Process control at polaroid

Business

The completed cartridges are then inventoried and sent to the packaging section to fill a large shipping carton. The shipping cartons are then stacked, palletized, and stored ready for shipment. The management of the R2 plant focuses on high volume output, low operating costs, timely production and low defect rates in their manufacturing processes

The quality control department was responsible for sampling a lot of finished cartridges for defects and create a disposition whether to release the lot to the market or hold the lot for further testing and rework or reject the whole lot as unacceptable. This is a traditional approach of quality control where the efforts of quality control are focused on the last stage of production prior to the delivery of products. This type of approach is very costly, time-consuming, and wasteful. In 1985, the R2 plant introduced and implemented a new process control program which they named Project Greenlight. The program involves a statistical process control chart that measures the variability of the product attributes and variables such as Pod Weight and Finger Height. The primary objective of the program was to reduce quality monitoring costs with a secondary objective of maintaining or, as much as possible, improve the quality of the integral film finish products.

Concurrently, the program has experienced several setbacks and challenges. The initial results of Project Greenlight show that the quality of products manufactured along the line has decreased and there exists a large discrepancy between the inspection results as reported between the quality auditors and line operators. According to the data collected by quality auditors, the defect rate is ten times higher than historical levels, while, according to the line operators, the defect rate is 50% lower than their historical levels.

It is recommended that the Project Greenlight team reevaluate their plans and create an operational strategy of an effective quality management system that aligns the control processes, monitoring, and inspection criteria between line operators and the quality auditors. Pareto analysis of the type of defects sampled shows that excessive reagent is the reported defect common to both operators and auditors which have a direct relationship with the process control programs of Project Greenlight. (Appendix A)

The baseline data of pod weight should be used properly. However, the initial control limits should not be set at three standard deviations. This gives a 99. 7% of acceptance of all products. The control is not tight at three standard deviations. A recommended control limit is two standard deviations (Appendix B). Tightening the control limit would minimize excess reagent defects.

The process control chart also showed different variations and out of control data when using the recommended control limits. The X-chart shows one point out of control, while the R-chart shows two points out of control. The process should be checked, corrected, and re-evaluated in order to lessen the number of occurrences of excessive reagent.

Over time, process engineers and the Project Greenlight team may consider using a tighter control limit. The control of the pod weight is very important as it is directly affecting the quality of the integral film.