

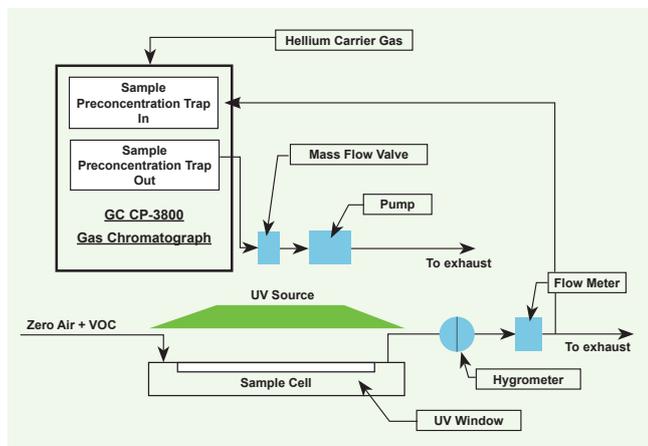


VOC Reduction

Photocatalytic Ultrafine Titanium dioxide, when applied by means of paints, coatings or other surface treatments, is shown to destroy atmospheric pollutants such as Volatile Organic Compounds (VOC).

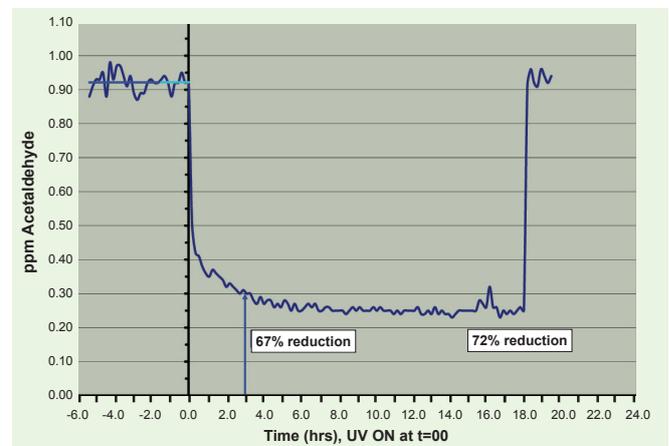
Within a few days to a few months from application and depending on the formulation type, a properly formulated paint is shown to become a 'negative VOC' product. This means that the VOC degraded by the coating material in its service life are far more than the ones emitted by the paint itself and due to the organic components of the formulation.

Tronox used a combination of a Total Hydrocarbon Analyzer (THC) and a CO₂ Analyzer to measure the VOC photocatalytic degradation in a gas stream passing in the sample cell represented in the schema below.



Tests were made on an optimized paint formulation (Styrene-Acrylic, 72.5% Total PVC and containing CristalACTIV™ PC-500 photocatalyst), showing significant activity in VOC reduction. Laboratory measures were confirmed also by VOC monitoring in an industrial environment (paint production workshop)¹.

The measurements of the VOC levels conducted, as requested by the Health and Safety procedures, showed significant decrease once the walls of the production unit were treated with a specifically formulated photocatalytic paint using CristalACTIV™ photocatalyst technology.



AREA 1	Y2009	Y2010	Y2011
BENZENE	0.17	0.0001	0.0033
TOLUENE	0.23	0.0007	0.0117
ETHYL BENZENE	0.43	0.0003	0.0033
XYLENE	8.65	0.0004	0.0034

AREA 2	Y2009	Y2010	Y2011
PET ETHER	0.03	0.0001	
BENZENE	0.17	0.0037	0.0033
TOLUENE	0.23	0.0047	0.0084
ETHYL BENZENE	0.09	0.0024	0.0033
XYLENE	2.02	0.0031	0.0033

¹ Data courtesy of Pacific Paints (Boysen) Philippines, Inc.

For more information about the photocatalytic properties of CristalACTIV™ TiO₂, contact: cristalactiv@tronox.com
Visit us at our website: www.cristalactiv.com

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