

AGS TECHNOLOGY CASE STUDY: ILLINOIS AS A LOW COST COUNTRY

PRODUCT PROFILE

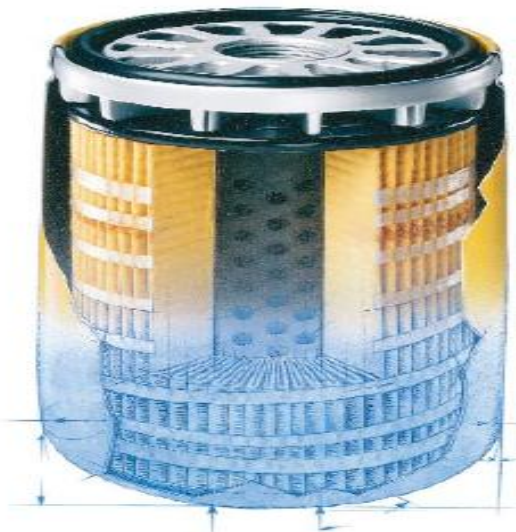
- Industry:** Filtration (Heavy Equipment)
Applications: Plastic Center Tubes-Fuel, Lube, FWS Filters
Material Description: 33% Glass Reinforced Nylon 66
Requirements:
- Heat Resistance
 - Tensile Strength
 - Dimensional Stability
 - Chemical Resistance to Fuel, Lubricating Oils, and Hydraulic Fluids

CUSTOMER ISSUE

A world class filtration systems supplier for various types of filters to the heavy equipment industry was under significant cost pressure to be competitive on a global basis without sacrificing their customer's rigorous performance specifications.

AGS INJECTION MOLDING SOLUTION

AGS Technology replaced virgin 33% glass reinforced PA66 with Injectoblend™ FPA66235 and utilizing the AGS injection molding process resulted in piece part cost savings exceeding 20%. The Injectoblend™ material meets all OEM plastic requirements and withstands over 600 kPa when collapse tested in accordance to SAE J-806.



One-Piece Aluminum Base Plate

is reinforced to prevent ruptures during cold starts.

High Efficiency Cellulose/Synthetic Blend Media removes more than 98% of particles 2 microns or larger.

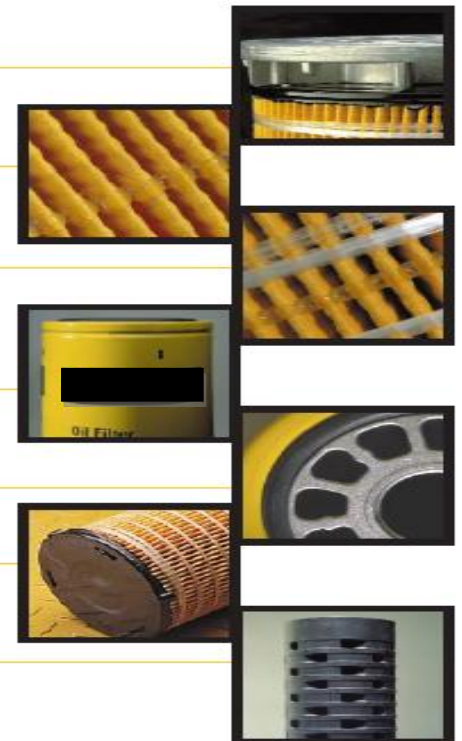
Spiral Roving and Acrylic Beads maintain pleat stability and spacing, prevent bunching, and maximize efficiency and capacity.

One-Piece Canister provides strength and anti-rupture protection.

Self-Lubricating, Free-Rotating Seal prevents bunching, eliminates leaks.

One-Piece Urethane End Caps bond tightly with filter media for greater strength.

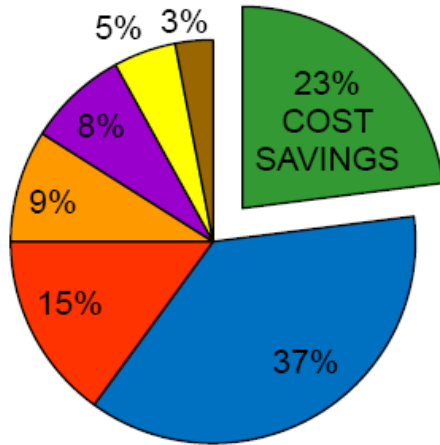
Non-Metallic Center Tube prevents metal contamination and is stronger than metal to prevent collapsing.



FR4611 CENTER TUBE COST SAVING EXAMPLE

Piece Part Cost Savings = \$0.07
 Annual Volume = 2,400,000
 Annual Cost Savings = \$168,000
 Percent Cost Savings = 23%

FR4611 Center Tube Piece Part Price
 AGS Injectoblend™ FPA66235



- Cost Savings
- Recycled Raw Material
- Machine
- Labor
- SG&A
- Profit
- Expendable Packaging

AGS Technology Inc.

To find out more about how you can take advantage of AGS Technology's unique injection molding capability using Injectoblend™ materials call (847) 534-6600.

Typical Properties of AGS Thermoplastics

INJECTOBLEND™ FPA66235

Nylon 66, 33% Glass Fiber Reinforced

FPA66235 is available in black color. Further information and details are available upon request

Properties Reported DAM. Properties @ 50% RH are available upon request	Test Method	English (U.S.)	Units (System)	Metric (S.I.)	Units (System)
PHYSICAL					
Specific Gravity, solid	D 792	-	1.39	-	1.39
Mold Shrinkage, flow, 0.125" (3.2mm)	D 955	%	0.2	%	0.2
Water Absorption, 73F (23C), 24 hrs	D 570	%	0.6	%	0.6
Water Absorption, saturation, 73F (23C)	D 570	%	5.4	%	5.4
Fiberglass Content	D 2584	%	33	%	33
MECHANICAL					
Tensile Strength @ Break, 73°F (23°C)	D 638	psi	22,000	MPa	152
Tensile Elongation @ Break, 73°F (23°C)	D 638	%	2	%	2
Flexural Strength, 73°F (23°C)	D 790	psi E3	30	MPa	207
Flexural Modulus, 73°F (23°C)	D 790	psi E3	1,100	MPa	7,590
Izod Impact, notched, 73°F (23°C), 0.125" (3.2mm)	D256	ft-lb/in	1.5	J/m	80
Izod Impact, notched, 73°F (23°C), 4 mm	ISO 180	-	-	kJ/m²	8
THERMAL					
Deflection Temperature, unannealed	D 648	°F	442	°C	228
264 psi (1.82 MPa), Load		°F	-	°C	-
66 psi (0.45 MPa), Load					
CLTE, -40 °C - +35 °C (-40 °F - +95 °F)	D 696	in/in/°F	1.33 E-5	m/m/°C	2.39 E-5
Melting Point	D 3418	°F	484	°C	251
FLAMMABILITY					
UL 94 Flame Class. 0.058" (1.47mm)	UL 94	-	HB	-	HB

The values shown on the data sheet are typical values that have been obtained on typical AGS materials, are not intended for specification purposes and are provided without any warranty or guarantee. Each user of the material should make his own test to determine the suitability of the material for his use. Therefore, it is understood and agreed that the customer assumes and hereby releases AGS Technology, Inc. from all liabilities, incurred in connection with the use of AGS products, technical assistance and information.