

WellChem Technologies

Highlighting Opportunities to Reduce Hazards



VERIFYING OUR COMMITMENT TO SUSTAINABLE SOLUTIONS

As the well service industry strives to meet growing global energy demand by accessing more challenging and complex oil and gas reservoirs, each part of this industry should be prepared to demonstrate its commitment to environmental sustainability.

For decades, WellChem Technologies (a business unit of Nalco Champion, an Ecolab Company) has developed chemical additives for the well service industry that were responsive to the environmental and health concerns of the time. As operators continue their drive into unconventional developments such as oil and gas shale plays, WellChem Technologies maintains a commitment to develop chemical advances for drilling, cementing, fracturing and stimulation that satisfy operational, environmental and human health criteria.





GREENER CHEMISTRIES

Currently, the definition of “green” varies widely around the world, depending upon the region, application, perception, empirical values and knowledge of the total process. Nalco Champion equates “product sustainability” with “green chemistry” and adheres to a definition recognized and adopted by the US EPA. This definition follows twelve guiding principles that require a product to reduce waste, use renewable and non-toxic feedstocks, provide safer outputs and reduce or eliminate pollution and environmental damage.

At Nalco Champion, developing green chemistries that adhere to these principles is dependent on the continuous and focused improvement of the product development process. Nalco Champion has designed a new tool to improve product development—an environmental and health hazard profile scoring system that we call eVerified – “e” to emphasize our focus on environmental sustainability and “Verified” to underscore the process to achieve the score using simple and readily verifiable sources of data.

eVERIFIED TOOL SCORES BIG

This tool enables Nalco Champion product development teams to “score” products—while they are still in development—to determine how they align with customer and regulatory requirements, and how they compare to other Nalco Champion products. Importantly, this comparative system allows us to more easily communicate our progress with our customers.

The scoring system begins with a list of categories of human and environmental hazards, each backed up by a source of data including regulatory lists of contaminants, recognized databases, hazard definitions, databases of ecotox tests and industry-recognized computer models.

The categories are determined by customer needs and use current relevant EPA regulations, North Sea rating criteria and other categories.

SCORING PROCESS GOALS:

Product development

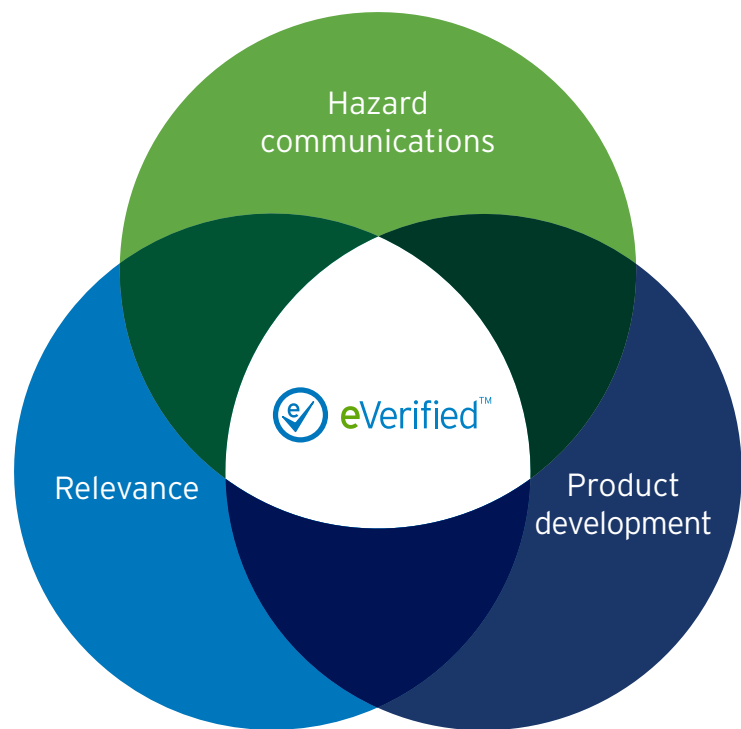
To be simple and efficient for researchers to use while developing new products, rather than after they had reached a technical solution.

Hazard communication

To communicate the human and environmental hazard profile of a product in a simple, visual way

Relevance

To develop a system that is quick and easy to adapt to regulatory changes or customer demands



ASSESSING HAZARDS, REDUCING HAZARDS

A product is evaluated at the substance level (CAS number) for each category. The product score for a category is the worst-case result of each substance evaluation. The scoring system generates a color-coded hazard ranking for each category based on the substance evaluations. A Level 1 (green) ranking indicates that the product poses no hazard in that category. A Level 2 hazard ranking (yellow) indicates that the product may unintentionally contain a contaminant or present a moderate hazard. A Level 3 hazard ranking (red) indicates a high hazard or contaminant present. Such a ranking provides an easy and quick means of assessing the hazard profile of the product.

The Nalco Champion Product Bulletin for an eVerified product will indicate the product hazard rankings for each category and will present a summary of what each ranking means.

eVerified™ SCORECARD

EVALUATIONS BY SUBSTANCE	PRODUCT X	PRODUCT Y
U.S. PRIORITY POLLUTANTS	LEVEL 3	LEVEL 1
CARCINOGEN, MUTAGEN, OR REPRODUCTIVE TOXICANT (CMR)	LEVEL 3	LEVEL 1
DRINKING WATER CONTAMINANTS	LEVEL 3	LEVEL 1
CLEAN WATER ACT CONTAMINANTS	LEVEL 3	LEVEL 2
CLEAN AIR ACT CONTAMINANTS	LEVEL 3	LEVEL 2
FLAMMABLE OR COMBUSTIBLE	LEVEL 3	LEVEL 1
BIODEGRADABILITY IN AQUATIC ENVIRONMENTS	LEVEL 2	LEVEL 2
POTENTIAL TO BIOACCUMULATE IN AQUATIC ENVIRONMENTS	LEVEL 1	LEVEL 1
AQUATIC SHORT & LONG-TERM TOXICITY	LEVEL 2	LEVEL 2
ACUTE MAMMALIAN TOXICITY	LEVEL 3	LEVEL 1
ENDOCRINE DISRUPTORS	LEVEL 1	LEVEL 1
IRRITATION/CORROSIVITY (EYE/SKIN)	LEVEL 2	LEVEL 1
TARGET ORGAN TOXICITY	LEVEL 3	LEVEL 1
SENSITIZATION	LEVEL 1	LEVEL 1

OUR COMMITMENT TO SUSTAINABILITY

The eVerified process will help WellChem Technologies research to develop new innovations that have the most clearly recognized performance benefits in terms of operational efficiency and environmental sustainability. Nalco Champion and its customers can both benefit from the application of the eVerified process thanks to a reduced hazard of using a less environmentally acceptable product. In our fast growing industry, it is critical that we continue to deliver sustainable processes that minimize hazard.

As our industry faces continued challenges of safely and sustainably developing new oil and gas resources, Nalco Champion is committed to developing new eVerified technologies that will help in this effort. This pledge not only comes with the full support of Nalco Champion corporate EH&S, R&D and Marketing teams, but it is a natural extension of our corporate commitment to environmental responsibility.



OUR SUSTAINABILITY COMMITMENT

At Ecolab, sustainability is not simply the way we do business - it's core to our purpose. Every day, our 40,000 employees worldwide make the world cleaner, safer and healthier, protecting people and vital resources. We do this by enabling our customers to achieve uncompromised operational standards, while using the least amount of energy and water, and generating less waste. Our 22,500 onsite experts deliver innovative products and services at more than one million locations worldwide to increase efficiency and enhance business results.

OUR PRINCIPLES

Our principles guide how we conduct business every day. We work hard to manage our global operations with care for the health, safety and prosperity of our employees, customers, communities and the environment.



SAFETY



WATER



ENERGY



AIR



WASTE



ASSETS

As part of our commitment to continuously improving our environmental performance, our manufacturing plants around the world are undergoing a comprehensive program of accreditation to either US 14001 or Responsible Care® 14001, the global standards for environmental performance.

More information on Ecolab Sustainability is available at ecolab.com/sustainability

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