

China pilot summary: Investigation into current chemical compliance

Summary

Primark has a stringent chemical management policy in place which complies fully with, and goes beyond, EU legislation¹. Beyond this, Primark recognises the importance of continuing to evolve its chemical management policy in line with industry best practice and of continuing to minimise the environmental impact of textile manufacturing processes. As a result, Primark has committed to working with industry and other stakeholders to achieve the goal of 'zero discharge' of hazardous chemicals within the textile and apparel supply chain by 2020. The detail of this is outlined in Primark's Detox Commitment².

Working with strategic suppliers, Primark initiated a deep-dive pilot project in China involving six mills within its supply chain³. Of the selected mills, three were dyeing mills, one was a dyeing and printing mill and two were garment washing mills.

The pilot aimed to identify chemicals present in the effluent discharges from the mills (with a particular focus on current compliance levels regarding APEOs, PFCs and Phthalates) and to assess current chemical management practices within wet processing units. Findings would be used to inform a longer term programme of supplier engagement and chemical phase out.

None of the water samples tested contained levels of any individual chemical analyte above 1ppm (one part per million). In many cases the chemicals were either not detected or were well below this level. Such levels are generally considered very low in terms of dyehouse effluent.

¹ Please refer to Primark's Restricted Substances List (RSL)
<https://www.primark.com/~media/ourethics/detox/pdfs/primark%20restricted%20substances%20list%20rsl.ashx?la=en>

² Please refer to Primark's Detox Commitment
<https://www.primark.com/~media/ourethics/detox/pdfs/primark%20detox%20commitment.ashx?la=en>

³ These mills are not owned by Primark and are producing garments for several brands, including Primark.

Methodology

Independent testing, inspection and certification provider Bureau Veritas and environmental auditing and consultancy firm Sustainable Textile Solutions⁴ (STS) were selected as project partners. Bureau Veritas served as the third party laboratory to test water samples from each factory, while STS specialises in environmental management audits, including chemical management.

1. Technicians from Bureau Veritas visited each factory to collect samples of incoming water, wastewater before treatment, wastewater after treatment and final sludge, where in-house effluent treatment plants (ETP) were available. In cases where no ETP facilities were available, only two samples were collected: incoming water and discharge water. These samples were tested for 117 chemical analytes of concern within the 11 priority classes of hazardous chemicals.
2. Auditors from STS visited the production sites to document the chemical inventory, collect recipes of production during the sampling period and track the chemicals used during production.
3. STS then reviewed the water and sludge analysis data provided by Bureau Veritas in order to identify potential sources of hazardous chemicals detected in the samples and to advice on possible steps to ensure their elimination.
4. Corrective Action Plans (CAP) were prepared for and share with the mills, outlining general improvement areas in relation to chemical management practices and recommending specific chemical substitutions in order to switch to safer alternatives.



⁴ Sustainable Textile Solutions (STS) is a trademark of DyStar Colours Distribution GmbH.

Results

Out of the six factories tested four were found to have their own waste water treatment plants and two sent their effluent for treatment at neighbouring facilities.

The following chemicals were not detected in any of the streams at the mills:

Priority Chemical Groups	Inlet water	Water before treatment	Water after treatment	Sewage sludge
Brominated and Chlorinated Flame Retardants	ND	ND	ND	ND
Azo Dyes	ND	ND	ND	ND
Organotin Compounds	ND	ND	ND	ND
Chlorinated Solvents	ND	ND	ND	ND

The following chemicals were found in the streams of the following number of mills:

Priority Chemical Groups	No. of mills where chemical was found in inlet water	No. of mills where chemical was found in water before treatment	No. of mills where chemical was found in water after treatment	No. of mills where chemical was found in sludge
APs and APEOs	1	5	2	5
Chlorobenzenes	2	4	4	3
Chlorophenols	ND	2	1	ND
Heavy Metals	6	6	5	5
Perfluorinated	ND	1	1	1
Phthalates	4	6	4	5
Short-Chained	ND	1	1	ND

Results summary

APEO

Effluent of five factories was found to contain APEO at levels below 1 ppm*

Chlorobenzenes

Effluent of four factories was found to contain Chlorobenzenes at levels below 0.005 ppm

Chlorophenols

Effluent of two factories was found to contain Chlorophenols at levels below 0.005 ppm

Heavy metals

Effluent of five factories was found to contain Heavy Metals at levels below 1 ppm

PFCs

Effluent of one factory was found to contain PFOA at levels below 0.001 ppm

Phthalates

Phthalates were found in all of the waste streams tested but in each case at levels below 1 ppm

Short-Chain Chlorinated Paraffins (SCCP)

Effluent of one factory was found to contain SCCP at levels below 0.2 ppm

**ppm = part per million. 1ppm is equivalent to 1 milligram per litre (mg/l)*

None of the water samples tested contained levels of any individual chemical analyte above 1ppm (one part per million). In many cases the chemicals were either not detected or were well below this level. Such levels are generally considered very low in terms of dyehouse effluent.

Next steps

Insight from the pilot has identified the following priority areas for action, both at the pilot mills and within the broader supply base as part of a long term programme:

1. Raise awareness of the need for and the benefits of chemical management at all levels of the supply chain
2. Provide comprehensive training and support on chemical management to suppliers, with a particular focus on wet processing units; the training programme should be tailored to take into account the differences across manufacturing regions, production processes and job roles
3. Through on-going supplier engagement and training, ensure effective phase out of chemicals which contribute to the detected levels of hazardous chemicals in the effluent and, in turn, ensure these are substituted through the sustainable phase in of safer alternatives
4. Track the aforementioned substitutions and test their effectiveness through follow-up audits and on-going wastewater analysis
5. Ensure on-going disclosure of results via the IPE Detox platform and on-going disclosure of substitutions via the Subsport platform
6. Continue to work with experts and engage with other brands to ensure a collaborative approach to the above

Appendix 1

Test results for APEOs, PFCs and Phthalates

Key:

I001 – Incoming water mg/l

I002 – Production outlet mg/l

I003 – Wastewater discharge mg/l

I004 – Sludge mg/l

APEOs:

	I001	I002	I003	I004
Mill 1				
OP	ND	ND	ND	7
NP	0.0074	0.0095	0.0107	32.5
OPEOs	ND	ND	ND	6.64
NPEOs	ND	0.603	ND	45.8
Mill 2				
NP	ND	0.0027	ND	2.01
NPEOs	ND	0.589	ND	4.4
Mill 3				
NP	ND	0.00128	ND	13.4
NPEOs	ND	0.0399	ND	47
Mill 4				
NP	ND	0.00114	NA	NA
NPEOs	ND	0.0491	NA	NA
Mill 5				
NP	ND	ND	0.008	56
NPEOs	ND	ND	ND	13.6
Mill 6				
NP	ND	0.0997	ND	1.73
NPEOs	ND	ND	ND	0.607

PFCs:

	I001	I002	I003	I004
Mill 1				
PFOA	ND	0.00075	0.00075	0.0249
Mill 2				
PFCs	ND	ND	ND	ND
Mill 3				
PFCs	ND	ND	ND	ND
Mill 4				
PFCs	ND	ND	ND	ND
Mill 5				
PFCs	ND	ND	ND	ND
Mill 6				
PFCs	ND	ND	ND	ND

Phthalates:

	I001	I002	I003	I004
Mill 1				
DEHP	ND	0.0162	ND	12.3
DIBP	ND	0.038	ND	ND
Mill 2				
DBP	ND	0.0036	ND	ND
DEHP	0.0034	0.0129	0.00608	1.04
DINP	ND	0.00912	ND	ND
DIBP	ND	0.0066	0.00312	1.95
Mill 3				
DBP	ND	0.00268	ND	ND
DEHP	0.00708	0.0143	0.0082	16.8
DIBP	ND	0.00264	ND	8.3
Mill 4				
DEHP	0.00252	0.00776	NA	NA
DIBP	ND	0.00288	NA	NA
Mill 5				
DBP	ND	0.00252	ND	152
DEHP	0.00536	0.00556	0.00716	39.7
DIBP	0.00344	0.00456	0.00684	195
Mill 6				
DEHP	ND	0.00904	0.0105	1.34
DIBP	ND	ND	ND	1.38