

Green Chemistry Retailer Webinar Series

Marks & Spencer - The Journey
to Accelerate Green Chemistry

Wednesday, March 23, 2016



What is the GC3?

- Cross-sectoral, B2B network of over 90 companies and other organizations
- Formed in 2005
- Collaboratively advances green chemistry across sectors and supply chains



Johnson & Johnson 90 Members, Including:



The Business of Innovation



Today's Speaker

Phil Townsend



**Sustainable Raw Materials Specialist,
Marks & Spencer**

Ground Rules

- Due to the number of participants in the webinar, all lines will be muted
- If you have a question or comment, please type it in the “Questions” box located in the control panel
- Questions will be answered at the end of the presentation



Marks & Spencer – The journey to accelerate Green Chemistry

Phil Townsend
Sustainable Raw Materials S

KEY FACTS



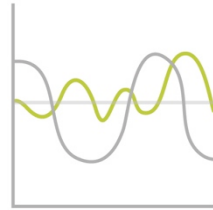
1884

M&S was established



£10.3bn

Group Revenue



£600m

Group PBT



57/43%

UK turnover is split 55% Food & 45% General Merchandise



83,069

Employees



No.1

UK market share in womenswear, menswear & lingerie



1 in 3

UK women wear M&S lingerie



3.9%

UK market share in Food



852

UK stores



34m

UK customers



£1.1bn

International revenue



480

International stores



59

International territories



9

International websites

M&S

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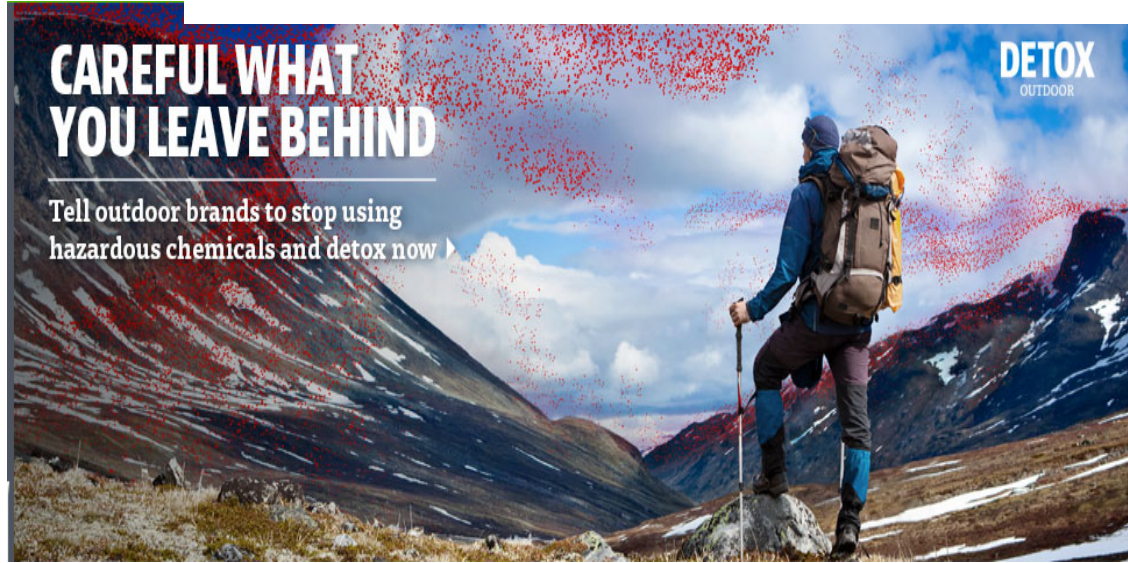
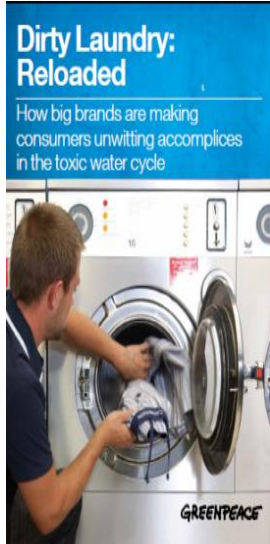
Clothing and Home



**£4
Billion
Global
GM
Turnov
er**



CHEMICAL COMPLIANCE



DEMAND TOXIC-FREE FASHION ▶

GREENPEACE

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**Multi-issue Campaigns –
Social, Environmental
and Animal Welfare**



**Leather: Hell for Animals and
Children in Bangladesh**



The Environmental & Chemical Policy – key milestones

- Environmental Code of Practice for chemicals launched in 1998
- Included the Restricted Substances List
- Relaunched in modular form as the Environmental & Chemical Policy in 2011
- All Wet processors must successfully complete the ECP audit before supplying M&S
- Detox agreement signed with Greenpeace 2011
- M&S joins ZDHC 2012
- MRSL launched in 2014
- Policy under constant and critical review

The Environmental & Chemical Policy



ENVIRONMENTAL & CHEMICAL **POLICY 2016: OVERVIEW**

CHEMICAL GUIDANCE

APEO
AZO DYES
PFC SUBSTITUTION
DIMETHYL FORMAMIDE
PHTHALATES

MINIMUM STANDARDS

MRSL and RSL
**SELF AUDIT –
DYERS etc.**
**SELF AUDIT –
TANNERIES**
REACH
**ENVIRONMENTAL
MANAGEMENT**

BEST PRACTICE

NEW CHEMICAL EVALUATION
CHROMIUM VI
EFFLUENT TREATMENT
SAFE USE OF SOLVENTS

ECP – ENVIRONMENTAL & CHEMICAL POLICY

VERSION 1.0 MARKS & SPENCER MAY 2011

YOUR M&S

ECP
MODULE 5 : SELF-AUDIT

**TO BE COMPLETED BY THE SENIOR MANAGER
TO SUBMIT – PRESS SEND AND EMAIL COPY TO PROPOSER**

WET PROCESSING FACILITY DETAILS	
1 GROUP / PARENT COMPANY NAME:	PARENT COMPANY
2 SITE / FACTORY NAME:	SITE NAME
3 SITE / FACTORY ADDRESS:	5508 HENGCHANGJIANG ROAD,ZHOUSHI TOWN,JIANGSU PRV.,CHINA
4 POST CODE / ZIP CODE:	
5a COUNTRY:	China
5b IS THIS YOUR FIRST ECP AUDIT?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
6 ECP AUDIT DATE:	12-Feb-14
7 PREVIOUS AUDIT DATE:	
8 FACTORY AUDITOR NAME:	SHEN JIAN
9 FACTORY AUDITOR EMAIL ADDRESS:	
PROPOSER DETAILS – Provide details of the proposer company, either a M&S Regional Office or a Supplier	
10 PROPOSER COMPANY:	M&S Regional Office (00 to 103)
10a M&S REGIONAL OFFICE NAME:	Shanghai China Regional Office
10b M&S SUPPLIER COMPANY NAME:	Bernardo Fashions LLC
11 PROPOSER NAME:	Becky Zhu
12 PROPOSER EMAIL ADDRESS:	becky@bretfront-china.com
13 DATE PROPOSED:	12-Feb-14

MODULE 5 ENVIRONMENTAL & CHEMICAL POLICY FOR TEXTILE PROCESSING Page 1 of 6

RESTRICTED SUBSTANCES LIST

Chemical	What M&S products are most likely to be affected?	What is the origin of the controlled chemical?	Why is it banned or restricted?	Retail legal status	Supply base legal status	Maximum limit on finished product	'Practical' Limit of Detection	Test method (preferred method)
REACH – the use of products or preparations containing SVHCs (Substances of Very High Concern) as listed on the current edition of REACH is not permitted by Marks & Spencer where viable alternatives are available. M&S must be notified of the presence of any SVHCs in product at the time of contract, these must be less than 0.1% WWV. See Module 2 – REACH for further details.								
Banned Azo dyes and pigments <i>No deliberate use</i>	All fibre types	Banned amines listed in appendix 1. Examples of dyes that can form such amines listed in appendix 2.	Dyes can split to form carcinogenic amines	Sale of products containing > 30 ppm is illegal. Regulation No 1907/2006 of the European Parliament and of the Council	Use of products containing > 30 ppm is illegal	20 ppm	5 ppm	Textiles: EN 14382:2012 Leather: EN ISO 17234:2010
WARNING: Azo pigments	CI Pigment Orange 13 and CI Pigment Orange 34, when used in combination with CI Pigment Black 7, can release the banned aromatic amine 3,3'-dichlorobenzidine. Do not use these pigments in combination.							
Skin Sensitizing Disperse Dyes <i>No deliberate use</i>	Polyester, Acetate, and disperse-dyed nylon	Disperse Dyes listed in appendix 3	Once sensitized to a dye, people can react violently to trace quantities	No Legal restriction	No Legal restriction	20 ppm	5 ppm	DI/N 54231:2005-11
Alkyl phenol ethoxylates and Alkyl phenols (APEOs, APs) <i>No deliberate use</i>	All fibre types	In widespread use as detergents, Wetting agents, and as emulsifying agents	Endocrine disruptors (sex change chemicals) for aquatic species	Regulation 1907/2006 (EU) Annex XVII	Use of formulations containing over 0.1% of NPEO is illegal in Europe	100 ppm combined total of NPEO and OPEO 10ppm NP and OP	100 ppm	Solvent Extraction GC/MS/LCMS
APEO technical notes Refer to Module 6 of the Environmental & Chemical Policy for Textile Processing								
Organo tin compounds <i>No deliberate use</i>	All fibre types	Preservative for fabrics and chemical formulations. Occasionally used as stabilizers and catalysts	Tributyl tin is highly toxic, and related products have toxicity issues	Commission Decision 2006/425/EC	Use is effectively prohibited via water authority regulations	0.5 ppm TBT, TPT (in extract) 1ppm DBT, DOT and MBT (in extract)	0.05 ppm	Textiles: Solvent extraction + GC-MS (ISO 17353:2005-11 or in-house methods) Leather: SATRA TM277

MRSL/RSL The key ECP management tool!

MRSL- THE PURPOSE

Why a *Manufacturing* Restricted Substances List?

- Some hazardous chemicals may be used but not appear on finished product
- Workers are exposed
- Effluent is contaminated
- MRSL controls the **INPUT** of hazardous chemicals to the process



PFC UPDATE

DATE	Water Repellent finishes	Stain Resist and Stain Release finishes	Technical Notes
M&S Brand or Performance Requirement	Stormwear™, Water Repellent, Shower Resist etc.	Stormwear™, Stain Away™, Stain Repellent, Home Furnishings' stain resist etc.	GM Innovation Project – trials and substitution of non-PFC technology for all GM areas
Current - up to and including Dec 31 st 2012	Various finishes used inc. PFCs (C8 and C6) and non-PFC finishes e.g. silicone, wax etc.	PFCs (C8 and C6) finishes – various 'branded' and non-branded chemical suppliers	Standards controlled by ECP and REACH requirements, and M&S performance requirements
From January 1 st 2013	Change to non-PFC finishes from major global chemical suppliers – maintain product performance	<ol style="list-style-type: none"> 1. <u>Flow product</u> – progressively substitute C8 type with C6 types, nil C8 by 31.12.2013 2. <u>New product</u> – C6 technology <u>only</u> from 1.1.2013 	List of 'global branded' PFC chemical suppliers who can supply Short chain 'C6' technology – see page 2 of this document
From January 1 st 2014	Only non-PFC finishes from 'global branded' chemical suppliers for water-repellent finishes allowed No PFC finishes for water repellent allowed from 1.1.2014	<ol style="list-style-type: none"> 1. C8 fully eliminated – no exceptions 2. C6 used <u>only</u> where no viable alternative – progress to (3) below 3. Non PFC developments to be substituted 	
From July 1 st 2015	No PFC finishes	90% or more of stain repellent finishes to be non-PFC from July 1 st 2015	
From July 1 st 2016	No PFC finishes	Non-PFC finishes <u>only</u> from 1.7.2016	

▪ **DEC 15 – 77% PFC FREE**

▪ **100% C8 FREE**

▪ **DEADLINE FOR PFC PHASE OUT - FROM JULY 1st 2016**

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IPE & DATA DISCLOSURE

- Integration of IPE/CITI into M&S ECP application and renewal system
- For every new application and renewal of ECP audit, all Chinese wet processing mills are now required to register and complete all aspects of the Cooperate Information Transparency Index (CITI)
- 66 suppliers successfully disclosed their self monitoring data in the public platform (from 52 in 2014) – IPE PRTR disclosure covers 76% of output from mills in China
- M&S continue the searching mechanism monthly in IPE Database
- Suppliers will be rejected if they do not take any corrective actions



企业名称	浙江庆茂纺织印染有限公司		
行业	纺织业——Deion		
地址	中国 浙江 绍兴 袍江 industrial zone, tanggong road 313		
所属集团公司	N/A	上市地点:	交易代码: The code
数据年度	2013		



CITI Corporate Information Transparency Index

No.	Brand	Total	Engagement and Responsiveness		Compliance and Corrective Actions			Extend Green Supply Chain Practices		Data Disclosure and Transparency		Responsible Recycling
			Respond to and Engage with the Public	Establish a Screening Mechanism	Push for Corrective Actions	Centralized Wastewater Treatment	Identify and Manage Main Polluting Sectors	Extend Management Upstream	Energy and Climate Data	PRTR	Recycling Used Products	
											Weight	12
1	Adidas	66	12	12	14	2.5	7	2	7.5	9	0	
2	H&M	59.5	12	12	7	2.5	7	4	5	6	4	
3	Levi's	59	12	12	10.5	2.5	7	2	5	6	2	
4	M&S	52.5	9	9	7	2.5	7	2	5	9	2	
5	Esquel	51.5	9	12	14	0	7	2	2.5	3	2	
5	Walmart	51.5	9	12	14	0	7	4	2.5	3	0	
7	Nike	49.5	12	9	10.5	0	7	4	5	0	2	
8	Uniqlo	44	9	12	14	0	7	0	0	0	2	
9	Puma	43.5	12	9	7	0	7	0	2.5	6	0	
10	Target	42.5	9	12	7	0	7	2	2.5	3	0	

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M&S have moved up to 4th place from 6th position this time last year.

First M&S ECO Dyehouse in China Region

- Contribute to Detox Target by 2020
- Huge Anaerobic Oxidation Pond underground with sludge digested by Mirco-organism as one of the key effluent treatment process
- The generated Methane(CH₄) are collected to support 10% of factory total electricity consumption



Underground anaerobic oxidation pond (beneath the fountain)

CHEMICAL DUE DILIGENCE TESTING IN REGION

Whilst we expect our primary and secondary suppliers to be carrying out some level of chemical due diligence testing, M&S also regularly conducts its own due chemical due diligence testing.

- In order to deliver a much more proactive approach to chemical compliance, we have developed a policy to conduct our chemical due diligence in our sourcing regions.



M&S

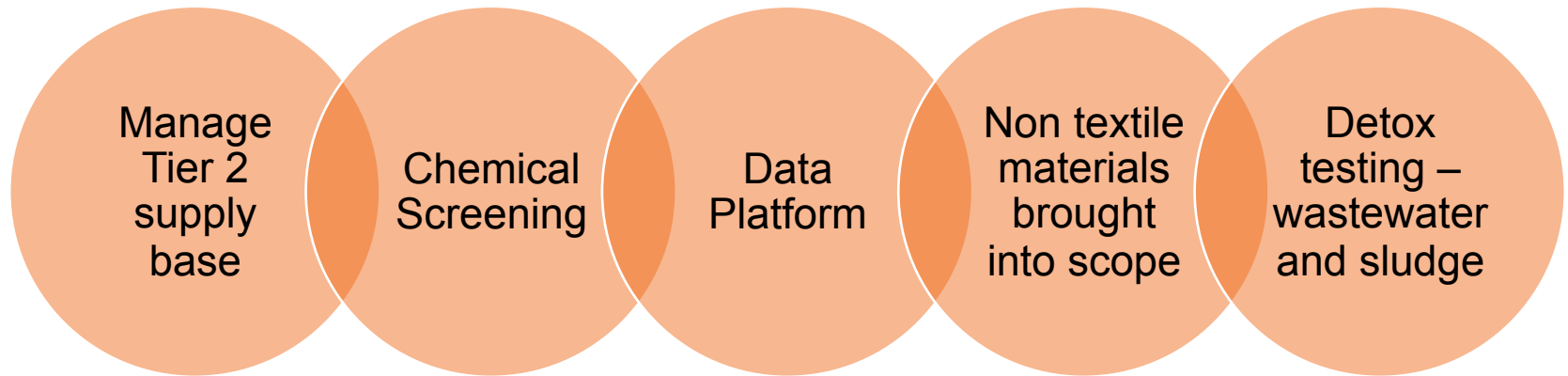
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REGIONAL RISKS

- CHINA - 90% of textile factories in China may face the risk of shutdown within three years if they fail to meet strict new pollution targets
- INDIA - Rajasthan State Pollution Control Board issued closure notices to 893 textile units in Sanganer for failing to install effluent treatment plants
- BANGLADESH - The textile industry in Bangladesh is expected to double in size by 2020. The sector consumes 1,500 billion litres of groundwater per year. Largest polluter of surface water



CHEMICAL COMPLIANCE – FOCUS AREAS FOR 2016

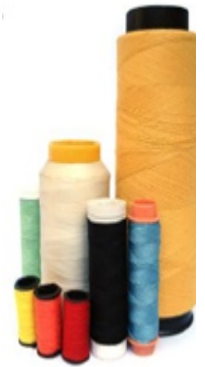


**TRAINING – cross cutting
all areas**

Plan A Attributes – Incentivising Clean Technology







- Eco Factories
- Re-cycled Fibres
- Bluesign
- Water based Synthetic Leather
- EIM software for sustainable
- Sublimation Ink jet Printing
- Spun dyed synthetic fibres
- Oekotex sTep



EIM ENVIRONMENTAL
IMPACT
MEASURING
SOFTWARE

are you green enough?

EIM SCORE   



benchmarks and process classification
depending on the EIM score

Low impact process Medium impact process High impact process

Calculation of the environmental impact

More information Deep Dive Download our app More help



Roadmap to Zero Programme

RØADMAP TO ZERO DISCHARGE OF HAZARDOUS CHEMICALS



IN ASSOCIATION WITH



INDUSTRY LEADERS COMMIT TO ZERO

Ø ZDHC

In 2011, a coalition of six brands published the Joint Roadmap and committed to the zero discharge of hazardous chemicals in the supply

This group now includes 21 Signatory Brands, 6 Associate Members and a diverse group of stakeholders with whom we regularly engage.



MCC

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Leaders in Advancing Environmental Responsibility

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- **Our mission** is to advance towards zero discharge of hazardous chemicals in the textile and footwear supply chain and act to improve the environment and people's well being.
- **Our vision** is widespread implementation of sustainable chemistry and best practices in the textile and footwear industries to protect consumers, workers and the environment.

OUR APPROACH

HARMONISING STANDARDS FOR BETTER CHEMICALS MANAGEMENT ACROSS THE TEXTILE & FOOTWEAR SUPPLY CHAIN

Three key categories for effecting industry change:

1. Standard Setting
2. Collaborative Implementation
3. Engaging a network of stakeholders



OUR PROGRAMME

Ø ZDHC

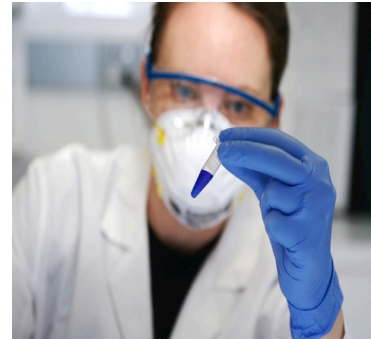
FOUR FOCUS AREAS & TWO CROSS-CUTTING

AREAS



FOCUS
AREA:

**MRSL &
CONFORMIT
Y GUIDANCE**



FOCUS
AREA:

RESEARCH



FOCUS
AREA:

**AUDIT
PROTOCOL**



FOCUS
AREA:

**WASTEWAT
ER QUALITY**



CROSS-
CUTTING
AREA:

TRAINING



CROSS
CUTTING
AREA:

**DATA &
DISCLOSURE**

M&S

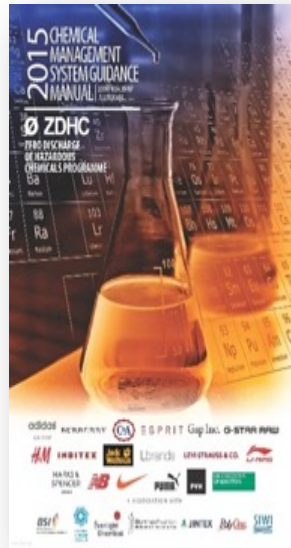
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FIND OUT MORE...

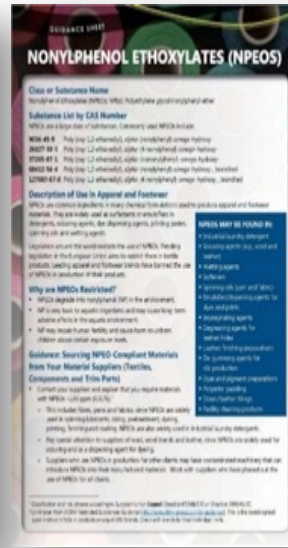
www.roadmaptozero.com



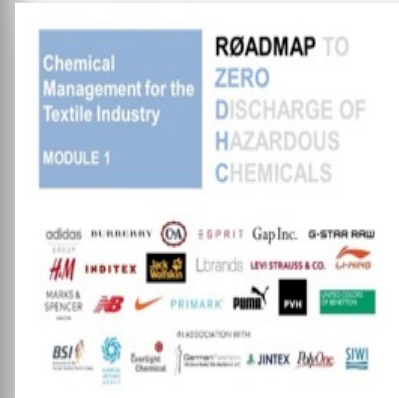
ZDHC
MRSL



CMS
Guidance
Manual



Chemical
Guidance
Sheets



Supplier
Training



QUESTIONS?

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Upcoming Events

WEBINAR

**Advancing Sustainability Through the Supply Chain
- Effective Communication and Transparency**

Thursday, March 31st, 2016 at 1:00 PM ET

WEBINAR

**Innovating with Intent: Science &
Sustainability at Eastman**

Wednesday, April 13th, 2016 at 12:00 PM EDT



11th Annual GC3 Innovators Roundtable

May 24-26, 2016 in Burlington, VT

Hosted by Seventh Generation



Thanks for joining us!

For more information about the GC3:
www.greenchemistryandcommerce.org

