

Nylon Solutions for Fuel Handling Applications

- ▶ Hydraulic Tanks
- ▶ Chemical Tanks
- ▶ Pneumatic Fuel Lines
- ▶ Single & Multi-layer Tanks
- ▶ Fresh Air Vents
- ▶ Filler Neck
- ▶ Lines & Connectors

Nylene® materials meet strict permeation requirements for fuel related applications, and scores highest when it comes to the combination of permeability, process stability, mechanical properties, and costs.



High Performance Polymers for the Most Demanding Applications

With Nylene specially developed polymers and copolymers, processors can produce thin wall tanks that still meet the EPA and California Air Resources Board (CARB) evaporative emission regulations.

Nylene material can be used as a single-layer or as part of a multi-layer system, reducing failure and scrap, which makes it extremely cost competitive.

Key Nylon Benefits for Fuel Related Applications

- ✓ Toughness/Impact Resistance
- ✓ Carb Compliant in Single Layer
- ✓ Excellent Environmental Stress Crack Resistance 248°F(120°C)
- ✓ Heat Resistance up to 250°F (121°C)
- ✓ Low Coefficient of Friction
- ✓ Fuel & Hydrocarbon Resistance
- ✓ Abrasion Resistance
- ✓ Corrosion Resistance
- ✓ Paintable

About Nylene

Nylene manufactures products that range from: compounded nylons and copolymers, modified for flexibility, impact strength, and color. Nylene works closely with customers to develop customized solutions for unique applications.



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Nylene Solutions for Fluid/Fuel

R Roto-molding
 I Injection Molding
 B Blow Molding
 E Extrusion

Nylene Grades & Features	Nylon 6					Nylon 6/12
	Nylene 494P	Nylene 494P IM	Nylene 743	Nylene 764B	Nylene 609	Nylene 6207
Processing	R	R	I B E	B E	B E	E B
Single Layer System	✓	✓		✓	✓	
Single Step System		✓	✓			✓
Barrier Layer System	✓				✓	
CARB Executive Order Letter for Innovative Product	Q-13-016	Q-08-028				
Fuel Related Approvals		FMVSS 302 (self extinguishing)				
Key Properties & Features	<ul style="list-style-type: none"> Higher heat resistance Excellent Impact Strength 	<ul style="list-style-type: none"> Higher heat resistance Excellent Impact Strength Higher impact at rt 	<ul style="list-style-type: none"> Designed for high strength at very low temperature impact Excellent impact strength without post conditioning 	<ul style="list-style-type: none"> Excellent low temperature properties Supports Large parisons Excellent impact strength without post conditioning 	<ul style="list-style-type: none"> Recommended for extrusion but can be blow molded For high line speeds Supports very complex profiles 	<ul style="list-style-type: none"> High viscosity Superior flexibility for thin wall sections and complex profiles

Competitive Comparison Of Materials For Fuel Tanks

Limits on emissions and the need to simplify production have led manufacturers to replace steel with plastic in many fuel tanks and components. Today many fuel parts and tanks are made with nylon because of its superior performance in aggressive fuels.

Nylon	Steel Tank	HDPE	PE with Barrier
<p>Advantages</p> <ul style="list-style-type: none"> ✓ Shape flexibility ✓ Low tooling cost for low production volumes ✓ Weight ✓ Corrosion ✓ Permeability ✓ Meets CARB & Federal ✓ EPA Permeation ✓ Recyclable ✓ Single or barrier layer ✓ Low raw material cost compared to Nylon 11 or Nylon 12 <p>Disadvantages</p> <ul style="list-style-type: none"> ✗ High raw material cost vs. PE 	<p>Advantages</p> <ul style="list-style-type: none"> ✓ Low cost at high production volumes ✓ Recyclable ✓ Meets CARB & Federal ✓ EPA Permeation <p>Disadvantages</p> <ul style="list-style-type: none"> ✗ Shape Flexibility ✗ Ineffective corrosion protection to methanol 	<p>Advantages</p> <ul style="list-style-type: none"> ✓ Low cost at low production volumes ✓ Shape flexibility ✓ Weight ✓ Corrosion <p>Disadvantages</p> <ul style="list-style-type: none"> ✗ Not effective to recycle ✗ Meeting CARB & Fed EPA permeation ✗ May require post molding treatment to improve permeability 	<p>Advantages</p> <ul style="list-style-type: none"> ✓ Low cost at low production volumes ✓ Shape flexibility ✓ Weight ✓ Corrosion ✓ Permeability <p>Disadvantages</p> <ul style="list-style-type: none"> ✗ Higher material cost ✗ Not recyclable