

## Battelle - committed to detergents



Dr. Heliana Kola

Detergence plays a fundamental role in our life and has a major impact on the environment, as we all know. Efforts by the many players involved in the development and optimisation of washing

technologies are being made through a number of channels which all aim at the same goal: provide the best and most effective responses to a number of issues that today must be approached in a more global - involving countries and territories - and multidisciplinary manner. Battelle is a company that has shown strong commitment towards these issues. This HPC Today issue focuses on sustainability. We have therefore asked Dr. Heliana Kola a few questions on Battelle's business, a company whose scope sees it involved in many activities that are sensitive for the lives of us all.

*1. Quote from your web site: "Battelle is an international science and technology enterprise that explores emerging areas of science, develops and commercializes technology, and manages laboratories for customers". Can you tell us something more? Your organization and working flow? The services you can offer?*

Battelle is an international organisation registered as a not for profit, with a few laboratories in several geographical areas such as USA, Mexico, UK, Switzerland, Japan and India. Battelle customers include private clients as well as public organizations and governmental agencies. It is an independent multidisciplinary organization whose objectivity, neutrality, competence are highly appreciated by its customers. At Battelle we deal mainly with scientific research projects, but also offer a diverse array of scientific and laboratory services to potential clients in relation to their specific needs and interests. Battelle

works either with a specific "fixed price" type of contract or with fees for different type of services which includes the payment of royalties whenever intellectual property rights transfer are negotiated.

*2. Can you tell us something more about your global commitment? Mission, your way to approach a problem?*

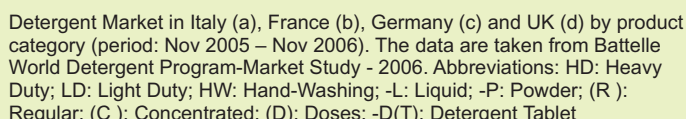
Our global commitment is to make the world a better place through our work with government and industry in the key areas of health & life science, energy, security and laboratory management. We are committed to help energy providers and policy makers solve complex problems, to advance research and development in the health and life sciences to make the world a healthier and safer place, to support America's armed forces and their missions - from homeland defence to the global war on terrorism. Battelle applies a broad range of scientific and technical expertise and its unique set of facilities to effectively meet the diverse needs, regulatory requirements, technical demands, and challenges of our government and commercial clients. Battelle offers cooperation for international partners, sets high standards of quality and timeline, and offers services at a competitive price. We are proud for our ability to manage efficiently and with minimal effort coming from costumers. A project manager is appointed for each task who is not only an experienced scientist, but also the contact person for the client to ensure that he or she is kept up to date with the progress of their program at Battelle. The Battelle World Detergent Program (BWDP) is an excellent example of identifying, initiating and managing a multi-client program which provides both technical and market data for our costumers.

*3. A comment on your specific contribution to the detergent world*

The revolution in the detergent world started in 1987, in Japan, where the compact powder products were successfully introduced and the Japanese powder market converted into compacts within two years. In the same year, BATTELLE Geneva Research Centre initiated its analytical Detergent Program covering the

4. What are in your opinion the most critical areas in detergency today? The challenges the industry is facing?

5. Can you spend a few words on the actual trend of formulations in laundry, dishwashing, household and I&I, personal care?



Today the leading brands such as Procter & Gamble, Lever, Henkel, etc. are moving towards more concentrated liquid detergents. In fact, the introduction of super-concentrated laundry products with smaller packaging in North American and Western European markets, during 2006-2007, represents another example of how the cleaning product industry, through groundbreaking research, is reinforcing its commitment to deliver valuable products to consumers, while reducing both consumption of resources and waste from excess of packaging. As regards with hand dishwashing products the innovations have focused more on product' aroma and the functionality of the container than on the formulation itself. Despite the fact that the fragrance maintain the consumer interest, in my opinion, the most important characteristics for these formulations are concentration of the surfactants vs. water in the product, its lasting suds and mildness to hands. For this reason more work must be done in the explanation of the product label in order to make people understand easier the functionality of the product. Recently, in Europe, manufacturers have integrated skin care products into hand dishwashing products. Finally a comment on personal care products: in developed areas the focus on health and environment protection is driving the consumers towards products that are beneficial to our health as well as to the environment and consequently many companies are addressing the problem of the past related to the chemicals and toxins used as ingredients for making personal care products and are shifting their focus to the natural and organic products. On the other hand in the developing areas this market is in expansion.

6. Are there important differences between Europe / Asia-Pacific / Latin America?



Based on research work there are a few trends and indicators I can share. For example: in Western Europe the level of

surfactants used in the laundry detergents is higher than in Asia and Latin America products. In fact these products are a mix of ingredients that typically include surfactants, builders, bleaching and antiredeposition agents, processing aids, washer protection agents and water. Phosphates are still largely used in Eastern Europe and Latin America while in the Western Europe and Asia are completely replaced by zeolite. Similarly happened with perborates that now have been completely replaced by percarbonates in the bleaching system of Western European laundry powders, while they are still used at a low concentration in the American continent and Asia. Other minor ingredients such as enzymes, optical brighteners and disinfecting agents are incorporated to laundry products to provide additional benefits such as better fabric whitening or brightening, improved stain removal and fabric softening. Their concentrations are higher in the European products than in Latin American ones. As regards with hand dishwashing liquids, in the European and Asian markets additional to anionic and non-ionic surfactants formulations of all brands contain amphoteric surfactants (more expensive and gentle for the skin), unlike in Latin America where they are used only by the leading brands.

### *7. What about your approach to REACH: your position, the services you can offer?*

Among the areas in which Battelle has been historically engaged in the last two decades is the products registration work for agrochemicals (REACH). Battelle's clients list includes most of the largest multinational companies which are active in this sector. Our excellent capabilities in dealing with analytical work, residue analysis, toxicity and ecotoxicity testing, risk assessment, regulatory aspects etc, puts us in a strong position to offer comprehensive services to our present and future clients in relation to REACH directive. My personal commitment towards REACH is to provide clients with flexible and demand driven comprehensive service system which satisfies their requests and serves to the global commitment of the organisation for a cleaner world.

### *8. This issue of HPC today is focusing on sustainability: what does this concept mean for you?*

In our days every one of us and all the contributors of industry seem more aware and committed to integrate environmental, health and socio-economic practices. In the field of detergency, the cleaning products must be considered always in association with their potential health and environmental risks and effects throughout the whole chain of production, transportation, use and disposal. Research and scientific programmes which look at such environmental assessment are needed therefore it is crucial for the cleaning product manufacturers and oleochemical producers to support such work in every new step of their production in order to resolve uncertainties around human and environmental safety. Integration of the production side with more research on the environmental and health risks as well as educational programme to raise the

awareness of the producers and consumers towards environmentally friendly products is the long term solution to sustainability in my view.

We need to work more on improving the cooperation among the key players in the detergent's world, such as producing companies, research institutions like ours as well as international and local association dealing with the consumer's awareness. Example of such initiative is "Sustainable Cleaning" program lead by the International Association for Soaps, Detergent and Maintenance Products in Europe. This programme launched in 2006 is aiming to extend the benefits of sustainable consumption of laundry detergent across Europe, particularly in central and East Europe by educating consumers on the correct dosage for concentrated detergents.

### *9. Water a precious resource: how can detergency contribute to face this issue today?*

Water is essential for everyone and the way that we use water has a big impact on the environment both locally and globally. With respect to this subject, the impact of the detergents in the water pollution is a major factor which is under the attention of the detergent business world. A step forward towards environmentally friendly detergency is the production of phosphate free detergents. During the last decade the gradual replacement of the phosphates by zeolites was slowly done. Large content of phosphates in aquatic systems leads to over-fertilising and uncontrolled growth of algae - the phenomena known as 'eutrophication', which leads to significant changes in the structure and function of the aquatic ecosystem. On the other hand, zeolites are inert biological material and they cause no harm to living organisms although their impact to environment still needs to be clarified. Now days, most industrial laundries discharge to public treatment plants or treat the waste water themselves before discharge. A few other anthropogenic compounds used in detergent compositions to 'soften' the water are the strong complexing agents that are much slowly biodegradable and are suspected to 'mobilise' metals in wastewater treatment plants and in nature. This behaviour has led to their gradual withdrawal from the detergent formulations by the detergent manufacturers.



**GAYLE DE MARIA**

gayle@teknoscienze.com