

# Getting Started with a Factory Chemical Management System

**Kitty Man**

**Levi Strauss & Co.**



LEVI STRAUSS & CO.



TESCO

1



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver



# When you Receive the RSL...



Promise:

To comply with the RSL

But:

Understand?

Confused?

Don't know what to do?



LEVI STRAUSS & CO.



TESCO



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver

Timberland

# Have a Feeling of Being Out of Control?

- Overloaded with new requirements?
- Manufacturing for multiple brands with different RSLs?
  - Source from numerous raw material and chemical suppliers?



# Why is there Confusion?

- Human Behavior
- Raw Material Management
- Chemical Management
- Production Processes

**Robust factory RSL management systems needed**



# AG

AFIRM GROUP

## Apparel & Footwear International RSL Management Working Group

"To reduce the use and impact  
of harmful substances in the apparel  
and footwear supply chain."

[ [info@afirm-group.com](mailto:info@afirm-group.com) ]

# AG

AFIRM GROUP

[ [2010 AFIRM RSL Seminar](#) ]

[ [Previous RSL Seminars](#) ]

[ [FAQ](#) ]

[ [RSL Seminar Agenda](#) ]

[ [Supplier RSL Implementation Toolkit](#) ]

[ [REACH Information for Suppliers](#) ]

[ [Objectives](#) ]

[ [Companies](#) ]

adidas  
GROUP

C&A

GAP

H&M

### Mission Statement

To reduce the use and impact of harmful substances in the apparel and footwear supply chain.

### Vision Statement

AFIRM is a recognized global center of excellence, providing resources for sustainable, self-governing RSL implementation across the apparel and footwear supply chain. The supply chain has knowledge about RSL and chemical safety, assuring that consumers and workers are safer from the impact of harmful substances and the environment is cleaner. This improves customer confidence and the public's perception of apparel and footwear companies.

## RSL Toolkit

[www.afirm-group.com](http://www.afirm-group.com)

AG  
AFIRM GROUP

adidas  
GROUP

GAP

H&M

HUGO BOSS

LEVI STRAUSS & CO.

new balance



PUMA

TESCO

5

C&A

Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

5.Oliver

Timberland

# AFIRM Toolkit Contents



**RSL  
Management System**

1. Introduction
2. Restricted Substance List (RSL)
3. Where are the risks?
4. Educate the Supply Chain
5. RSL Testing
6. RSL Implementation
7. Links to brand RSLs
8. Appendices

[www.afirm-group.com](http://www.afirm-group.com)



LEVI STRAUSS & CO.



TESCO



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver

Timberland

# Potential Failures

## Human Behavior

Raw Material Management

Chemical Management

Production Processes

### Human Behavior Situation:

1. Misunderstanding
2. Wrong interpretation
3. Poor communication
4. Lack of accountability



# Understanding the RSL

**Read the RSL and Toolkit!!!**

- **Substances**
- **Limits**
- **Testing**

[Toolkit reference:](#)

[Chapter 1: Introduction](#)

[Chapter 2: Restricted Substance List](#)

**Human Behavior**



8



HUGO BOSS



Environmental  
Health & Safety  
Social Responsibility







## Human Behavior

# Education / Communication

**All staff, with focus on:**

- **Material / chemical purchaser**
- **Production manager**
- **Chemical room manager**
- **Anyone that touches chemicals**

[Toolkit reference:](#)

[Chapter 4: Educate the Supply Chain](#)



LEVI STRAUSS & CO.



TESCO

9



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver

Timberland



**Human Behavior**

# Education / Communication

## Your Supply Chain

- Raw material supplier
- Chemical supplier
- Subcontractors
- Packaging supplier
- Sundry supplier

Must have:

A 2-way communication!



LEVI STRAUSS & CO.



TESCO



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver

Timberland

# Potential Failures

Human Behavior

## Raw Material Management

Chemical Management

Production Processes

### Raw material management situation:

1. Purchase raw material containing restricted substance
2. Incorrect use of material
3. Contamination



# Raw Material Management

## Know what you purchase

- Type of material
- Chance for failure

## Source of raw material

- Reputable supplier
- Small corner shop

## Assurance from supplier

- Test reports, eco labels, declarations
- Recent date, valid test method, same material

**Maintain a comprehensive understanding of your raw material to minimize failure risk**

**Raw Material  
Management**



LEVI STRAUSS & CO.



TESCO

12



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver



# Raw Material Management

Understand potential failures for each type of material and test accordingly

## Example: Natural Fibres

- Core tests: metals, azo dyes, etc.
- Supplemental tests: PCP

[Toolkit reference:](#)

Chapter 3: Where are the Risks?

Raw Material  
Management



LEVI STRAUSS & CO.



TESCO



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver



# RSL Testing

- Follow your customer's testing requirements
- Proactive internal educated and random testing
- Require test reports from raw material suppliers

Raw Material  
Management

[Toolkit reference:](#)

[Chapter 5: RSL Testing](#)



LEVI STRAUSS & CO.



TESCO



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver

Timberland

# Potential Failures

Human Behavior

Raw Material management

**Chemical Management**

Production process

Chemical management situation:

1. Purchase chemical containing restricted substance
2. Incorrect use
3. Wrong dosage
4. Contamination



# Chemical Management

## Chemicals include:

- Dyestuff and colorants
- Printing inks and binders
- Detergent, fixing agents, softeners
- Chemicals for special finishing (wrinkle free / easy care)
- Adhesives and solvents

Chemical  
Management



LEVI STRAUSS & CO.



TESCO



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver

Timberland

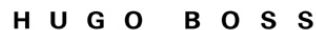


# Chemical Management

- Provide your customer's RSL and education to your chemical suppliers
- Obtain Material Safety Data Sheet (MSDS)
- Require documented assurance of compliance

**If they don't know  
what they're selling,  
don't buy their**

**Chemical  
Management**

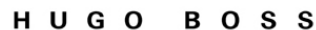


# Chemical Management

**Chemical purchase price is not the only factor when selecting chemicals**

Chemical	A	B
Price	\$50/kg	\$150/kg
Usage per garment	25 grams	8 grams
Price per garment	\$1.25	\$1.20

**Chemical Management**



# Chemical Management

## In-house chemical management

- Maintain a current chemical inventory
- Label and segregate all chemical containers properly
- Cover all containers – avoid spillage and contamination
- Educate staff who handle chemicals
- Document and maintain formulations



# Potential Failures

Human Behavior

Raw Material Management

Chemical Management

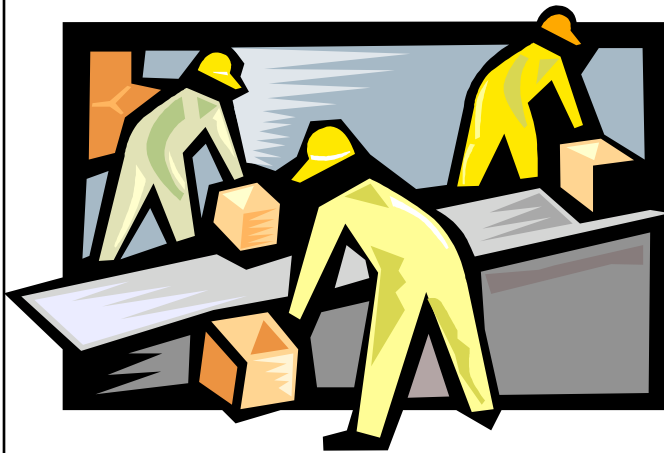
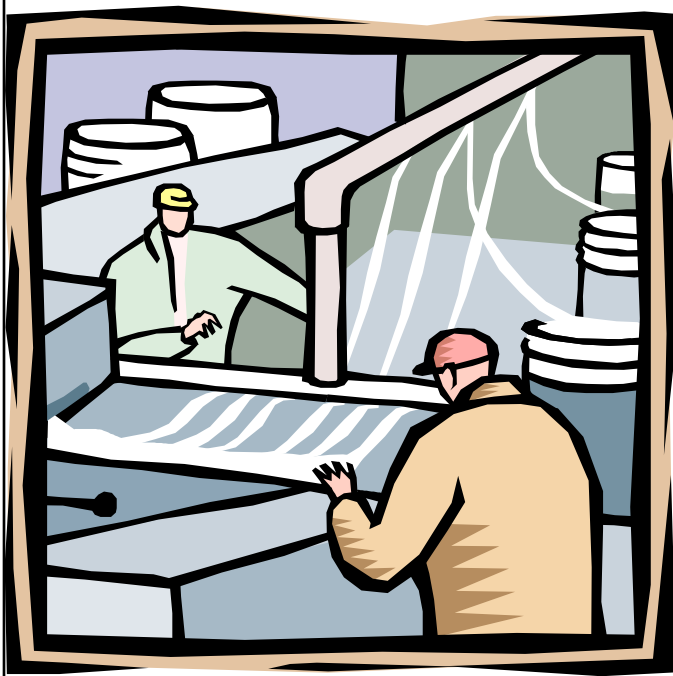
**Production Processes**

Production processes situation:

1. Inconsistent process control
2. Incorrect formulation



# Production Processes



- Worker education
- Document all chemical formulations
- Regular calibration of equipment
- Appropriate chemical use:
  - Dying, printing, finishing
- Comprehensive documentation
  - Technical Data Sheets (TDS)
  - Material Safety Data Sheets (MSDS)

# Production Processes

- Curing & drying
  - Temperature, duration
  - Check the oven temperature!

Improper curing/during may lead to both RSL and physical performance problems



22



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver





# What should you do if a Restricted Substance is found on the product?



LEVI STRAUSS & CO.



TESCO

23



HUGO BOSS



Phylmar Group

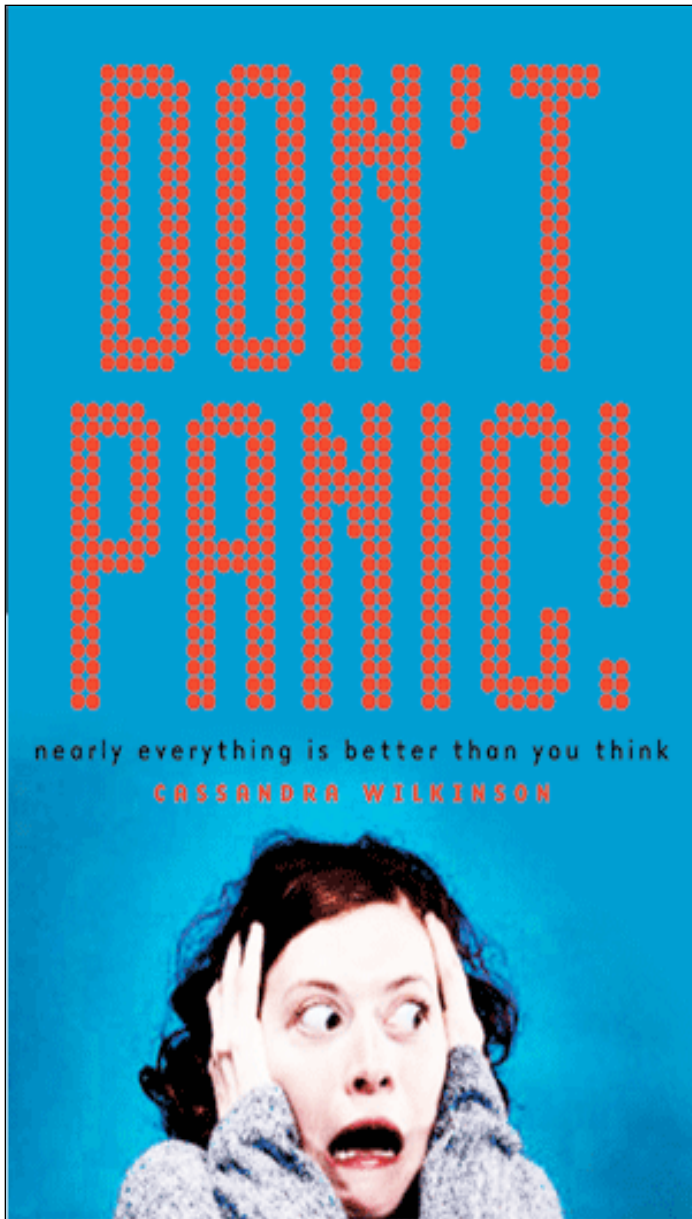
Environmental  
Health & Safety  
Social Responsibility

s.Oliver



# Restricted Substance Found...

1. Don't panic!
2. Inform your customer – Stop shipments
3. Involve raw material and chemical suppliers in investigation
4. Track the source of the failure
  - Raw materials
  - Chemicals
5. Test all product ingredients
6. Verify process control, TDC, MSDS





# Successful Manufacturers:

1. Understand restrictions
2. Setup in-house RSL team
3. Ensure thorough communication and engagement throughout supply chain
4. Maintain chemical inventory list
5. Document the formulation / recipe
6. Ensure controls are in place
7. Be transparent

[Toolkit reference:](#)

[Chapter 6: RSL Implementation](#)



LEVI STRAUSS & CO.



TESCO



HUGO BOSS



Phylmar Group

Environmental  
Health & Safety  
Social Responsibility

s.Oliver

Timberland