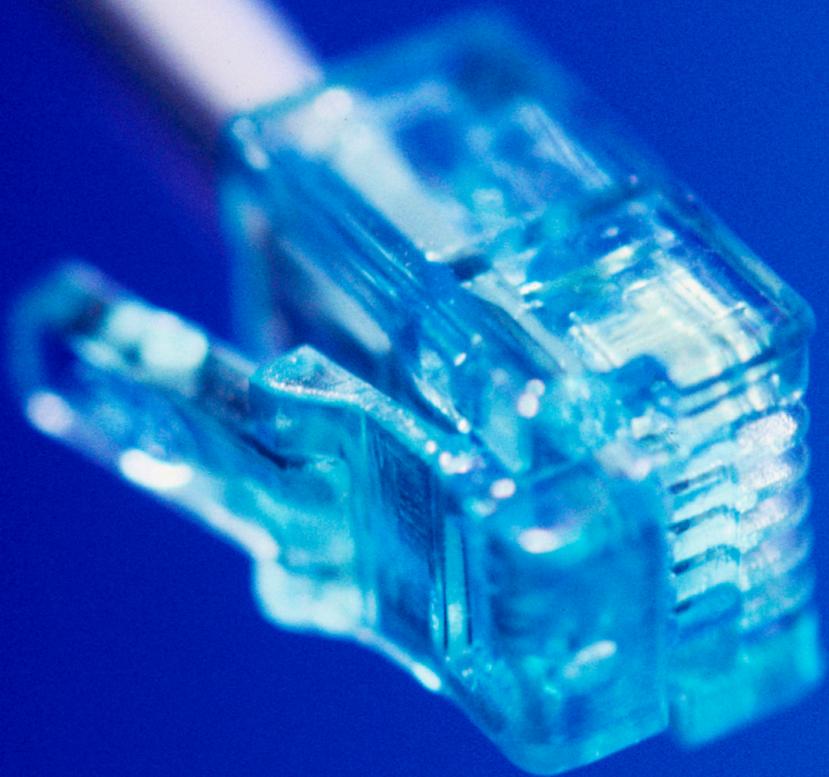
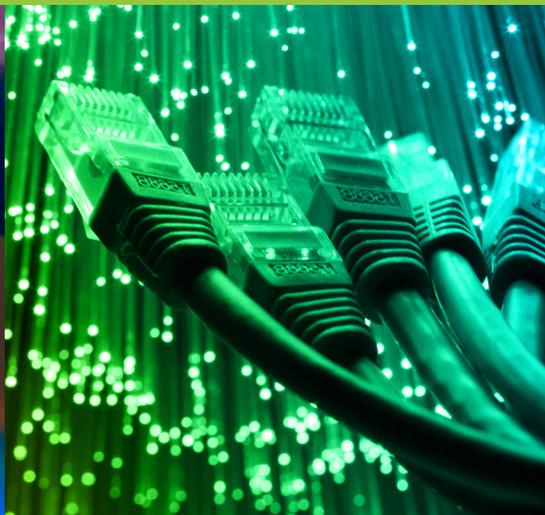
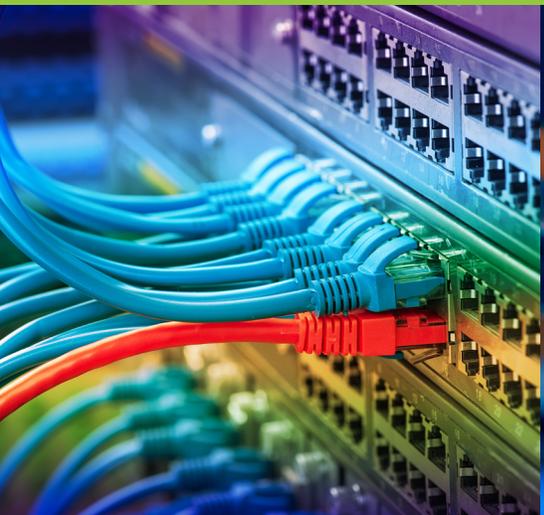


Challenge Accepted.

# AN ALTERNATIVE FLAME RETARDANT SOLUTION FOR CATEGORY CABLES



» CASE STUDY: MAXXAM™ FR POLYPROPYLENE





## MEETING FR GOALS IN DATA CABLES WITH AN ALTERNATIVE TO FEP

### THE CHALLENGE

Category cables serve a critical role in our increasingly connected world. High flame performance and a low dielectric constant keep our equipment safe and data moving quickly. FEP provides such characteristics, and thus is commonly chosen to provide category cable insulation.

But FEP has drawbacks. Not only is the material costly, it can also be challenging to process and use in thin wall cable applications.

Facing these challenges, engineers from a leading global wire and cable manufacturer approached Avient to explore new material formulations that would also improve processability and productivity without sacrificing stringent flame and data performance requirements.

### THE SOLUTION

The manufacturer worked with Avient to identify alternatives to FEP insulation that would meet requirements in their data cable. After delivering polypropylene-based samples from the Maxxam™ FR line for immediate trial, the Avient team also worked with the manufacturer to help them determine the best pair combination design.

After Avient delivered test data for pair combinations and the manufacturer's team completed material trials, they were able to replace FEP with Maxxam FR material in four out of four insulation pairs. This grouping allowed the customer to maintain the cable's thin wall construction, as well as plenum flame performance, and achieve a dielectric constant of 2.7–2.9.

### THE IMPACT

When compared with FEP, Maxxam FR formulations offer significant cost savings and improve processing ease. Upon achieving full-scale production, the manufacturer was also able to reach line speeds of over 1,000 fpm at thicknesses of 10 mil or below, while reducing material costs by 33%.

PRODUCT		FR™ 0521-48 R1	FR™ 0587-21 R3
<b>TYPE</b>			
LSFOH PP		✓	
Halogenated FR PP			✓
<b>APPLICATION</b>			
Crossweb		✓	✓
Insulation			✓
<b>GENERAL PROPERTIES</b>			
Specific gravity	g/cm <sup>3</sup>	1.50	1.46
LOI	%	31	34
Tensile Strength	MPa	13.8	15.9
Elongation	%	320	320
Dielectric constant	1MHz	3.06	2.88
Shore D	-	72	75.6
T°C max/T°F Max	°C/°F	232/450	232/450
<b>FIRE PERFORMANCE</b>			
UL 444		✓	✓
Plenum yellow card		✓	✓

**Maxxam FR materials can provide cost savings and improved processing capabilities when used in category 5e cables and above. To learn more, please contact Avient at +1.844.4AVIENT (1.844.428.4368) or visit [www.avient.com](http://www.avient.com).**