



Technical Brief

Volatile Organic Compounds and Consumer Products: An Overview

What are VOC's?

The term 'volatile' refers to a solid or liquid that readily evaporates at a normal temperature. An organic compound is one based on carbon and hydrogen. Therefore, Volatile Organic Compounds are organic chemicals that easily evaporate at normal temperature and pressure. Many solvents, aerosol propellants, and petroleum distillates are VOC's.

Why are we concerned about VOC's?

VOC's are an ingredient in the formation of ground-level ozone, also known as 'smog'. Smog contributes to respiratory problems for humans and animals, and extended exposure can lead to asthma, pneumonia and bronchitis. Peak smog levels typically occur during hot, dry, stagnant summertime conditions.

How are VOC's regulated?

The EPA developed air quality standards for ground-level ozone and requires states to monitor and maintain 'safe' levels of ozone through permitting and regulatory initiatives. Some VOC's are more reactive than others and more readily produce smog. VOC's with a very low reactivity, such as acetone and perchloroethylene, or those with very low vapor pressure, are exempt from the regulations.

In order to meet the federal standards, several states have created regulations that limit the amount of VOC's in consumer products. California was the first state, in 1989, to set VOC limits by product type and category. Since then, they have amended their regulation several times to include new product categories and to lower previously established limits. Other groups of states have followed California's lead. One group is called the Ozone Transport Commission (OTC) and includes Northeastern and Mid-Atlantic states. This group created a 'Model' Consumer Products VOC Rule that could be adopted by member states. The first model rule was developed in 2001. It was revised in 2006, 2012 and again in 2018. Another group of states is the Lake Michigan Air Directors Consortium (LADCO) and consists of states that border Lake Michigan. This group uses the Model Rules developed by the OTC. Currently, Colorado, Connecticut, District of Columbia, Delaware, Indiana, Illinois, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Utah, and Virginia have in place a version of this model rule.

What does CRC offer as a solution?

CRC is diligent about following all regulatory developments regarding VOC's in order to provide compliant products for our customers. Customers can easily determine which of our products meet consumer products VOC limits for California and other states using various resources on CRC's website. The CRC Product Compliance Guide lists all regulated products and their compliance status in CA, OTC and LADCO states. Also be sure to check out our other Technical Briefs that highlight updates in state regulations or discuss specific provisions of the VOC regulations. Please visit our website at crcindustries.com and see the "VOC Information" page for more information.