

The Voluntary Emissions Control Action Programme

2015 Progress Report

VECAP IN A NUTSHELL

WHAT

The **Voluntary Emissions Control Action Programme** is a pioneering product stewardship scheme for the responsible management of chemicals throughout the value chain; run under the principles of Responsible Care^{®1}. Initially, VECAP only applied to the brominated flame retardant Deca-BDE²; since 2004, the programme has been expanded to include TBBPA³ and HBCD⁴ as well as EBP⁵. Recognising the remarkable impact the VECAP programme had in helping industries 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.

1. Responsible Care[®] is the global chemical industry's unique initiative to improve health and environmental performance, enhance security, and to communicate with stakeholders about products and processes www.cefic.org/Responsible-Care. **2.** Decabromodiphenyl ether. **3.** Tetrabromobisphenol A. **4.** Hexabromocyclododecane. **5.** Ethane bis (pentabromophenyl).

WHO

The **flame retardants industry voluntarily developed VECAP** to take responsibility for the management of flame retardants at the production and manufacturing stage. VECAP was established by three of the main producers of flame retardants – all members⁶ of the Bromine Science and Environmental Forum (BSEF)⁷ - together with the UK Textile Finishers association and run, in Europe, by the European Flame Retardants Association - EFRA⁸. 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.

6. Albemarle, Chemtura, ICL-IP www.albemarle.com, www.greatlakes.com, www.icl-ip.com. **7.** The Bromine Science and Environmental Forum (www.bsef.com) is the organisation representing the bromine industry, committed to investing in scientific research on bromine and brominated flame retardants (BFRs). **8.** EFRA is a sector group of the European Chemical Industry Council (CEFIC) www.flameretardants.eu.

WHERE

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 VECAP recommendations.

WHY

VECAP is founded on the commitment of the flame retardant industry to sustainably manage polymer additives throughout the value chain. The programme has been tailored to provide support and guideline to participating companies on how to control and reduce potential emissions of chemicals into the environment for the handling of polymer additives in the production phase of the value chain. The **simple-to-implement best practices**⁹ 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.

9. For more information on VECAP best practices, please see the last chapter of this brochure, or visit the VECAP web page.

VECAP REPORTING METHOD

CHANGES IN THE REPORTING METHODOLOGY

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 during the year. Since the first reporting period, the amount of substances handled according to VECAP best practices has been reported based on a per tonnes potential emissions calculation.

2015 marks a turning point in the development of the programme. 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 that supplier anonymity is maintained. Therefore, as of 2015, reporting will focus on the total percentage of volume sold that has been treated according to VECAP best practices.

THE VECAP SURVEY TOOL

The VECAP survey tool covers every step of the user's manufacturing process, in order to have an accurate understanding of the practices applied at every potential emission point. 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.

• **5** parameters cover those elements within the manufacturing process for which potential emissions to the environment have been calculated. These are the critical sources of potential emissions which VECAP aims to reduce; namely waste water and waste disposal.

• **7** parameters cover those elements within the manufacturing process for which potential emissions to the environment could occur but have not been calculated. Such best practices are




generally recognised as applicable to every plant, regardless of whether VECAP is in place.

• **3** questions cover points within the manufacturing process for which potential emissions to the environment could occur but have not been calculated. For example the disposal of Personal Protective Equipment (PPE). These best practices are recommended by EFRA members, and have been added to VECAP as the programme evolved.

PRIZING COMMITMENT

Based on their performance implementing the VECAP best practices across the different parameters, participating users and producers are assigned a status to recognise their commitment. Those that meet all parameters are granted Gold status. Silver status is given to those that meet all 5 parameters related to the critical sources for potential emissions and demonstrate awareness of the 7 parameters related to the generally recognised best practices. Finally, Bronze status is granted to participating companies who do not entirely comply with the 5 parameters related to the core critical sources for potential

emissions. The Bronze status reflects 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 commits to increase 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.

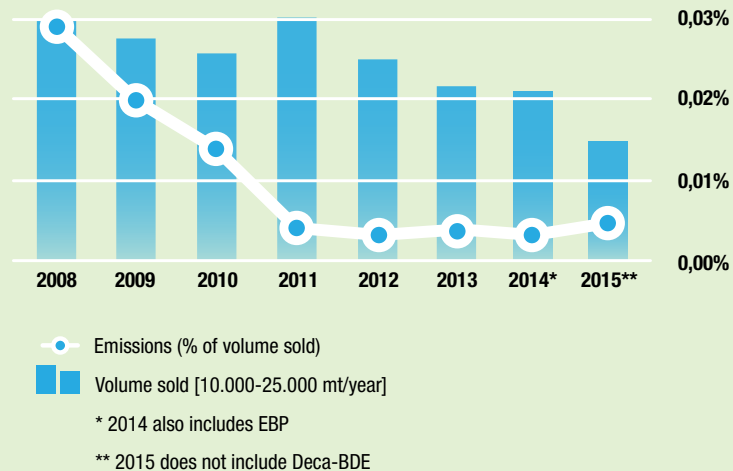
			
VECAP 5 parameters	✓	✓	✗
Generally recognised best practises	✓	✗	✗

HOW WE DID THIS YEAR

2015 EUROPEAN PROGRESS REPORT

Since its launch in 2004, the VECAP product stewardship programme has achieved great results for the four substances covered by the programme (Deca-BDE, HBCD, TBBA and EBP) in Europe. The 2015 survey results show that potential emissions to land, water and air of these four substances have significantly decreased to less than 0.01% of volume sold since the launch of the programme.

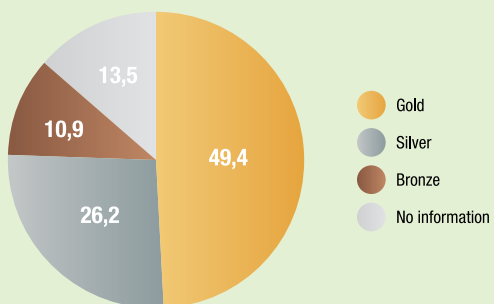
Summary of potential emissions of Deca-BDE, HBCD, TBBA and EBP in Europe (2008 = index year)



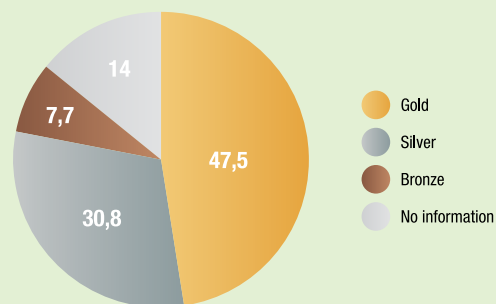
The 2015 European Progress Report shows the successful implementation of VECAP best practices across the region. As a matter of fact, 49.4% of the total volume of BFRs commonly sold in 2014 was handled with all VECAP best practices and assigned Gold status. A further 26.2% of the total volume sold met the criteria for Silver. Over 75% 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. 10.9% of the volume covered was assigned Bronze status with only 13.5% of the volume sold in 2014 not accounted for.

The 2015 results show that 40.9% of the total TBBPA sold in 2014 was not accounted for, reflecting the challenges of new users joining the programme for the first time. The VECAP team is firmly committed to continue to work closely with new users to provide support in the implementation of the VECAP best practices. While both Deca-BDE and HBCD are expected to be phased out in Europe in the near future, EFRA members remain committed to implementing VECAP best practices as long as the sales continue. 2015 led to a sharp reduction of sales of Deca-BDE among the VECAP member companies which therefore, for anti-trust rules, can only be reported as part of the total BFRs covered by the programme. The 2015 results showed that 33.7% of HBCD, 46% of TBBPA and up to 47.5% of EBP sold in 2014 was handled to the Gold standard of implementing VECAP best practices.

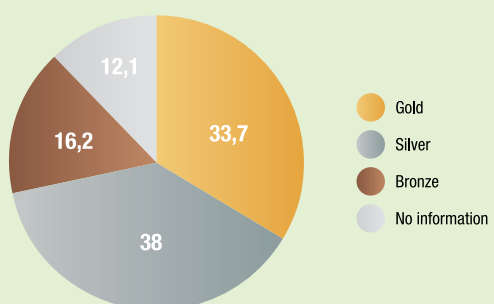
Status % of total volume sold in 2015 (all BFR's)



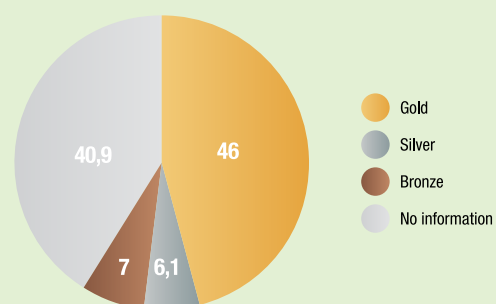
Status % of total volume sold in 2015 (EBP)



Status % of total volume sold in 2015 (HBCD)



Status % of total volume sold in 2015 (TBBPA)



Scorecard for total percentage of volume of all BFRs covered by the programme

