VECAP™

CONTROLLING EMISSIONS
PROTECTING THE ENVIRONMENT
CONTINUOUS IMPROVEMENT

SECOND ANNUAL PROGRESS REPORT 2007

The Voluntary Emissions Control Action Programme for Brominated Flame Retardants

EBFRIP
A SECTOR GROUP OF CEFIC

BSEF
Bromine Science and Environmental Forum

CONTROLLING EMISSIONS
PROTECTING THE ENVIRONMENT
CONTINUOUS IMPROVEMENT

ANNUAL PROGRESS REPORT 2007

Table of Content

ABBREVIATIONS

BFRs	Brominated Flame Retardants
BSEF	Bromine Science and Environmental Forum
CEFIC	European Chemical Industry Council
Deca-BDE	Decabromodiphenyl ether
TBBPA	Tetrabromobisphenol-A
HBCD	Hexabromocyclododecane
HPV	High Production Volume Chemicals (>1000 tonnes)
EBFRIP	European Brominated Flame Retardant Industry Panel
REACH	Registration, Evaluation and Authorisation of CHemicals
SME	Small and Medium-sized Enterprise
VECAP	Voluntary Emissions Control Action Programme

This report aims to introduce VECAP to a wide range of audiences, including regulatory authorities, user industries and the general public as a whole. It is designed to provide transparent and concise information on the progress of the VECAP programme on an annual basis. Any feedback or comment on the following report and VECAP in general is most welcome and would be considered for future editions.

BSEF is the international organisation of the bromine chemical industry, whose purpose is to inform stakeholders and commission science on brominated chemicals such as flame retardants.

ACHIEVEMENTS OF VECAP SO FAR:

- VECAP is a major Responsible Care® commitment from the brominated flame retardant manufacturers
- 97% of Deca-BDE used in the EU textiles industry in the key six EU Member States has been covered by VECAP with the first mass balance measurements completed
- 82% of Deca-BDE used in the EU plastics industry in the key six EU Member States has been covered by VECAP and the first mass balance measurements completed
- The third annual mass balance by the UK textiles sector shows a 97% estimated emissions reduction overall to water thus demonstrating the effectiveness of the VECAP process
- Auto and retail companies are starting to specify VECAP for upstream suppliers of textiles and plastics
- VECAP has been expanded to Japan and North America and to other brominated flame retardants
- VECAP Best Available Technique guidance is proving effective - Initial measurements at plant level indicate that, by using guidance for emptying packaging containing BFRs, the amount of Deca-BDE left in the bags can be significantly reduced.

Foreword from the Bromine Industry

VECAP is a proactive industry initiative whose aim is to prevent or eliminate emissions to the environment in a sustainable and measurable manner, both from our own manufacturing facilities and from all end user sites throughout the supply chain.

The second full year of the Voluntary Emissions Control Action Programme (VECAP) has seen some notable successes. Following the pilot project in the UK, reported levels of Deca-BDE in the environment have fallen significantly. In addition, during its first full year in Belgium, France, Germany, Italy and The Netherlands, we have seen strong industry commitment to the programme.

During 2006, VECAP was launched in the US and Canada and a significant proportion of North American users have already committed to implementing it. In January 2007, VECAP was also rolled out for HBCD in Japan with the participation of the government.

As global producers of chemicals, among them brominated flame retardants, we are deeply committed to Responsible Care® and Product Stewardship, which underscore the chemical industry's voluntary initiative to protect the environment, ensure the safety and security of our operations and safeguard the health and safety of our employees and of the communities in which we live and work.

With this second annual progress report, we are seeking to stimulate dialogue and understanding about the value that VECAP delivers to the management of chemicals throughout the supply chain.

The report confirms the programme is developing quickly and effectively and that industry, from producers to end-users, is strongly committed to it.

We feel transparency is essential for VECAP. It is therefore vital to keep regulatory authorities, other stakeholders and the general public regularly informed. This report aims to provide a clear overview of the progress achieved so far, to re-emphasize the industry's and our personal commitment to further emissions reduction throughout the supply chain and to show how the programme supports our global communities and our environment.

Mark C. Rohr
CEO, Albemarle

Robert L. Wood
CEO, Chemtura

Yossi Shahar
CEO, ICL-IP

Introduction to VECAP

VECAP (the Voluntary Emissions Control Action Programme) is a proactive product stewardship initiative established by the brominated flame retardant (BFR) industry. It aims to manage, monitor and minimise industrial emissions of Deca-BDE, TBBPA and HBCD into the environment through partnership with the supply chain. Manufacturers and users of brominated flame retardants work together to establish and share best practices on the handling of BFRs to reduce and prevent emissions to the environment.

As such, VECAP represents advance practice on the new EU legislation governing the management throughout the supply chain of chemicals in Europe, better known as REACH (Registration, Evaluation, Authorisation and restrictions of Chemicals). REACH will require downstream users to have more information and prepare an assessment of the substances they use for their specific applications. VECAP provides industry with practical tools in this respect.

Initially, VECAP was set up in Europe for the flame retardant Deca-BDE. The progress achieved by the programme and the users' commitment have motivated the brominated flame retardant industry to roll out VECAP globally, and to implement it for two other flame retardants, TBBPA and HBCD.

"VECAP is an innovative initiative from the chemical industry that demonstrates its commitment to Responsible Care®. The initial results of the programme show that it is a valuable process for controlling emissions of brominated flame retardants to the environment. The principles underlying VECAP may be applicable to the handling of other chemicals, and Cefic is committed to increasing industry's awareness of this programme.

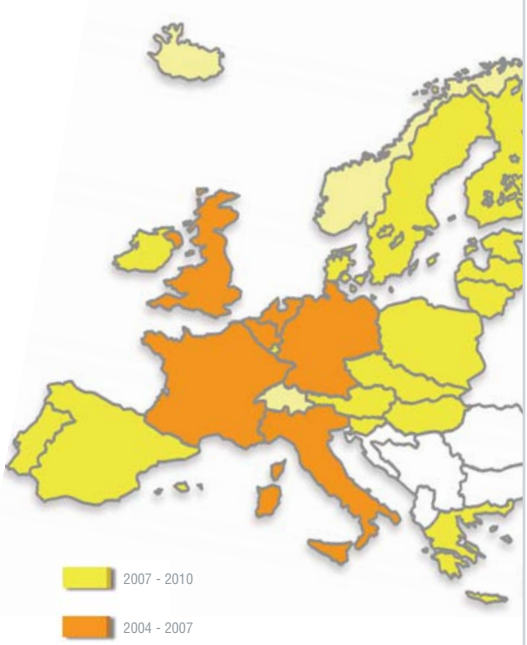
At a time when the chemical industry and its supply chain are preparing for REACH, VECAP is an example of how cooperation throughout the value chain can be enhanced for the benefit of the environment."

Alain Perroy
Director General of the European
Chemical Industry Council (Cefic)

2006-2007 Results and Developments

PRESENTATION 2006-2007 PROGRAMME RESULTS

The focus of the first three years of VECAP for Deca-BDE has been to introduce and implement the programme in the six EU Member States (Belgium, France, Italy, Germany[1], The Netherlands, and United Kingdom) which account for around 95% of the Deca-BDE usage in the European Union[2]. As presented to the EU regulatory authorities in 2004, the implementation of VECAP for Deca-BDE is geographically spread in the European Union according to the following time schedule:



As regards the expansion of VECAP to the brominated flame retardants HBCD and TBBPA, the programme is being introduced to all European users in parallel regardless of geographic origin.

Under the current scope of the programme, commitment to VECAP is defined as "a Deca-BDE user formally implementing the principles included in the Code of Practice".

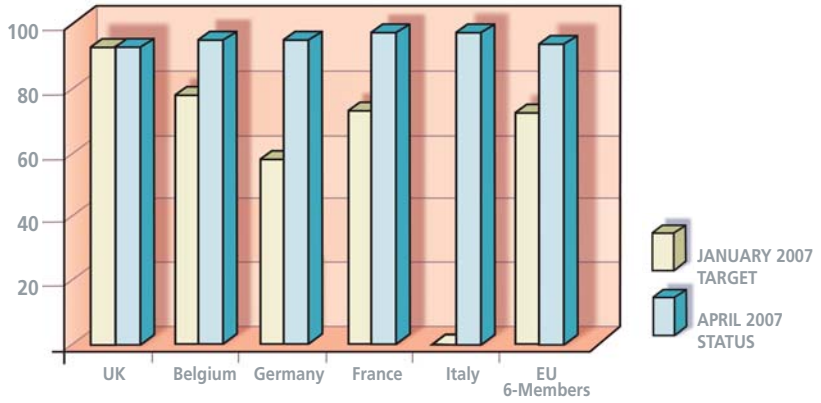
Once a user has agreed to implement the VECAP principles, it must first calculate its mass balance ratio to establish a baseline of its actual process and related emissions (e.g. water and air emissions). The objective of this baseline is to collect data for an evaluation of the environmental performance and to obtain a reference point to allow the measurement of future improvements.

[1] Contrary to some perceptions, Deca-BDE is used by many companies in the plastics and textiles industry in Germany. A commitment from 1986 of the German plastics industry organisation (VKE) not to use Deca-BDE was limited in application to VKE members and prejudged an OECD Voluntary Industry Commitment and EU scientific risk assessment. Many SME plastics companies who are not members of VKE have continued to use Deca-BDE and are now demonstrating significant take-up of VECAP.

[2] Based on 2005 figures compiled by Cefic.

2006-2007 Results and Developments

FIGURE 1: DECA-BDE USER BASELINE DETERMINATION TEXTILES (% of tonnage)

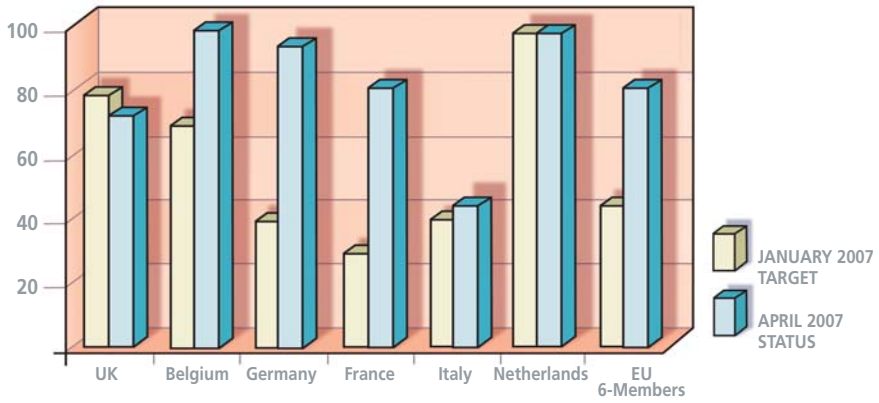


DECA-BDE BASELINE DETERMINATION

Country	Textiles[1] (% of tonnage)	
	Target January 2007	Actual current status (April 2007)
United Kingdom	95%	95%
Belgium	80%	97%
Netherlands	No usage	No usage
Germany	60%	98%
France	75%	100%
Italy	*	100%
Above EU-6 Member States	75%	97%

[1] Covers formulators and textile coaters
*No specific target

FIGURE 2: DECA-BDE USER BASELINE DETERMINATION PLASTICS (% of tonnage)



Country	Plastics[2] (% of tonnage)	
	Target January 2007	Actual current status (April 2007)
United Kingdom	80%	73%
Belgium	70%	100%
Netherlands	100%	100%
Germany	40%	94%
France	30%	83%
Italy	40%	44%
Above EU-6 Member States	45%	82%

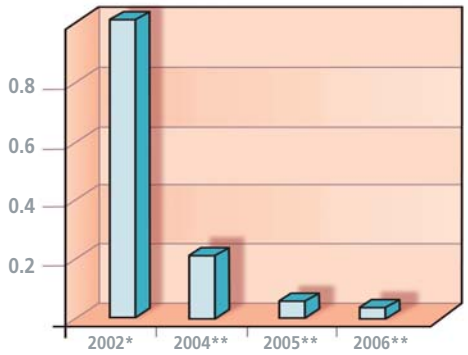
[2] Covers plastic resin producers, masterbatchers and plastic compounders

2006-2007 Results and Developments

HIGHLIGHTS 2006

- 95% of the Deca-BDE usage in the EU both in the textiles and plastics sectors is already subject to the VECAP principles.
- Overall the % of Deca-BDE usage for which baselines surveys have been performed in both the plastics and textile sectors met the targets set for January 2007 for the EU-6 Member States (Belgium, France, Italy, Germany, The Netherlands, and United Kingdom) although there was variation between different countries:
  - ➜ 97% of Deca-BDE's usage in the textiles industry in the EU-6 countries has been subject to a baseline emissions survey, compared to the 75% initially targeted for January 2007
  - ➜ 82% of the Deca-BDE used by the plastics sector in the EU-6 countries performed a baseline survey, compared to the 45% initially expected to be subject to the survey by January 2007
- Having been the pilot sector for developing the VECAP process, the UK textiles industry has now recently completed its third industry emission survey. The results in figure 3 below show that, when compared with the emission estimate for the UK textile industry in 2002 made for the Deca-BDE Risk Assessment, the emissions to water have been reduced by 97% overall.

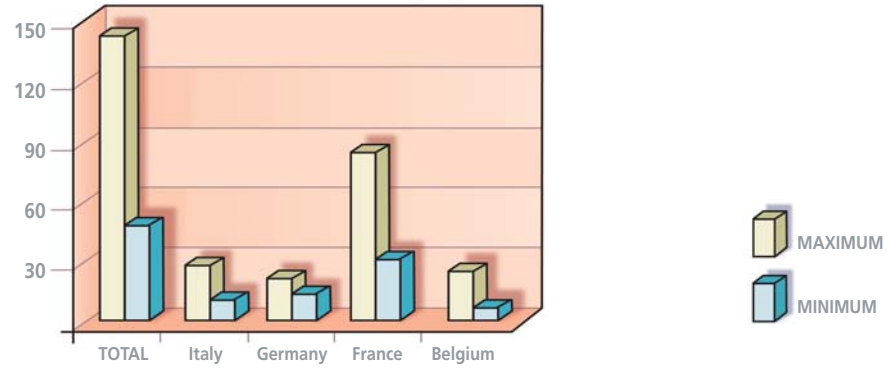
FIGURE 3: EFFECTIVENESS OF VECAP IN REDUCING DECA-BDE EMISSIONS TO WATER IN UK TEXTILES INDUSTRY



* Estimated emissions to sewer from UK textiles industry: Deca-BDE Risk Assessment Report 2004
**UK Textile Finisher's Association annual emission surveys following VECAP implementation

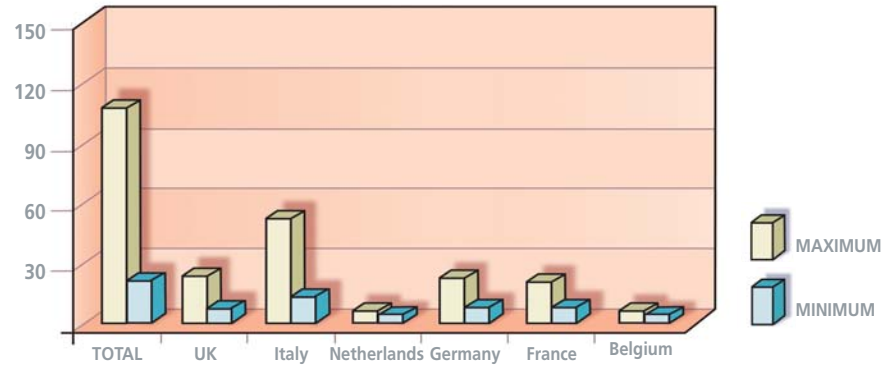
The determination of the first baselines in the EU-6 has permitted the VECAP participating companies to evaluate their environmental performance in terms of their current emissions of Deca-BDE to the environment. In addition, this has provided a reference point to allow the measurement of future improvements. Figures 4 and 5 show direct air and water emissions resulting from the users' production process and are based on 2005 sales figures. The difference between the maximum and minimum figures estimated for each country already give an insight into the extent of emissions reduction improvements that could be made in upcoming years in both the plastics and textile sectors.

FIGURE 4: DECA-BDE TOTAL EMISSIONS FROM TEXTILES (Kg/year)*



* No Deca-BDE textiles use in the Netherlands.
For the UK results see Figure 3 on page 10

FIGURE 5: DECA-BDE TOTAL EMISSIONS FROM PLASTICS (Kg/year)



2006-2007 Results and Developments

EXPANSION OF VECAP

TO OTHER BFRS

The positive response to the VECAP initiative is such that it is being extended to the other high production volume brominated flame retardants, HBCD and TBBPA.

In 2006, VECAP was introduced in Europe for the additive plastic applications of TBBPA and, since early 2007, it is also being applied to its reactive plastic applications. To date, 89% of the additive TBBPA plastics users in Europe by volume have committed to reducing their emissions and established a baseline. One of the objectives of VECAP for TBBPA additive applications is to reduce emissions to water and sediment as per the need identified in an EU environmental risk assessment. The use of HBCD is also covered by two emission control programmes: VECAP for textiles and plastics and "SECURE" for HBCD uses in polystyrene foams.

TO OTHER WORLD REGIONS

North America: VECAP was launched in the United States and Canada in 2006. During its first year, VECAP in North America has focused on:

- visiting Deca-BDE users and helping them in completing the initial baseline surveys and,
- educating interested parties by organising workshops to introduce VECAP to regulators, non-government organizations, trade groups and others interested in controlling and reducing emissions of BFRs.

Significant progress has already been achieved, with around 95% of Deca-BDE users in the U.S. and Canada having now been introduced to the programme and around 35% already actively implementing it.

More specifically, since the introduction of the programme:

- 23% of the Deca-BDE usage by the North American plastics industry has committed to apply VECAP
- 64% of the Deca-BDE usage by the North American textiles industry has committed to apply VECAP

The focus for 2007 in this world region would be to establish the first mass balance surveys.

Japan: A similar VECAP has been established in Japan.

The Japan VECAP is focused in a first phase on HBCD and involves producers and users from the textiles and polystyrene foam industry. The focus on HBCD follows consultations with the Japanese government authorities.

On 22 January 2007, a launch meeting was held and a working group involving representatives from the producers and users was established. The Japanese government is also an active partner.

Industry is also currently assessing the feasibility of introducing VECAP in **China**.

"Proceeding with a voluntary undertaking like VECAP is a necessary condition for continued use of a chemical substance when, for example, there are concerns about its harmfulness but it is nonetheless considered essential to society. We hope that this undertaking will continue to go forward smoothly, with the understanding of the concerned business entities"

Japanese Ministry of Economy,
Trade and Industry (METI)

VECAP in Practice

Initial results show that VECAP is both a practical and cost-effective means of controlling emissions of BFRs. It is also a potential model for chemical management in general that could be applied to any other chemical.

The following examples of how users and producers are applying the principles of VECAP show that by taking forward a series of simple and low cost measures at the plant level, significant levels of the BFR emissions can be reduced.

1 TEXTILE COMPANY IN THE UK:

- **Review** of its processes to understand where emissions of Deca-BDE occurred.
- **Actions:** introduction of a number of low-cost adaptations of its production process:
  - ➜ scraping out barrels instead of just rinsing them out
  - ➜ sending the scraped down residue of the coating roll bank for disposal instead of just washing it away.
- **Results:**
  - ➜ reduction of the Deca-BDE loss per barrel by 90% (from 1.5 kg to 150g) resulting in increased manufacturing process efficiency
  - ➜ reduction of the water emissions.

2 PLASTIC COMPANY IN BELGIUM:

- **Review:** mass balance analysis indicated that air emissions during emptying of the BFR packaging was a potential emission source in plastic applications
- **Action:** installation of ventilation equipment with filters
- **Result:** at least 95% reduction of Deca-BDE air emissions.

"It is a pleasure for me to refer to the very promising initiative of the European Brominated Flame Retardant Industry in the context of the European Existing Substances Programme, namely VECAP programme. It started in 2004 with the intention to improve control of emissions from sites using Deca, especially the textile and plastics industry covering the majority of emissions of Deca in the Community. Nowadays, about 95% of the industrial sites using Deca have undersigned the VECAP agreement and have as part of the agreement implemented the code of practice for improved emission control measures, leading to a remarkable emission reduction of about 75% compared to figures from 2004. For example in the Netherlands, all Deca users are in the plastics industry and they have committed themselves to practise the VECAP recommendations. Such an initiative deserves to be copied by other industry sectors with other substances. It is in line with the REACH intention that industry must take responsibility to go for the best emission control."

Dr Dick Jung
Head of Department for Substances and Standardisation, Dutch Ministry of Housing, Spatial planning and the Environment (VROM)

3 HBCD PRODUCTION PLANT IN THE NETHERLANDS

An HBCD production plant in The Netherlands (the sole HBCD production plant in Europe) has developed methods to control air, water and solid waste emissions:

- **Air emissions** from production units are captured by a state-of-the-art dust filter and catalytic burner
- **Wastewater** from the production process is treated at the plant by an advanced water treatment facility, using active carbon and so producing effluents that can then be safely discharged
- **Organic waste** is treated on site in a state-of-the-art incinerator specially designed for high bromine content waste. This process allows the plant to recover bromine from the waste and reuse it for production.
- **Result:** reduction in 2006 of total HBCD emissions to less than 0.4 grams per tonne.

Continuous Improvement - Challenges

VECAP is based on the principles of learning and continuous improvement. It has developed in part thanks to its actual implementation by the supply chain. Implementing the VECAP process has helped highlight a number of unforeseen challenges in terms of ensuring greater control and prevention of emissions down the chemicals supply chain.

CHALLENGES BEING ADDRESSED

BEST PRACTICE ESTABLISHED FOR HANDLING PACKAGING WASTE

The practical implementation of VECAP has revealed potential emission sources that prior to VECAP had not been considered. The methodology and discipline of VECAP's mass balance requires producers and users to assume that there is a "loss" that might result in an "emission" of the chemical used if all the volume of the chemicals inputted into the industrial process is not accounted for. This has led to an emerging zero tolerance mentality resulting in the discovery of new potential emission sources.

Up until now, residues of a chemical remaining in the packaging were likely to be disposed of in landfill if, as in the case of Deca-BDE, the chemical did not require any labelling in view of its lack of environmental risk. Under VECAP, this potential source of emissions has been integrated into the programme's implementation and a first ever best practice document for the handling of chemical packaging waste has been established in conjunction with user companies.

CHALLENGES AHEAD

ENSURING ALL SUPPLIERS OF BFRS ARE COVERED

The in-situ plant visits performed by the VECAP Product Steward have shown that BFR users in Europe may not only be supplied by the EBFRIP member companies but that in some cases users also purchase from other suppliers, which are

currently not part of VECAP. If a user is purchasing a BFR from both an EBFRIP member company and a non-EBFRIP supplier, then this volume of BFR will already be covered by VECAP since the principles are applied in a manufacturing plant to the whole BFR input regardless of its provenance. However, it is not clear what volumes of non-EBFRIP supplied BFRs, if any, are falling outside the VECAP process in Europe. EBFRIP would welcome cooperation with regulatory authorities, including customs control officials, in order to see how this gap can be addressed.

INDEPENDENT CERTIFICATION AND AUDITING

VECAP being a totally new programme, albeit rooted in the principles of ISO 9000 and 14001, a specific certification scheme has had to be developed in order to provide external auditors with a common and internationally recognised basis for assessing VECAP compliance. At the same time, plants implementing VECAP have often sought some formal recognition for their efforts. A certification scheme is currently being developed by international auditors Bureau Veritas. This will provide further confidence and visibility in the VECAP operational implementation.

BEYOND THE DECA-BDE USER PLANT

While the scope for further improvements at the manufacturing processes will be discussed with individual users on the basis of their baseline emission surveys, the potential for emissions beyond the boundaries of a producer's and user's industrial plants is likely to become an increasing focus. For instance, VECAP includes within the scope of what constitutes "an emission" wastewater sent to municipal treatment facilities. Currently, without having sought information from municipal treatment facilities, VECAP's emissions estimates are calculated on the basis of a worst case assumption that the sludge from these facilities is not incinerated and therefore any Deca-BDE in the waste water could be emitted to the environment in some form. Therefore, addressing these potential emissions could be considered in the context of the next phase of VECAP's implementation. This will naturally require cooperation with regulatory authorities.

EXPANSION TO OTHER REGIONS

Beyond Europe, North America and Japan, there are signs of increasing interest in voluntary emissions control. BSEF is committed to pursuing such opportunities and expanding the programme while adapting it to the local needs.

"VECAP is an example of how voluntary initiatives can respond to concerns without the need for strict regulatory measures "

Colette Alma-Zeestraten
Managing Director, Vereniging van de Nederlandse Chemische Industrie (VNCI)

Appendix

WHAT IS VECAP?

VECAP, Voluntary Emissions Control Action Programme, aims to manage, monitor and minimise industrial emissions of the HPV (high production volume) BFRs Deca-BDE, TBBPA and HBCD into the environment through partnership with the supply chain.

THE BROMINATED FLAME RETARDANT INDUSTRY'S COMMITMENT UNDERPINNING VECAP

The brominated flame retardant industry has voluntarily committed itself to VECAP. This commitment, shared by its members, supports all activities which promote:

- public health and safety
- transparency with public authorities
- scientific research
- responsible care for the environment
- promoting fire safety in the most environmentally sustainable manner

VECAP IS BASED ON THE FOLLOWING PRINCIPLES:

VOLUNTARY INITIATIVE: it demonstrates the commitment of the industries involved to act in a manner which supports the interests of society and the environment.

CONTINUOUS IMPROVEMENT: recognition that we can always improve processes further and should do so if technically and economically justified.

PROMOTING SUSTAINABILITY: reducing impact on the environment while enhancing the competitiveness of local industries.

TRANSPARENCY: publishing of reports and information for the parties involved, collected via an independent Product Steward.

DIALOGUE: VECAP is promoting an open dialogue with all interested bodies at national and EU level. This dialogue will progress with time and feedback.

BEST PRACTICE SHARING: VECAP offers all companies – small, medium or large – equal access to the industry's expertise in environmental and process performance best practice. Such access allows benchmarking and drives continuous improvement.

SAFE USE: VECAP is providing detailed information ensuring safe and eco-efficient use of brominated flame retardants.

VECAP CERTIFICATION: an independent third party VECAP audit procedure, using ISO9001/14001 principles will be available at the end of 2007.

WHY VECAP?

Participation in the EU risk assessment process, which has so far only been applied in the European Union to just over 100 chemicals (including the High Production Volume BFRs), but which will be fully incorporated under the new REACH Regulation, has led the BFR manufacturers to realise that one of the key properties of flame retardants, their persistency, could have been the cause of the discovery of very small quantities of these products in the environment. Persistency plays a key role in ensuring an effective, long-term fire ignition resistance of the products in which BFRs are used. Risk assessments of BFRs carried out in the EU have raised some concerns about the environmental levels and possible long term effects of BFRs in the environment.

Environmental monitoring commissioned by the BFR manufacturers and conducted by the Dutch Institute for Fisheries Research (RIVO) in 2000 and 2002 indicated that the vast majority of current emissions of BFRs into the environment occur during their manufacture, as well as during the manufacturing processes of materials (such as plastics and textiles) that depend on BFRs to meet high levels of fire safety.

Given this, the BFR manufacturers decided that it was important to take positive steps to prevent any avoidable emissions of BFRs into the environment. This resulted, in 2004, in the development of VECAP, whose focus at the start was on the flame retardant Deca-BDE. Since 2006, however, the programme has been rolled out and now applies to all HPV brominated flame retardants.

THE BACKGROUND TO VECAP

VECAP was developed following the finalisation of the Deca-BDE risk assessment in 2004. Deca-BDE had been subjected to an EU risk assessment by the 25 EU Competent Authorities for chemicals management. This included a scientific assessment which, after 10 years and the evaluation of some 588 studies, was completed in May 2004. The risk assessment did not identify any risk from the use of Deca-BDE in plastic, or in any other applications.

However the European authorities expressed their concern at the findings of Deca-BDE at very low (but rising) levels in the environment close to industrial sites. During the final stages of the Risk Assessment, it was identified that the significant emissions into the environment could be traced to point sources. These point sources were particularly found where aqueous applications were taking place, such as for textiles and carpets where Deca-BDE was being used to achieve the required flame retardancy. A secondary source of emission was from practices in handling Deca-BDE powders in the plastics industry.

EBFRIP (the European Brominated Flame Retardant Industry Panel) initiated the VECAP in 2004. The programme started in the UK textile industry, but was quickly expanded to include plastic applications and the other major Deca-BDE users in the EU.

Appendix

HOW DOES VECAP WORK?

VECAP is based on the development and application of best practices and is driven by the "VECAP model" through partnership with the supply and customer chain. It is based on recognized environmental management programmes such as ISO 14001 and EMAS, but simplified to focus on the target chemical and allow Small and Medium Enterprises to participate in the programme.

THE SCOPE OF VECAP

At every production/use site there is a difference in quantity between the amount of raw materials entering and the amount that subsequently leaves as sellable material: the "mass balance". VECAP does not only address the potential of direct emissions of BFRs to air and water (through material handling, process, spills, cleaning of equipment, etc) but also encourages and offers guidance to users to look critically at all product flows and processes in order to achieve efficiency improvements and to identify other potential indirect emissions to air and water – thereby aiming to close the mass balance loop.

In more concrete terms, VECAP analyses qualitatively and quantitatively the air and water emissions from the production processes of brominated flame retardant users:

- **Qualitatively:** all known air and water emissions are shown on a flow chart of the production process, a document which is standard in environmental auditing procedures.
- **Quantitatively:** the programme determines as precisely as possible the emissions to air and water, expressed as g/tonne of flame retardant used and the mass balance is calculated.

THE VECAP PROCESS

1 → COMMITMENT TO THE VECAP CODE OF GOOD PRACTICE

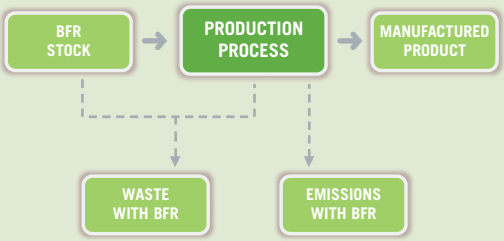
The VECAP system starts with the user's commitment to the programme, adopting the Industry's Code of Good Practice and implementing these principles into the procedures and work instructions of daily operations.

2 → SELF AUDIT

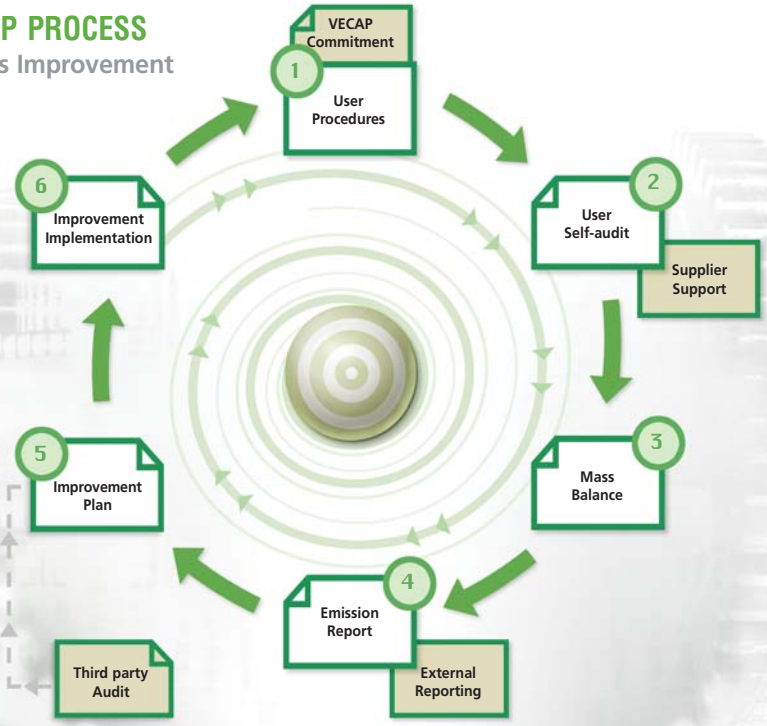
With the self-audit, the company identifies the production flow sheet of its operations

3 → MASS BALANCE APPROACH

The company completes and closes the BFR mass balance (signaling the gap in the amount of BFR entering and leaving the production process).



THE VECAP PROCESS
Continuous Improvement



4 → BASELINE EMISSIONS SURVEY

The company uses the obtained results as a baseline to demonstrate actual performance and to detect future emission reduction priorities.

5 → EMISSIONS IMPROVEMENT PLAN

An emission improvement plan is determined in accordance with the company's own objectives and policies.

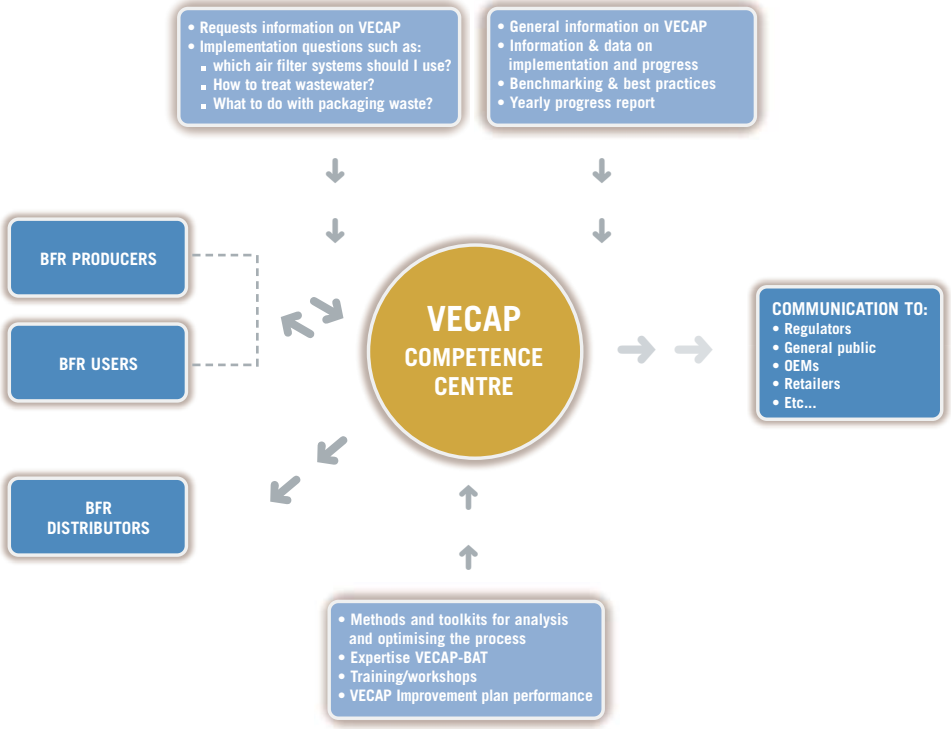
6 → IMPLEMENTATION AND CONTINUOUS IMPROVEMENT

Once the improvement plan is implemented, operational results are evaluated and potential for further emission reductions investigated, ensuring effective continuous improvement.

Appendix

PROVIDING SUPPORT TO VECAP USERS

The competence centre was established in 2006 with the key aim to provide support to VECAP users in their specific implementation of the program but also to further improve the VECAP system itself as it evolves and to promote operational implementation of this practice. The information and data generated by the VECAP Competence Centre serves also as a basis for broad communication on the program to the authorities and the general public.



VECAP TOOLKIT

The VECAP Competence Centre has developed toolkits for the textile and plastic applications to assist the BFR downstream users to perform the necessary self-audits and prepare the mass balance which are central to the VECAP implementation process. These toolkits also provide general principles to monitor and control emissions. The toolkits are available in several languages and consist of the following elements:

CODE OF GOOD PRACTICE
this document includes working procedures and good housekeeping measures aimed at controlling and reducing emissions. It has been specifically developed for the various industrial sectors using the BFRs covered by the programme

SELF-CONTROL GUIDANCE DOCUMENT
supports users in defining where they stand in respect of the Code of Good Practice provisions

PROCESS FLOW CHART
assists the user to identify where the potential material losses can occur within the processes

MASS BALANCE SHEET
indicates which data should be measured, recorded and managed.

Certification

External certification by an independent environmental auditing company Bureau Veritas (BV), using ISO 9001/14001 principles, is currently being developed and will become available and operational for interested users before the end of 2007.

Best Practice

A Q&A document has been developed in order to provide answers to technical questions related to the VECAP program. Its aim is to help users of brominated flame retardants to reduce and control environmental emissions by providing insight in:

- available emission abatement technologies
- best practices on waste handling and disposal
- waste water sampling and analysis
- how to compile a mass balance

In early 2007 a specific Best Available Technique document has been developed in order to reduce at the lowest possible the emissions during the emptying of BFR containing packaging and the handling of packaging waste.

Product Steward support

A VECAP Product Steward (Paul Adriaenssens, qualipa@skynet.be or +32 475 74 34 41) is available to provide individual assistance to introduce and implement VECAP.

Managing Emissions of Persistent Chemicals
Good Practice Guides for the Textile & Plastic sectors
available at: www.vecap.info

Contacts

EBFRIP Secretariat at Cefic
Avenue E. van Nieuwenhuyse 4, bte 2
B-1160 Brussels - Belgium
Tel: +32 2 676 73 38
Fax: +32 2 676 73 92
E-mail: ebfrip@cefic.be

BSEF Secretariat
37 Square de Meeûs
1000 Brussels - Belgium
Tel. +32 2 733 93 70
Fax. +32 2 735 60 63
E-mail: mail@bsef.com

1110 Vermont Avenue, NW
Suite 1100
Washington DC 20005
Tel. +1 202 530 48 47
Fax. +1 202 530 45 00
E-mail: mail@bsef.com

NEXT STEPS

- Launch of VECAP Certification and auditing process
- Establishing environmental trend data
- Emissions reductions for plastics
- Controlling environmental levels
- Best practice for packaging waste management

This report was published in June 2007.

For further information:
contact the VECAP Product Steward,
Paul Adriaenssens at qualipa@skynet.be or visit
www.vecap.info

VECAP is a voluntary initiative of the European Brominated Flame Retardant Industry Panel – EBFRIP together with the industry's global organisation, the Bromine Science and Environmental Forum – BSEF

EBFRIP
A SECTOR GROUP OF CEFIC

BSEF
Bromine Science and Environmental Forum