Graco reduces air emissions with low HAP paint!

"Environmental performance improvement is important at Graco. (We strive to) use less energy, generate less waste, generate less wastewater, and (to maintain) the flexibility afforded by maintaining our permit status."

- Eric Lillyblad, Graco Environmental Specialist

Background:
The origin of Graco can be traced back to Minneapolis in 1926. On a cold winter's day, Russel Gray thought there had to be a better way to lubricate automobiles than by using a hand pumping grease gun. It was so cold that day that the grease wouldn't budge. Russel Gray was inspired to develop a grease gun powered by air pressure. After a favorable reaction from industry, Russel and his brother Leil formed Gray Company Inc. to market the grease gun. As of today, Graco is a multi-million dollar organization with seven manufacturing facilities in the United States that has expanded to making fluid transfer and application equipment for "everything from peanut butter to paint." Their products include pumps for: tomato paste, paint, vehicle oil and lubricant, and other various business and industrial applications.

Process:
Graco paints their fluid application products as part of their production process. When paint dries on a part, chemicals within the liquid paint evaporate into the air. Some of the common chemicals found in paint are volatile organic compounds (VOCs), such as toluene and xylene. In 2001, the Graco facility in Minneapolis realized that it would be beneficial to decrease their VOC emissions, and they made an effort to find more environmentally friendly paint.

Motivation:
The major driving force behind Graco's desire to reduce VOC emissions was to maintain flexibility in their class D air permit. The process would also allow Graco to reduce their toxic release inventory (TRI) chemical usage. Finally, Graco is motivated by environmental protection and waste reduction, striving to produce quality products with minimal waste, consistent with Graco's Environmental Policy and ISO14001 Environmental Management System.

VOC Reduction Process:
In order to reduce emissions, Graco focused on the coatings used at the Minneapolis production paint line. They worked with their paint supplier to have the coatings they purchased reformulated with less toluene and xylene. After some experimenting, they were able to settle on coatings with lower Hazardous Air Pollutant (HAP) content without sacrificing appearance or quality. This change resulted in a slight cost increase, and there was time and effort required to test the paint. However, there were no significant downsides, and the process did not compromise their products or production. Additionally, Graco is no longer a TRI reporter of any hazardous air pollutants, which means that they now handle less than 10,000 pounds of any section 313 chemical, including toluene and xylene.

The result of this VOC reduction process is a decrease in xylene and toluene air releases, as well as a general trend of decreased VOC emissions since 2002. The Graco facility in Minneapolis became a non-reporter of xylene after 2006, and a non-reporter of toluene after 2008. Compared to 2002 data, 2013 xylene releases were down 40%, toluene releases were down 94% and VOC's decreased 28%.

YEAR	TOLUENE	XYLENE	VOC
2002	7,880	12,820	59,200
2013	480	7,700	42,720
% REDUCTION	94%	40%	28%