The Voluntary Emissions Control Action Programme

The 2016 European progress report of the bromine industry’s stewardship programme.
The Voluntary Emissions Control Action Programme (VECAP) is a pioneering product stewardship scheme for the responsible management of chemicals throughout the value chain; run under the principles of Responsible Care®. Initially, VECAP only applied to the brominated flame retardant Deca-BDE. In 2004, the programme was expanded to include TBBPA and HBCD and in 2013 also EBP. Recognising the significant impact the VECAP programme had in helping producers and downstream users to manage chemicals responsibly and in an environmentally sound manner, in 2015 the programme took an additional step forward, and decided to extend its application to all powder brominated flame retardants produced by VECAP member companies. The programme ensures the environmentally responsible management of chemicals in all elements of the value chain, by reducing the potential for emissions of chemicals during the production and manufacturing process.

As part of the industry’s commitment to track progress, participating users and producers receive an annual questionnaire to fill in and report back on the handling of the volume of the relevant brominated flame retardants treated throughout the year. Whilst from the first reporting period until 2014 the volume of substances handled according to VECAP throughout the year. Whilst from the first reporting period until 2014 the volume of substances handled according to VECAP was reported based on a g/t potential emissions calculation, the reporting method has since evolved into a scorecard system.

Strengthening their commitment to the sustainable management of chemicals throughout the value chain, VECAP member companies extended the application of VECAP best practices to all powder brominated flame retardants produced - including proprietary and company specific substances. In line with this expansion in the remit of the programme, the VECAP reporting methodology has been adapted following competition and anti-trust rules, which require the maintenance of supplier anonymity. As such, reporting for the volume surveyed in 2016 also focused on the total percentage of volume sold that has been treated as per VECAP best practices.

In order to have an accurate understanding of the practices applied at every potential emission point, the VECAP survey tool covers every step of the user’s manufacturing process. Users are required to carefully fill in the questionnaire in order for the VECAP team to be able to identify critical points, and to continuously develop best practices to successfully achieve zero or near-zero potential emissions while handling and treating chemicals. The assessment of the successful implementation of the VECAP best practices is then based on several parameters from the survey.

Based on their performance with implementing the VECAP best practices across the different parameters, participating users and producers who have been introduced to VECAP best practices and are encouraged to accomplish greater compliance in the coming years. The VECAP team is committed to increasing participation and awareness among all existing and new users on a yearly basis. The team is also committed to the continuous improvement of the programme with the development of new best practice recommendations based on experience and evolution in manufacturing processes.

VECAP is a globally recognised product stewardship scheme, with more and more users in Europe and worldwide embracing the core values of the programme. Individual BSEF members have promoted and implemented VECAP in Europe, North America, Mexico, China, Japan, Singapore, Thailand, Indonesia, South Korea and Taiwan. In all these countries users show their commitment to the scheme by participating to the programme, responding to the survey questionnaire that underpins the progress reports, sharing experience and implementing the recommendations.

VECAP is founded on the commitment of the brominated flame retardant industry to sustainably manage solid polymers throughout the value chain. The programme has been tailored to provide support and guidelines to participating companies on how to control and reduce potential emissions of chemicals into the environment for the production phase of the value chain. The simple-to-implement best practices help producers and downstream users to control, reduce and continuously improve their potential emissions of flame retardants to the environment. Even though industry practices for processing all types of chemicals differ between applications, VECAP best practices can apply across the board.

**WE ARE DEDICATED TO ENSURE ENVIRONMENTAL RESPONSIBILITY**

**WE ARE COMMITTED TO INVEST IN SCIENTIFIC RESEARCH**

**WE ARE A PIONEERING PRODUCT STEWARDSHIP SCHEME**

2. Albemarle, Chemtura, ICL-IP www.albemarle.com, www.chemtura.com, www.icl-ip.com; 3. The Bromine Science and Environmental Forum (www.bsef.org) is the organisation representing the bromine industry, committed to investing in scientific research on bromine and brominated flame retardants (BFRs); 4. EFRA is a sector group of the European Chemical Industry Council (CEFIC) www.flameretardants.eu; 5. www.everkem.com; 6. For more information on VECAP best practices, please see the last chapter of this brochure, or visit the www.vecap.info.
Since its launch in 2004, the VECAP product stewardship programme has achieved impressive results for the four substances covered by the programme (Deca-BDE, HBCD, TBBA and EBP) in Europe. Potential emissions of HBCD and TBBA have decreased significantly over the years (Figure 1). The 2016 survey results show that potential emissions to land, water and air of HBCD and TBBA have decreased to less than 0.001% of volume sold since the launch of the programme. In 2016 EBP data was reported as part of the total BFRs covered by the programme due to anti-trust rules, together with Deca-BDE whose sales ceased among the EFRA member companies.

The 2016 European Progress Report shows the successful implementation of VECAP best practices across the region. The 2016 survey was marked by an increase in the volume of BFRs covered by programme, which reached 90% of total BFRs sold by the founding member companies in 2015. Everkem’s contribution to the VECAP product stewardship programme in 2016 also contributed to the increase reported in 2016. As a matter of fact, 69.5% of the total volume of BFRs commonly sold in 2015 was handled with all VECAP best practices and was assigned Gold status, marking a 40% increase in comparison to the previous reporting period. A further 17.4% of the total volume sold reached the criteria for Silver status. Over 85% of the all BFRs commonly sold was handled correctly, with VECAP best practices implemented at the most crucial points to reduce potential emissions to the environment, an increase of 15% regarding the preceding year. 3.6% of the volume covered of all BFRs sold was assigned Bronze status, with only 9.6% of the volume sold in 2015 not being accounted for.

2016 was also marked by a 60% increase in the total volume of TBBA sold by the programme compared to the previous year, which reflects an improvement in the access to data from new joiners. While HBCD is expected to be phased out in Europe in the near future, EFRA members remained committed to implementing VECAP best practices as long as sales continue. 38.3% of the total volume of HBCD was granted Gold status, 8.9% Silver, 20.2% Bronze leaving only 32.6% of the total volume sold unaccounted for. The survey results showed a decrease in the percentage of best practices for dust filters use applied when handling HBCD, reflecting the shift of some gold standard users to HBCD replacement.

The 2016 results showed that 88.2% of TBBA and up to 63% of EBP sold in 2015 was handled to the Gold standard of implementing VECAP best practices. HBCD-replacement products, of which 97% of the total volume sold is covered by the programme, achieved 68.9% strong Gold standard in all fronts with a minor exception to the best practices applied to the cleaning of the working area. In this respect, the VECAP team is firmly committed to continue working closely with new users to provide support in the implementation of the VECAP best practices.

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