NEW TECHNOLOGY FOR HIGH PERFORMANCE, WATER-BORNE COATINGS

APTALON™ POLYAMIDE POLYURETHANE TECHNOLOGY

www.lubrizol.com/aptalon
Aptalon™ polyamide polyurethane technology is a revolutionary chemistry from Lubrizol that is solving many of today’s most demanding coating challenges with exciting new levels of performance and capability. With amazing versatility across a diverse range of surfaces and applications, the opportunities for this unique technology continue to grow. The product family includes purpose-built dispersions to deliver solvent-borne performance in water-borne systems for metal, wood and plastics.

Aptalon Polyamide Polyurethane technology is adaptable to specific application requirements.

KEY BENEFITS

As a market-leading innovator of coating technology, Lubrizol is dedicated to delivering performance, simplicity and sustainability benefits to customers. Aptalon Polyamide Technology is no exception, as it delivers outstanding benefits in each area:

**Performance**
- Very high levels of hardness and toughness means outstanding scratch and mar resistance with decreased frequency of recoating requirements
- Excellent thermal resistance enables use in applications where other polymers fall short
- Powerful chemical resistance brings long-lasting aesthetic appeal with remarkable resistance to staining

**Simplicity**
- 1K, self-crosslinking system (no mixing required, no chance of mixing errors)
- Easy to achieve various gloss levels without the need for matting additives
- Water-borne system means easy clean-up after application

**Sustainability**
- High bio-based carbon content
- No potentially hazardous solvents needed to achieve outstanding water-borne performance
- Water-borne rather than a hydrocarbon-based solvent helps to reduce environmental footprint
APTALON™ M8100 FOR PIGMENTED METAL TOPCOAT

Aptalon™ M8100 is designed to deliver very high performance topcoats for paint and coating applications. Aptalon™ M8100 enables high performance one-pack water-based industrial metal coatings with excellent weathering resistance, hardness and chemical resistance beyond other one-pack or two-pack polyurethane chemistries. It protects surfaces from abrasions and marring and works effectively to deter a broad range of aggressive industrial fluids to provide long-lasting appeal and protection.

APTALON™ M8100 PERFORMANCE: TOPCOAT ON PRIMER (METAL) – HUMIDITY CHAMBER

<table>
<thead>
<tr>
<th>TOPCOAT*</th>
<th>250 h</th>
<th>500 h</th>
<th>750 h</th>
<th>1000 h</th>
<th>1500 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>2K SB Polyurethane</td>
<td>% Blushing</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Field corrosion</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Blisters</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Aptalon™ M8100 WB Polyamide Polyurethane</td>
<td>% Blushing</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Field corrosion</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Blisters</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>SB Alkyd 2K / Epoxy</td>
<td>% Blushing</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Field corrosion</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Blisters</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
</tbody>
</table>

*All topcoats were tested on the same epoxy primer

APTALON™ W8030 FOR SELF-MATTING COATINGS

Aptalon™ W8030 is a water-borne self-matting polyurethane dispersion designed to eliminate the need for matting additives typically required in matte topcoats for wood and metal coatings. Coatings formulated with Aptalon™ W8030 demonstrate excellent hardness and abrasion resistance. It has an inherent low gloss that allows natural and matte finishes without sacrificing performance, and can be used with in pigmented or clear coatings.

APTALON™ W8030 FOR SELF-MATTING COATINGS

APTALON™ M8100 gloss formula and Aptalon™ W8030 formula with no matting additives.

CHEMICAL RESISTANCE

ASTM D1308, 7 days ambient cure (10 designates highest score per chemical)
APTALON™ W8060 FOR HIGH GLOSS WOOD COATINGS

Aptalon™ W8060 is designed for high-performance wood coating and flooring applications in a 1-component, water-borne system that matches the performance and protection of solvent-borne polyurethanes. Aptalon W8060 contains up to 35% bio-based carbon. The advanced resin delivers excellent hydrolysis resistance and chemical resistance that outperforms other water-borne polyurethane chemistries and hardness that meets or exceeds many 2-component water and solvent-borne products.

APTALON™ W8062 FOR LOW VOC WOOD COATINGS

Aptalon™ W8062 is intended for a wide array of coating applications, including high-performance sport and athletic wood floors or high traffic wood flooring applications as it exhibits excellent wear and gloss retention in one-pack water-based formulated coatings.

APTALON™ 8080HS HIGH SOLIDS FOR HARD SURFACE PROTECTION

Aptalon™ 8080HS is a high solids, water-borne polyurethane dispersion for hard surface protection. With 50% solids content, it formulates hard, tough durable films with high gloss, and maintains outstanding chemical and abrasion resistance. With fast dry times and 35% bio-based carbon content, Aptalon™ 8080HS is an advanced technology for protecting wood, concrete and metal surfaces.

**APTALON™ W8060 PERFORMANCE: WOOD COATING (1K)**

<table>
<thead>
<tr>
<th></th>
<th>Commercial Solvent 2K PU</th>
<th>Commercial Solvent 1K</th>
<th>Commercial Waterborne 2K</th>
<th>Polyamide Urethane 1K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gloss 60°</td>
<td>103</td>
<td>58</td>
<td>96</td>
<td>92</td>
</tr>
<tr>
<td>König Hardness (oscillations)</td>
<td>125</td>
<td>79</td>
<td>36</td>
<td>79</td>
</tr>
<tr>
<td>Black Heel Mark</td>
<td>7</td>
<td>9</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Taber Abrasion (mg lost)</td>
<td>132</td>
<td>50</td>
<td>58</td>
<td>45</td>
</tr>
<tr>
<td>Chemical Resistance*</td>
<td>156/107</td>
<td>110/118</td>
<td>87/103</td>
<td>104/108</td>
</tr>
</tbody>
</table>

*Sum of 13 Chemicals after 1 hour recovery

1K water-borne polyamide polyurethane can match the properties of 2K solvent-borne PUDs.

**Film Thickness Per Coat**

- **Formulation Solids**
- **Polyamide Polyurethane**
- **Aptalon 8080HS**

Film build thickness of traditional three coat systems achieved in two coats with high solids.
New product technologies will continue to emerge from this exciting new polyamide polyurethane chemistry. In the meantime, contact us to discuss your demanding coatings challenges. Let’s collaborate on developing the right Aptalon™ Polyamide Technology to address your toughest coating requirements.

WHAT WE ADD MAKES THE DIFFERENCE™

Lubrizol is a market-driven innovator of specialty chemicals that solve today’s challenges in the paints and coatings, printing and packaging, paper and textiles, plastics and composites and digital print markets. More than just a supplier, we are a collaborator with extensive experience in surface protection, dispersion, adhesion and barrier properties that enables us to enhance the performance, simplicity and sustainability benefits of our customers’ products. With a commitment to collaboration, applied science, and demonstrated value, our team of experts is dedicated to exceeding customer expectations for both the simplest and toughest requirements. Count on Lubrizol to make the difference.