An injection molding customer in Northern Europe, processing polycarbonate in a 200 ton Demag, reported having trouble with black specks in their clear optical lenses. This was causing a high scrap rate and they needed a solution that would improve the product quality and reduce or eliminate this scrap rate.

Black specks appear in facilities that use one screw to process many different resins and perform multiple color changes. Proper screw design that is specific to the material processed is crucial for successful molding. Poor product quality and black specks can occur when a screw design is not tailored to the specific resin processed. Improper screw design creates high shear stress, which results in resin degradation. This degradation and contamination is typically what causes the black specks. Resins where black specks are troublesome include PC, FPVC, RPVC, and PET.

Pristine product quality is especially important when producing clear lenses. Product defects of any kind are intolerable. Melt degradation, excessive screw RPM, contamination, excessive shear, and inadequate screw and valve design can be causes for product defects, as well as black specks in lens products. Screw designs catering to the specific characteristics of polycarbonate can make a considerable difference in product quality and help increase yield and profitability. We will take you through a real-life customer example and show you how a proprietary Xaloy® injection molding screw design enhanced product quality and significantly reduced scrap rates for an injection molder.

**Prevent black specks in your lens products!**

When clarity counts most, take advantage of Xaloy® technology to enhance product quality, lower scrap rates considerably and make your process more efficient.

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**The Challenge**

Reducing scrap rates in optical lenses

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The Importance

Product quality is key

Product quality is key in an injection molding facility. Loss of yield cuts profitability. Downtime and sorting rejects are costly. Ultimately, inefficient processes and low quality products lead to a loss of customer base.

The Nordson Solution

Xaloy® Pulsar® Mixing Injection Screw

Nordson suggested the Xaloy® Pulsar® mixing injection screw to improve quality and lower the scrap rate. The Xaloy® Pulsar® screw is a low shear distributive mixing screw that provides a uniform and homogenized melt. Other advantages of this specific screw design include strong weld lines, lower back pressure, and quick color and material changes.

The Results

Reduced scrap rate from 20% to 1.5%

After installation of the new Xaloy® Pulsar® mixing screw, the customer reported significant success. With this screw, they were able to reduce their scrap rate from 20% to 1.5%. This reduction in scrap rate allowed their productivity to increase by 41%. Another benefit of switching screws was a cycle time reduction of three seconds. With such great results, our customer was able to achieve a quick ROI of 14 days.

Do you want to learn more about optimizing your injection molding process? Contact us today and let our technical team support you with expert advise and custom-tailored process solutions.