



High Performance *Solutions*



Piedmont Plastics®
where solutions take shape



Why Piedmont?

WE OFFER

- ✓ Over 50 Branch Locations
- ✓ Expert Product Knowledge
- ✓ Local Inventory & Value-Added Services

WHO WE ARE

At Piedmont Plastics®, our recipe for success for over 50 years has been excellent customer service, local, knowledgeable employees, and competitive prices on the world's best brands.

In that time, we have grown from a local supplier of basic plastic shapes and films, to one of the leading plastic distributors in North America.

With a reputation for integrity that permeates every aspect of our business, we have established a legacy of customer service and product quality. We embrace every opportunity to promote enjoyable, profitable relationships with our customers, employees and suppliers.

With over 50 distribution centers throughout North America, chances are, we have what you need, when you need it... *FAST*.



OUR COMMITMENT

Customer service is a core value of Piedmont Plastics®.

We are committed to providing every customer with the highest level of service in the industry. This commitment reaches far beyond simply providing you with our knowledgeable sales representatives and the right product mix. Through our dedication to this goal, our customers have come to rely on us for:

- On-Time Shipping
- Premier Brands
- Industry Expertise
- State-of-the-Art
- Quality Management Conversion Equipment
- Systems

the
PREMIER CHOICE
for your plastic needs

Find more solutions at
www.piedmontplastics.com



Semi-Crystalline Plastics

ACETAL

Acetal provides high strength and stiffness coupled with enhanced dimensional stability, ease of machining, a low coefficient of friction and good wear properties. Acetals are also FDA and USDA compliant.

- Lower Costs
- Tear Resistant
- Readily Available
- Easy to Process
- Wide Variety of Colors/Textures

FLUOROPLASTICS

With higher heat and chemical resistance, fluoroplastics exhibit properties that can hold up to extreme tasks.

- Teflon® / PTFE
- FEP
- Kynar® / PVDF
- PFA
- PCTFE
- Halar® / ECTFE
- Tefzel® / ETFE

POLYURETHANE

Rigid polyurethanes offer a broad range of chemical resistance, dimensional stability and toughness.

- HYDEX® 301, 202
- General Purpose
- Custom Cast Shapes



POLYESTER

Polyester-based mechanical plastics provide excellent dimensional stability and good wear resistance. Additionally, polyesters have a low coefficient of friction, high strength and resistance to moderately acidic solutions. Most polyesters are FDA and USDA compliant.

- Ertalyte® PET-P
- Ertalyte® TX
- HYDEX® 4101 PBT
- HYDEX® 4101L

POLYOLEFINS

Polyolefins provide great wear and corrosion resistance, low friction surfaces and high impact strength. Many of the varieties offer FDA and USDA compliance. With no moisture absorption, self-lubricating properties and an economical price, polyolefin materials deliver performance and value.

- UHMW Polyethylene
- TIVAR®
- Ceram p®
- HDPE - High Density Polyethylene
- Polystone®
- PP - Polypropylene
- LDPE - Low Density Polyethylene
- Welding Rod



Amorphous Plastics

ABS

ABS, or acrylonitrile butadiene styrene, is a common lightweight thermoplastic. The most important mechanical properties of ABS are impact resistance, dimensional stability and ease of machining. These characteristics make ABS a great product for a wide range of prototyping and machined applications.

- Flame Retardant
- General Purpose

POLYCARBONATE

Machine Grade Polycarbonate (PC) is a transparent amorphous thermoplastic which offers very high impact strength and high modulus of elasticity. Machine Grade Polycarbonate is stress relieved making it ideal for close tolerance machined parts. Available in glass-filled grades for enhanced strength and stability.

- PC 1000
- SUSTANAT PC
- Glass-Filled

PVC - POLYVINYL CHLORIDE

PVC / CPVC is a good general purpose material used in a wide variety of applications that require corrosion resistance, mechanical strength and good thermal and electrical properties. PVC / CPVC is commonly used for applications in chemical processing, handling and storage, metals finishing and thermoforming.

- PVC - Grey Type 1 and 2, White, Pipe, Tubing
- CPVC



FLUOROPOLYMERS

Nylon offers a broad range of sizes, good mechanical and electrical properties, strength, toughness and some grades are FDA and USDA compliant. Available in both extruded and cast versions, nylon is a great solution to many of your demanding applications.

- Cast Nylon (tubular bar, rod and plate)
- Nylatron® GS, GSM, GSM Blue, NSM, 703XL
- Nylon 101, 6, 6/6
- HYDLAR® Z
- MC 901® Blue Cast Heat Stabilized
- Oil-Filled Nylons
- Custom Cast Shapes (sheaves, pulleys)
- Tubing



Other Plastics

INDUSTRIAL LAMINATES

Industrial laminates are made of thermoset resins (phenolic, epoxy, silicone or melamine) combined with various base materials such as paper, cotton cloth or glass cloth under high pressure and heat. These materials offer high strength, heat resistance and excellent dielectric properties.

- Phenolics, NEMA Grades
 - Cotton (C, CE, L, LE)
 - Paper (X, XX, XXX)
 - Glass (G5, G7, G9, G10)
- Phenolics, Specialty Grades
- GPO, Glass Polyester
- Thermoset Composites

HIGH TEMPERATURE/CORROSION RESISTANT & ENHANCED MECHANICAL PROPERTIES

The harshest environments require the toughest products. That's why we offer solutions for industries like aerospace, chemical and food processing, automotive and electronics. We offer the broadest selection of high performance polymers in the industry.

- Celazole® - PBI
- Fluorosint® 500, 207, HPV
- PEEK - Duratron®, Victrex®
- Polyimide - Duratron® PI, Vespel®
- Polysulfone - PSU
- Polyethersulfone - PES
- Radel® - PPSU
- Torlon® - PAI
- Techtron® - PPS



TUBING

Our tubing products are designed for use in a variety of applications including chemical processing, water treatment, soaps and detergents, pulp and paper, compressed gas, document processing equipment, food and beverage, lawn and garden, and instrumentation.

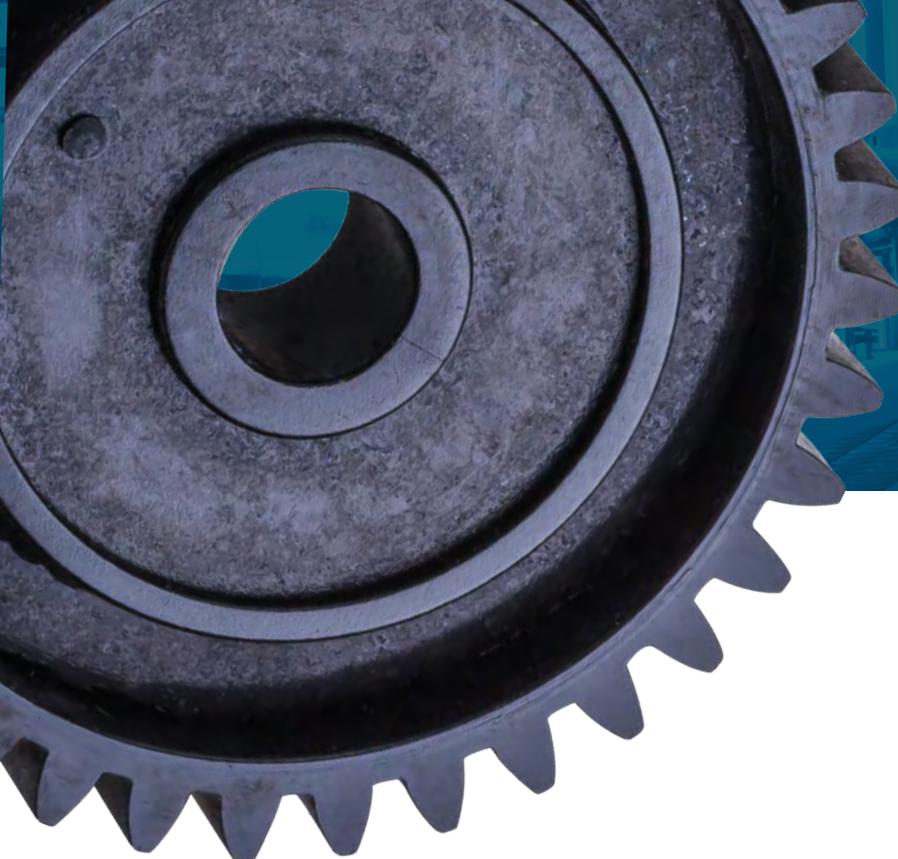
- Acetal
- Acrylic
- Chemfluor®
- Fluoroplastics (PFA, PTFE)
- Norprene®
- Tygon®
- Nylon
- Polycarbonate
- Polyethylene
- PVC

ESD - STATIC CONTROL

Piedmont Plastics® carries a full line of electronically active materials. Depending on the application, there is a static dissipative or conductive polymer to address your electrical electronic/ESD requirements. These materials exhibit various other important physical properties including wear, chemical, and heat resistance, mechanical strength, dimensional stability, machinability and purity. If your application includes issues with static discharge, consider one of Piedmont's ESD materials.



the Benefits of Machining



Low Volume Requirements Are Most Easily & Cost-Effectively Machined

For small or intermediate lot sizes, molds are neither necessary nor cost effective. Since thermoplastic stock shapes can be machined with standard metal-working tools, you'll find lower tooling costs when you machine to meet your design goals.

Closer Tolerances Are Possible With Machined Parts

Machining is often the only way to hold tight tolerances. Molded parts cannot hold tight tolerances due to mold shrinkage and flow problems.

More Design Flexibility When You Machine

Because there is no costly mold redesign needed, changes in machined part size or material can be made quickly and easily.

Faster Delivery Is Possible When You Machine Parts

No extensive delays for "first parts" due to mold delivery.

Some Parts Are Impractical To Mold

Parts with multiple undercuts or adjacent thin and heavy sections are difficult to mold.

Machined Parts Have Lower Stress

Thermoplastic rod and plates for machining are stress-relieved. This reduces the possibility of part distortion. Molded parts may distort more easily.

Machined Parts Have Consistent Properties

When molded parts are made, the orientation of material can cause variation in properties. Machined part properties are more consistent.

Machined Parts Require No "Draft" Angle

Draft is the taper required in mold cavities that allow the part to be ejected from the cavities. Therefore, part surfaces will not be parallel or straight. Draft is not required with machined parts.

Machined Parts Have No Weld Lines

Molded parts of annular (ring) shapes usually have weld lines which occur when the flow travels around the I.D. core and welds together. This weld area is the weakest area of the part. There is no critical weak point in a thermoplastic machined part.

Molded Parts Develop Skin

Molded materials, especially nylons, have an amorphous (quickly cooled) surface or "skin" which may delaminate while the part is in service. Machined parts are uniform in crystalline structure and do not have "skin" problems.

Cross Sections Heavier Than 1/4" Cannot Be Molded Well

Molding is not a good alternative for heavier cross sections since shrinkage will cause surface sinks (depressions) and internal voids. Sinks and voids do not occur during machining.



Engineering Plastics Troubleshooting

Difficulty	Common Cause	Difficulty	Common Cause
Drilling Tapered Hole	<ol style="list-style-type: none">1. Incorrectly sharpened drill2. Insufficient clearance3. Feed too heavy	Turning and Boring Melted Surface	<ol style="list-style-type: none">1. Tool dull or heel rubbing2. Insufficient side clearance3. Feed rate too slow4. Spindle speed rate too fast
Burnt or Melted Surface	<ol style="list-style-type: none">1. Wrong type drill2. Incorrectly sharpened drill3. Feed too light4. Dull drill5. Web too thick	Rough Finish	<ol style="list-style-type: none">1. Feed too heavy2. Incorrect clearance angles3. Sharp point on tool (slight nose radius required)4. Tool not mounted on center
Chipping of Surfaces	<ol style="list-style-type: none">1. Feed too heavy2. Clearance too great3. Too much rake (thin web as described)	Burrs at Edge Cut	<ol style="list-style-type: none">1. No chamfer provided at sharp corners2. Dull tool3. Insufficient side clearance4. Lead angle not provided on tool (tool should ease out of cut gradually, not suddenly)
Chatter	<ol style="list-style-type: none">1. Too much clearance2. Feed to light3. Drill overhang too great4. Too much rake (thin web as described)	Cracking or Chipping of Corners	<ol style="list-style-type: none">1. Too much positive rake on tool2. Tool not eased into cut (tool suddenly hits work)3. Dull tool4. Tool mounted below center5. Sharp point on tool (slight nose radius required)
Feed Marks or Spiral Lines on Inside Diameter	<ol style="list-style-type: none">1. Feed too heavy2. Drill not centered3. Drill ground off-center	Chatter	<ol style="list-style-type: none">1. Too much nose radius on tool2. Tool not mounted solidly3. Material not supported properly4. Width of cut too wide (use two cuts)
Oversized Holes	<ol style="list-style-type: none">1. Drill ground off-center2. Web too thin3. Insufficient clearance4. Feed rate too heavy5. Point angle too great	Cutting Off Melted Surface	<ol style="list-style-type: none">1. Dull tool2. Insufficient clearance3. Insufficient coolant supply
Undersized Hole	<ol style="list-style-type: none">1. Dull drill2. Too much clearance3. Point angle too small	Rough Finish	<ol style="list-style-type: none">1. Feed too heavy2. Tool improperly sharpened3. Cutting edge not honed
Burr at Cut-Off	<ol style="list-style-type: none">1. Dull cut-off tool2. Drill does not pass completely through piece	Spiral Marks	<ol style="list-style-type: none">1. Tool rubs during its retreat2. Burr on point of tool
Rapid Dulling of Drill	<ol style="list-style-type: none">1. Feed too light2. Spindle speed too fast3. Insufficient lubrication from coolant	Concave or Convex Surface	<ol style="list-style-type: none">1. Point angle too great2. Tool not perpendicular to spindle3. Tool deflecting (use negative rake)4. Feed too heavy5. Tool mounted above or below center
Holes Not Concentric	<ol style="list-style-type: none">1. Feed too heavy2. Spindle speed too slow3. Drill enters next piece too far4. Cut-off tool leaves nib, which deflects drill5. Web too thick6. Drill speed too heavy at start7. Drill not mounted on center8. Drill not sharpened correctly	Diameter	<ol style="list-style-type: none">1. No chamfer before cut-off2. Dull tool



For a full list of locations, visit
piedmontplastics.com/locations

We're closer than you think.

Important: It is the user's responsibility to ensure the suitability and safety of the product for all intended uses. As a distributor, Piedmont Plastics® does not warrant the merchantability of the product or the capability of the product for the purpose intended by the user. Users should independently test each material prior to use, for suitability for their specific purpose according to instructions in any technical data sheet. Piedmont Plastics® does not assume any responsibility or liability for any advice provided, or for performance or results of any installation or use of the product or any final product into which the product may be incorporated by the purchaser and/or user.

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