

AGCO reduces VOCs by installing a powder coat paint line!



Background:

AGCO is a global leader in agricultural machinery. They manufacture tractors, combines, hay tools, sprayers, forage equipment, tillage, implements, and grain storage and protein production systems, in addition to replacement parts. The AGCO facility in Jackson, Minnesota began in a garage in 1963 as Ag-Chem Equipment Co, a manufacturer of better crop sprayers. In 2001, Ag-Chem was purchased by AGCO, and has become a worldwide farm machinery company through market growth, strategic acquisitions, and cutting edge agricultural solutions.

Process:

The AGCO facility in Jackson has three lines where they paint agricultural products. They had been using a solvent based liquid spray painting process. As liquid paint dries, the solvents within are released into the air as volatile organic compounds (VOCs). Traditional spray painting equipment can be wasteful as atomized paint often misses the part and ends up on the floor, walls, and collects in the paint booth filters.

Motivation:

In contrast to liquid coatings, powder coatings emit nearly zero VOCs. They are environmentally friendly and material efficient, because most over-sprayed powder paint can be reused. This leads to a 95% – 100% powder paint transfer efficiency. Powder coating lines also create less hazardous waste, as there is no paint sludge produced. This means that there is very little environmental reporting that is necessary on a powder coat line. AGCO was motivated to switch one of their liquid paint lines over to powder coating in order to reduce their VOC reporting requirements and to reduce their environmental footprint.

VOC Reduction Process:

The line that AGCO chose to change from traditional liquid coating to powder coating was the one containing parts that could handle the high temperature baking of the powder coating process. The parts to be powder coated need to be able to hang on their powder coat paint line, and cannot contain gaskets or O-rings that will be damaged in the high temperature powder baking process. Example items now being powder coated include small parts like gussets and brackets. This line change from liquid to powder coating was made without much difficulty, and has resulted in significant reductions in emissions and waste.

As a result of the installation of the powder coat line, the AGCO facility in Jackson has managed to reduce their VOC output between 2010 and 2011 by 7.8%. Their xylene emissions are down 56.3% from 2010. As of 2012, AGCO in Jackson has reduced its xylene usage to the point of no longer needing to report this chemical for TRI purposes.

YEAR	VOC'S (LB)	XYLENE AIR EMISSIONS (LB)
2010	212,807	16,950
2011	196,223	7,415
% REDUCTION	7.8 %	56.3 %

