

## Telecommunications Without Compromise

One manufacturer finds you can improve product *and* cost performance using Geon™ vinyl compounds.

### Situation

An injection molder supplying a telecommunications device manufacturer encountered flow and processing issues when trying to fill a two-cavity mold. This mold produced the two halves of a network interface device (NID) housing using a PVC compound from a local supplier. The high viscosity of the PVC compound was causing high cycle times and excessive stress on the molded part, which in turn caused the part to break during ejection from the tool.

NID devices, used in the telecommunications industry, require the use of plastic materials that meet the following performance criteria:

- Weatherability
- Medium/High Impact
- Color Retention
- Flame Retardance (UL94 V0 approved)

The manufacturer and molder asked PolyOne to propose a PVC product that would meet specifications and enable an increased flow rate to eliminate part breakage and reduce cycle times.

### The PolyOne Difference

PolyOne's sales and technical professionals worked closely with the manufacturer in a timely and effective manner to determine a solution. First, the team made sure to gain a full understanding of the customer's needs, from the demanding requirements of the end-use application to manufacturing and cost considerations. Investigations uncovered the fact that the molder's machine was working at excessively high temperature and pressure, with a long cycle time and elevated scrap rate level.

PolyOne determined that a specific Geon vinyl compound would not only meet specifications, but would also eliminate the negative manufacturing issues. During the first molding trial, this material's performance yielded higher product output, lower scrap rate and energy saving while being processed at lower temperature and pressure. When the OEM tested molded parts for impact and accelerated aging, they met required levels and the material was approved.



## Delivering a Value-Added Solution

The proposed Geon vinyl solution offers a host of beneficial properties including excellent dimensional stability, UV resistance, and impact resistance. These inherent performance properties help the final product to meet rigorous specifications for weatherability, creep resistance, and durability. Further, the material's enhanced flow properties enable the molder to fill intricate features within the NID housing while still maintaining a superior surface appearance free of warpage or other imperfections.

Overall, the Geon compound improved production, enhanced machine productivity, reduced cost per unit and boosted part quality.

- **Reduced Cycle Time:** The high flow properties of the PolyOne solution allowed the molder to reduce packing and cooling time while still producing warp-free parts. As a result, the material helped to achieve a cycle time reduction of over 8% during the first trial.
- **Increased Production:** The PolyOne solution allowed the molder to increase part output, resulting in a machine cost-per-part savings.
- **Reduced Scrap Rate:** The new material's properties and performance created parts with improved toughness and impact resistance. These parts are also subjected to less stress during molding because of the lower temperature and pressure requirement. The first molding trial achieved zero part breakage during tool ejection, fewer rejects, and a 3% reduction in scrap rate.
- **Total Manufacturing Cost Savings:** Although the price per pound of the PolyOne material was higher than the original PVC material, the manufacturer's total costs were reduced by over \$21,000 on an annualized basis as a result of the proven, quantified savings in cycle time, productivity and scrap reduction. This cost savings dropped to the OEM's bottom line and increased its operating income.

**Product choices often vary by region due to differences in regulatory and agency requirements, availability and other key factors. Please contact your nearest sales office for assistance in choosing the right solution for your locale.**

### CONTACT INFORMATION

#### Americas

U.S. – Avon Lake, Ohio  
+1 866 POLYONE

Argentina – Buenos Aires  
+0054 11 4200 5917

Brasil – Campinas  
+55 19 3206 0561

Canada – Mississauga  
+1 905 673 1213

Canada – St Remi  
+1 450 454 5498

Columbia – Bogota DC  
+57 1 622 1844

Mexico – Toluca  
+52 722 279 0200

#### Asia

China – DongGuan  
+86 (0) 769 8587 8800

Japan – Tokyo  
+81 3 6912 9102

#### Europe

Belgium – Assesse  
+32 (0) 83 660 211



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[www.polyone.com](http://www.polyone.com)

#### PolyOne Americas

33587 Walker Road  
Avon Lake, Ohio 44012  
United States  
+1 440 930 1000

#### PolyOne Asia

Guoshoujing Road No. 88  
Z.J Hi-Tech Park, Pudong  
Shanghai, 201203, China  
+86 (0) 21 5080 1188

#### PolyOne Europe

Rue Melville Wilson 2  
5330 Assesse, Belgium  
+32 (0) 83 660 211