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Foreword

Welcome to the Chemicals Management Software Guide. This is Chemical Watch's first guide to chemicals management and regulatory compliance software solutions, and we plan to build on it in future years.

In addition, we'll be keeping you up-to-date with new software developments on a regular basis through the pages of Chemical Risk Manager.

In publishing this guide, we are in part responding to the trend of IT and software solutions being used to improve chemicals management programmes, while also presenting data on what is currently being used and future plans for investment into new systems.

To this end, we carried out a survey, described in full in the introduction (pages 4-7) about how chemical companies and downstream users are doing just that.

While regulatory compliance is a core focus, we are also interested in the software that is helping companies to go beyond compliance, supporting product stewardship initiatives and environment, health and safety (EHS) management systems.

With our focus on exposure, operational risk, safety and assessment, Chemical Watch and its sister publication, Chemical Risk Manager, are well positioned to provide coverage of chemicals management, which is increasingly a core component of the enterprise-wide systems that are managing these areas.

The Guide features five specially commissioned articles by seasoned journalists on software that addresses specific needs. These sections vary considerably from each other, but some common themes will emerge.

Risk management (pages 9-11) comes first. It is essential for manufacturers and users to mitigate their operational risks, because of the intrinsic hazards of the products.

The industry already does this in great detail, of course. Now home-grown paper methods are giving way to packages that offer everything from tracking hazardous properties to exporting data and automatically filling in safety data sheets.

Environmental performance is a wider-ranging term and vast amounts of data has to be generated and managed to achieve it (pages 13-15).

The integration of software systems is particularly crucial here. Our case studies show how such systems have been implemented in the electrical power, agrochemicals and automotive sectors to ensure compliance across complex networks of facilities.

Occupational exposure and hazard assessment (page 17-19) are areas where compliance with regulations was traditionally a 'ticket to play', but where companies increasingly have to go further. Examples show how some have used software to produce their own documentation to demonstrate compliance, but also for use in early testing, to eliminate hazardous chemicals at source.

Product stewardship (pages 21-23) is moving centre-stage as regulations, particularly REACH, demand that companies generate data to prove what they are doing.

It now touches every area of a business, so simply having an expert update a spreadsheet will no longer be enough. Companies have to communicate more than ever about their products. This requires software, but of a kind adapted specifically to how the individual company works.

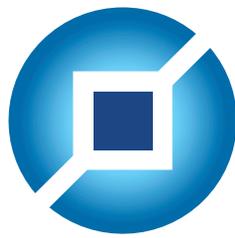
And finally, we look at process safety management (pages 25-29). This is a basic function, prescribed by both regulation and commercial necessity, but even here the need to go 'beyond compliance' is clear. Again, software makes it possible and some packages can even incorporate EHS into enterprise resource planning packages.

We hope you enjoy reading the articles and find the listings useful.

Dr Andrew Warmington

Editor - Chemicals Management Software Guide

Chemical Watch would like to thank its sponsor, Sphera Solutions for its sponsorship of this new Guide. You can view their profile on page 52.



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Introduction

Why are chemicals companies and downstream users investing in chemical management software?

Why a guide on chemical management software?
The answer is both simple and complex at the same time.

The compliance demands placed on chemicals companies and downstream users are becoming more extensive and complex with every passing year.

This statement does not refer only to the traditional safety mechanisms built into the industry down the years. It also encompasses the responsibilities expected of it all the way down the value chain.

The advantages of dedicated software that can continuously monitor process safety, operational risk, environmental performance and product stewardship are obvious enough. They are the same that come from any automated function that replaces multiple human brains in different locations.

At the same time, compliance is not a 'nice to have'; it is essential. Making mistakes can have serious, even catastrophic, consequences for the company, its reputation, its workers and the wider community around it, not to mention the industry as a whole.

In this report, we examine software in four broad categories:

- operational risk;
- environmental performance;
- product stewardship; and
- process safety.

These correspond to the four main articles in the editorial section, with another on hazard and occupational exposure.

The software chemical companies and downstream users buy cannot be just 'good enough'. Users are of necessity cautious about what they buy, how they implement it and how they update it.

So, who is investing in the software and why? Chemical Watch carried out a survey of over 450 firms active in and around the chemicals industry, asking them about their current investments and future plans relating to chemical management software.

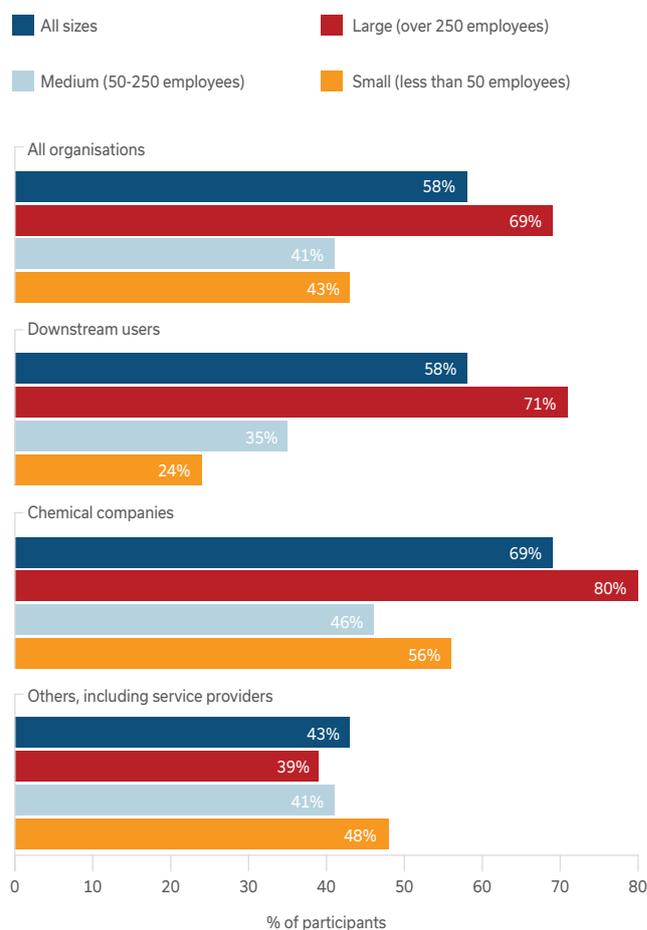
These companies varied considerably in size, though most (59%) were defined as large, with over 250 employees and a further 19% were medium-sized, with 50-250

employees. Small (10-50 employees) and micro (less than 10 employees) companies accounted for 9% and 13% respectively.

Nearly three quarters of those participating in the survey defined their company's main area of activity as chemicals, oil and energy (33%) or downstream users of chemicals (40%). The rest comprised, service providers including legal services (13%), government and agencies (3%), trade associations, public relations firms and similar (2%), and others (7%).

Not entirely surprisingly, there were marked differences between these groups when they were asked "Have you used a software system (including third party) to support your chemicals management programme in the past three years?" (**Figure 1**).

Figure 1 - Percentage of participants using software to support chemicals management programme in the past three years by organisation sizes and sector



Of those whose main activity was in chemicals, oil and energy, 68% said that they had done so, while the figure for those in the downstream sectors was 59%. More than half of the service providers had too. About half of both chemical companies and downstream users plan additional investments in the coming year.

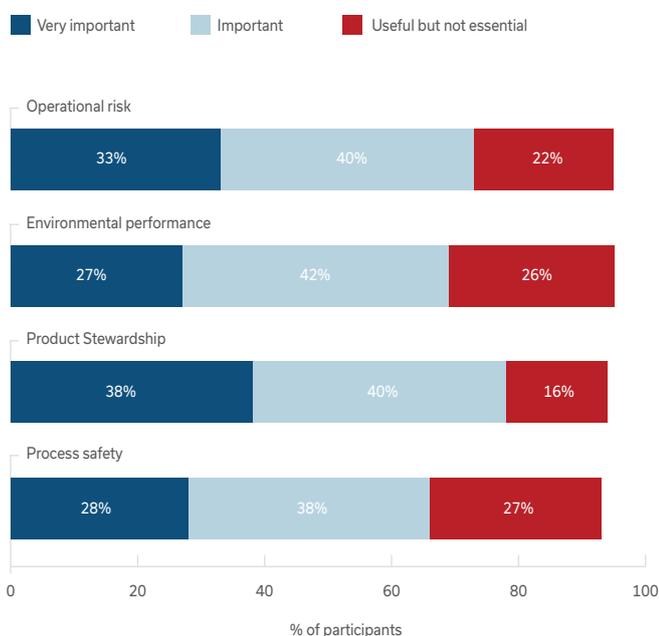
Large companies were most likely to have made investments: 69% of those responding had done so. However, substantial minorities of medium, small and micro companies (41%, 48% and 39%) had done likewise, showing that this is far from being a concern purely for the multinationals.

Whatever their size, chemical companies were more likely than those in any other category to have invested in software. 80%, 46%, 60% and 50% of large, medium, small and micro companies had done so, as against 71%, 35%, 30% and 18% for the downstream users. About half of service providers had invested; it was rarer, but not unknown, in the other categories.

When asked how important different kinds of IT solutions were to their current chemicals management programme, trends were broadly similar across the four categories as defined for the purposes of this report.

Between 28% and 38% of respondents said that software was very important to them in each of the four categories, 38-42% said that it was important in each case and 16-27% described it as useful but not essential. Only 5-7% in each case said that the specific category was not important (Figure 2).

Figure 2 - Importance of four primary IT solution types in support of chemicals management programme



These answers form strong evidence of the need for software with many different functions. Statistically, there were no significant differences in outlook between chemical companies and downstream users on this matter. Both regarded software for all four broad types of application as of roughly equal importance.

“In order to run a safe and successful business, it is important to identify, analyse, mitigate and monitor operational risk,” the guide explains. The right software can consolidate “disparate reports, processes and/or systems”. These all capture information but they can also limit the opportunity to develop the data into actionable strategies and processes.

Similarly, when it comes to managing environmental performance, the right tools are “becoming increasingly important as companies strive to cope with the huge amounts of data required for documenting and reporting their risk management and compliance activities”.

Respondents were asked how important ten different regulatory compliance software functions were to their current chemicals management programme (Figure 3).

While all ten scored highly and none was ranked as ‘not important’ by more than 9% of the total, the ones most rated as either ‘very important’ or ‘important’ were:

- data management (regulatory lists, substance data) - 90%;
- product compliance - 89%;
- regulatory management - 87%; and
- hazardous material management - 82%.

In the middle of the pack came change management (chemicals), reporting, chemical inventory management and compliance assurance. The least essential were deemed to be:

- chemical safety prediction, which was seen as ‘very important’ or ‘important’ by 65%, while another 28% saw its as ‘useful but not important’; and,
- substance volume tracking, which was regarded as ‘very important’ or ‘important’ by 67% but as ‘useful but not important’ by 23%

Even so, it is clear that all ten functions were generally seen as significant. Regulatory compliance is thus evidently a field in which the right software is seen as essential, not just a more convenient way of getting the task done.

As we report, “scrupulously-documented adherence to regulations is no longer enough for many companies. Maintaining a good reputation and upholding ethical and sustainable values are becoming more important as customers and supply chains scrutinise the safety of chemicals in ways they did not before.”

It was a slightly different story when respondents were asked to look at different chemical safety assessment software functions for their current chemicals management programmes (**Figure 3**).

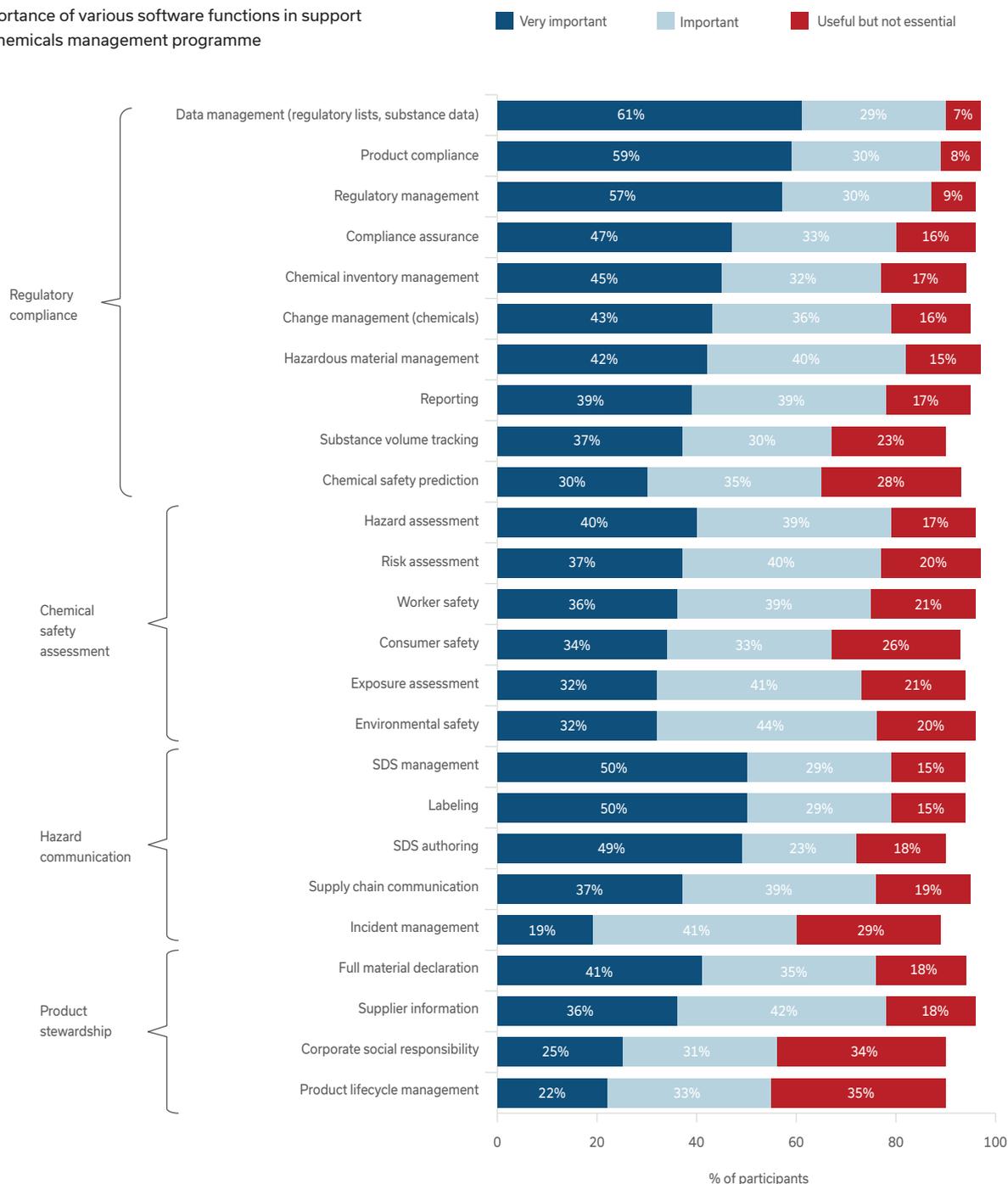
Between 32% and 40% of respondents described each of hazard assessment, exposure assessment, risk assessment, worker safety, environmental safety and consumer safety as very important.

In total 33-44% described each of them as important, 17-26% called each of them useful but not essential and only 4-8% described each of them as not important. Overall, then, the chemical safety assessment function matters too but less than regulatory compliance.

The key hazard communication software functions in respondents' eyes were safety data sheet (SDS) management and labelling, both of which were seen as very important by 50% and as important by a further 29%. SDS authoring was not far behind, with 82% seeing it as either important or very important, followed by supply chain communication (**Figure 3**).

Strikingly, only 19% saw incident management as a very important function of chemical management software, while a much higher proportion saw it as merely useful (29%) or not important (11%). Here, perhaps, is a function where there is still no real substitute as yet for experience and local knowledge, or it may just reflect the demographic of the respondents.

Figure 3 - Importance of various software functions in support of chemicals management programme



Finally, the product stewardship software functions deemed most important were full material declaration (described as very important by 41% and as important by 35%) and supplier information (36% and 42% respectively).

At the opposite end of the scale, 45% and 44% respectively described product lifecycle management and corporate social responsibility as either useful or not important (Figure 3).

Overall, then, the product stewardship function was not seen as quite so important in software terms as either chemical safety assessment or hazard communication. In some cases, this may reflect the current limitations of the software for relatively loosely defined concepts like product lifecycle management and corporate social responsibility.

However, both are major industry concerns and one would expect, as the software improves and the two are better defined and integrated into what companies do, that this will change.

As Mike Penman of Penman Consulting points out: "Product stewardship is changing and moving from a back room to a front room activity because all the regulations mean you have to have the data".

Asked how they integrate new software with existing business software, 44% of companies do this via an in-house team, 22% use consulting services and 15% go to

third parties. And, despite all the strictures by the experts about why this is the whole object of the exercise, 19% do not integrate the software at all (Figure 4).

Downstream users were slightly more likely than chemical companies to use an in-house team and to integrate, while the chemical companies were slightly more likely to go outside. This perhaps reflects the greater average size of the downstream users as much as anything, but the gulf between them is not vast.

And lastly, what drives the investment? Two words: time and cost, generally in that order. Of the respondents to this question, 50% and 43% respectively named time saving as very important or important, as against 39% and 50% respectively for cost (Figure 5).

Whilst the other categories - stakeholder expectations, product stewardship initiatives and corporate social responsibility did matter, 34% and 9% respectively described both the latter two as useful or not important, as against only 17% seeing them as very important.

This last answer reinforces the overall impression. Compliance software is there to help chemicals companies and their downstream users manage their risks and obligations better, in a timely manner and in a more cost-effective way than continuously expanding their regulatory departments. And the systems are now better than ever before. This guide can help you to find the right ones for you.

Figure 4 - How is new software integrated with existing business software?

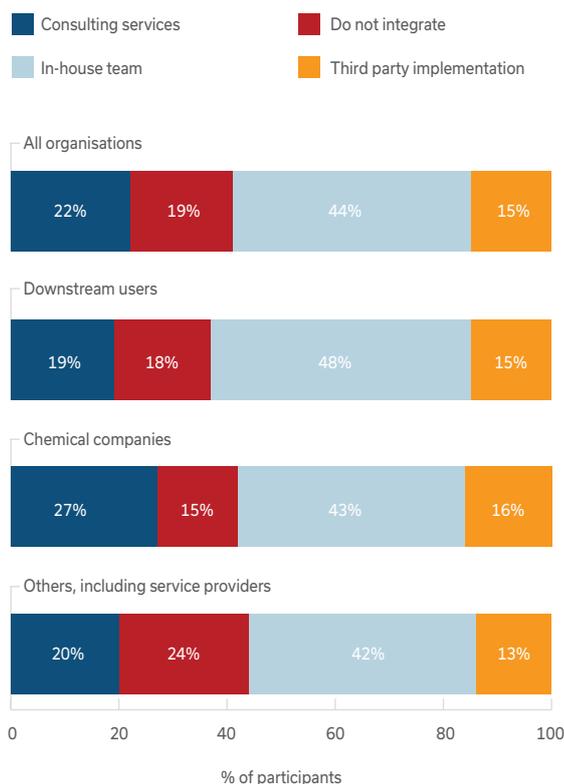
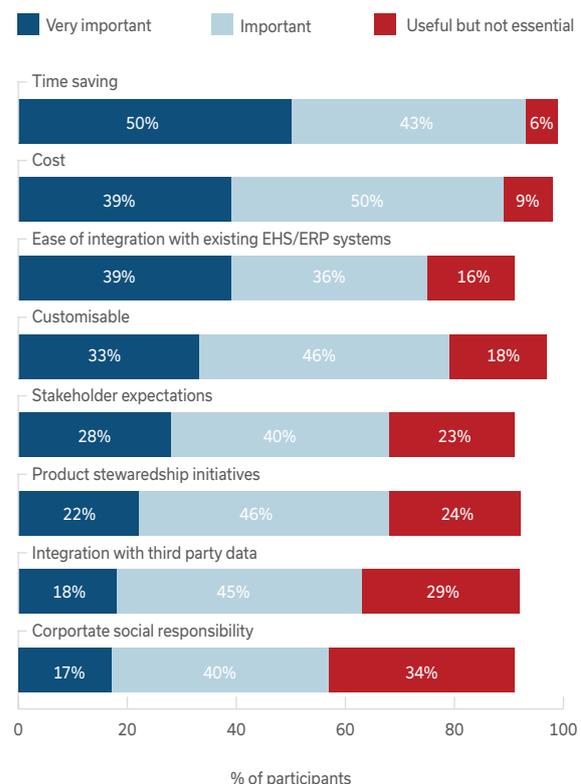


Figure 5 - Factors in driving your investment in software solutions



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hundreds of
regulation changes
from multiple
sources?



Taking too much time
to find the changes
that are actually
important to you?

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Why take the risk?

Automated systems are now available to enable companies to mitigate operational risks



Whatever the sector or size of an organisation, mitigating operational risk is of the utmost importance. Every company faces it: some risk categories affect entire industries, while others are unique to an individual organisation's processes.

Some of the most obvious risk variables that need to be considered include those that pose a potential hazard to local communities, ones that could affect the quality of a company's products and productivity and ones that jeopardise the health and safety of its workers or customers.

In order to run a safe and successful business, it is therefore important to identify, analyse, mitigate and monitor operational risk. There are many ways a business can do this, from using paper-based processes and Microsoft Excel spreadsheets through to the latest cloud-based technologies.

However, Dexter King, North America environment, health and safety (EHS) director at software firm ProcessMAP, points out that many organisations are missing out on the benefits of automated systems by continuing to use home-grown, paper-based methods.

"These usually involve the consolidation of disparate reports, processes and/or systems that capture information, but which limit the opportunity to develop the data into actionable strategies and processes," he notes.

Today's wide choice of software specifically developed to mitigate operational risk can feel overwhelming. But, by taking the time to analyse a company's specific needs and the solutions available, management of operational risk can become easier – and more robust – than ever before.

"The best software solutions seamlessly solve the problems of manual data management that often exacerbate operational risk, while automating repetitive processes and connecting users to timely regulatory updates," explains Cora Knutson, senior regulatory specialist at software provider UL SCS.

Software for chemicals

For organisations working with chemicals, some of the main areas of concern regarding operational risk revolve around assessment, change management, incident reporting and regulation compliance. There are many applications aimed specifically at businesses in this field, covering everything from asset management systems and chemical management platforms through to incident reporting, worker safety and regulatory compliance.

Such applications allow organisations to do everything from "tracking hazardous chemical properties and quantities so that they are able to accurately export data for any regulatory reporting requirements they have, to making safety data sheets (SDSs) readily available to all employees," explains Chris Nowak, director of business development for EHS at software provider Enviance.

"Our customers manage the full cradle-to-grave material lifecycle," says Aldric Delahaie, supply chain and product stewardship product manager at software provider Enablon. "Each potentially hazardous material is described with its identification, composition and manufacturer's classification and labelling, with more than 100 attributes for safe handling, storage, disposal and health considerations."

According to Mr Delahaie, "multilingual SDSs are associated with the materials and are easily accessible for

any employee in the world in their language through all devices, including mobiles ones."

"Customers can also track and monitor classifications and labels and can use templates to generate any type of document to communicate hazards, such as safety cards or transport labels," he says.

Automating compliance

In today's rapidly evolving regulatory environment, it is increasingly important for companies to be aware of, and comply with, the latest safety, chemical and environmental regulations.

In the EU, regulations such as REACH, RoHS, WEEE, and supplier disclosures continue to drive business. In the US, the EPA is currently reviewing chemicals under the revised Toxic Substances Control Act (TSCA). This "has the potential to significantly change how chemicals are managed on-site and during disposal," notes Ian Cohen, product Marketing Manager at software provider Cority.

Software designed to mitigate operational risk includes regulatory compliance components, allowing organisations to create a chemical property database to help comply with REACH. The software will also help track regulatory changes that will affect them in any shape or form.

By using such software, says Mr Nowak, "companies are able to track through the supply chain and identify what substances are in the supplier's raw materials and parts they are planning to use for the manufacture of their product".

"They can quickly identify what the risk factors are and take corrective action - declaring, reporting, sourcing a safer replacement material or part. Cas numbers declared in supplier materials and parts can be applied against a product Bill of Materials and compared to various regulatory lists to identify any substances of concern," he points out.



Lanxess has recently replaced its Excel system via Sharepoint

Loss in knowledge

Jeremy Johnson, Sphera Solutions' director of operational risk solution management, notes that the use of such software is also becoming more important due to a growing lack of regulatory knowledge by staff.

"With more retirements and new people coming into the business, you start losing some of that regulatory knowledge," he says. "We're starting to see a growth in the popularity of chemical compliance management software components, so that businesses don't have to maintain that expertise in-house and can focus on the core business. They're just finding it more efficient and cost-effective to outsource."

Today's wide choice of software specifically developed to mitigate operational risk can feel overwhelming

Organisational risk applications are designed to eliminate redundancies, ensure employees have the most current information and standardise chemical management processes from cradle to grave. However, it is worth remembering that they can enable businesses not only to identify and manage risks, but also to uncover opportunities to reduce or eliminate them entirely.

"The information you gather can be a treasure trove of data," notes Andy Hosman, vice president of operational risk at Sphera. "You can see what could have gone wrong, giving you an idea of where you might need training and discover other trends that are popping up across the organisation."

"A good mix of proactive and reactive measurement can help you remove and reduce risk as much as possible," he adds.

Efficient and cost-effective

By using technologies designed to improve operational risk mitigation, companies can begin to see a myriad of benefits. Two of the biggest include cost and time savings.

"Most of today's processes are handled manually, which is time-consuming for EHS, quality and product stewardship professionals," Mr Nowak notes.

"Utilising software automates the processes, which saves time, money and can help companies get their product to market faster. Some software providers deliver services to assist with chemical data management - SDS updating, supply chain data gathering for REACH and RoHS - which also saves companies time and money," he adds.

Looking at the wider picture, Mr King goes on to point out how every company that handles chemicals, at any stage within its lifecycle, will benefit from using such applications. "Associated benefits include a heightened visibility of sourcing, inventory control and management, and disposal methods," he notes.

"The right solution will support a holistic management system that will reduce claims, possible litigation and lost time that may impact earnings to the business, as well as to the individual worker, and support brand image in the community."

"The by-product of this early intervention will spawn improved stakeholder confidence and organisational resilience as the business aims for operational excellence," he says.

One need not just take software providers' word for it. Speciality chemicals company Lanxess recently implemented risk management software to replace its existing Excel system via Sharepoint and has already begun to see the benefits.

Thanks to "no manual consolidations, automation of reports, workflows and controls, we have benefited from time and cost savings," notes Svenja Olejak, a business and risk controller in Lanxess's Business Analysis and Forecasting department. "We have also seen an improvement in quality, with a lower error rate, effective risk analysis and flexible reporting," she says.

How to choose

Once companies understand the benefits of implementing operational risk management software, it is then important to consider the questions they need to ask themselves – and potential software providers – when choosing which software to implement.

When deciding on a software provider, buyers must always look for a vendor that clearly understands both the business and IT landscape "in order to translate business processes into the software solution," says Mr Cohen.

Mr Johnson reminds buyers that, ultimately, software is a tool and that organisations need to ensure their chosen vendor will provide expertise "that can manage the implementation, help with organisational change and standardisation, and make sure the business maximises the return on its software investment".

Regarding the software itself, users should consider how in-depth an application the business needs and/or wants. 'Quick and dirty' solutions can be set up speedily and with minimal training, while complex systems that provide more in-depth management and analysis tools will take more time, effort and money to implement. However, these extra components may allow the business to garner a better



Software systems can help reduce lost worker time

understanding of its operational risks, thus providing an improved return on investment over time.

Both flexibility and customisation are also important factors to consider when looking at a software purchase. Buyers must understand their immediate needs and look at whether an application can be customised to fit these. In addition, they must consider whether the software package in question has the ability to scale with their business needs.

Finally, suppliers agree, users should ask how configurable the provider's software is. The ability to configure in-house is much more cost-effective, as it allows users to avoid large software development fees from a third party.

"A lot of software providers are looking at opportunities to put configuration tools into the customer's hands, allowing them to make the tweaks and modifications necessary for the system themselves," Mr Hosman points out.

Organisational buy-in

Ms Olejak advises getting the business prepared early by setting up a dedicated project team with sufficient resources. The majority of providers can help organisations create a customised application; therefore the business should come to the discussion with a full understanding what it is looking for. "You want to prepare detailed requirement specifications for your discussions with potential software providers," she notes.

Even so, says Mr Hosman, there is one vital ingredient that can make or break a project. "I really can't emphasise enough the importance of organisational buy-in, whether that's IT or executive management. If people aren't on board, and there's no support across the organisation, you're not going to succeed, no matter what software you implement."

"If you want to drive organisational change and maximise value from your investment then make sure you've got that buy-in from senior management and IT. Together you can make it a reality," he concludes.

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What a performance...

Multiple vendors offer software systems to manage environmental performance but users must choose carefully to ensure that their needs are met



The use of software tools to manage environmental performance is becoming increasingly important as companies strive to cope with the huge amounts of data required for documenting and reporting their risk management and compliance activities. Buyers can spend substantial sums on IT systems but cost is not a prerequisite for success and the sheer number of different software systems available can be daunting.

Major software providers, such as Enablon, Enviance, Sparta Systems, UL EHS and VelocityEHS, suggest that buyers should focus on sourcing a system that is intuitive, simple, flexible, mobile and able to be integrated with other internal programmes.

"Make sure your software is cloud-ready, scalable, modular and interconnected, agile to address ever-changing regulations, integrated with the whole ecosystem, intelligent with advanced analytics, easy to use and fast to implement. It also needs to be functional on- and offline, and for use in the field by all employees," advises Kyle Schiber, product manager at Enablon.

Users should also be clear on what they require from the software and prioritise the areas and features of most importance, suppliers agree. Also, the software provider should be a point of consideration. Will the provider continue to invest in its software? Does it provide regular updates and adequate support and training? Does the provider have other customers in the same industry? Is the software partner aligned with its customers' goals and strategy?

Software should make processes much faster and daily working life much easier but, cautions Mark Ward, general manager of UL EHS Sustainability, it is just a tool and will not automatically solve system issues. He believes that investing in preparatory work before implementation starts

will save time and money in the long run. Features to look for, in his opinion, include:

- the ability to schedule recurring actions;
- a robust library that organises all regulation, requirements and policies applicable to the buyer's company;
- a configurable dashboard; and
- integration with software to simplify reporting across multiple locations and incorporate best practice targets into environmental tracking.

UL EHS Sustainability offers its Pure Environment Solution, which has different modules for compliance, emission tracking, audits, reporting to the Occupational Safety and Health Administration (Osha) and collaboration across individual sites and employees. Companies that have successfully deployed the platform include the Swiss-based food giant Nestlé and the German industrial gases group Linde.

Nestlé, which employs more than 333,000 people, was previously using an in-house system to manage environment, health and safety data, but started to use Pure in early 2013. More than 2,000 employees in nearly 500 manufacturing facilities now use the system to capture energy, waste and water indicators on a monthly basis.

Nestlé is building functionalities to facilitate the planning and tracking of future environmental objectives. UL says that it is working with Nestlé to create dashboards and ready-to-use templates that will make reporting more straightforward and more efficient.

According to Andrew Owen, performance manager for safety, health, environment and quality at Linde, Pure offered the most cost-effective option. He was also impressed by the fact that it was simple to use with a clear display.

Easy implementation on a global scale was a concern for Linde, but UL ensured that it would happen. Approximately 700 locations were introduced to the system on a single phone call to eight managers. Those managers then cascaded the information down through the company. Implementation for each location took less than 15 minutes.

VelocityEHS's platform also comes with a variety of different modules and functionality, ranging from a basic level, inexpensive version to customised offerings for specific needs. Matt Airhart, president of VelocityEHS Canada, says that the company "provides an out-of-the-box environmental, air and water management option" using the OS/soft PI interface, a programme that automates data transfer from remote monitoring and control equipment.

The software works through server-based technology to track and record real-time data and make it accessible to users wherever they are. 'Turnkey PI connectors' are available too. These simplify the process of adding new data to the system, a factor that Mr Airhart notes is very important for chemical companies and refiners.

On environmental reporting, Mr Airhart adds that VelocityEHS has several large customers who have saved hundreds of personnel hours per month per facility. For instance, Canadian oil and gas group Enerplus has used VelocityEHS' platform to assist in its regulatory reporting, among other areas.

A recent case study provided by the company details how the system has allowed employees to become more autonomous, as they can get the information they need at any time with a few simple clicks. It has enabled Enerplus to deactivate its other programmes and procedures, thus cutting costs and becoming more efficient by saving time on tasks like filling out paper forms.

Brandon Henning, director of industry solutions at Sparta Systems, says that an important feature of the company's software is its ability to run either on a server or in the cloud, something he says not every vendor can offer. Sparta's quality management system (QMS) portfolio includes TrackWise, Stratas and 123Compliance.

Mr Henning advises that, when vendors say that their software is easy to understand and use, buyers should ask them to prove it and show how simple it really is to create and change documents. This, he says, is where buyers often fall into a trap because while demonstrations can look simple, the reality may not be.

"Buyers should also look at the return on investment that systems can provide as there is a tonne of value in moving away from manual spreadsheets. I see companies focusing on sales and marketing IT systems but not regulatory

compliance because it is harder to justify the spend," he comments.

Mr Henning adds that he sees daily occurrences of companies accepting an order from overseas for a chemical they are not allowed to send to the country in question. This would not happen if the companies involved were using regulatory management software.

Customer success stories cited by Sparta include projects executed for a major consumer products company and for an agrochemicals and seeds firm. The former, with 13,000 employees and operations in 72 countries, wanted an information system that consolidated global, end-to-end regulatory functions in one platform. Sparta supplied a central repository to track all global product registrations, giving them, it claims, total market awareness and enhancing their competitive advantage.

The agrochemicals group, which employs more than 25,000 people, used Sparta to develop a centralised management system to track and manage its 400+ facilities from a regulatory and training perspective. Sparta says that its system gave better visibility and management across the entire enterprise, allowing the customer to track and manage facility, audit and training records in 66 countries with global consistency and local regulatory compliance.

Mr Henning cites as a general example the European Commission's proposed restriction on the manufacture, marketing and use of perfluorooctanoic acid (PFOA), its salts and PFOA-related substances, which are used in semiconductor manufacturing.

Sparta's systems, he says, can help organisations track the submissions necessary for those components containing PFOA and the markets where they are sold. By leveraging Sparta's software to manage the process needed to facilitate the product change - the removal of PFOA - companies can also track and manage the product's re-registration to a new specification.

With regard to changes made by the Commission on plastic food-contact materials and articles, Sparta says that it can help food and beverage companies, which generally use third-party suppliers for their packaging, to ensure that these suppliers are adhering to new and existing regulations and guidelines. These services can range from managing audits to requesting Certificates of Analysis.

Enviance, which regards itself as a leader in EHS software, offers a platform for environmental management that includes a broad suite of programmes, covering everything from complex air emissions compliance and wastewater management to those that simplify permit tracking, waste management, safety data sheet (SDS) inventories and inspections, among others. Features include pre-built



Enviance supplied the software system for a major power company

templates, calculation methodologies and reports, plus an interface that can be configured and maintained by customers to their specific needs.

Amanda Smith, vice president of product development at Enviance, believes that buyers should make sure their software partner is completely aligned with their requirements. They should understand upfront what the true cost of the system is. For example, are there other costs to upgrade, or are new releases automatically provided?

A system's ability to change and grow as a company expands is another key factor for buyers, says Ms Smith, as is the ability to integrate with internal systems as well as other software providers. "You must have a good partner that invests in your success and you must have a corporate strategy to reduce risk at an organisational level. A system on its own will not provide you with environmental compliance," she says.

American Electric Power (AEP), the largest electricity generator and one of the largest electric utilities in the US, used software from Enviance to preserve its in-house knowledge and assure regulatory compliance. It wanted a system to better manage processes, tasks, deadlines and record-keeping related to its compliance efforts.

AEP had no uniform process for collecting and storing data and much of its compliance information was stored in the minds and hard drives of plant staff. The company says it needed a way to harvest that knowledge and make it easily available internally.

"We looked at a number of the leading systems and even did a site visit to another utility, but the infrastructure complexity really put us off. Our IT organisation needed fewer burdens, not more," says Greg McCall, a senior engineer at AEP.

Enviance, he adds, was chosen in part for being internet-based and externally hosted, with easily deployed and low maintenance software, plus a simple subscription-based fee structure.

Enablon, meanwhile, has a comprehensive platform comprising systems for:

- managing air quality, water and waste;
- generating safety data sheets and labelling;
- chemical tracking and regulatory compliance;
- audits; and,
- health and safety.

Effective integration is probably the primary goal for Enablon's Mr Schiber. "An environmental compliance programme gathers data from many sources and requires a large volume of complex calculations to take place at a regular frequency. The software needs to be able to integrate with and compile data from all of those sources and be capable of performing any calculation quickly and automatically. This is particularly true for large air-reporting programmes," he says.

Cooper Standard, a supplier of automotive parts and components, says that it chose Enablon in 2011 to help it solve the "data-dense problem of global chemical compliance". Steve Krile, director of HSE-HR process excellence, comments: "We watched their offering mature over the years and, when given the chance to upgrade to their cloud-based solution, we saw an opportunity to upgrade a large set of disparate internal systems into one common global platform."

Mr Krile further notes that, since using Enablon's chemical compliance module, Cooper Standard has had no regulatory violations. This, he maintains, is linked directly to its ability to interact with millions of rows of data from its ERP systems in an efficient and directed manner.

He adds that the transition from Enablon's on-premises solution to its cloud version has gone very smoothly and the company is now able to focus on preparing its Incident Management module for launch in Q2 2018.

Based on his experience, Mr Krile says that buyers should clearly define the problem they need to solve and understand their business process independent of software. They need to be ready to explain that process to a prospective vendor.

"Use your vendor to help identify areas in your business process that could be optimised with technology but do not let the software provider define that process," says Mr Krile.

Environmental performance and compliance is a highly complex area and one where the benefits of automated processes would appear obvious. However, buyers must make sure they are aware of their current and future business needs and fully understand the options and services offered by software providers.



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Measuring your hazards

Software is now available that enables users to carry out their own occupational exposure and hazard assessment



Chemical manufacturers, formulators and users, both upstream and downstream must comply with a vast range of chemical risk management legislation. This all needs to be carefully documented.

However, scrupulously documented adherence to regulations is no longer enough for many companies. Maintaining a good reputation and upholding ethical and sustainable values are becoming more important as customers and supply chains scrutinise the safety of chemicals in ways they did not before.

Software is available which empowers users to produce their own documentation with minimal, if any, external advice. This saves time and resources.

This article examines two particular software packages that enable organisations to undertake their own occupational exposure assessments and hazard assessments.

Various software is already available to help with **occupational exposure assessments**, for example:

- Advanced Reach Tool 1.5 (ART);
- Bayesian Exposure Assessment Tool (BEAT);
- European Centre for Ecotoxicology and Toxicology Of Chemicals (Ectoc) Targeted Risk Assessment (TRA);
- Estimation and Assessment of Substance Exposure for Metals (Mease).
- EMKG-Expo-Tool;
- Riskofderm; and
- Coshh Essentials.

However, many of these tools cover a limited number of exposure routes, provide limited advice or are no longer supported or updated. More than one tool would need to be used to comply with, and document compliance to, all the chemical risk management legislation in place.

Software packages are available which can cover different exposure routes with added functionality for managing chemical risks in the workplace. One example is Stoffenmanager, a validated online software developed by Cosanta, which claims to help organisations prioritise and control the risks of handling hazardous substances in the workplace.

Stoffenmanager was originally developed to help SMEs apply the UK's Control of Substances Hazardous to Health (Coshh) regulations. It has since been updated for the CLP Directive, the EU Directives on risks related to chemical agents at work (98/24/EC) and on risks of carcinogens and mutagens at work (2004/37/EC) as well as the REACH Regulation. There are modules for conducting a risk assessment, such as control banding, quantitative exposure assessment and REACH worker exposure assessment.

Stoffenmanager also enables users to register hazardous substances to create an inventory of chemicals used and to create and export workplace instruction cards. Available in various European languages, it is said to be equally useful beyond Europe, as the underlying exposure model is a global one. Organisations outside the EU can use their local data to validate the model.

Stoffenmanager uses a risk management model validated by 6,000 measurements and it is updated by a scientific advisory board, explains Henri Heussen, chief technology officer at Cosanta. Whilst other chemical management tools also use a validated model, he adds, these are based on fewer measurements and a less robust business model.

More than 30,000 registered users currently make use of the software, from SMEs to multinationals, including chemical producers, formulators and end users. "Drivers

for SMEs to use our software are more likely to be risk and regulatory compliance," says Erika Ustailieva, international business developer at Cosanta. "Multinationals use it to meet their sustainability agenda, business values and maintain their reputation and branding."

Two versions of Stoffenmanager are available. The basic version is free of charge and has been developed to help SMEs perform risk assessments. A maximum of 35 products and risk assessments can be saved online.

The premium, paid-for version is designed for companies that handle larger numbers of hazardous substances. It can produce an unlimited number of products and risk assessments can be undertaken. This version offers extended functionality to the customer to make chemical management more efficient.

Software is available which empowers users to produce their own documentation with minimal, if any, external advice

Stoffenmanager is updated twice a year to stay up-to-date with EU legislation. Support and training is provided for both the free and the paid-for model, and a validated tool is embedded in a community platform to enable companies to organise their chemical risk management in a structured way. Partners and paid-for users are encouraged to contribute ideas for improvement.

The software is currently being developed for information exchange within the supply chain. Although there is some resistance to sharing data, Cosanta predicts that demand for this function will grow with increasing levels of sustainability awareness.

"One of our clients in the process industry uses our software to send information on the presence of hazardous chemicals on pumps to their maintenance contractor, which cleans and maintains pumps, so that they know what the occupational risks are," Ms Ustailieva says. "The software can be used to produce a workplace instruction card or 'clean proof statement'."

Software is also being developed for **hazard assessment**. The concept of chemical similarity says that chemicals tend to be hazardous when they are very similar to another hazardous compound. It is used under REACH in read-across submissions when experts describe how similar chemicals should produce similar biological effects.

However, this approach only works when there is sufficient toxicological information known about a large number of chemicals. If similar chemicals are discovered about which nothing is known, little can be predicted about their probable toxicity endpoints.

Advanced software can predict the toxicity of chemicals for REACH submissions and other purposes. REACHAcross, which was launched by US safety consultancy UL in 2017, is a generalised chemical informatics database platform that combines read-across with quantitative structure-activity relationship (Qsar) models for hazard assessment of substances. The software can predict chemical hazards based on the concept of chemical similarity.

REACHAcross is more accurate than just using experts to manually predict endpoints, according to UL, because it harnesses machine learning in a statistical model (logistic regression). A large database of hazard-labelled chemicals creates 'network' features to predict probabilities of toxicity endpoints. It uses the full Echa database of chemicals and other publicly available datasets with hazard labelling data (molecular structure and health endpoint interactions) for some 250,000 chemicals – and harnesses advanced machine learning to analyse this 'big data'.

"Because of the broad range of chemical structures in the database used, REACHAcross can predict the hazardous properties of a broad range of chemicals" says Dr Craig Rowlands, senior toxicologist for innovation at UL. "In other words the software is not limited in its applicability, which is very important for the Qsar model and for regulatory purposes."

REACHAcross produces toxicology assessment reports for eight REACH endpoints, for all tonnage levels in Annex VII. These are:

- skin sensitisation;
- eye irritation;
- acute oral toxicity;
- mutagenicity;
- skin irritation and corrosion;
- acute dermal toxicity;
- acute aquatic toxicity; and
- chronic aquatic toxicity.

Although it does not have official Echa approval, it complies with the guidelines for REACH reporting formats that demonstrate that models are valid and is therefore



Eye irritation is one of the endpoints which REACHAcross can test for



Software can be used in early molecule development to predict hazard

compliant with REACH. It can also be used for compliance with other regulatory regimes around the world, such as the reformed TSCA and 'Korea REACH'. Because the underlying dataset used in the software comes from animal testing, it is about as accurate as animal testing models (~82-84%). That means it can be used to replace animal testing.

"The output of REACHAcross can help us do more intelligent testing design, to address the alerts that we see," states Dr Pam Spencer, director of regulatory and product stewardship at Angus Chemical, a US chemical company dedicated to nitroalkanes and their derivatives. "We then use the alerts to undertake *in vitro* testing first to assess the need for animal testing and confirm the output from the software."

UL has validated the software internally using OECD guidelines. A National Institute of Environmental Health Sciences (NIEHS) validation study sponsored by the US Food & Drug Administration (FDA) is due to start in autumn 2017. An independent committee will examine the model for skin sensitisation first. UL is currently pursuing official validation at governmental level by the International Coordinating Committee for the Validation of Alternative Methods (ICCVAM). This will be the first such validation of a prediction model using software.

Beyond aiding with compliance, REACHAcross helps with hazard communication, such as filling in the gaps in safety data sheets, product labels, hazard information for transportation and industrial hygiene for workers or laboratory safety. Quick predictions of hazards are useful when formulating new products, so that chemicals with lower hazards can be selected.

Further downstream, retailers can use the software to complete sustainability metrics for their customers. It can be used in chemical customer surveys to answer hazard assessment, life cycle assessment and sustainability questions.

The software can be used by product stewards without the need to hire external toxicologists to produce hazard assessments in the (Q)SAR prediction reporting format (QPRF) and (Q)SAR model reporting format (QMRF), with an OECD QSAR validation report attached. The user simply enters the 'simplified molecular-input line-entry system' (SMILES) reference, which describes the structure of chemical species using short ASCII strings, and the software generates the reports. No additional steps or decisions are needed.

"A significant difference from other tools available is that REACHAcross will provide a probability of the hazard prediction," says Dr Rowlands. "This provides a measure of the accuracy and certainty of the prediction and aids with regulatory acceptance, which is very important for early R&D."

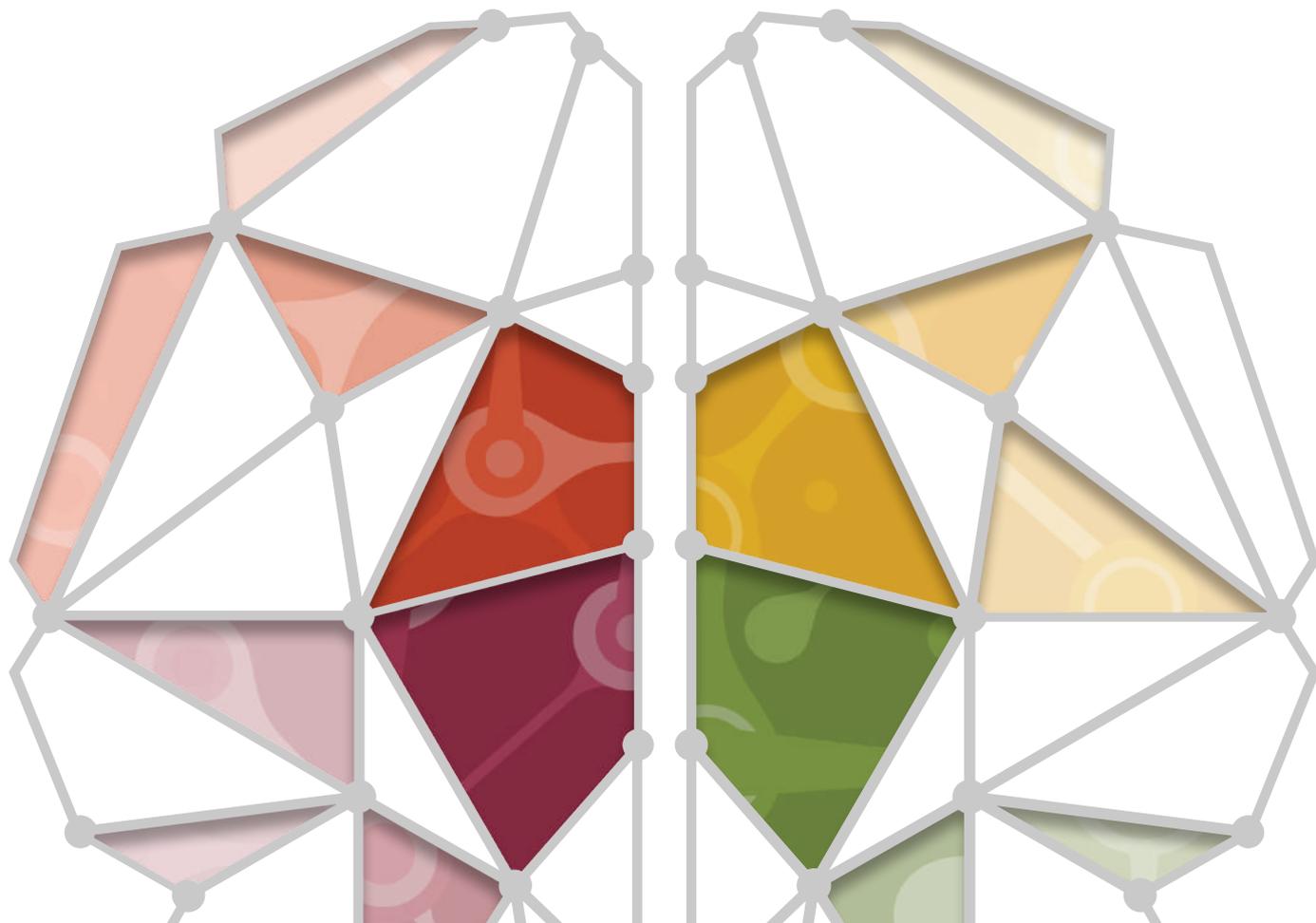
The software is currently being tailored for use by chemical manufacturers for early stages of molecule development to predict the hazards of newly formulated chemicals. If hazards are predicted, the molecule can be modified to decrease the molecule's hazardous properties. Angus Chemical uses the software for exactly this purpose, to help undertake early screening of new chemicals and focus its resources.

"We use REACHAcross in combination with other tools, for early product safety assessment screening to identify any significant red flags for human health or the environment," says Dr Spencer. "It helps us to eliminate chemicals from product development that we will not invest further time and resources into developing."

Dr Spencer gives some positive feedback on the software, saying it is "very intuitive and easy to use". On possible future improvements, she adds: "We would like to be able to assess multiple endpoints simultaneously and multiple structures in batches for early screening – at present the software only lets you assess one end point for one chemical at a time – and UL are working to develop the software to enable this."

Screening chemicals was not the original purpose of the software, she notes, but turns out to be a very useful purpose for the tool. "More endpoints are being added over time and we would like to see other endpoints for early screening purposes like repeated dose toxicity; and more complex endpoints like carcinogenicity would be useful."

"This software could be used to train the chemists of the next generation so they can see how structural attributes of new molecules will affect human health and environmental safety."



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Stewardship through software

How can product stewardship software help companies cope with the increasing demands placed on them by chemicals regulations?



Regulations on chemicals are continually expanding and changing. This poses a significant challenge for organisations in the industry, who have to manage large quantities of data to track and demonstrate compliance.

The process of managing this – known as product stewardship – is not new. Many companies have been doing some form of it for decades but it is becoming ever more important due to an increasingly global market and the need for greater transparency in the whole supply chain.

Mike Penman, CEO at Penman Consulting, which produces the Active Steward software programme, says: "Product stewardship is changing and moving from a back room to a front room activity because all the regulations mean you have to have the data". REACH, he adds, has pushed a standard onto industry, requiring manufacturers to know not just about intrinsic hazards, but "who the users are, where it ends up and how people are using it".

Product stewardship is becoming ever more important due to an increasingly global market and the need for greater transparency in the whole supply chain

Product stewardship, observes Dr Mark Pemberton, technical director of Global MSDS, now touches almost every part of the business, from board policy and strategy, manufacturing and procurement through to transport, storage warehousing, marketing and advertising. Traditionally, most companies have relied on updating spreadsheets to maintain good product stewardship, but many now see a software package as a necessity.

"Using software can save time and money," says Professor Gail Hart of the Product Stewardship programme at Indiana University. "Even at a basic level, you need to be talking with others about how to use your product and how not to harm the environment. Even in an SME, you're going to need a way to do that in the most automated, consistent and effective way possible."

"In product stewardship, what matters more than anything is continuity – knowing what you said and who you said it to over a period of time," adds Mr Penman. "Everyone puts the data on their PC hard drive and then someone leaves and it all evaporates or gets corrupted – even in large companies."

For this reason, he says, storing all product safety in a centralised system is clearly sensible. "Compliance, meeting regulations, and supply chain management are the key areas that software can help you with."

Ruth Dawson, a consultant at Blue Frog Scientific, says that the company moved over from spreadsheets to a software system in May. This might not have happened but for the changing regulatory environment. she adds, but today's regulatory demands make good data management vital.

"If Echa came to us to get information we know that we would be able to find it straight away – that's why I think having an online system like that is really beneficial," she says.

To decide whether a company needs a software system rather than an internal system or manual approach, compliance software provider Enablon suggests companies review their current systems to see if they are delivering what is needed. The key steps are:

- Estimating the time compliance experts currently spend to determine product compliance for several countries;
- Analysing the flexibility of the existing system to adapt to change (workflows, regulations, processes, etc.);
- Evaluating how many products are duplicated in databases and how much time is spent to input similar datasets twice or more; and
- Estimating the risk of non-compliance penalties related to product stewardship.

When choosing a software package, Mr Penman says, it must align with the business's needs. "You need to ask what your stewardship programme is, how is it going to integrate with your business systems and what do you need it to do."

"The first thing people think of is safety data sheets (SDSs) because they are worried about getting their product out of the door but the software you want is the software that actually complements your management practices." For example, a complex formulations business will probably need something heavyweight integrated into its system but a smaller company with occasional chemicals could go for a bespoke service.

Dr Pemberton agrees, saying: "You need to know what type of company you are and what suits your needs. If you need data rigidity and someone to integrate the data for you, then a system from a third-party provider that links everything easily from data sheets to labels documentation can suit your needs."

However, he adds, this has high maintenance costs and can be inflexible – particularly trying to connect into business systems that change. A complex business working in very different global systems or one that is simply producing SDSs and labels will find that an inflexible system probably will not meet its needs.

In software development, the quality of the systems may suffer due to a lack of clear objectives or user requirements

"A flexible third-party stand-alone system will probably be more valuable as you can tailor it to your needs. However, it may require more effort because you have to do the integration yourself or get someone to do it and initial costs may be more," Dr Pemberton concludes.

No software package is likely to meet a company's specific needs. Users need to assess how easily it can be made to fit, according to Sandra Meijer, director of business development at the REACH Centre which provides a software product called Chemtrac.



The needs of formulation manufacturers are different from those of occasional chemical users

A good software package should be adaptable to specific requirements, she adds. "For example, where the system provides regulatory data and updates, it should be able to specify the regulations and substances that matter to you. Having a system that actively filters out unwanted information will save a lot of time."

Hyundai's Europe Technical Centre is working with Chemtrac to develop a new bespoke system for the automotive industry. Dr Elisabeth Payrer, an engineer in environmental affairs at Hyundai, says that users need to be clear about what they want, because market software is generally geared to a broad spectrum of business areas rather than individual needs.

In software development, she adds, the quality of the systems may suffer due to a lack of clear objectives or user requirements. "So it is essential that software developers find out the customer needs."

What are the potential pitfalls? Firstly, a software system is only as good as the data you put into it. "It's no good having good systems if you don't have quality information," says Dr Pemberton.

"You need to know where the information has come from, the context and when it was taken, and whether it's changed. When you are buying systems that have databases you need to have assurance of how they are generated and maintained. If they aren't maintained or, even better, live, then the data is useless."

Fundamentally, however, the success of the software comes down to the people working with it. As Mr Penman points out: "You need a lot of varied inputs: good product stewardship individuals who understand the regulations, IT people to avoid pitfalls on selection and implementation, plus business people to keep everyone on track with governance. Ideally you want to make sure people are going to be around for a while."

And it is important to get people on board with the idea. "The system needs investment upfront both financially and time required to get the data into it to make it useful, so a change in company culture is essential. Getting people to give up their spreadsheets and C drives can be really difficult without their buy-in and enthusiasm."

"The biggest pitfall with software is that you will use days at a time trying to load all your data into online solutions," Mr Dawson says. "Getting people invested in the software and using it is really important but quite a challenge. The software itself is only ever going to be as good as the data and the time you invest in developing it and customising it for your own use."

A good relationship with the vendor is no less important. Ms Dawson recommends looking for a user-friendly system which offers a strong link with the software developers.

"People don't always appreciate the value of good customer support, until things go wrong," Dr Pemberton says. "Ideally as well as product support, you want an understanding of how it fits into your business by people with a biochemical or toxicology background."

He advises users to ask for a price upfront that is broken down into all the elements, so that they can see what the add-ons are and how cooperative the company is. They should also ask to play with it free of charge and test whether it actually meets their needs

Given the fast-changing world of chemical regulations, adaptability is another key feature. Professor Hart says: "You want to think how your system will cope if a new regulation comes into force and whether you can change multiple products at the same time and link the changes throughout your workplace and suppliers."



Having employee buy-in is vital to making software work for a company

"Also do you have the ability to have new information about a product brought in periodically and, if you make a change in substance, will it be reflected in your product so you get the right hazard and risk determination on your products?"

Ideally, the software should closely follow regulatory developments, including early proposals and regulatory precursor lists, so that companies can anticipate future regulatory issues and avoid substituting with a substance that later down the line also becomes regulated itself, Ms Meijer says.

Most systems are now cloud or web-based, Professor Hart notes. While this has the benefit of instant access, companies must decide if they want to rely on third parties to hold their data. They must also consider whether security from hacking is more important. This she sees as likely to be a growing issue in time.

Ideally, the software should closely follow regulatory developments, including early proposals and regulatory precursor lists

Dr Pemberton echoes these concerns but points out that well-designed systems that employ secure servers, obfuscation of accessible code and 'double-handshake' systems can minimise this risk.

So what else does the future hold for product stewardship software? Dr Payrer believes that future software needs will require the use of Artificial Intelligence (AI) as well as an automated system, with the latter observing what the user does repeatedly and repeating it automatically, while AI helps to improve the system.

"This market is going to grow - no two ways about it," says Mr Penman. "The future is for more holistic systems that cope with all the facets of your business as regulations change."

Ms Dawson's view is that regulations are going to get much tighter and start focusing on smaller volumes so companies are really going to have to know their production volumes, map supply chains and have really good data management.

"The next few years are going to be challenging so I think consolidating all the info you have into one software solution is the best way forward and the best way to prepare," she says.

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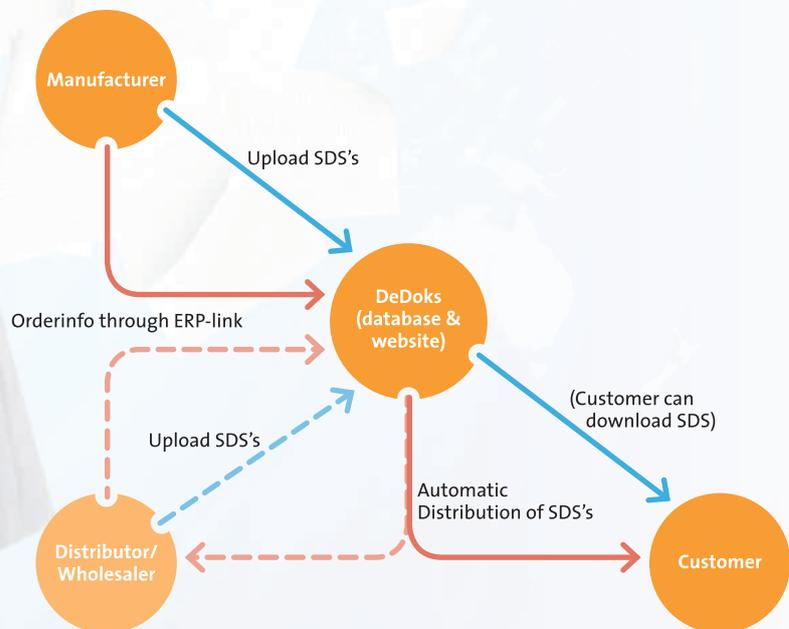
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Software for safety

Effective software programmes can enhance process safety performance and in turn offer many business benefits.



Process safety management (PSM) is a process by which companies identify the potential hazards and risks posed by any manufacturing processes involving chemicals (including the handling and storage of those chemicals), take steps to minimise the identified risks and develop response plans that can be implemented in the event of an accident or natural disaster.

"In principle, PSM involves managers, employees and contract workers understanding and controlling process hazards at the facility they are operating in order to prevent process-related injuries and incidents," says Stephen Anderson, global asset integrity management director with Intertek.

Regulations in place around the world, including the Process Safety Management of Highly Hazardous Chemicals standard (29 CFR 1910.119) in the US, the Seveso III Directive in the EU and the Control of Major Accident Hazards (Comah) regulations in the UK, establish requirements for the management of the hazards and risks posed by manufacturing processes that involve highly hazardous chemicals.

The US PSM standard issued by the Occupational Safety and Health Administration (Osha) has requirements categorised under 14 headings:

- employee participation;
- process safety information;
- process hazard analysis;
- operating procedures;
- training, contractors;
- pre-startup safety reviews;
- mechanical integrity;
- hot-work permits;
- management of change;
- incident investigation;

- emergency planning and response;
- compliance audits; and
- trade secrets.

A number of software products, are available to assist manufacturers. Some provide overall PSM management, while others allow users to focus individually on the 14 categories. Many include added features that enable companies to make use of the enhanced safety and reliability of their operations and knowledge of their operators to achieve improved productivity and efficiency.

Many software products include added features that enable companies to make use of the enhanced safety and reliability of their operations and knowledge of their operators

Specialised software

Many different software programmes are designed to help manufacturers meet the requirements of all 14 categories of the Osha PSM standard. Among them are computerised maintenance management systems (CMMS), risk-based inspection and maintenance packages, such as Aware, and programmes that help companies perform hazard analyses and related activities.

These programmes come from companies including SAP, Intertek, Siemens and PrimaTech. Some of these focus on developing software, while others are consulting companies and service providers that use proprietary software packages to assist their clients.

PrimaTech, for example, provides process safety and risk management consulting, training and software for the

process industries. Its PHAWorks software is a tool for process hazard analysis (PHA) studies, such as Hazop and What If studies, and is designed to allow users to conduct studies straight out of the box by leading them through each step of data entry, saving on time and costs, according to software business manager Shawn Metzler.

The company also offers LOPAWorks, a product that allows users to conduct 'layers of protection analysis' (LOPAs) for hazard scenarios. This improves efficiency and reduces the time required for completing studies. PrimaTech recently introduced the PHAWorks RA Edition, which allows data for PHA and LOPA studies to be recorded together in the same worksheet.

Meanwhile, PrimaTech's Tracker software is a fully integrated and automated application for easy electronic tracking of tasks from conception to completion. "This programme is designed to simplify the workflow for tracking any type of action item and helps avoid having action items overlooked, not implemented or forgotten," Mr Metzler says.

Integrated PSM programmes

Several companies offer integrated software systems designed to help companies manage multiple activities related to process safety, and often other environmental, health and safety (EHS) programmes. These typically include chemical management aspects combined with hazard analysis, risk assessment, emergency response planning and reporting capabilities.

Users can track and monitor the production, use, storage and transport of hazardous materials, including raw materials, processing agents, materials that are manufactured and stored onsite and materials that are emitted into the air or water, or disposed of. These systems also aid compliance with global classification and labelling requirements.

They typically include modules that assist with:

- performance of hazard analyses;
- control of changes to procedures;
- processes;
- equipment and process chemicals;
- the conduct of pre start-up safety reviews;
- incident investigations and audits;
- implementing training programmes and emergency response plans; and
- managing contractor risks.

As importantly, they provide a central location to store the documentation required, such as standard operating procedures (SOPs) and safe work practices (SWPs).

With 'software-as-a-service' (SaaS) systems, such as those offered by Enablon, GenSuite and 360factors, many different individual, specialised programmes are offered



Software can be used to track the production, use and storage of hazardous materials

as an integrated package. "These systems go through an approval process and then are integrated with other existing systems, such as enterprise resource planning (ERP) systems," says Donovan Hornsby, a corporate strategy executive with GenSuite.

As multi-module platform systems, they can integrate with many other types of systems, including web services (as a service provider or client for remote services), third-party systems including databases, SAP and other enterprise systems and process historians, says Kyle Schiber, product manager at Enablon.

"With so many requirements associated with process safety management, having an integrated software solution that facilitates implementation allows companies to do more than just focus on compliance. As a result, businesses reap many benefits in addition to providing a safer workplace," adds Mr Hornsby.

Safety embedded

The most effective approach, whether companies purchase specialised software packages or integrated systems, is to have all relevant safety data embedded in an ERP system, according to Datacor president Sean O'Donnell. As examples, he points to the incorporation of safety instructions within each process batch ticket and the definition of locations where products that require segregation can be stored.

"With this approach, the manufacturer is keeping operators safe and complying with regulations while doing so within transactions that make money, rather than in a separate function or piece of software," Mr O'Donnell observes.

In essence, the results of risk assessments, hazard analyses and so on are used to implement safety procedures within the ERP system, providing a 'checks and balances' mechanism.

"Incorporating safety information within the ERP with automated rules that conform to SOPs that take into account hazard analysis results and the requirements

of generated risk management plans creates a controlled environment that ensures, beyond compliance, enhanced safety," adds Mr O'Donnell.

SAP has gone one step further and incorporated significant EHS capabilities directly within its ERP system. The EHS management module, which includes product safety and stewardship as well as process safety aspects, is natively integrated with various business processes associated with manufacturing, plant maintenance, sales and logistics, according to Marko Lange, solution manager, IBU chemicals, Industry Business Solutions with SAP.

The module is made up of three areas: Incident Management, Health & Safety Management and Environment Management. It includes software for chemical risk assessment.

To achieve 'full-blown' process safety management, SAP has strong integration between the EHS and plant maintenance modules, including management of change and work clearance management. Special emphasis is given to risk assessment for chemicals using product safety and stewardship capabilities to generate safety instructions next to safety data sheets and labels.

"Today, very often pretty local and non-integrated solutions are in place," says Mr Lange. "Lacking integration between different involved departments and between the shop floor and top floor leads to limited visibility into safety-relevant issues. A global and integrated approach can help to overcome safety issues residing from missing information and to enforce global safety and environment standards."



The Internet of Things could be a big enabler of process safety

Enhanced benefits

Clearly, minimising the risk and maximising the safety of manufacturing processes involving hazardous chemicals are the two primary goals of any PSM programme. Many different software programmes have been designed to facilitate the management of safety in a manufacturing environment. While these programmes also have the main goal of enhancing safety and reducing risk, they can provide business-related advantages as well.

"Chemical management software digitises a company's chemical management programme, making hazard communications easily accessible to all employees," says Mr Donovan.

"By making critical hazard communications readily available to all employees, users can easily identify potential risks in order to prevent incidents from occurring. The software also increases employee engagement across sites by offering intuitive interfaces for everyday chemical management processes."

There are, in fact, numerous business drivers to implementing a software system, particularly one that is integrated with an ERP system, according to Mr Lange. He notes that users of SAP with integrated PSM software capabilities benefit from:

- reduced EHS penalties and fines;
- operational risks;
- unplanned downtime or outages;
- fixed asset service and maintenance costs;
- engineering change costs;
- purchase order error rates; and
- uncollectible accounts receivable write-offs.

"Using SAP leads to efficiency gains that result from the automation of EHS processes, integration into business processes based on ERP and, last but not least, analytical capabilities that show where a company stands. In addition, the results can be combined with other economic performance indicators and brought to the attention of company management through SAP's digital boardroom," he concludes.

Mr Schiber adds: "Using a software platform that addresses the various elements of PSM defined by Osha with an integrated set of applications streamlines PSM activities. Information is consistent and centralised, and best practices and lessons learned are shared across the enterprise."

"Risks are also centralised: this improves risk mitigation and risk awareness. When the benefits of the software platform are combined with improved collaboration across the entire company, the result is a safer, more reliable and more resilient operation."

Furthermore, chemical management software systems can be integrated with new product developments, designs or processes that a company creates, allowing for the early assessment and management of risks, which saves additional time and money, according to Mr Donovan.

Limitations to consider

There are, however, limitations to software systems for process safety management. Mr Donovan notes that with point solutions for chemical management, users cannot make connections with other EHS programmes. For Mr



DR Software, Inc.

Who We Are:

- Leader in the development of **software** for the creation and management of **Safety Data Sheets**, **Internal Plant Instructions** and **Labels**.
- Our **ChemGes** software has been on the market since **1989**.
- **1,800** customers in **53** countries.

Resin solution X 50

UN 1993

Resin Solution X 50

UN 1993

Feuille de données de sécurité
pour l'ÉPOXYDOLITE Solène 50

UN 1993

Safety Data Sheet
for EPOXYDOLITE

UN 1993

معلومات سلامة المادة
المادة الكيميائية
UN 1993

The ChemGes Software:

- Automatic creation of complete, country-specific SDSs and Labels in 37 languages. Taking into consideration legislative, linguistic and structural differences of SDSs.
- Quick and easy generation of Preparations.
- Comprehensive Raw Materials Database containing the GHS Classification, Chemical/Physical Data, Toxicological Values, Substance Listings, TLVs and Transport Classifications among other things.
- Highly scalable and flexible software to meet the needs of individual companies and industries.
- Experienced in-house software engineers to quickly implement user-specific program adjustments and customized applications.
- Unlimited hotline support via Email and Telephone. Our profession hotline answers questions ranging from software to legislative to technical questions.
- Frequent Data and Software Updates ensuring your documents are compliant.
- Easily implemented data exchange with your other software systems, via ANSI Text files.
- Interface and support available in English, German, French and Italian.

WWW.DR-SOFTWARE.COM

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O'Donnell, the biggest is that software operates based on specified checks and balances, the number of which is continually expanding as regulations evolve.

"Having rules in these systems is obviously important because people are forced to follow them," he explains. "However, the realities of business sometimes require deviation from the rules. It is important that these systems ensure that both compliance and enhanced safety can be achieved without handcuffing the business. The software has to be constantly tweaked to manage these competing aspects."

Datacor focuses on the chemical industry and stays up-to-date on regulatory changes and how they may impact its users. "We look to simplify or help to reduce the compliance burden, while also ensuring the minimisation of risks and maximisation of safety," Mr O'Donnell observes.

More benefits to come

Regulatory change and customer demand will be the two largest drivers for future use of chemical management software. Mr Donavan says: "Regulations related to chemical and process safety management are constantly being updated and introduced across the globe, and chemical management software vendors must be able to address any new developments now and into the future."

At the same time, the quantity of information available to companies is expanding rapidly. Whether accessed using a tablet, smartphone or PC, this information can have a significant impact on PSM, according to Mr O'Donnell. He points in particular to the growing use of sensors, which is allowing increased process automation.

"More of these advanced technologies will be introduced as a result of safety considerations," he notes. For example, one day drums may have sensors that can send an alert if they are stored next to drums containing incompatible materials.

Mr Lange agrees that the Internet of Things, for data gathering, and the predictive analytics of Big Data, using machine learning, are significant technologies that can help to further improve and automate safety.

"One thing I have noticed over the years is that the chemical industry is highly focused on safety," Mr O'Donnell states. "Manufacturers put a lot of work into developing and implementing programmes and processes to minimise the likelihood of incidents and to be prepared to respond should one occur."

"I fully expect this high commitment to process safety to continue going forward, with the industry leveraging all technologies and software systems that can help them safely manage their operations."

ChemicalWatch

GLOBAL RISK & REGULATION NEWS



Chemical Watch's **sector-specific homepages** provide you with a lens through which you can view our latest coverage about, and relevant to, a number of key industry sectors. Our sector homepages include:

- Aerospace, Automotive & Engineering
- Built Environment
- Children's Products
- Cleaning Products
- Electrical & Electronics
- Food Contact Materials
- Personal Care Products
- Retail
- Textiles

View the full range of sector homepages and articles from each sector here:

www.chemicalwatch.com/sectors

Glossary

Use the glossary to look up key terms and how we define the categories presented in the guide.

Service areas

Operational risk	mitigating operational risk using safety and risk assessment tools
Environmental performance	measuring the environmental impact of chemicals throughout the supply chain
Product stewardship	minimising the environmental impact of chemicals in products throughout the supply chain
Process safety	monitoring and assessment of manufacturing process to improve safety

Software functions/capabilities

Regulatory compliance	
Change management (chemicals)	manage chemical regulatory compliance during operational or regulatory change
Data management (regulatory lists, substance data)	source chemical and regulatory information
Reporting	present data as reports for regulatory bodies, shareholders, government agencies, etc.
Substance volume tracking	capture and track substance volumes to ensure compliance
Hazardous material management	manage SVHCs throughout the supply chain
Chemical inventory management	track inventory information required for regulatory reporting
Chemical safety prediction	help fill data gaps on hazardous materials
Product compliance	ensure products meet compliance requirements before going to market
Regulatory management	track regulatory updates and changes
Compliance assurance	conduct auditing in order to maintain compliance
Chemical safety assessment	
Hazard assessment	assess hazard endpoints, toxicology and screening
Exposure assessment	assess and manage safe exposure levels for workers
Risk assessment	assess risk of chemicals in materials/products
Worker safety	determine hazards in the workplace, comply with hazard communications and 'right-to-know'

Environmental safety	assess the environmental impact of chemicals
Consumer safety	assess the impact on consumers of chemicals in consumer products
Hazard communication	
Supply chain communication	communicate vital information, providing a unified access point for all users
SDS authoring	support creation of SDS
SDS management	support distribution and maintenance of SDS records
Incident management	improve EHS performance and mitigate risk by capturing data on incidents and identifying root causes
Labelling	create labels for substances that meet regulatory compliance requirements
Stewardship	
Product lifecycle management	minimise environmental impact of chemicals in products through management and scrutiny of design/manufacturing process
Full material declaration	identify and track all substances in products to help minimise environmental impact
Supplier information	find and track supplier information to ensure end-to-end compliance
Corporate social responsibility	manage CSR metrics and data collection, assess and report on long-term CSR sustainability goals

Acronyms

SaaS - software as a service

ERP - enterprise resource planning

PLM - product lifecycle management

CSR - corporate social responsibility

EMIS - environmental management information systems

EHS - environmental health and safety

FMD - full material disclosure

BOM - bill of materials

LIMS - laboratory information management system

Software functions/capabilities are indicated in the profiles using the following terms:

Core - standard function/service of the product

Enabled (Enb) - function/service is enabled by a partner

Customisable (Cst) - customisable module before purchase

Active Steward



By Penman Consulting

About

Active Steward is a Product Stewardship and Regulatory Affairs (PSRA) toolset to simplify your data management and reduce your long-term regulatory costs.

Designed by chemical industry experts, Active Steward captures information on a substance and product level, providing your business with the data it needs to maintain global compliance and to contribute to the value chain.

Active Steward enables PSRA teams to easily identify, understand, and respond to changes in regulation which affect the business. Decisions can be made based on data that is thoroughly indexed and quick to find. Store and manage knowledge, future proof your business and ensure continuity during change.

Active Steward is supported by Penman Consulting's PSRA team.

Features

- Efficient document storage, searching and retrieval;
- link documents to database items;
- auditable tracking of document recipient;
- track regulatory compliance activities and status;
- manage product-specific regulatory status;
- product versioning;
- add, manage, and blend constituents and sub-constituents;
- generate and send reports for products and constituents;
- manage product portfolios;
- integrated inventory and list searching;
- substance tracking across the supply chain;
- substance volume tracking (SVT);
- issue enquiries to downstream users;
- set up secure tabbed pages, for internal or external view;
- arrange views by user-permission, group, or individual entities;
- integrated email client; and
- industry-strength security and data-backup.

Product details

Software type: SaaS • Cloud based

User experience: Off-the-shelf • Configurable

Pricing structure: Subscription • Free trial • Unlimited users

Content type: Database • Global inventory and lists

Expertise: Product Stewardship • Toxicology • Environmental sciences

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Service areas

Operational risk	
Environmental performance	
Product stewardship	
Process safety	

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Cst
Chemical inventory management	Core
Chemical safety prediction	-
Product compliance	Enb
Regulatory management	Enb
Compliance assurance	-
Chemical safety assessment	
Hazard assessment	-
Exposure assessment	-
Risk assessment	-
Worker safety	-
Environmental safety	-
Consumer safety	-
Hazard communication	
Supply chain communication	Core
SDS authoring	-
SDS management	Enb
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	Core
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	-

CDX Compliance Data eXchange



By DXC Technology

About

The CDX helps you efficiently gather, store and report product content for use in compliance and material reporting to agencies and customers worldwide.

By using our service, you can:

- capitalise on your supply chain's knowledge by using established standards and procedures;
- communicate product content with your suppliers and customers in real time;
- stay ahead of new requirements by analyzing existing product content and planning where changes are needed;
- benefit from our Chemical Service which manages the growing regulations for you; and
- become a green corporate citizen while minimizing your reporting costs.

Features

- CDX is a cloud solution which can be used off the shelf, no implementation costs needed;
- Chemical Service maintains growing regulations like RoHS, REACH Candidate List, Annex XIV and XVII, TSCA, Cal Prop65 and others;
- create own regulations and substance lists ;
- supply chain management and onboarding support;
- Conflict Minerals Declaration Manager helps to easily manage the collection and roll up of data from your supply chain;
- partial and full material declaration;
- Web Services connect CDX to your internal systems (SAP EHSM...);
- import of IMDS data;
- import of and export to IPC1752A and IEC62474 format; and
- analyze your data and create reports.

Product details

Software type: SaaS • Cloud based • Web based connection

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Pay-per-use • Free trial

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management • LIMS

Content type: Database • Regulatory updates

Expertise: Purchasing • Planning & management • Implementation • Integration
Compliance processes

Partners

- EPR Consulting - [Content provider](#)
- Compliance professional - [Content provider](#)
- RSJ Technical - [Consultancy](#)
- VDE Institute
- Tetra Tech - [Consultancy](#)

Other support services

[Free webinars and events](#)

[System integration services](#)

[CDX partners](#)

[CDX training](#)

[Data Import from IMDS, IPC1752A, IEC62474](#)

www.cdssystem.com

cdx-info@dxc.com

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Cst
Hazardous material management	Core
Chemical inventory management	Enb
Chemical safety prediction	Enb
Product compliance	Core
Regulatory management	Core
Compliance assurance	Enb
Chemical safety assessment	
Hazard assessment	Enb
Exposure assessment	Enb
Risk assessment	Core
Worker safety	Cst
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	-
SDS management	Cst
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	Cst
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	Cst

CHEMDOX®



By CHEMDOX®

About

The CHEMDOX® company provides an outstanding software solution for the chemical industry: Assure regulatory compliance; classify chemicals according to numerous regulations and to generate high-quality safety related documents in the most efficient way.

What our clients like about us

The CHEMDOX® software has been developed by experts for experts. It's efficient, open, flexible and really supports compliance. It is easy to use, easy to integrate and easy to automate. All this, based on state-of-the-art technology and an outstanding customer support.

The CHEMDOX® company is a 100% subsidiary of UCS - unique computing solutions gmbh - developing high-quality software since 1999.

Features

- Chemical Management: Manage chemicals easily and efficiently with the CHEMDOX® software and its legal content, and substance database.
- Classification Calculators: Improve regulatory compliance when classifying chemicals according to several regulations (e.g. GHS, transport, national regulations). The CHEMDOX® regulatory calculators provide automatically computed classification suggestions.
- Regulatory Coverage: Cover global regulatory requirements on a best practice level and up-to-date for all major markets in e.g. Europe, Asia, Americas.
- SDS Authoring: Generate SDS efficiently and 'translate' your SDS into 40+ countries taking into account official languages, national legal terminology as well as national regulations.
- Hazard Labelling: Create multilingual hazard labels with our flexible label editor.
- SDS Distribution: Distribute SDS automatically with no manual effort.
- System Integration & Data Exchange: The CHEMDOX® software provides easy and state-of-the-art integration with other IT systems. Electronic exchange of data furthermore improves productivity and quality.

Product details

Software type: SaaS • Cloud based • Locally installed

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription • Free trial

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management • LIMS

Content type: Database • Regulatory updates • Classification calculators

Partners

- Several regional consulting and sales partners worldwide
- Several software partners (ERP, labelling, etc.)

Other support services

- Free Software Demo
- Extensive Customer Support
- CHEMDOX® Days

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+43 1 5321489 0
+1 888 8369462

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Enb
Hazardous material management	Core
Chemical inventory management	Enb
Chemical safety prediction	-
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Enb
Worker safety	Core
Environmental safety	Core
Consumer safety	-
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	Cst
Labelling	Core
Stewardship	
Product lifecycle management	Core
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	-

ChemGes

By DR- Software

About

With more than 1,800 customers in 53 countries, DR-Software is a leader in creating and managing SDSs, internal plant instructions and labels. Solutions range from single workstations to worldwide corporate networks, equally meeting the requirements of global enterprises and SMEs.

ChemGes combines transport, environmental and safety data and calculates risks and hazards, from which SDSs according to various international standards and in 37 languages are easily and quickly authored. This leads to significant cost and time savings for complying with legislation globally.

A maintenance contract guarantees unlimited hotline support and access to all software and legislative updates. Legal and data changes are implemented quickly.

Features

- Offices in Canada, USA, Austria, Germany, France, Italy;
- available in 4 screen languages (English, French, German, Italian);
- raw material database of 22,000 substances;
- automatic country-specific classification according to the UN-GHS and its worldwide implementation (including OSHA HCS, CLP, WHMIS 2015);
- transport classification;
- estimation/calculation of physical/chemical data;
- automatic creation of SDSs in 37 languages;
- label module;
- IPIs;
- TLVs, substance listings, tox-data etc;
- entering a formulation and outputting an SDS takes only a few minutes;
- extremely high scalability/flexibility, for all industries and needs;
- experienced in-house software engineers quickly implement user-specific program adjustments and customized applications;
- rule-based form generator allows for fully-automatic SDS creation and update;
- network capability for standardized data management; and
- expert team provides professional, fast hotline support for all questions on the software, legislation, and technical matters.

Product details

Software type: Locally installed

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription • Maintenance contract subscription

Integration capabilities: ERP • PLM • EMIS • EHS • Formular Management • LIMS

Other essential support services

- Hotline support
- [News letter](#)
- Update description



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Service areas

Operational risk	● ● ● ● ● ●
Environmental performance	● ● ● ● ● ●
Product stewardship	● ● ● ● ● ●
Process safety	● ● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	-
Hazardous material management	Core
Chemical inventory management	-
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	-
Labelling	Core
Stewardship	
Product lifecycle management	-
Full material declaration	Core
Supplier information	-
Corporate social responsibility	-

Chemical Safety Communication Software



By UL

About

For over 30 years, UL has supported the chemical industry to comply with chemical hazard communication legislation with innovative, powerful and intelligent software solutions.

We combine the expertise of regulatory and software teams to deliver a unique range of specialist products and services, all designed to help your company stay up-to-date with complex chemical regulations and simplify product compliance processes across the supply chain.

Our range of products and services will ensure your team tackle chemical hazard communication with an unrivalled level of confidence and comply with accuracy.

Regardless of your company's size or location, we have a chemical hazard communication compliance solution to meet your exact needs.

Features

Our EH&S software applications include solutions for:

- Supply chain product stewardship
- Supply chain risk management
- Chemical hazard communication
- Chemical data management
- Chemical materials selection
- Sustainability management

Product details

Software type: SaaS • Cloud based • Locally installed

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Pay-per-use • Subscription • Free trial

Integration capabilities: ERP

Content type: Database • Regulatory updates

Expertise: Purchasing • Planning & management • Implementation • Integration

Other support services

[Webinars](#)

[Events](#)

[White Papers](#)

www.ul-scs.com

www.ul-scs.com/contact-us

Service areas

Operational risk	● ● ● ● ● ●
Environmental performance	● ● ● ● ● ●
Product stewardship	● ● ● ● ● ●
Process safety	● ● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Core
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	-
Labelling	Core
Stewardship	
Product lifecycle management	Core
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	Enb

Cst - Customisable | Core - Core service | Enb - Enabled

Chemical Substance Management



enablon

By Enablon

About

Enablon, a Wolters Kluwer business, is the world's leading provider of Sustainability, EH&S and Operational Risk Management Software.

More than 1,000 global companies and one million users rely on Enablon software solutions to manage their environmental, health and safety performance, ensure compliance, minimize risks and improve profitability.

Enablon offers the most comprehensive platform in the industry, and is consistently recognised as a global leader and visionary.

Enablon's integrated approach on a single technology stack enables a secure and scalable platform with a consistent user interface. Its unique modular architecture brings rich interactions between applications and covers over 300 use cases.

Features

- Identify regulatory drivers governing operations, define and execute a compliance strategy, and evaluate compliance performance;
- track product stewardship program including product compliance and chemical management needs, by analysing and drawing insights from data and content on products, materials and substances; and
- full database to manage, approve and keep track of all chemicals (mixtures and substances) at all facilities throughout the enterprise.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management • LIMS

Content type: GHG emission factors • Worldwide regulatory register
SDS Library • Regulatory lists & limits

Expertise: Planning & management • Implementation • Integration

Partners

- 3E
Content provider
- SiteHawk
Content provider
- CH2M
Systems integrator
- Arcadis
Systems integrator
- ERM
Systems integrator

Other support services

Product stewardship: leveraging technology for supply-chain compliance complexities

Implementing a global approach to managing EHS regulatory compliance

www.enablon.com

info@enablon.com

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance

Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Core
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core

Chemical safety assessment

Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core

Hazard communication

Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	Core
Labelling	Core

Stewardship

Product lifecycle management	Cst
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	Core

Chemtrac



By The REACH Centre

About

Chemtrac is an online compliance software tool that helps you to track and monitor changes to your substances across 600 global regulations. Developed and maintained in-house, it offers a tailored solution allowing you to focus on the specific substances and regulations that affect your organization, with all the information you need stored in one place. Chemtrac is the tool of choice for product stewardship and regulatory compliance in a wide variety of industries, providing a cost-effective and time-saving solution for manufacturers, formulators, distributors and retailers.

Features

- **Substance Database:** a comprehensive database of over 240,000 substances, with the ability to create your own substance lists and report against more than 600 global regulations;
- **Regulations Guide:** a helpful reference tool containing summaries of all the regulations within Chemtrac to help you understand your obligations;
- **Chemtrac Alerts:** a user-friendly application that allows you to select the substances and regulations that matter to you, and receive regular updates of any changes that occur;
- **Item Inventory:** manage your in-house database of products to work with our substance database and alerts applications; and
- **Product Risk Assessor:** mitigate business risk by assessing which of the most harmful known substances could be present in your products.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription • Free trial

Integration capabilities: ERP • EHS • Formula management • LIMS API functionality

Content type: Database • Regulatory updates

Expertise: Planning & management • Implementation • Integration

Partners

- Japan Environmental Management Association for Industry (JEMAI)

Other support services

- Webinars
- Whitepapers
- Training Courses
- Referrals

www.chemtracglobal.com

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+44(0)1524 594155

Service areas

Operational risk	● ● ● ● ● ●
Environmental performance	● ● ● ● ● ●
Product stewardship	● ● ● ● ● ●
Process safety	● ● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Enb
Substance volume tracking	Cst
Hazardous material management	Enb
Chemical inventory management	Core
Chemical safety prediction	Enb
Product compliance	Core
Regulatory management	Core
Compliance assurance	-
Chemical safety assessment	
Hazard assessment	-
Exposure assessment	-
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Enb
SDS authoring	Enb
SDS management	Core
Incident management	-
Labelling	Core
Stewardship	
Product lifecycle management	-
Full material declaration	Enb
Supplier information	-
Corporate social responsibility	-

Chesar

By European Chemicals Agency (ECHA)



About

Chesar is an application developed by the European Chemicals Agency (ECHA) to help companies carry out their chemical safety assessments (CSAs) and prepare their chemical safety reports (CSRs) and exposure scenarios (ESs) for communication. Chesar enables registrants to conduct their safety assessments in a structured, harmonised, transparent and efficient way. Its workflow starts with the import of substance-related data from IUCLID, followed by the use description and performing the exposure assessment and risk characterisation. Based on this, Chesar automatically generates the CSR and ESs for communication.

Features

- Chesar helps you maintain full consistency between your IUCLID dossier, CSR and ESs for communication;
- fully compatible with IUCLID - import substance data and export use and exposure information
- contains built-in exposure estimation tools (ECETOC TRA and EUSES);
- automatic generation and easy and efficient update of CSR and ESs for communication;
- facilitates re-use/update of assessment elements, including use maps developed by sector associations;
- allows import of the ESCOM phrase catalogue and generation of ESs in ESCOM XML format;
- allows import of translations of phrase catalogues and generation of translated ESs for communication; and
- available free of charge and easy to install.

Product details

Software type: Locally installed

User experience: Customisable • Off-the-shelf

Pricing structure: Free of charge

Integration capabilities: IUCLID • ESCOM XML

Other support services

[Chesar support](#)

[CSR illustrative example](#)

[Use maps library](#)

[ECHA helpdesk](#)

www.chesar.echa.europa.eu

chesar@echa.europa.eu

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	-
Reporting	Core
Substance volume tracking	-
Hazardous material management	-
Chemical inventory management	-
Chemical safety prediction	-
Product compliance	Core
Regulatory management	-
Compliance assurance	-
Chemical safety assessment	
Hazard assessment	-
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	-
SDS management	-
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	-
Full material declaration	-
Supplier information	-
Corporate social responsibility	-

CHESSOL PIF software

By Lisam Systems s.a.



About

Lisam Systems is a global player in the environment, health and safety business. Lisam Systems was founded in 1998 and currently has more than 1,000 customers who use their ExESS SDS Authoring software. Lisam Systems has offices in 16 countries all around the world.

With the CHESSOL PIF Software Lisam Systems also has entered the cosmetic safety market. CHESSOL is a specialised software tool for the generation and management of Cosmetic PIF dossiers. Besides the software, CHESSOL also includes an extensive chemical database.

Features

Software:

- Fully integrated cosmetic PIF;
- cosmetic products module;
- formula library;
- raw materials module / database;
- substance module / database; and
- reports module.

Services:

- Regulatory services;
- support for cosmetic PIF;
- safety assessment and signing of PIF;
- responsible person (in EU);
- database management; and
- audits.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Pay-per-use • Subscription • Free trial

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management

Content type: Database • Services for Responsible Person

Expertise: Planning & management • Implementation • Integration
Regulatory affairs

Partners

- Wikichemia
Content provider

Other support services

Lisam Systems Events

User Meeting

Seminar

Free demo

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www.chessol.com

info.nl@lisam.com

+31 85 40 19 786

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	-
Hazardous material management	Core
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	-
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	Core
Labelling	Core
Stewardship	
Product lifecycle management	-
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	-

Compliance Map Enterprise



By The Compliance Map Ltd.

About

The Compliance Map Enterprise platform is an all-in-one solution to automate and manage environmental and supply chain compliance obligations. The system covers chemical regulations ranging from Global REACH and RoHS to TSCA, Prop65, and much more. Companies can leverage tools within the platform to automate their supply chain data collection efforts as well as build customer and regulatory reporting forms to meet customer requests. The solution is fully enterprise integrated, enabling transparent synchronisation of BOM and material data and supports the major PLM/ERP systems on the market. Compliance Map monitors all regulations to ensure the platform is always current to reflect today's regulatory landscape and scales to meet tomorrow's challenges.

Features

- Native support for Risk assessments and test plan evaluations of chemical data;
- tracks exemption expirations, reporting due dates and draft regulations on a shared compliance calendar;
- automatic collection of chemical, compliance data and surveys from the supply chain using email workflows and supplier portals;
- real-time roll-up of compliance data through Product BOMs mirrored from ERP/PLM systems;
- all chemical lists, regulation rules, and reporting formats are kept automatically up-to-date; and
- report, label and form production is supported to meet the CE marking requirements for RoHS with native support for standards such as IPC1752A, IEC 62474, IPC1756, IPC1753, IMDS and more.

Product details

Software type: SaaS • Cloud based • Locally installed

User experience: Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription • Free trial

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management • LIMS

Content type: Database • Regulatory updates

Expertise: Planning & management • Implementation • Integration

Partners

- SiliconExpert
Content provider

Other support services

Free IPC1752 Material Declaration Tool

Reverse Supply Chain Compliance

Origin Determination and Conflict Minerals

Supply Chain Investigator

www.thecompliancemap.com

tcm@thecompliancemap.com

+44 1869 255 758

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Core
Chemical inventory management	Enb
Chemical safety prediction	Enb
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Cst
Risk assessment	Core
Worker safety	Cst
Environmental safety	Cst
Consumer safety	Cst
Hazard communication	
Supply chain communication	Core
SDS authoring	-
SDS management	Core
Incident management	Cst
Labelling	Cst
Stewardship	
Product lifecycle management	Enb
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	Core

EcoWebDesk



By Ecolntense GmbH

About

EcoWebDesk is the ideal solution for your health and safety, environmental protection and sustainability management. Expertly grounded, the web-based software knows your tasks and unites all of the functions that you need. Documenting, organising, evaluating – with EcoWebDesk you're done in a jiffy. Keep track at all times, whether you need a global view or detailed specific information about a particular issue. Manage all hazardous materials and ensure legal compliance in all processes of your company.

Features

- Database of relevant legal norms and regulations;
- one register for all working and hazardous materials as well as hazardous goods;
- central document management;
- organise and generate statements on the approval and application of chemicals;
- manage safety data sheets including checks for updates;
- generate risk assessments including substitution check;
- create operating instructions including information about safeguards, first aid and disposal;
- plan, organise, record and monitor corrective and preventive actions; and
- document dangerous situations and accidents, and derive immediate measures.

Product details

Software type: SaaS • Locally installed

User experience: Off-the-shelf • Configurable

Pricing structure: Licensed • Free trial

Integration capabilities: Customisable for all systems

Partners

- TÜV NORD Systems GmbH & Co. KG
Consultancy
- Eco Compliance
Content provider
- SAT GmbH & Co. KG
Content provider

Other support services

- Demo
- Webinars
- Consultancy services
- User forum

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Service areas

Operational risk	● ● ● ● ● ●
Environmental performance	● ● ● ● ● ●
Product stewardship	● ● ● ● ● ●
Process safety	● ● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Core
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	-
Regulatory management	Core
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	-
Hazard communication	
Supply chain communication	Core
SDS authoring	Cst
SDS management	Core
Incident management	Core
Labelling	Core
Stewardship	
Product lifecycle management	-
Full material declaration	-
Supplier information	-
Corporate social responsibility	Core

EHS & Risk Management Software



enablon

By Enablon

About

Enablon, a Wolters Kluwer business, is the world's leading provider of Sustainability, EH&S and Operational Risk Management Software.

More than 1,000 global companies and one million users rely on Enablon software solutions to manage their environmental, health and safety performance, ensure compliance, minimize risks and improve profitability.

Enablon offers the most comprehensive platform in the industry, and is consistently recognised as a global leader and visionary.

Enablon's integrated approach on a single technology stack enables a secure and scalable platform with a consistent user interface. Its unique modular architecture brings rich interactions between applications and covers over 300 use cases.

Features

- Identify regulatory drivers governing operations, define and execute a compliance strategy, and evaluate compliance performance;
- track product stewardship program including product compliance and chemical management needs, by analysing and drawing insights from data and content on products, materials and substances;
- centralised risk register for operational risk management and enterprise risk management, and comprehensive reporting to identify top risks and opportunities;
- take control of organizational risks by collecting, analysing, and acting upon real-time field data, while establishing standardised
- take control of organizational risks by collecting, analysing, and acting upon real-time field data, while establishing standardised processes to systematically flag potential permit exceedances and reduce the risk of non-compliance; and
- identify and manage operational risks, strengthen audits and control processes to ensure business continuity.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management • LIMS

Content type: GHG emission factors • Worldwide regulatory register
SDS Library • Regulatory lists & limits

Expertise: Planning & management • Implementation • Integration

Partners

- 3E - Content provider
- SiteHawk - Content provider
- CH2M - Systems integrator
- Arcadis - Systems integrator
- ERM - Systems integrator

Other support services

Product stewardship: leveraging technology for supply-chain compliance complexities

Implementing a global approach to managing EHS regulatory compliance

www.enablon.com

info@enablon.com

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance

Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Core
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core

Chemical safety assessment

Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core

Hazard communication

Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	Core
Labelling	Core

Stewardship

Product lifecycle management	Cst
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	Core

ExESS

By Lisam Systems



About

ExESS is a powerful, integrated software solution (.NET) based for global environmental health, safety and transportation management.

ExESS rules calculators, analyse, adhere to and maintain compliance with local and international EHS and transport regulations. Utilising over 2000 algorithms and supported by major product and regulatory databases worldwide, ExESS is able to generate accurate and consistent regulatory documents including SDS, (e)SDS, various transport documents, regulatory compliant labels, etc.

ExESS supports over 50 languages which can be linked to any product or regulatory database and allows the creation of custom templates to ensure local regulatory compliance.

Features

- SDS, labels & other documents management** - Provides multi-lingual document creation ((e)SDS, labels, Workplace Instruction Cards), validation and distribution.
 - SDS Authoring** - allows for the creation and maintenance of the customer Product database. It allows the manual addition (or importation) of new products to the database.
 - Classification & rules creation** - Apart from the classification functionalities provided as standard
- in the system such as: CLP, GHS US, GHS CN, ADR etc. ExESS also provides customers with the ability to add own rules:
- rule (Blocks);
 - parents – child relations;
 - versioning;
 - phrase libraries;
 - content updates;
 - history/track changes;
 - data exchange; and
 - administration and security.

Product details

Software type: SaaS • Client server application

User experience: Customisable • Off-the-shelf • Configurable
Logged information • Integrated libraries • Updates

Pricing structure: Licensed • Subscription • Free trial

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management

Content type: Database • Regulatory updates • Regulatory data

Expertise: Planning & management • Implementation • Integration
Regulatory affairs

Partners

WikiChemia - Content provider

EIGA - Content provider

JCDB - Content provider

ERM - Systems integrator

Emori - Systems integrator

Other support services

Lisam Systems Events

Lisam Systems News

Lisam Systems Free Demo

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Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Core
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	Core
Labelling	Core
Stewardship	
Product lifecycle management	-
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	-

gComply

By Decernis



About

gComply provides the current necessary global knowledge and regulatory library to determine the compliance status of your products, components, materials, ingredients and/or substances.

gComply is a powerful web-based regulatory reference database providing access to over 90,000 regulations across 210 countries, allowing you to scan applicable requirements relevant to your business or products.

Using over five million terms across 40 languages, gComply is providing you a user friendly searching and cross-referencing tool at your fingertips.

Features

- Search and find applicable regulations and amendments in identified countries or regions relevant to your products;
- search for specific criteria in particular regulations;
- find regulatory updates or changes with ease;
- quickly review a variety of regulations applicable to an individual ingredient or substance;
- english translations of important regulations available;
- updated monthly; and
- customisable with your own private library of data, documents, and customer standards.

Product details

Software type: Cloud based

User experience: Off-the-shelf • Configurable

Pricing structure: Licensed • Free trial

Content type: Database • Regulatory updates

Partners

- Intertek
Consultancy
- SpecPage
Systems integrator
- Siemens
Systems integrator

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Service areas

Operational risk	● ● ● ● ● ●
Environmental performance	● ● ● ● ● ●
Product stewardship	● ● ● ● ● ●
Process safety	● ● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	-
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	-
Hazardous material management	-
Chemical inventory management	Core
Chemical safety prediction	-
Product compliance	Core
Regulatory management	Enb
Compliance assurance	-
Chemical safety assessment	
Hazard assessment	-
Exposure assessment	-
Risk assessment	-
Worker safety	-
Environmental safety	-
Consumer safety	-
Hazard communication	
Supply chain communication	-
SDS authoring	-
SDS management	-
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	-
Full material declaration	-
Supplier information	-
Corporate social responsibility	-

Cst - Customisable | Core - Core service | Enb - Enabled

gComply Plus

By Decernis



About

gComply Plus is an enterprise-level system providing your business an automated "compliance management" solution to manage a component or a bill of materials in order to compare your product formulas against requirements and allowable regulatory limits.

gComply Plus provides a governance process to manage the development of products. gComply Plus is a logic-based solution that links to Decernis regulatory library to provide the authoritative source document supporting any conclusion. gComply Plus integrates with the clients own systems. It can be easily deployed as a remotely hosted system or as a module integrated with your product lifecycle management (PLM) system.

Features

- Prepare a chemical, material, ingredient, and product level compliance analysis;
- analyse and compare global threshold requirements for additives and contaminants;
- author global declarations of compliance for a product, material, or ingredient;
- manage change;
- search for and obtain information concerning global regulatory status and requirements;
- upload your formulations and recipes and analyse their compliance;
- provide an archive of compliance data and material acceptance processes utilised to support auditing and institutional memory;
- gComply Plus can also synchronize with all Decernis solutions to provide you with one seamless solution to manage and control your products and supply chains; and
- modules are available for food additives and recipe management, food contact, contaminants and standards of identity.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed

Integration capabilities: PLM

Content type: Links to the gComply regulatory database

Partners

- Intertek
Consultancy
- SpecPage
Systems integrator
- Siemens
Systems integrator

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Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	-
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	-
Chemical inventory management	Core
Chemical safety prediction	-
Product compliance	Core
Regulatory management	-
Compliance assurance	-
Chemical safety assessment	
Hazard assessment	-
Exposure assessment	-
Risk assessment	Core
Worker safety	-
Environmental safety	-
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	-
SDS management	-
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	-
Full material declaration	-
Supplier information	-
Corporate social responsibility	-

Cst - Customisable | Core - Core service | Enh - Enabled

Horizon Scanning

By Decernis



About

Horizon Scanning is an intelligence-gathering solution using big data analytics which automatically monitors and tracks global events and regulations providing insights and trend analysis that impact compliance requirements, enable market access, and increase speed-to-market for your products.

What challenges must I face tomorrow with new draft requirements or developments in the marketplace? How do I manage change? How can I take advantage of opportunities and avoid delays? These are fundamental challenges for manufacturers and processors. Using Decernis' patented "Horizon Scanning" technology, your business can proactively monitor regulatory changes that affect your products.

Features

- Screens over 1,200 pages per minute and cross-references developments against a five million term lexicon across 40 languages and over 200 countries;
- summarises over 2,500 regulatory and scientific events per day;
- sources include the Decernis expert editorial team, direct feeds from governmental partners, and automation;
- customisable to your business, product and ingredient portfolio;
- monitor significant developments and hot topics, as well as:
- proposed and final regulatory notifications;
- scientific opinions;
- market developments and consumer trends;
- product recalls;
- warning announcements;
- issue management; and
- translations of content summaries.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Free trial

Integration capabilities: PLM

Content type: Regulatory updates

Partners

- Intertek
Consultancy
- SpecPage
Systems integrator
- Siemens
Systems integrator

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Service areas

Operational risk	● ● ● ● ● ●
Environmental performance	● ● ● ● ● ●
Product stewardship	● ● ● ● ● ●
Process safety	● ● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	-
Chemical inventory management	Core
Chemical safety prediction	-
Product compliance	-
Regulatory management	Core
Compliance assurance	-
Chemical safety assessment	
Hazard assessment	-
Exposure assessment	-
Risk assessment	-
Worker safety	-
Environmental safety	-
Consumer safety	-
Hazard communication	
Supply chain communication	Core
SDS authoring	-
SDS management	-
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	-
Full material declaration	-
Supplier information	-
Corporate social responsibility	-

Intelligent Compliance Solutions for Chemical and Workplace Safety



Verisk Analytics 3E Company is a Verisk Analytics business

By Verisk 3E, formerly 3E Company

About

Verisk 3E™, formerly 3E Company, provides award winning SDS and chemical management tools that are flexible, scalable, and modular, offering a variety of options and enhancements based on your organization's needs. Verisk 3E employs a full service approach to SDS management, assuming the burden of obtaining and maintaining the currency of all SDSs in your chemical inventory across all of your global locations. Beyond managing and maintaining SDSs, our solution can enhance your overall hazard communication program, supported with many options, including sophisticated safer chemical analytics which enable your team to perform intelligent risk assessments, evaluating product hazards based on SDS data and exposure considerations.

Features

- Take control of chemical inventory management and approval, managing which chemicals enter a given facility;
- enable every handler to access updated SDSs, labels and Extended Safety Data Sheets (eSDSs) in the language and jurisdiction required anytime, anywhere 24-7-365;
- eliminate time wasted chasing suppliers for SDSs and let Verisk 3E obtain and manage revisions to all SDSs across all of your locations.
- comply with local, national, regional and global EHS and right-to-know regulations including GHS, Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), California Proposition 65, Toxic Substances Control Act (TSCA) and others;
- research, identify, analyze, track, complete and submit required disclosures, permits and reports on your behalf for requirements related to emergency planning, community right-to-know, hazardous materials storage and handling and waste generation;
- access live, global 24-7-365 emergency and incident response for spills, ingestions and exposures;
- quickly and expertly evaluate the relative hazards of your chemicals, mixtures and products to assess health and environmental risk and determine mitigation measures;
- stay abreast of continually changing regulatory obligations in multiple markets and jurisdictions and quickly determine their impact on operations; and
- integrate current, comprehensive regulatory content and documents including SDSs, eSDSs, technical data sheets, compliance declarations and material declarations into your EHS, procurement, EMIS or ERP system.

Product details

Software type: SaaS • Cloud based

User experience: Configurable • Off-the-shelf • Customisable

Pricing structure: Subscription • Free trial

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management • LIMS

Content type: Database • Regulatory updates • SDS and other documents

Expertise: Planning & management • Implementation • Integration

Partners

- Enablon - [Content provider](#)
- Intelex - [Content provider](#)
- Cority - [Content provider](#)
- SAI Global - [Content provider](#)
- ProcessMap - [Content provider](#)

Other support services

- [Verisk 3E Events and User Groups](#)
- [Verisk 3E EHS Webinar Series](#)
- [Verisk 3E Blog](#)
- [Verisk 3E Resource Center](#)

www.3ecompany.com

info@3ecompany.com

(001) 760-602-8700

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Enb
Hazardous material management	Enb
Chemical inventory management	Core
Chemical safety prediction	Enb
Product compliance	Enb
Regulatory management	Enb
Compliance assurance	Enb
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	Enb
Labelling	Core
Stewardship	
Product lifecycle management	Enb
Full material declaration	Enb
Supplier information	Core
Corporate social responsibility	-

Intelligent Compliance Solutions for Product Safety & Stewardship



3E Company is a Verisk Analytics business

By Verisk 3E, formerly 3E Company

About

Verisk 3E™, formerly 3E Company, provides intelligent product safety and stewardship solutions that leverage reliable, global regulatory content to accelerate the development and launch of safer products. Our core competence lies in researching, obtaining, aggregating, validating, and enriching compliance related data and making it actionable and available to our customers.

Only Verisk 3E can empower you with comprehensive regulatory insights that can be directly embedded throughout your product safety and stewardship processes to drive informed, proactive decisions.

With Verisk 3E as your single trusted source for global regulatory expertise and compliance solutions you will be able to proactively anticipate and manage regulatory changes, respond quickly to changing customer requirements, avoid supply chain disruption and accelerate time to market.

Features

- Proactively manage the health, safety and environmental aspects of raw materials and intermediate and consumer products to reduce potential risks to people and the environment;
- conform with regulations and international treaties regarding the manufacture, import and use of banned or restricted substances to ensure products can be sold in their intended markets;
- seamlessly exchange safety and product data across the organization to increase accuracy, compliance and productivity;
- create, analyze and manage globally compliant, multilingual hazard communication documentation including Safety Data Sheets (SDSs), exposure scenarios and labels;
- address requirements for voluntary compliance initiatives including sustainable product design and development, Corporate Social Responsibility (CSR) and Non-government Organization (NGO) obligations;
- streamline processes in order to reduce costs, mitigate risk, deliver to market on time and meet customer demands for customization.

Product details

Software type: SaaS • Cloud based • Locally installed

User experience: Configurable • Off-the-shelf • Customisable

Pricing structure: Subscription • Free trial • Licensed

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management

Content type: Database • Regulatory updates • Full text of regulations

Expertise: Planning & management • Implementation • Integration

Partners

- SAP - [Content provider](#)
- Enablon - [Content provider](#)
- Intelex - [Content provider](#)
- Cority - [Content provider](#)
- SAI Global - [Content provider](#)

Other essential support services

- [Verisk 3E Events and User Groups](#)
- [Verisk 3E EHS Webinar Series](#)
- [Verisk 3E Blog](#)
- [Verisk 3E Resource Center](#)

www.3ecompany.com

info@3ecompany.com

(001) 760-602-8700

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Enb
Hazardous material management	-
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Enb
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	-
Labelling	Core
Stewardship	
Product lifecycle management	Enb
Full material declaration	Enb
Supplier information	Core
Corporate social responsibility	Enb

iSafeRat® Online for High Accuracy QSARs



By KREATiS SAS

About

Objective: to fulfil endpoint requirements for regulatory dossiers.

In 2017, two options available:

1. iSafeRat® model predictions meeting regulatory requirements provided by KREATiS staff
2. As from November 2017, predictions obtainable directly from iSafeRat® Online

The aim of this tool is to provide reliable and accurate in silico approaches to replace experimental OECD guideline studies (physicochemical, ecotoxicological, toxicological), with endpoint values equal to (or better than) those obtained by the best available experimental techniques for a fraction of the time and price of a laboratory study.

When requested each endpoint value can be supported by all the documentation necessary to demonstrate validity following OECD and ECHA recommendations.

Features

- Endpoints covered: Several Physicochemical, Ecotoxicological and Human Health endpoints relevant for regulatory submissions.
- Model precision: Only the most accurate experimental data, validated by KREATiS experts has been used for iSafeRat model development. This data has been combined with suitable algorithms to develop high precision models.
- Model validation: All iSafeRat® High Accuracy QSAR models have been validated following the five OECD principles.
- Supporting documentation: Each endpoint value is supported by an in-silico study report, and statistical information on validity (QMRF and QPRF for submissions to ECHA).
- Price plan: Standard plans include Annual and Pay-As-You-Go subscriptions. Free trial available. Price plans can be customized by contacting KREATiS.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Configurable

Pricing structure: Licensed • Pay-per-use • Subscription • Free trial

Integration capabilities: EMIS • EHS • Formula management

Content type: Substance finder help

Integration capabilities: Ecotoxicology and chemistry

Partners

- CEHTRA SAS
Consultancy

Other support services

Training on use of off-the-shelf and KREATiS software

KREATiS posters

KREATiS Tutorials

Consultancy

- 🌐 www.kreatis.eu
- ✉ contact@kreatis.eu
- ☎ 0033 (0)4 28 19 01 06

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Enb
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	-
Hazardous material management	-
Chemical inventory management	-
Chemical safety prediction	Core
Product compliance	Cst
Regulatory management	-
Compliance assurance	Enb
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	-
Risk assessment	-
Worker safety	-
Environmental safety	Core
Consumer safety	-
Hazard communication	
Supply chain communication	-
SDS authoring	Enb
SDS management	-
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	Enb
Full material declaration	Cst
Supplier information	-
Corporate social responsibility	-

Product Stewardship



enablon

By Enablon

About

Enablon, a Wolters Kluwer business, is the world's leading provider of Sustainability, EH&S and Operational Risk Management Software.

More than 1,000 global companies and one million users rely on Enablon software solutions to manage their environmental, health and safety performance, ensure compliance, minimize risks and improve profitability.

Enablon offers the most comprehensive platform in the industry, and is consistently recognised as a global leader and visionary.

Enablon's integrated approach on a single technology stack enables a secure and scalable platform with a consistent user interface. Its unique modular architecture brings rich interactions between applications and covers over 300 use cases.

Features

- Identify regulatory drivers governing operations, define and execute a compliance strategy, and evaluate compliance performance;
- track product stewardship program including product compliance and chemical management needs, by analysing and drawing insights from data and content on products, materials and substances; and
- full database to manage, approve and keep track of all chemicals (mixtures and substances) at all facilities throughout the enterprise.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management • LIMS

Content type: GHG emission factors • Worldwide regulatory register
SDS Library • Regulatory lists & limits

Expertise: Planning & management • Implementation • Integration

Partners

- 3E
Content provider
- SiteHawk
Content provider
- CH2M
Systems integrator
- Arcadis
Systems integrator
- ERM
Systems integrator

Other support services

Product stewardship: leveraging technology for supply-chain compliance complexities

Implementing a global approach to managing EHS regulatory compliance

www.enablon.com

info@enablon.com

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance

Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Core
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core

Chemical safety assessment

Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core

Hazard communication

Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	Core
Labelling	Core

Stewardship

Product lifecycle management	Cst
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	Core

Product Stewardship with Intelligent Authoring & Comply Plus

By Sphera



About

Sphera's solution combines software, content and expertise to enable companies to more effectively manage product compliance and hazard communication requirements. The solution enables you to efficiently create and automate compliant safety data sheets and labels by providing an extensive set of integrated global regulatory content with supporting rules & logic that is monitored and updated. Functionality is available to allow easy tailoring of rules so that authors can effortlessly modify and enforce decisions about regulatory variables and grey areas affecting the content of SDSs. Furthermore the solution allows for GHS by Design, a unique functionality that allows authors to create a single set of documents targeted to several countries or apply GHS logic for countries lacking an implementation.

Features

The solution enables you to:

- Efficiently create and automate REACH and GHS compliant safety data sheets, labels and other compliance documents;
- benefit from extensive global regulatory data and content that is monitored and updated. This includes rules, logic, templates, phrases, languages and industry specific guidelines;
- leverage a product compliance analysis platform to assess regulatory impacts on your product portfolio;
- integrate effectively with other business systems such as ERP, PLM and formulation management applications;
- fulfill REACH substance volume tracking requirements;
- proactively manage chemicals entering your facilities by ensuring proper reviews and approval of new materials;
- simplify SDS tracking and management; and
- consolidate chemical inventory data for regulatory reporting.

Product details

Software type: SaaS • Locally installed • Hosting & Sustainment

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management LIMS • Automated SDS publishing & distribution

Content type: Database • Regulatory updates • Rules • Logic • Templates
Regulatory phrases • Languages

Expertise: Implementation • Integration • Regulatory & authoring services

Partners

- LinxAs
Systems integrator

Other support services

[Video overview of Intelligent Authoring for SDS Creation](#)

[Video overview of Comply Plus for SDS Management](#)

[Video overview of Product Compliance for SAP EH&S](#)

[Overview of GHS & REACH Compliance](#)

[Customer case study successes](#)

[www.sphasolutions.com/
product-stewardship](http://www.sphasolutions.com/product-stewardship)

[operationalexcellence@
sphasolutions.com](mailto:operationalexcellence@sphasolutions.com)

1-438-797-4661
31 (0) 24 329 7424

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	-
Chemical inventory management	Core
Chemical safety prediction	-
Product compliance	Core
Regulatory management	Core
Compliance assurance	-
Chemical safety assessment	
Hazard assessment	-
Exposure assessment	-
Risk assessment	-
Worker safety	Core
Environmental safety	-
Consumer safety	-
Hazard communication	
Supply chain communication	Enb
SDS authoring	Core
SDS management	Core
Incident management	-
Labelling	Core
Stewardship	
Product lifecycle management	Enb
Full material declaration	-
Supplier information	-
Corporate social responsibility	-

Cst - Customisable | Core - Core service | Enb - Enabled

ProSteward360



Experience the commitment®

By CGI

About

A state-of-the-art hazard communication and chemical management software platform fully aligned with GHS and REACH, ProSteward360 is the most sophisticated approach to global chemical data management and product safety available in the market today.

- Supports process harmonisation across wide geographies and diverse lines of business;
- streamlines access to information from manufacturing to head office;
- sustains current and future product stewardship needs from product development through customer end use;
- reduces duplication of services and systems;
- improves data quality and consistency;
- reduces cycle time to market through regulatory modelling;
- provides better information and faster response to customers; and
- leverages best practices while reducing costs.

Features

- **SDS/eSDS Authoring:** manage regulatory information with rules-based chemical data management and SDS authoring in accordance with regulations in 100+ countries and 40+ languages;
- **Exposure Scenario Management:** efficiently store and manage the use, exposure scenario and risk management measure information for REACH and CLP compliance;
- **Vendor SDS Management:** store and maintain a central repository of vendor and company-authored SDSs for employee access aligned with local requirements;
- **Chemical Inventory and Workplace Safety:** get one-stop access to critical information regarding RTK, site-level authorized material use lists, and chemical inventory used to generate ready-for-submission reports such as SARA 311/312; and
- **Reporting & ERP Integration:** flexible integration engine to flow data to third party systems or support business requirements such as Volume Tracking, Chemical Safety Assessments, EHS data access, and report generation.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Pay-per-use • Subscription

Integration capabilities: ERP • PLM • EMIS • Formula management • LIMS

Content type: Database • Regulatory updates

Expertise: Purchasing • Planning & management • Implementation • Integration

Other support services

ProSteward User Group
(annual conference)

www.cgi.com/environment

ehs@cgi.com

+1 605-592-0551

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Cst
Hazardous material management	Enb
Chemical inventory management	Core
Chemical safety prediction	-
Product compliance	Core
Regulatory management	Core
Compliance assurance	Enb
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Enb
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Cst
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	-
Labelling	Enb
Stewardship	
Product lifecycle management	-
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	Enb

PubliChem

By Lisam Systems



About

The PubliChem application was created in an effort to help companies comply with the REACH Standards for SDS archiving and distribution.

Its document management functionalities will help suppliers to safely store any document used for chemical safety purposes. In addition, PubliChem boasts advanced tracking functionalities to ensure the safe receipt of the sent documents.

Because it easily integrates with your existing systems, PubliChem will help you to bring SDS authoring and ERP information all together for a fully automated distribution job in multiple formats, multiple languages and for multiple regions.

Features

Supplier functionalities:

- **Document Management**
Storage of any kind of document related to a chemical (safety data sheets, labels, technical data sheets, specifications, ...) and management of documents metadata: region, language, version, archived status.
- **Active and Passive Distribution**
Automatic distribution of safety data sheets based on orders information and documents updates. Distributed documents are also shared on the platform to downstream users via free restricted accounts.

- **Distribution Tracking**
Possibility to track the receipt and the reading of distributed documents.
- **Interfaces with External Systems; and**
- **data import**
Formats: XLS, XLSX, TXT, CVS, XML
- **Permissions management**

Downstream user functionalities:

- Document repository; and
- document request.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Pay-per-use • Subscription • Free trial

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management

Content type: Regulatory updates • Archive management

Expertise: Planning & management • Implementation • Integration

Other support services

[Lisam Systems Events](#)

[Lisam Systems News](#)

[Lisam Systems Free Demo](#)

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Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	-
Data management (regulatory lists, substance data)	Core
Reporting	-
Substance volume tracking	-
Hazardous material management	-
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	-
Regulatory management	-
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	-
Exposure assessment	-
Risk assessment	-
Worker safety	-
Environmental safety	-
Consumer safety	-
Hazard communication	
Supply chain communication	Core
SDS authoring	-
SDS management	Core
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	-
Full material declaration	-
Supplier information	Core
Corporate social responsibility	-

Cst - Customisable | Core - Core service | Enh - Enabled

Responsible Supply Chain



enablon

By Enablon

About

Enablon, a Wolters Kluwer business, is the world's leading provider of Sustainability, EH&S and Operational Risk Management Software.

More than 1,000 global companies and one million users rely on Enablon software solutions to manage their environmental, health and safety performance, ensure compliance, minimize risks and improve profitability.

Enablon offers the most comprehensive platform in the industry, and is consistently recognised as a global leader and visionary.

Enablon's integrated approach on a single technology stack enables a secure and scalable platform with a consistent user interface. Its unique modular architecture brings rich interactions between applications and covers over 300 use cases.

Features

- Assess suppliers' social and EHS compliance to reduce risk and improve sustainability performance;
- plan and deploy standardized checklists on suppliers and contractors to provide a clear measurement of their third parties' level of compliance;
- effectively create action plans, track completion, ensure a follow-up with suppliers, mitigate risks, improve performance and stay compliant;
- build declaration, track and aggregate suppliers data while accessing an up to date smelter database; and
- deploy assessments to third parties, track data collection, implement scoring and automate feedback that triggers suggested action plans.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription

Content type: GHG emission factors • Worldwide regulatory register
SDS Library • Regulatory lists & limits

Expertise: Planning & management • Implementation • Integration

Partners

- 3E
Content provider
- SiteHawk
Content provider
- CH2M
Systems integrator
- Arcadis
Systems integrator
- ERM
Systems integrator

Other support services

- Product stewardship: leveraging technology for supply-chain compliance complexities
- Implementing a global approach to managing EHS regulatory compliance

www.enablon.com

info@enablon.com

Service areas

- Operational risk ● ● ● ● ●
- Environmental performance ● ● ● ● ●
- Product stewardship ● ● ● ● ●
- Process safety ● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Core
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	Core
Labelling	Core
Stewardship	
Product lifecycle management	Cst
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	Core

Cst - Customisable | Core - Core service | Enh - Enabled

SAP EHS consultancy, support service and training

By eSpheres



About

HSE Information management consultants was founded in 2011 as a Solvay spin-out. eSpheres is a global leader in **SAP EHS consultancy** and delivering health, safety, environment (HSE) software and service solutions to organizations worldwide. Our in-depth IT solutions, **SAP EHS consultancy** and **out-tasking services** help industrial companies and institutions in improving their management of safety, industrial hygiene and occupational health processes. We have a wide experience in SAP EHS implementations, project management and maintenance services. We are experts in SAP EHS and HSE data management and have **developed IT-tools** to facilitate our customers' use of their SAP EHS system or other EMIS systems. eSpheres experts understand your enterprise, including your IT architecture, ERP systems and data warehouses. Our biggest differentiator is that we understand customers business needs, and compliance requirements and focus on real business scenarios.

Features

- **SAP EHS Constancy:** eSpheres tailors consultancy and implementation services to deploy and integrate the SAP® EHS(M) modules and deliver quick and sustainable results. Expertise in product safety, SVT, incident & accident management, risk assessment, vendor SDS management, occupational health, waste management, IDMP and recipe management.
- **Outsourced EHS regulatory content update services** for the EHS regulatory content package used for SAP EHS product safety and SDS authoring:
 - analyse impacts of new/updated data (between current and new content updates);
 - align properties tree with the latest updated data model (classes & characteristics);
- installation and alignment of phrase sets;
- installation of rules;
- review updated rules and install new version; and
- update custom templates (WWI) and testing.
- **SAP EHS Training:** SAP EHS user training, SAP EHS expert Rules creation, SDS release generation management but also customer tailored SAP EHS training programs.
- **Compliant Chemicals:** eSpheres has developed software tools to file, **extract and manage EHS data** from SDS pdf into XML, CSV and XML files, to facilitate your HSE data management for SAP EHS. We can collect, store, maintain and distribute your EHS relevant documents and data; we feed your SAP EHS or other EMIS system.

Product details

Software type: SaaS • Cloud based • Locally installed

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Pay-per-use • Subscription

Integration capabilities: ERP • PLM • EMIS • EHS • Formular management • LMIS

Content type: Database • Regulatory updates • Support SAP EHS content

Expertise: Purchasing • Planning & management • Implementation

Partners

- REACHLaw Consultancy
- ARCADIS Consultancy

Other support services

- **IT - EHS Project management**
- **Vendor SDS Management**
- **Chemical Management**
- **SAP EHS Maintenance**

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Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Core
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	-
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	-
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	Core
Incident management	Core
Labelling	Core
Stewardship	
Product lifecycle management	-
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	-

SAP solutions for product compliance and environment, health and safety



By SAP SE

About

As market leader in enterprise application software, SAP helps companies of all sizes and industries run better. From back office to boardroom, warehouse to storefront, desktop to mobile device – SAP empowers people and organizations to work together more efficiently and use business insight more effectively to stay ahead of the competition. SAP applications and services enable more than 355,000 business and public sector customers to operate profitably, adapt continuously, and grow sustainably. SAP software and services help customers integrate sustainability into their strategies and operations, increasing their profitability and creating positive change.

Features

- Product marketability and chemical compliance to secure the right to market, sell, and ship products;
- safety data sheet and label management to ensure compliance and accelerate product introduction;
- dangerous goods management to avoid delivery delays and protect brand value;
- incident management to resolve safety issues and learn from incidents;
- health and safety management by taking a proactive approach;
- environment management to reduce environmental impact;
- management of change thorough review of operational changes, risk mitigation, and documentation approval; and
- maintenance safety and permit to work through clear safety instructions and permits.

Product details

Software type: SaaS • Cloud based • Locally installed

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription • Free trial

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management LIMS • Enterprise Asset Management • Process Control Systems • Data Historians

Content type: Database • Regulatory updates

Expertise: Planning & management • Implementation • Integration

Partners

- Accenture
Systems integrator
- ERM
Systems integrator
- LinxAS
Systems integrator
- Opesus
Systems integrator
- SI PRO
Systems integrator

Other support services

- SAP Community
- SAP Product Finder
- SAP Solution Explorer
- SAP Events
- SAP Roadmaps

www.sap.com

www.sap.com/corporate/en/company/office-locations.html

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Cst
Substance volume tracking	Core
Hazardous material management	Core
Chemical inventory management	Core
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Cst
SDS authoring	Core
SDS management	Core
Incident management	Core
Labelling	Core
Stewardship	
Product lifecycle management	Cst
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	Core

Cst - Customisable | Core - Core service | Enh - Enabled

SciveraLENS



By Scivera

About

Scivera is fundamentally changing the way brands and suppliers screen and select chemicals by providing fast and cost-effective access to better information. The SciveraLENS® platform enables you to complete web-based chemical assessments to support both product integrity and sustainable chemistry. By providing targeted tools, the SciveraLENS platform allows everyone – from the smallest supplier to the largest brand – to own and participate in the mission we all share to create better products via preferred chemicals. SciveraLENS enables an enhanced chemicals management process, complementing testing requirements and protecting supplier confidential information.

Features

- Select your plan for immediate access and use;
- easily input your chemical, formulation, and product data;
- screen chemicals and formulations against over 270 regulatory, restricted, and preferred substances lists and sublists (including REACH, CA Prop 65, and more);
- review the human and environmental health attributes of your chemicals;
- calculate estimated chemicals exposure and risk;
- receive real-time alerts if any changes to lists and hazard assessments impact your chemicals of interest;
- prescreen new formulations;
- screen alternatives to regulated or otherwise restricted chemicals;
- share your assessment results with full materials disclosure or in redacted form;
- gather more complete and accurate ingredient information from your suppliers; and
- leverage our team of board-certified toxicologists with options to request priority services.

Product details

Software type: SaaS • Cloud based

User experience: Off-the-shelf • Configurable

Pricing structure: Licensed • Subscription • Free trial

Integration capabilities: ERP • PLM • EMIS • EHS • Formula management • LIMS

Content type: Database • Regulatory updates • Hazard, Exposure, and Risk Assessment

Expertise: Planning & management • Implementation • Toxicology

Other support services

GreenScreen Certified™ Product Assessments

ZDHC Certification Body

Levi Strauss & Co. Screened Chemistry Assessment

[Scivera Customized Consulting](#)

[Scivera News](#)

www.scivera.com

info@scivera.com

+1.434.974.1301

Service areas

Operational risk	● ● ● ● ●
Environmental performance	● ● ● ● ●
Product stewardship	● ● ● ● ●
Process safety	● ● ● ● ●

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	Core
Reporting	Cst
Substance volume tracking	Enb
Hazardous material management	Core
Chemical inventory management	Enb
Chemical safety prediction	Core
Product compliance	Core
Regulatory management	Core
Compliance assurance	Core
Chemical safety assessment	
Hazard assessment	Core
Exposure assessment	Core
Risk assessment	Core
Worker safety	Cst
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	Core
SDS authoring	Core
SDS management	-
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	Core
Full material declaration	Core
Supplier information	Core
Corporate social responsibility	Core

Cst - Customisable | Core - Core service | Enb - Enabled

Supply Chain Management



By Decernis

About

Our supply chain management solution provides you a simplified auditable automated process to collect, manage, and verify supplier compliance documentation to ensure your products meet regulatory, market, or customer requirements across your supply chain.

This solution provides your business a workflow and automation for purchasing materials and managing supplier data with greater transparency, accuracy, and speed.

Features

- Automated supplier questionnaire management;
- fast and easy collection of supplier data;
- automated data management;
- actionable and collaborative product, component, and material acceptance workflow;
- a secure document repository to organize and manage compliance documents for individual chemicals, materials, ingredients, or products;
- successfully collect, verify and monitor supplier documentation and feedback;
- provide an archive of compliance data and processes to support auditing;
- user friendly compliance reporting system;
- accessible by your business and multi-tiered supply chain;
- global harmonisation across multiple locations;
- customisable; and
- can synchronise with all Decernis systems to provide you with one seamless solution to manage and control your products and supply chains.

Product details

Software type: SaaS • Cloud based

User experience: Customisable • Off-the-shelf • Configurable

Pricing structure: Licensed

Integration capabilities: PLM

Partners

- Intertek
Consultancy
- SpecPage
Systems integrator
- Siemens
Systems integrator

 www.decernis.com

 sblackie@decernis.com

 +1 248 505 8516

Service areas

Operational risk	
Environmental performance	
Product stewardship	
Process safety	

Functions/Capabilities

Regulatory compliance	
Change management (chemicals)	-
Data management (regulatory lists, substance data)	Core
Reporting	Core
Substance volume tracking	Core
Hazardous material management	Cst
Chemical inventory management	Core
Chemical safety prediction	Cst
Product compliance	Core
Regulatory management	-
Compliance assurance	Cst
Chemical safety assessment	
Hazard assessment	-
Exposure assessment	-
Risk assessment	-
Worker safety	-
Environmental safety	-
Consumer safety	-
Hazard communication	
Supply chain communication	Core
SDS authoring	-
SDS management	Core
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	-
Full material declaration	-
Supplier information	Core
Corporate social responsibility	-

Targeted Risk Assessment (TRA) Tool



By European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC)

About

ECETOC's Targeted Risk Assessment (TRA) tool calculates the risk of exposure from chemicals to workers, consumers and the environment. It has been identified by the European Commission's Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as a preferred approach for evaluating consumer and worker health risks (ECHA, 2010 a,b):

ECHA. 2010a. REACH Technical Guidance on information requirements and chemical safety assessment, Chapter R14: Occupational Exposure Estimation. European Chemicals Agency, Helsinki, Finland.

ECHA. 2010b. Guidance on information requirements and chemical safety assessment, Chapter R15: Consumer Exposure Estimation (Version 2, April 2010). European Chemicals Agency, Helsinki, Finland. Addendum to TR114 : Technical Basis for the TRA v3.1 (June 2014).

Features

- Addresses exposures to workers, consumers and the environment;
- optimised for the use descriptor requirements of REACH;
- ready ability to iterate impact of different RMMs and OCs on risk;
- ability to run the tool in batch mode;
- MS Excel based: does not require access to skilled technical support to operate tool; and
- supported by extensive technical reports and user guidance.

Product details

Software type: Locally installed

User experience: Off-the-shelf • Configurable

Pricing structure: Free Excel-based tool

Integration capabilities: REACH Registration CSA obligations

Content type: Exposure prediction via substance properties and use

www.ecetoc.org

info@ecetoc.org

+32 2 675 3600

Service areas

Operational risk	● ● ● ● ● ●
Environmental performance	● ● ● ● ● ●
Product stewardship	● ● ● ● ● ●
Process safety	● ● ● ● ● ●

Functions/Capabilities

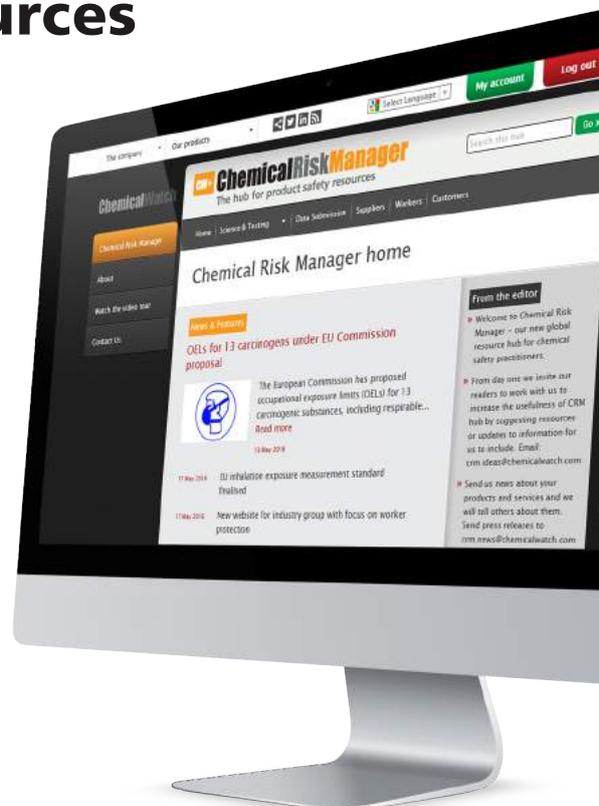
Regulatory compliance	
Change management (chemicals)	Core
Data management (regulatory lists, substance data)	-
Reporting	Core
Substance volume tracking	-
Hazardous material management	-
Chemical inventory management	-
Chemical safety prediction	-
Product compliance	Cst
Regulatory management	-
Compliance assurance	-
Chemical safety assessment	
Hazard assessment	-
Exposure assessment	Core
Risk assessment	Core
Worker safety	Core
Environmental safety	Core
Consumer safety	Core
Hazard communication	
Supply chain communication	-
SDS authoring	Cst
SDS management	-
Incident management	-
Labelling	-
Stewardship	
Product lifecycle management	Core
Full material declaration	-
Supplier information	-
Corporate social responsibility	-

CW+ ChemicalRiskManager

The hub for product safety resources

Product safety news and resources

Chemical Risk Manager is an **online publication** designed specifically to support **professionals managing the risk of chemicals** in the workplace, through the supply chain, and in products. It delivers **news and resources** to help them with practical challenges in their day-to-day roles.



Benefits to you

- » A time-efficient, cost-effective way of keeping up with new tools and guidance as well as new products and services
- » Brings together in one place information that is essential to your team

TOPICS COVERED



Hazard

Tox, ecotox, environmental fate, physchem resources



Exposure

Resources for modelling, measurement and monitoring



Risk

Resources for assessment and characterisation



Data Submission

Resources on regulatory data requirements



Customers

Resources for managing chemicals in articles



Workers

Resources on occupational hygiene



Suppliers

Resources for safe use communication

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Directory

Software solutions currently used by the Chemical Watch audience

Software/service	Vendor/Provider	Website	
3E Generate	Verisk 3E	www.verisk3e.com	
ACD/Name	ACD/Labs	www.acdlabs.com/home	
Active Steward	Penman Consulting	www.activesteward.com	p.32
Agile	Oracle	www.oracle.com	
AlphaOmega	Chymeia	www.chymeia.com/en	
AMBIT	Cefic	www.cefic.org	
Ariel WebInsight	Verisk 3E	www.verisk3e.com	
Assent Compliance Manager	Assent Compliance	www.assentcompliance.com	
Bill of Materials Viewer	BOMCheck	www.bomcheck.net	
BIOVIA	Dassault Systèmes	www.accelrys.com	
BNA	Bloomberg	www.bna.com	
C2P	Compliance and Risk	www.complianceandrisk.com/c2p	
CDX Compliance Data eXchange	DXC Technology	www.dxc.technology	p.33
ChemAdvisor	ChemAdvisor	www.chemadvisor.com	
ChemAlert	Risk Management Technologies	www.rmtglobal.com	
ChemAxon	ChemAxon	www.chemaxon.com	
CHEMDOX	CHEMDOX	www.chemdox.com/en	p.34
Chemeter	SIAM	www.siam-it.com/en	
ChemGes	DR- Software	www.dr-software.com	p.35
Chemical & SDS Management Software	ProcessMAP	www.processmap.com	
Chemical EHS Management Software	ERA Environmental Management Solutions	www.era-environmental.com/industry/chemicals	
Chemical ERP Software	TGI	www.tgilt.com	
Chemical Inventory Management	Enviance	www.enviance.com	
Chemical Inventory Software	Sysflow	www.sysflow.co.uk	
Chemical Management Navigator	M3V Data Management	www.m3vsoftware.com/contact	
Chemical Management Software	Gensuite	www.gensuite.com	
Chemical Management Database (CMD)	Dynasys Solutions	www.dynasys.com.hk	
Chemical Safety	SFS Chemical Safety, Inc	www.chemicalsafety.com	
Chemical Safety Communication Software	UL The Wercs	www.ul-scs.com	p.36
Chemical Substance Management	Enablon	www.enablon.com	p.37
Chemicals Manufacturing ERP Software	Batchmaster	www.batchmaster.com/batchmaster-erp-for-chemicals	
Chemius Expert	Bens Consulting	www.bens-consulting.com/en	
ChemKnowledge System	RightAnswer	www.rightanswer.com/index.php	
ChemLinked	REACH24H Consulting Group	www.chemlinked.com	
ChemManager	DHI	www.dhigroup.com	
Chempax	Datacor	www.datacor.com	
chemSHERPA	ChemSHERPA	www.chemsherpa.net/chemSHERPA/english	
Chemsoft EH&S	ChemSoft Limited	www.chemsoft.co.uk/index.html	
Chemtrac	The REACH Centre	www.chemtracglobal.com	p.38
Chemwatch	Chemwatch	www.chemwatch.net	
Chesar	ECHA	www.chesar.echa.europa.eu	p.39
CHESS	Bureau Veritas	www.bureauveritas.com	
CHESSOL PIF software	Lisam Systems	www.lisam.com/en-us	p.40
Cintellate	SAI Global	www.saiglobal.com	
CloudSDS	CloudSDS	www.cloudsds.com/home	
Compliance Map Enterprise	The Compliance Map	www.thecompliancemap.com	p.41

Compliance reporting	Ithos Global	www.ithosglobal.com/index.html	
Compliance Software	Lorax Compliance	www.loraxcompliance.com/index.html	
Compliance Software	Nimonik	www.nimonik.com	
COSHH Essentials	HSE	www.hse.gov.uk/index.htm	
Dakota	Dakota Software	www.dakotasoft.com	
DATABASE MANAGER	Laboratory of Mathematical Chemistry	www.oasis-lmc.org	
DeDoks	Trade Wind	www.twnl.nl/en	
Derek Nexus	Lhasa Limited	www.lhasalimited.org	
DocCompliance	Qumas (part of Biovia)	www.qumas.com	
Dynamic Case	Appian	www.appian.com	
Dynamics	Microsoft	www.dynamicssoftware.com	
easyTRA	Jansen-Systems	www.jansen-systems.com	
Eco Publisher	EcoOnline	www.ecoonline.com	
EcoOnline	EcoOnline	www.ecoonline.com	
EcoWebDesk	Ecolntense GmbH	www.ecointense.com	p.42
EH&S Software	Chemical Safety International	www.chemicalsafety.com	
EH&S Software	Enviance	www.enviance.com	
EHS & Risk Management Software	Enablon	www.enablon.com	p.43
EHS Compliance Software	Quantum Compliance	www.usequantum.com	
EHS Compliance Suite	regAction	www.regaction.com/en	
EHS Enterprise Software Suite	ImageWave	www.imagewave.com	
EHS Insight	StarTex Software	www.startexsoftware.com	
EHS Product Compliance	SAP EHS	www.sap.com/index.html	
EHS Software	EMEX	www.emex.com/en/industries/ehs_for_industrial_and_chemical_industry	
EHS Software	MIRS	www.mirsinfo.com/soft.htm	
EHS Software	Perillon	www.perillon.com	
EHS Software	ProcessMAP	www.processmap.com	
Element 1	H2 Compliance	www.h2compliance.com/element-1	
Enhesa	Enhesa	www.enhesa.com	
ENOVIA	Dassault Systèmes	www.3ds.com/en-uk	
Enterprise EHSQ	Cority	www.cority.com	
Epicor	Epicor Software Corporation	www.epicor.com	
EPOCH	Logical Data Solutions	www.logicalds.com	
Epy	Telematic	www.epy.it	
EpyPlus	Telematic	www.epy.it	
Euphor	Euphor	www.euphoreach.com	
Exact Macola	Macola Software	www.macola.com	
ExESS	Lisam Systems	www.lisam.com/en-us	p.44
FACET	FERA	www.ec.europa.eu/jrc/en/research-topic/food-contact-materials	
Formulator	Formulator Software	www.formulatorus.com	
FOUNDATION SDS Management	Cornerstone	www.corner-enviro.com	
gComply	Decernis	www.decernis.com	p.45
gComply Plus	Decernis	www.decernis.com	p.46
GeSi3	GeSi Software GmbH	www.gesi.de	
GHS Professional	UL Safeware Quasar	www.safeware-int.com	
Global NCI	CAS	www.cas.org	
Granta MI	Granta Design	www.grantadesign.com	
Green Arrow Labs	Green Arrow Labs	www.greenarrowlabs.com	
GreenData Manager	Greensoft Technology	www.greensofttech.com/site	
GreenScreen	GreenScreen	www.greenscreenchemicals.org	

GSM	Global Safety Management	www.gsmsds.com	
Hazardous Materials Management	eska Engineering company mbH	www.eska.eu	
hazMIN	Logical Technology	www.comply1.com	
HazMix	GlobalMSDS	www.globalmsds.co.uk/index.php	
HELASOFT SERCure	HELASOFT	www.helasoft.com/?L=0	
Heritage Environmental Information System	Heritage	www.heritage-enviro.com	
Horizon Scanning	Decernis	www.decernis.com	p.47
ICTools	InfoChem	www.infochem.de/index.shtml	
IMDS	DXC Technology	www.cdxsystem.com/cdx/faces/login	
InfoDyne	InfoDyne	www.infodyne.fr/en/reach/safety-data-sheets-sds.html	
Insight	DEKRA Insight	www.dekra-insight.com/en	
Intelex	Intelex	www.intelex.com/industries/chemical	
Intelligent Compliance Solutions for Chemical and Workplace Safety	Verisk 3E	www.verisk3e.com	p.48
Intelligent Compliance Solutions for Product Safety & Stewardship	Verisk 3E	www.verisk3e.com	p.49
IPCA	IPCA	www.ipcasolutions.com	
Material Compliance	iPoint-systems GmbH	www.ipoint-systems.com	
iSafeRat	KREATIS	www.kreatis.eu	p.50
iScienceSearch	Digital Science	www.isciencesearch.com	
IUCLID	ECHA	www.iuclid6.echa.europa.eu	
Keller Online	JJ Keller & Associates	www.kelleronline.com	
Laboratory Inventory Management	Vertére	www.vertere.com	
Legislation Alert	Scitegrity	www.scitegrity.co.uk	
Lycos Athena	Lycos	www.lycos.ltd.uk	
M3	Infor	www.infor.com/product-summary/erp/m3	
Mendix	Mendix	www.mendix.com	
Movex	Movex	www.movex.co.uk	
MSDS Authoring	ChemHaz Solutions	www.chemhazsolutions.com	
MSDSOnline	Velocity EHS	www.msdsonline.com	
Operational Risk Management	EtQ	www.etq.com	
OSIsoft	PI System	www.osisoft.com	
Paradigm 3	Paradigm Software	www.paradigm3.com.au	
Pharos Project	Pharos	www.pharosproject.net	
PHAWorks 5	Primatech	www.primatech.com	
PLM and Compliance Cloud	Selerant	www.selerant.com	
PRISYM Chemica	PRISYM ID	www.prisymid.com	
Product Compliance	Thinkstep	www.thinkstep.com	
Product Compliance Management	REACHECK Solutions GmbH	www.reacheck.eu	
Product Stewardship	Enablon	www.enablon.com	p.51
Product Stewardship with Intelligent Authoring & Comply Plus	Sphera Solutions	www.spherasolutions.com/product-stewardship	p.52
Product Vision	Advanced Software Design	www.asdssoftware.com	
Prometheus	Hibiscus PLC	www.hibiscus-plc.co.uk	
ProSteward360	CGI	www.cgi.com/environment	p.53
PubliChem	Lisam Systems	www.lisam.com/en-us	p.54
QSAR Toolbox	OECD	www.oecd.org	
Qualisys	Qualisys GmbH	www.qualisys.eu/index.php?id=102&L=2	
REACH Compliance Software	iPoint-systems GmbH	www.ipoint-systems.com	

REACH Delivery	REACH Delivery International	www.reachdelivery.com/reach.html	
REACH Product Compliance	REACHLINKED	www.reachlinked.com	
REACHcross	UL Environment	www.ulreachcross.com	
REACHGallery	ServiREACH	www.servireach.com	
REACHSuite	Baytouch	www.reachsuite.com	
RegScan One	RegScan	www.regscan.com	
Regulatory Change Management	Mitratech	www.mitratech.com	
Regulatory Compliance	Foresite Compliance Cloud	www.foresitesystems.com	
Regulatory Compliance	Red-On-Line	www.red-on-line.com	
Regulatory Compliance tool	Airweb	www.airweb.com	
Responsible Supply Chain	Enablon	www.enablon.com	p.55
Right Answer	RightAnswer	www.rightanswer.com	
Rivo	Sphera Solutions	www.spherasolutions.com	
RoHS and REACH Compliance Software	Salve Software Services	www.salvesoft.com	
S-CIRCABC	ECHA	www.echa.europa.eu	
Safety365	Sevron	www.sevron.co.uk	
Safeware Quasar	UL Safeware Quasar	www.safeware-int.com	
SAP	SAP	www.sap.com/uk/about.html	
SAP EHS consultancy, support & training	eSpheres	www.espheres.com	p.56
SAP solutions for product compliance and environment, health and safety	SAP SE	www.sap.com/corporate/en.html	p.57
SAP S4/HANA	Trasys	www.trasysinternational.com	
SciFinder	CAS	www.cas.org	
SciveraLENS	Scivera	www.scivera.com	p.58
SDS Factory	EcoMundo	www.ecomundo.eu/en/software/sds-factory	
SDS Publisher	Sigma-Aldrich	www.sigmaaldrich.com/united-kingdom.html	
SDSPro (GHSPRO)	MSDSpro	www.sdspro.com	
SEIRICH	SEIRICH	www.seirich.fr/seirich-web/index.xhtml	
Sevaluate	TT Consulting	www.ttenvironmental.co.uk	
SiteHawk Communicator	SiteHawk	www.sitehawk.com	
SMART Chemical Inventory	Compliance Technology Group	www.compliancetechnologygroup.com	
SMARTdoc	SMARTdoc	www.smartdoc.eu	
Soutron	Soutron	www.soutron.com	
Stoffenmanager	Cosanta	www.stoffenmanager.nl	
Supply Chain Guru	LLamasoft	www.llamasoft.com	
Supply Chain Management	Decernis	www.decernis.com	p.59
Sypol	Alcumus	www.alcumusgroup.com	
Targeted Risk Assessment (TRA) tool	European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC)	www.ecetoc.org	p.60
Team center	Siemens	www.plm.automation.siemens.com/en	
TERA	Toxicology and Risk Assessment	www.tera.org	
The WerCS	UL SCS		
Tinyterm	Century Software	www.censoft.com/products/tinyterm-terminal-emulator.php	
TMDS	ISA	www.isatest.com	
ToxPlanet	ToxPlanet	www.toxplanet.com	
TrackWise	Sparta Systems	www.spartasystems.com/products/trackwise-qms	
UMCO Hazard Communication System	UMCO	www.umco.de/en	
WASPS	Environmental Sciences	www.esldatasheets.com/ihomepage_c.html	
Winchill Product Analytics	PTC	www.ptc.com	

ChemicalWatch

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Chemical Watch publishes news and intelligence to help companies meet responsibilities under chemicals legislation worldwide, including regimes such as REACH, CLP, GHS and TSCA. We keep you abreast of policy and business trends across Europe, North America, Asia and the rest of the world. Because we are not tied to any trade associations, government or campaign group, we are able to offer objective news and analysis for all sectors.

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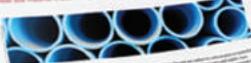
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Global Service Providers Guide 2016

A guide to global chemicals management and control services

PVC: a unique story



ChemicalWatchNews

13 February 2016 / 10:03am GMT+0
Key Developments
The Department of Environment and Heritage has announced that it will be reviewing the classification of BPA as a Category 1 carcinogen. The review will consider the latest scientific data and the potential for BPA to be classified as a Category 1 carcinogen. The review will also consider the potential for BPA to be classified as a Category 1 carcinogen. The review will also consider the potential for BPA to be classified as a Category 1 carcinogen.

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Introduction to Toxicology

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