff Dennis who left the group back in the spring. Jordan started at ADC as an intern for the R&D Urethanes group in 2006. He has a bachelor's degree in chemistry from Siena Heights University. Jordan can be reached at 517-438-5277 or emailed at: [jordan.duckett@anddev.com](mailto:jordan.duckett@anddev.com)

