THE PLANT VERSUS THE PRODUCT

As the introduction implies, although marine coatings are affected by worldwide regulations, in most instances—at least for developed countries—their first regulations are in their manufacturing plants of origin.

So, in the U.S., paint plants are governed by a variety of requirements emanating from the federal, state, and, in some cases, local levels, including requirements on the reporting on hazardous materials, handling of waste, and discharges.

Of these, the most important are those affecting the manufacturing of products. The ones with the greatest impact are those that limit the amounts and types of materials that can go into the products under various clean-air regulations that prevent or limit the materials' emissions from the plant and the products themselves.

In the U.S., these fall into two categories—emission of volatile organic compounds (VOCs), which contribute to the formation of ozone or smog, and emissions of hazardous air pollutants (HAPs), which are often VOCs, but are classified as more hazardous and thus regulated by "maximum achievable control technology" (MACT). More often than not, these requirements are imposed through a state or local permit, but the minimal standards themselves are set by the U.S. Environmental Protection Agency (EPA).

In the case of VOCs, the standards are set primarily through an EPA-issued Control Technique Guideline (CTG), which specify "reasonably available control technology" (RACT) for existing paint plants and products. Technically these are presented as only a "recommendation" to the states. However, like a "recommendation" from an air-permit commanding officer in the service, they are ignored at a risk: failure to adopt them can result in EPA's disapproval of a state's clean-air plan.

As their names suggest, the stringency of a MACT HAPs standard (maximum) is much higher than that of a RACT VOC standard (reasonable) on the premise that a hazardous air pollutant is, by definition, more of a threat. In setting RACT standards, the regulators can consider the costs of the controls and strive to pick the best but reasonably doable controls by all those affected. In setting a MACT standard, the regulators essentially put blinders on to cost considerations and are required by statute to select the average of the top 12 percent best-performing control technologies.

The states can also go beyond these minimal federal standards and some, particularly California, often do. So, a national company with operations in several states can be affected by a variety of regulations and it must stay abreast of all...

In the European Union, plant VOC emissions are regulated for the most part under the authority of the Solvents Emissions Directive, which member states must follow. HAPs emissions are not handled as a separate category for emission controls yet, but there are other means underway on this score. This includes the Registration, Evaluation, and Authorization of Chemicals (REACH) regulation, a massive chemical review and evaluation program that seeks to eliminate or greatly limit the use of relatively more dangerous chemicals from all products and manufacturing operations. This is guided by the so-called "precautionary principle" of affirmatively demonstrating that the material does no harm in all of its applications and uses. However, like the individual states in the U.S., the EU member states may go beyond the EU-wide standards and, hence, local rules and programs there must also always be consulted.

We turn now to the marine-coatings products themselves. These too are regulated for their content of VOCs and HAPs, which are released upon application. As a result, these rules apply to the end user or customer—not the manufacturer.

For coatings manufacturers, two considerations are important here. First, manufacturers are far more concerned about these controls because they affect their products and, hence, their markets. Plant controls are an engineering issue, and even if costly, they do not limit their proliferations—as do product formulation restrictions—that can affect the performance and thus the demand for a product.

Secondly, because the rule applies to the customer, it is both a blessing and a curse. It is a curse in the sense that the manufacturer has to deal with the perceptions and ability of the user to comply. If something goes amiss, the customer will look to the manufacturer for assistance or perhaps even to blame. However, it is also a blessing in that the manufacturer can use the compliance issue as a means to cement a good customer relationship. Companies compete with each other on this score, with many devoting a great deal of time and effort to it.

For product managers and sales forces in day's world, it is not enough to simply know the details of how the product works, optimal application conditions, etc. Now they must also be experts on regulations facing their customers in the use of the products, even if for no other purpose than to assure them that, if used as directed, the product will comply with any applicable local, state, or federal regulations. It is not unusual for an end user to ask for help from its coating manufacturer with filling out permit terms or developing products that will make it easier to comply.