CASE STUDY

ScienceDirect

EHS—A Team Effort

Using ScienceDirect to maintain regulatory standards, boost R&D and save millions

SUMMARY

Maintaining environmental health and safety (EHS) is critically important to business success in today's chemical industry. EHS affects every aspect of the process, from R&D to production, and therefore must always be top of mind. One Environmental Manager at a leading specialty chemicals firm shares how having the right information at the right time enables her to keep the facilities that she manages running smoothly while also providing company researchers with crucial data.

ELSEVIER

"It's a team effort... So any information that I've found through ScienceDirect, I pass on."

—Environmental Manager

A specialty chemicals and performance materials company operates dozens of manufacturing plants, as well as several research and development facilities, across the globe. An Environmental Manager, who oversees one of their manufacturing plants and one of their R&D facilities, both located in a small U.S. town, has been with the company since 2012. Her job includes carefully monitoring all aspects of environmental compliance, including water, waste and air.

Changes in the Air

Although every regulatory item is of the utmost importance, this Environmental Manager notes that air is often of particular concern in her role, due to the strict emissions and permitting standards in her state. A recent agreement with the EPA, for instance, meant that the company had to drastically decrease NOx emissions. This required costly and intense changes in production, which they had to manage while still meeting the expectations of their carbon black customers. The company also made a significant feedstock change from ammonia to urea, which has come with its own set of impacts and challenges.

Fortunately, she has been able to rely on ScienceDirect as a valuable resource. "There have been several journal articles that I've read on ScienceDirect's website," she points out, highlighting an especially important one that covered emissions—particularly olephins and paraphins—in the region where she works.

"The article goes into the air modeling process. It's provided quite a bit of information regarding RVOCs. Because when we make the carbon black, we first start by feeding the reactor with carbon black feedstock, and it generates quite a bit of VOCs, as well. So the portion on air modeling was very helpful."

She has found articles like this especially useful when out-of-state consultants, who don't necessarily know the local terrain or regulations very well, have needed reliable data for their modeling reports. But it's not just content covering local data that is useful. "There are quite a few articles that are devoted to emissions in China," she says, pointing out that the company has several plants in that country, so she wants to be aware of anything involving their increasingly strict environmental regulations. "It's a team effort," she explains. "So any information that I've found through ScienceDirect, I pass on. Especially with air emissions."

ScienceDirect has helped the Environmental Manager to solve urgent problems quickly

"Design is a big part of it, too, if we're going to install something new. So ScienceDirect has provided quite a bit of information for myself and our engineers. Whenever I receive some type of question and they're not familiar with that particular website, I always send them over to help them develop their project."

—Environmental Manager

An Assist to R&D

Information gleaned from journal articles is not only useful for writing environmental reports or dealing with regulatory inquiries, but also helps the facility's R&D teams in their work. Being able to reference the peer-reviewed scientific and technical literature found on ScienceDirect has helped the Environmental Manager to solve urgent problems quickly, such as a time when an article on hydrocarbon cracking proved to be a great resource.

"When I do an R&D type project that's at the plant, I can submit what's called a Permit-by-Rule. It's a quick, easy way to allow additional air pollutants to be authorized, to a certain extent—for a short amount of time. So, using that particular information as a reference, I was able to obtain that Permit-by-Rule in order to help our R&D guys," she explains.

By providing leading-edge information and data, ScienceDirect is certainly making work a little easier for this EHS professional and her colleagues. But, more to the point, it is driving efficiencies for the business when it is able to help them make headway on major projects, such as an important R&D effort related to the energy system that the plant uses to keep feedstock oil hot.

"In the whole aspect of reusable energy, it's a huge cost. We have to keep our feedstock tanks, and these tanks are 50–60,000 gallons—having six of them on site," she says. Figuring out how to use energy more efficiently in heating them, while maintaining production standards, is a priority. "Design is a big part of it, too, if we're going to install something new. So ScienceDirect has provided quite a bit of information for myself and our engineers. Whenever I receive some type of question and they're not familiar with that particular website, I always send them over to help them develop their project."

With so much at stake, having access to the current, high-quality information available on ScienceDirect is more valuable than ever.

Using ScienceDirect to Make a Strong Case—Quickly

Having access to this information makes it easier for her to present a compelling case, and she can say "'Here are the pros and cons based on the research that I've looked at from journals A, B and C, from this website,' and so it gives me more credibility," she explains. "In a team sense, we can come together to find the best solution. In that respect, it gives me some leverage, especially when I can tie the regulations into it. So ScienceDirect has helped quite a bit in that area, especially when it comes to some of the R&D projects."

It's not that there aren't other methods that a regulatory expert could use to obtain such valuable data, but ScienceDirect offers certain advantages. "Having it consolidated on that website, and very easily searchable, I can obtain it in a matter of minutes. In my role, people want answers right then and there, and there's no room for 'Let me think about it,'" she says. "Sometimes there is time to evaluate, to take more time to really get into the nitty gritty. But when we have a critical breakdown or we potentially, for example, exceeded emissions, I go to ScienceDirect to gain any information that I can to protect my company from a regulatory standpoint."

Information Access Leads to Cost Savings

Ensuring that the company maintains high EHS standards can mean saving it huge sums of money. "I get visited by the regulators all the time," reports the Environmental Manager. "Having that journal article in my files is sometimes very crucial to protecting our company from large fines, notices and violations." Those fines can be enormous—"$500,000, $600,000, $700,000"—as her state is quite strict in regards to their fines for air pollution.

It can be even more if the EPA gets involved. "Several of my reports do go to the EPA. So if perhaps the EPA levies a fine on us, and tells us we must shut down our units, our flares in particular, then the fine itself could run in the millions." But of course the costs can go far beyond fines—you also have to calculate lost sales and customers in the event of a shut down. "So the cost can be millions to billions," she confirms.

With so much at stake, having access to the current, high-quality information available on ScienceDirect is more valuable than ever.

ELSEVIER

For more information visit:

http://www.elsevier.com/sciencedirect

May 2016