BURBERRY

ESTABLISHED 1856

ALKYLPHENOLS AND PHTHALATES INVESTIGATION REPORT OCTOBER 2014

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1. Executive summary

Burberry Group plc (Burberry) has completed a eight-month investigation into the presence of alkylphenols and phthalates as part of a programme of work to eliminate from the supply chain the use of these chemicals beyond existing legal limits.

Burberry's entire manufacturing supply chain was approached by Burberry to participate in an initial partner survey to identify the intentional use of alkylphenols and phthalates. To ensure the comprehensiveness of the investigation process, Burberry carried out a review of product testing reports. Burberry then conducted an effluent testing activity to identify where alkylphenols or phthalates were present in incoming water or effluent (pre-treatment). To conclude, Burberry carried out testing on samples of bulk production raw materials. This validated effluent testing results and provided greater detail on the sources of alkylphenols and phthalates.

This process was supported by on-going communications with key stakeholders including mills and vendors, chemical suppliers and other brands.

Overall, this investigation has identified many areas of Burberry's manufacturing supply chain (regions, suppliers, processes and product) where alkylphenols and phthalates are present and where further action is required to achieve the objective of eliminating the use of these chemicals beyond existing legal limits.

All results confirm that all Burberry's products within the scope of this investigation are safe and legally compliant.

2. Introduction

This report provides a summary of the activities Burberry has completed to deliver on the commitment to eliminate alkylphenols and phthalates chemical groups. This includes the programmes in place to achieve full traceability of raw material suppliers, the familiarisation of standards and expectations and joint initiatives with other brands.

Alkylphenols are a group of man-made chemicals that do not occur naturally. They are primarily used as detergent auxiliaries in scouring and bleaching processes or in small quantities as emulsifiers or wetting agents in several dyestuff and pigment preparations.

Phthalates are a class of chemicals typically applied in the apparel industry as plasticiser in printing, coating and in PVC based materials to provide flexibility and softness.

3. Investigation methodology

Over the past eight months, Burberry has undertaken a comprehensive investigation into the use and discharge of alkylphenols and phthalates in the global supply chain.

3.1 Partner survey

The basis of this investigation was an initial exploration of the manufacturing supply chain by way of a partner survey. This process engaged all manufacturing partners on the use of alkylphenols and phthalates in their facilities.

The survey was undertaken at an individual level and allowed the partner to provide an open and honest evaluation. It is important to note the limitations of the survey results and ensuing conclusions due to the nature of self-assessment responses. However, this process was successful in prompting partners to initiate an investigation into the use and presence of alkylphenols and phthalates in their processes.

3.2 Product testing review

To ensure comprehensiveness, Burberry also conducted a review of any product testing reports available up to July 2014. Although these results were useful to review the existing testing carried out on Burberry products, there were many limitations with the data due to inconsistencies in testing methods and the range and frequency of product tested. As a consequence, Burberry followed up with a targeted investigation focusing on raw materials with a specific and harmonised testing method.

3.3 Effluent testing

Burberry initiated testing of incoming water, effluent (pre-treatment) and post-treatment water samples from partner facilities. This provided a higher level of data accuracy to identify the use of these chemicals in partner manufacturing processes and enabled Burberry to publicly disclose effluent discharge results through the IPE platform[1].

It is important to note that this effluent testing activity is not an accurate measure of the use of each chemical in Burberry production processes because there is no clear link between effluent test results and Burberry product processed in the facility. Furthermore, there is insufficient data to ascertain how the chemicals are inputted in the partner's facility.

3.4 Raw material testing

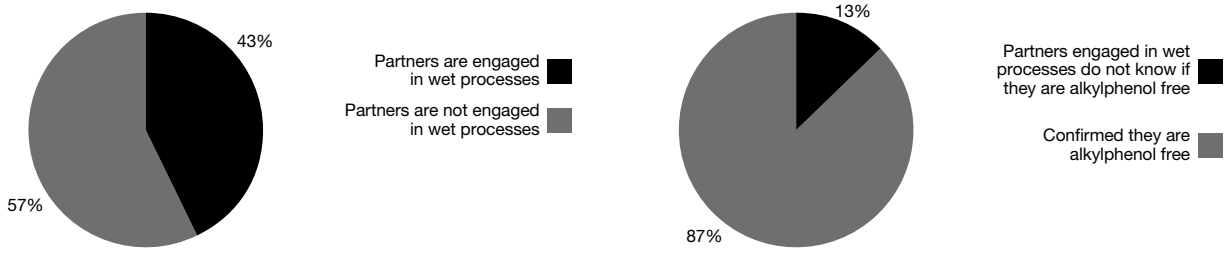
In order to further investigate the use of alkylphenols and phthalates in the manufacturing process Burberry requested the submission of samples of bulk production raw materials from specific partners to a designated testing house for assessment. Partners were also asked to provide multiple samples of a specific raw material from their facilities to allow comparative analysis between items from the same facility.

The results of this testing provided detailed data on the use of alkylphenols and phthalates in partner's manufacturing processes, raw materials and their own supply chain. In validating these results with the data from the rest of the investigation a number of conclusions can be drawn regarding the distribution, frequency and use of these chemicals in the entire manufacturing process of Burberry products.

4. Partner survey results

In March 2014 Burberry initiated a partner survey to identify the intentional use of alkylphenols and phthalates. 54% of questionnaires were returned including additional input from a number of partner suppliers. The majority of responses were confirmed during the testing activities. The results are as follows:

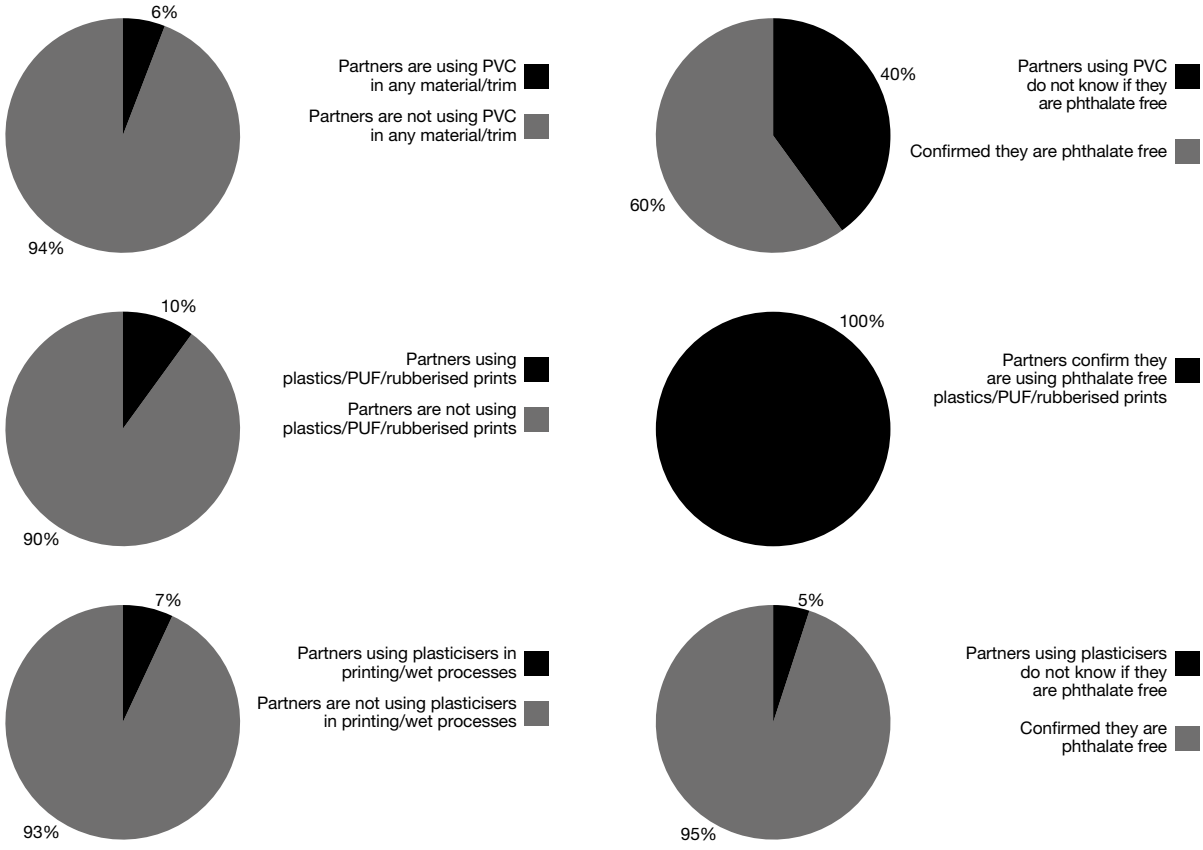
4.1 Alkylphenols



In summary, the partner survey results reflect that less than 6% of partners are at risk of alkylphenols being present.

1 Burberry has committed to the public disclosure of effluent testing results on http://www.ipe.org.cn/en/pollution/discharge_detox.aspx

4.2 Phthalates



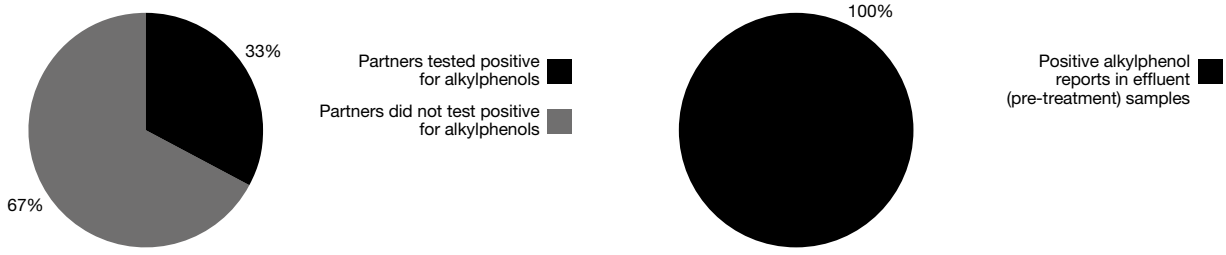
In summary, the partner survey results reflect that 3% of partners are at risk of phthalates being present.

5. Effluent testing results

Burberry identified key partners based on their relevance to wet processing activities and share of global production. This work is currently in progress and is planned to extend to 80% of global production by December 2014.

At the time of writing, 44% of these partners have been engaged in this activity since March 2014. Samples were taken on both incoming water and effluent (pre-treatment) from partner facilities.

5.1 Alkylphenols



The detailed results reveal that NPEOs are the most commonly detected analytes in all testing, followed by NPs and OPEOs, OPs were not detected in any partner facility.

Frequency & range of alkylphenols per analyte in effluent (pre-treatment) samples

Number of positive reports

		MIN	MAX
OPEO	1	–	184 PPB
NPEO	7	6 PPB	504 PPB
OP	0	–	–
NP	4	1.2 PPB	2.8 PPB

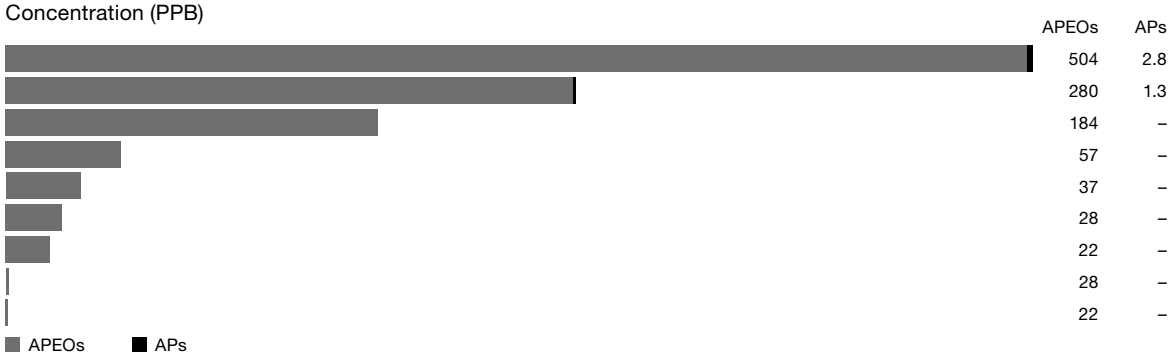
This chart reflects that NPEOs (6 positive reports) are the most commonly detected analytes in all testing, followed by NPs (4) and OPEOs (1). OPs were not detected in any partner facility.

The positive report of NPs indicates the possibility that NPEOs can degrade to form NPs in a relatively short period of time and this may be facilitated by the manufacturing process and/or facility conditions.

The results can be ordered by the concentration of alkylphenols detected in effluent (pre-treatment) samples.

Concentration of alkylphenols detected per partner in effluent (pretreatment) samples

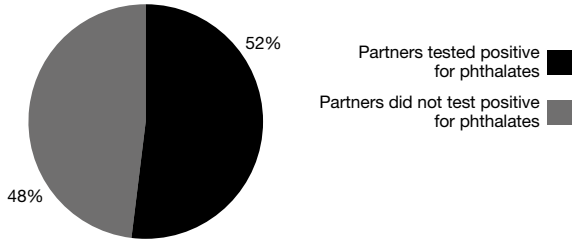
Concentration (PPB)



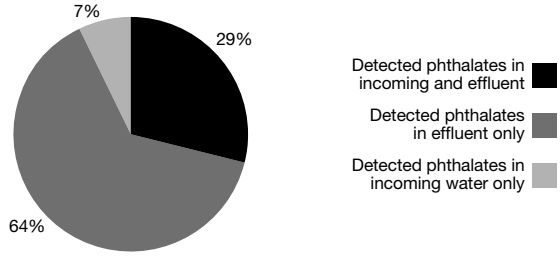
The two highest recorded results were for APEOs >200 mg/kg; those concentration levels indicate that alkylphenols are likely used in process chemicals within that facility.

The incidence of partner facilities where alkylphenols were detected was higher in Europe (77%) than in Asia (23%).

5.2 Phthalates

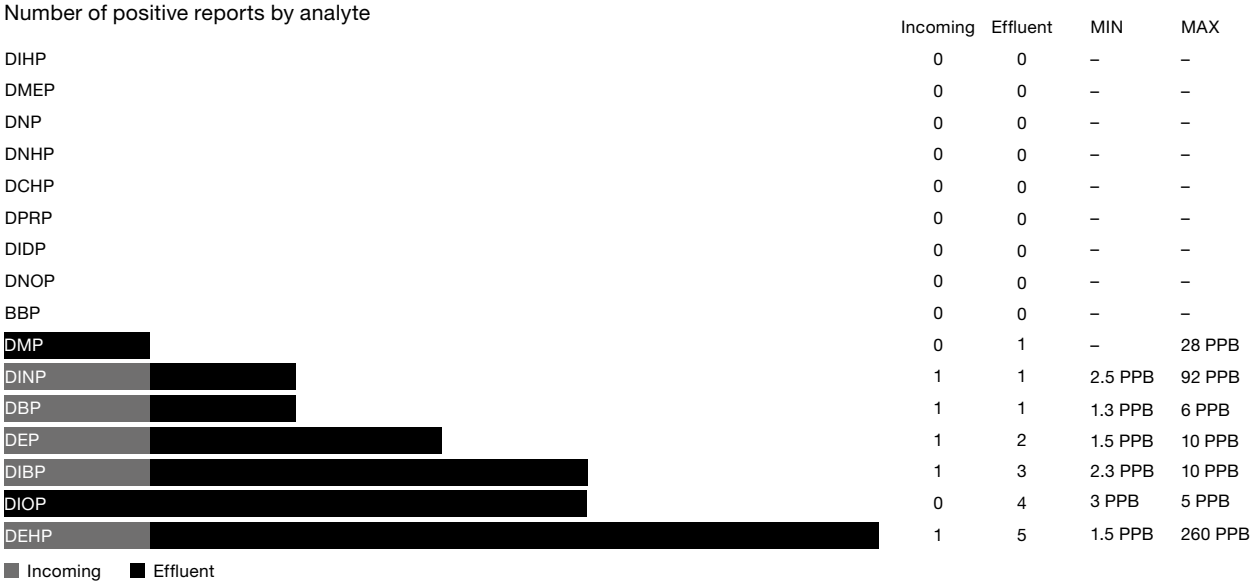


Of this 52%:



Frequency & range of phthalates per analyte in effluent (pre-treatment) samples

Number of positive reports by analyte



	Incoming	Effluent	MIN	MAX
DIHP	0	0	–	–
DMEP	0	0	–	–
DNP	0	0	–	–
DNHP	0	0	–	–
DCHP	0	0	–	–
DPRP	0	0	–	–
DIDP	0	0	–	–
DNOP	0	0	–	–
BBP	0	0	–	–
DMP	0	1	–	28 PPB
DINP	1	1	2.5 PPB	92 PPB
DBP	1	1	1.3 PPB	6 PPB
DEP	1	2	1.5 PPB	10 PPB
DIBP	1	3	2.3 PPB	10 PPB
DIOP	0	4	3 PPB	5 PPB
DEHP	1	5	1.5 PPB	260 PPB

The results can be ordered by the concentration of phthalates detected in effluent (pre-treatment) samples.

Concentration of phthalates detected per partner in effluent (pre-treatment) samples

Concentration (PPB) by partner

Incoming	Effluent
17	260
0	98.5
0	28
0	15
0	6
0	5
0	5
0	4.1
0	4

14.3% partners detected more than one phthalate analyte, which were detected in effluent (pre-treatment) only.

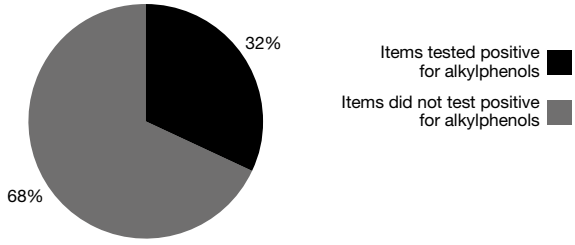
Partner facilities that detected phthalates were higher in Asia (57%) than in Europe (43%). This revealed Asia region is at higher risk for phthalate unintended presence in the manufacturing supply chain.

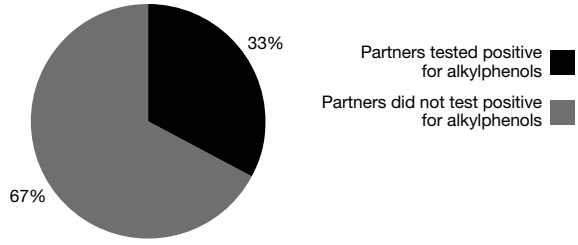
While DMP, DEP and DIOP are not currently restricted under European regulation REACH, all other phthalate analytes have varying levels of control.

6. Raw material testing results

Burberry identified raw material items for testing based on their relevance, volume and age range procured for the AW14 season. 70% of the material items selected were requested to be submitted for testing in multiple colours.

6.1 Alkylphenols





Frequency and range of alkylphenols per analyte in raw material samples

Total positive reports by partner

	MIN	MAX
NPEO	33.2 PPM	7700 PPM
OPEO	33.4 PPM	–
NP	–	–
OP	–	–

In total 11.1% of partners detected OPEOs and 88.9% of partners detected NPEOs. There were no reports of more than one type of alkylphenol analyte in the same item.

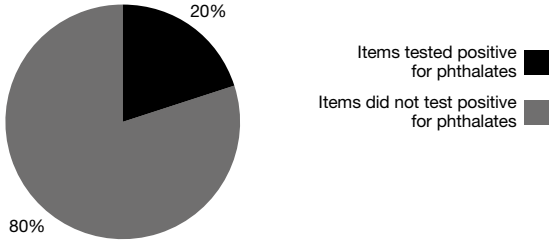
In line with effluent testing results, NPEOs were again the most commonly detected alkylphenol analyte in positive reports. AP and OP were not detected in any raw material samples.

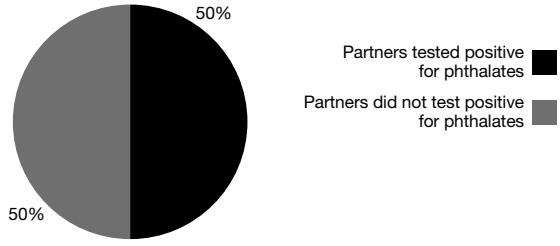
The test of two samples of the same raw material detected NPEOs on 1 sample and not the other. As we are confident that the production process is identical for both items, except for the dyeing recipe, this may indicate that different sources for the raw material are used rather than different process recipes or formulations.

Only one partner facility tested positive to OPEOs in both effluent and raw material samples.

6.2 Phthalates

12.5% of raw material items in this testing activity are relevant to phthalates according to the finishing processes performed. Positive reports have been evaluated against these items only.





Of the total positive reports the concentration range was between 127 – 170 PPM.

7. Comparison

Below is a comparison of results where partners have engaged in multiple activities and reported positive to either alkylphenols or phthalates in effluent or raw material testing.

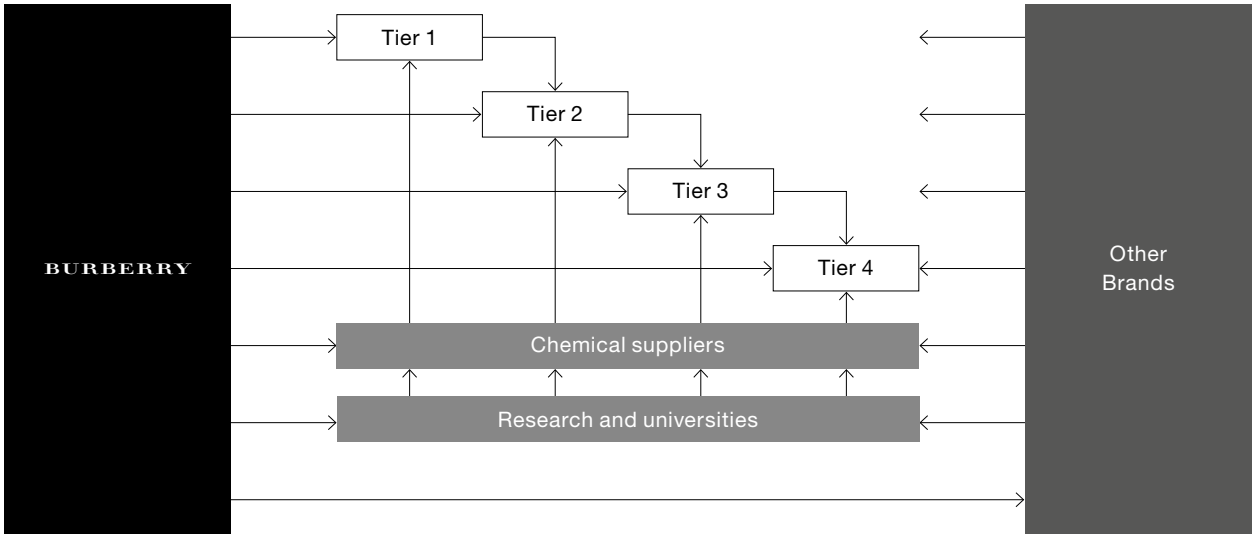
Partner	Survey	Effluent	Raw material	Engagement
Partner a	APEO risk	Not tested	NPEOs	Low
Partner b	APEO risk	Not tested	NPEOs NPEOs	Low
Partner c	APEO and phthalate risk	Not tested	NPEO Phthalates (DINP)	Low
Partner d	APEO risk	Phthalates (DINP & DIBP) NPEOs	NPEOs	Low
Partner e	Not at risk	Not tested	NPEOs	Low
Partner f	Not at risk	Not tested	NPEOs	Medium
Partner g	Not at risk	Not tested	NPEOs	Medium
Partner h	No risk	OPEOs	NPEOs	Medium

In the majority of the cases above partner survey responses have reflected the outcomes of testing activities in this investigation. A number of positive reports were correlated to partners who have not been involved in any form of engagement. A greater number of negative findings were related to partners with higher levels of engagement.

8. Stakeholder communications

In conjunction with investigation activities Burberry continually communicated with key stakeholders having the ability to influence the project goals. Stakeholders include key partners, chemical suppliers and testing laboratories, other brands and academic institutions.

These communications are important in order to influence all tiers of the extended supply chain. Burberry has identified a model (below) that demonstrates its influence and capacity for engagement across each tier of the supply chain via alternative channels.



8.1 Chemical supplier workshops

Burberry has conducted a series of collaborative meetings with a number of chemical suppliers to the apparel industry. The objective of this engagement was to encourage chemical suppliers to develop chemical alternatives and adopt quality control systems for the purchase, supply and use of chemical formulations.

The meetings revealed a shared challenge across chemical suppliers, namely their ability to control their own supply chains and provide a level of transparency on the procurement of their own raw materials.

8.2 Partner workshops

Burberry held a series of partner workshops across the globe in order to effectively communicate its chemical elimination commitment to the supply chain. Workshops included input from Burberry, chemical suppliers and testing laboratories to ensure alignment on the commitment and shared actions to eliminate the use of these chemicals in manufacturing processes.

8.3 Partner dialogue

Throughout the process of this investigation, a number of in-depth discussions have been carried out to identify the cause of contamination in specific product and partner facilities. In these cases, tailored advice and assistance has been provided with recommendations for actions to ensure future contamination does not occur.

8.4 Research development

Burberry has engaged with several academic institutions to explore opportunities for the development of more sustainable manufacturing methods. These meetings have facilitated the sharing of insight with academics on the latest research and technologies, which Burberry believes is fundamental to achieving systemic change.

8.5 Brand collaboration

Since early 2014, Burberry has been an active member of the Zero Discharge Hazardous Chemicals Group (ZDHC) to support the elimination of hazardous chemicals in the global apparel industry by 2020. Burberry has also participated in a number of meetings with other luxury brands to discuss common challenges and opportunities for collaboration.

9. Conclusion

This report provides an overview of Burberry's investigation into the presence of two priority chemical groups in the global supply chain; alkylphenols and phthalates.

This investigation has identified that the general awareness among suppliers related to the use of and presence of alkylphenols and phthalates does not correlate with the findings of effluent and raw materials testing. Although all findings indicate legal compliance to local and international legislation there is a significant need for increased awareness of potential sources of contamination amongst partners.

Alkylphenols were found in higher frequency and concentration on raw material and effluent in countries where regulations related to alkylphenols are already in place. Alternatively, phthalates were found in higher frequency and concentration on raw material and effluent in countries where regulations related to phthalates were less restrictive. This identifies that there are many different potential paths for alkylphenol and phthalate contamination, including:

- Raw materials
- Impurities on chemical formulations
- Undeclared ingredients in chemical formulations
- Other (such as equipment, machinery...)

This has revealed the complexity of eliminating the intentional and unintentional use of alkylphenols and phthalates in the global supply chain.

This investigation highlighted the fact that regulation and quality control systems for the purchase, supply and use of chemical formulations are inadequate in preventing the presence of alkylphenols and phthalates in partner processes, products and effluent. This has led to the following conclusions to be drawn:

i. Further development and enforcement of chemical regulation, voluntary standards and management controls are required.

In many cases where a presence of alkylphenols or phthalates was found, the corresponding partner facility also demonstrated a lack of engagement with Burberry communication activities where recommended standards and quality control systems were discussed. This demonstrates:

ii. Partner engagement is directly related to effective action to control and eliminate alkylphenols and phthalates.

Overall, the investigation has provided a detailed understanding of the presence of alkylphenols and phthalates in the manufacturing supply chain, achieving a level of transparency required in order to eliminate these chemical groups.

10. Next steps

Burberry will continue its efforts to eliminate the use of alkylphenols and phthalates. Next steps to be developed will include:

1. Developing and implementing Burberry Manufacturing Restricted Substances List (MRSL) and updated Product Restricted Substances List (PRSL)
2. Conducting partner facility assessments to understand contamination paths and develop site chemical management systems
3. Developing industry recognised test methods for chemical formulations by engaging with chemical suppliers, testing houses and other brands through ZDHC activities
4. Investigating and providing guidance on chemical management systems for the global supply chain including buying processes, chemical supplier selection, substances screening and due diligence testing programs for chemical formulations and raw materials
5. Extending the same requirements (MRSL) and actions to additional tiers of the supply chain
6. Developing research into positive alternative chemicals which meet Burberry requirements