

Apparel and Footwear
International RSL Management
(AFIRM) Working Group

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SEMINAR***

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Welcome

Apparel
Footwear
International
RSL
Management

Restricted **S**ubstances **L**ist
Seminar

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Introduction to AFIRM



Betsy Blaisdell

Supply Chain

The Timberland Company

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Who We Are

- **Multi-company working group that includes:**

- apparel and footwear companies with RSLs
- regulatory, product safety and chemistry experts

- **Which shares**

- best practices
- RSL management, information and experiences, and benchmarking.

- **Complies with the antitrust laws of the US**

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Why We're Here

- Regulatory burden is growing
- Green consumerism is rising
- Brands managing RSLs are growing
- Streamlining requests of suppliers and manufacturers
- Leverage resources through partnerships
- Ownership of chemical product safety at all levels is a must
- Factory self-governance on chemical product safety is required to prevent product recalls and cancelled contracts

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Different But Similar

- Individual companies have their own RSLs. The differences between them are minor.

- All have similar:

- Missions

- Guiding principles

- Approaches

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AFIRM's Mission

- Advance global management of RSL in apparel and footwear manufacturing
- Communicate information about RSL throughout the supply chain
- Share best practices for improving RSL management
- Ultimately, elevate consumer satisfaction

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Guiding Principle

#1

Chemical product safety must be **understood in the global supply chain** as an integrated whole, from workplace to consumer

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Guiding Principle

#2

Chemical product safety can only be achieved through **partnership** among retailers, suppliers and manufacturers.

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Guiding Principle

#3

Retailers must encourage
**suppliers' and manufacturers'
self-governance of chemical
product safety**

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PURPOSE OF THE SESSION

Jeffrey Birtwistle

Product Compliance Management

C&A EUROPE

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WHAT CAN YOU EXPECT TO GAIN TODAY

Apparel
Footwear
International
RSL
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Additional understanding about AFIRM's mission

- Who we are
- What we do
- Our main concerns
 - Understanding
 - Partnership
 - Social Responsibility

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WHAT CAN YOU EXPECT TO GAIN TODAY



- RSL's what & why
- Chemicals are everywhere
 - Consumer concern
- Where is the final destination
 - Product safety

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WHAT CAN YOU EXPECT TO GAIN TODAY

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Chemical categories and classification

- By law
- Stockholm convention
- Consumer classification
 - Oeko-tex
 - Toxproof
 - S.G. label
 - Eco-label “Flower”
 - ETAD
- External classification schemes
- R.E.A.C.H.

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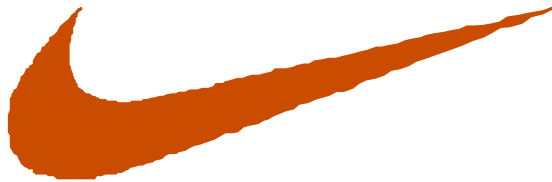


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EXAMPLES OF FAILURE



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- The issues
- The cost
 - Financial
 - Negative publicity
 - Image management
- Solutions

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SOURCES OF FAILURE

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- Where do restricted chemicals come from
- Main failure areas in supply chain
- Transparency of information
 - Secondary chemicals in production

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TIPS FOR COMPLIANCE



- True source of failures
 - Product control
- Seeking / sharing knowledge
 - Control of processes
 - Keeping records is good management
- Why failure has to be avoided

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TESTING PROCEDURES



- **General procedure**
- **What needs to be tested**
- **Customer preference**
- **Importance of testing**

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**Do you know
what you are wearing?**

Time to find out!

SOME CONCERNS

- From cotton plantation to finished garment, 14000 potential dyes /chemicals
- Group sells several billion pieces of apparel/footwear every year
- A large percentage of chemicals have direct skin contact
- A large percentage may pollute air, land and surface water
- Risk exposure is significant

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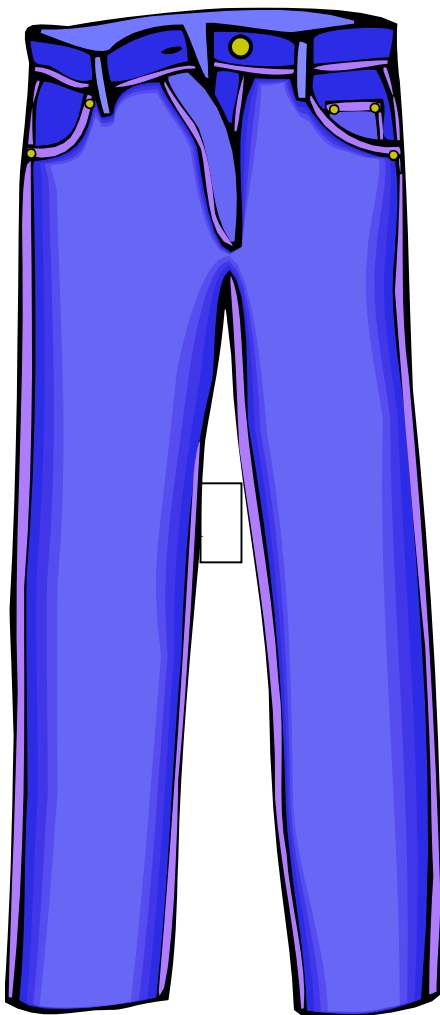
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RSLs – What and Why?



Sean Cady

Levi Strauss & Co.

- **Legislation**
- **Non-Governmental Organization**
- **Health and Environment**

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What is an RSL? Why?



Chemical substances either:

- Prohibited from use
- Limited in the product
- Restricted in manufacturing

- Legislation

- NGO

- Consumer / worker protection

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Chemicals



- **Critical for consumer products**
 - **Unique properties**
 - **Unique purpose**
- **Where does the chemical end up?**

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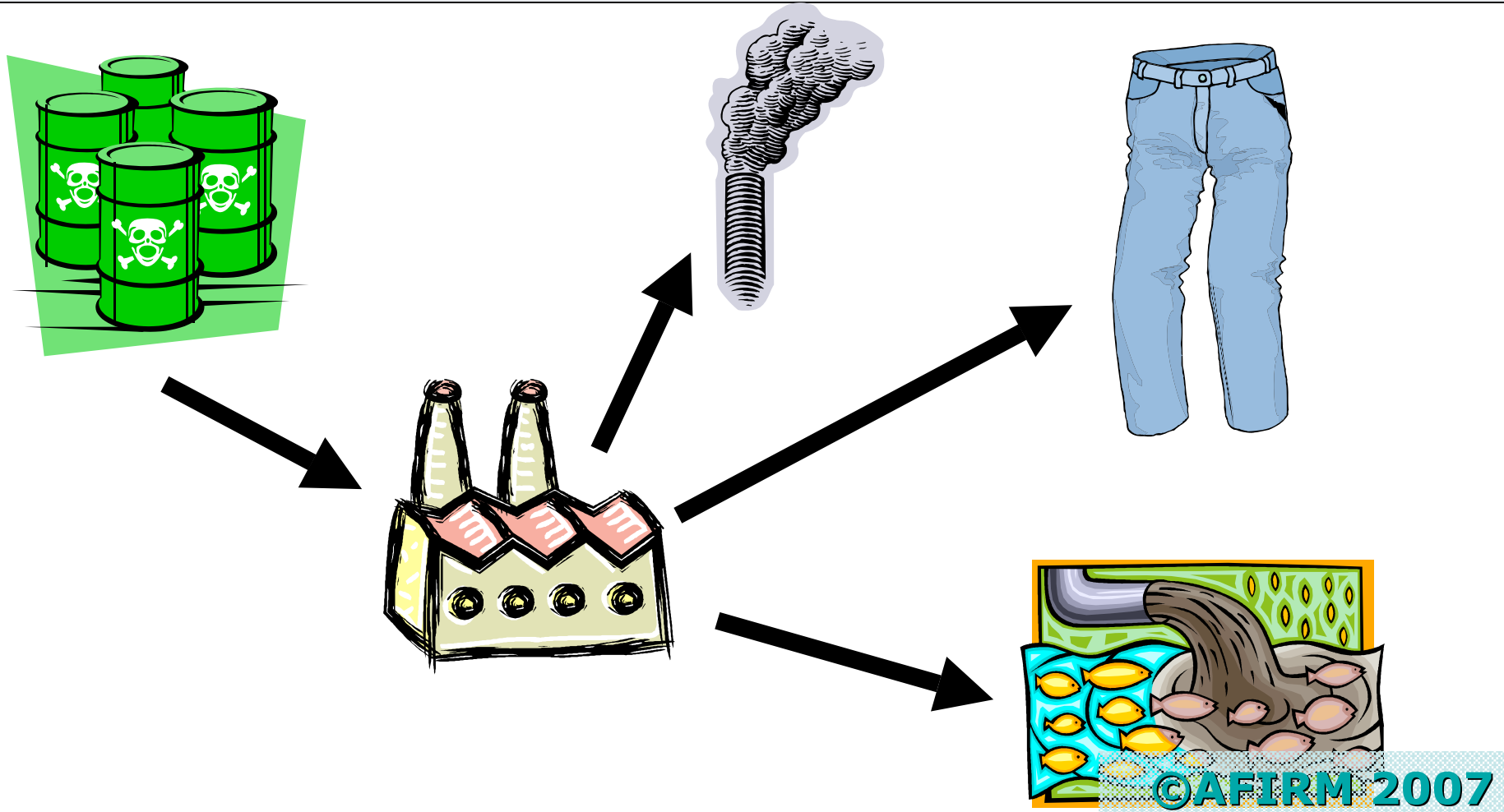
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End of Life



Focus on Product



RSL Focus

- Chemical on product
 - Day
 - Night
- Direct skin contact

Why?

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Important?

Why is an RSL Important?



- Product safety
- Responsibility
- Comply with legislation
- Brand image

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Legislation



Formaldehyde

- China, Japan, Russia, South Korea, EU Countries

Limit for product:

Indirect: 150 ppm

Direct: 75 ppm

Baby: 20 ppm*

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Non-Governmental Organizations

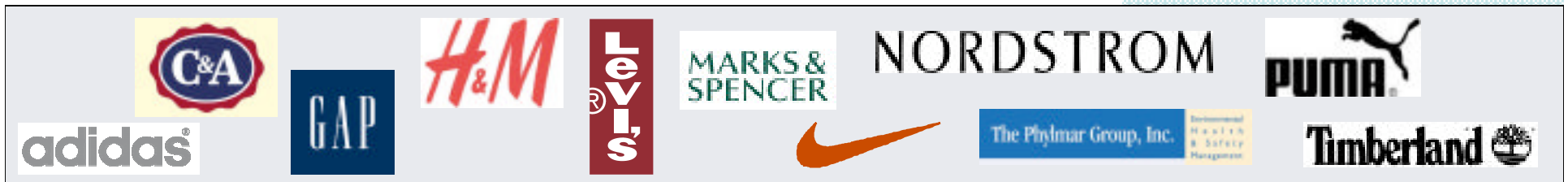
Oeko-Tex



More restrictive on dyes

- Azo amines: 2 more than EU
- Disperse dyes: 12 more than EU

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ÖKO-TEST

RICHTIG GUT LEBEN



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Oeko-Test

Poisonous Cord



- Found: 408 ppm benzidine
- Law: 30 ppm

In the blue cord of a child's sweater, the quantities of aromatic amines were so high that it should not be sold.

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Consumer Protection

Types of consumer reactions:

- Skin irritation
- Sensitization
- Cancer
- Respiratory irritation

Dyes, Resins, Solvents

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Environmental Protection

Chemicals into environment:

Air

Water

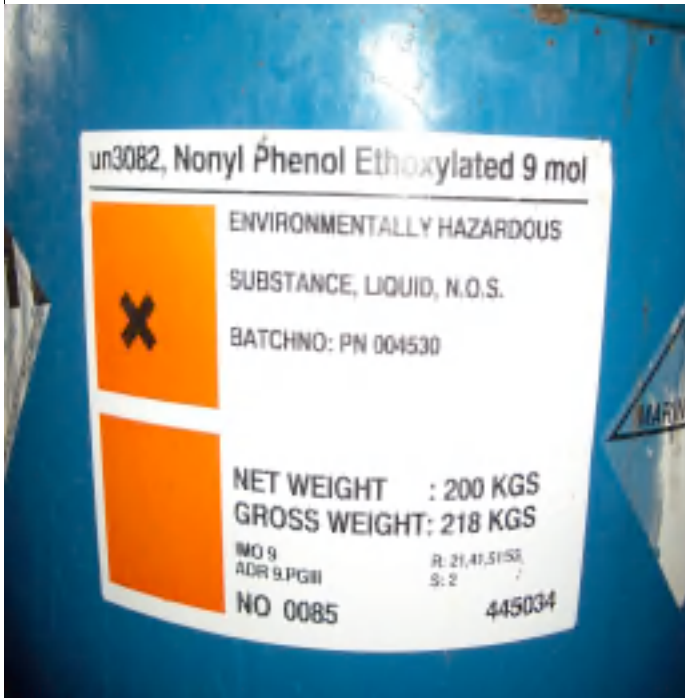
Soil

- **APEOs**

- **Dyes**

- **Flame Retardants**

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Summary

RSLs Help To:

- Comply with the law
- Protect the consumer
- Protect the environment
 - Meet NGO concerns
 - Protect business

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Chemical Categories

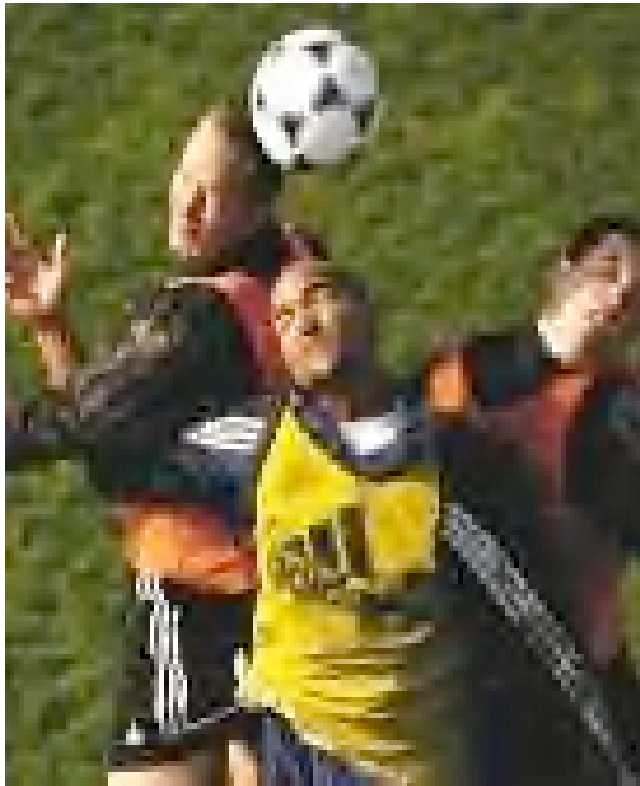
Chemical Categories and Classification schemes

by

Marcus Kuerner

Senior Environmental Manager

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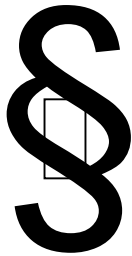


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Chemical Categories

Classifications by Law

- German Chemikalienverbots Verordnung (Chemicals Act)
- §30 of the Food and Commodities Law (LMBG)
- Directive 76/769/EEC and amendments (restrictions on marketing and use of certain dangerous substances)
 - Japan Law 112
 - California Proposition 65
- Various national Laws on global base



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Chemical Categories

Other Classification Schemes

- Stockholm Convention on Persistent Organic Pollutants (POP's)

Targeting prevention and phase out of chemicals according to their inherent characteristics:

- persistent
- toxic
- bio-accumulative
- endocrine disrupting



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Chemical Categories

“Consumer” Classification Schemes

- Oeko-tex 100 (www.okotex.com)
 - TÜV Toxproof
 - SG Label
- For Inks/Dyes: ETAD

(Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers)

(www.etad.com)

- WFSGI RSL
- BSR RSL



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Chemical Categories

BAUR H&M L&L EGG MATERIAL REQUIREMENTS TEXTILES FOR GARMENTS
 Oeko-Tex Sport-Check

"Tested for harmful substances": Natural, chemical fibres and blends

A. Suit for direct skin contact...
 B. Direct skin contact...
 C. External children's wear...

Parameter	CHEMICAL PARAMETER				Test method
	1	2	3	4	
Formaldehyde	0.05 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	1
Acidic dyes	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	2
Allylamine	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	3
Heavy metals	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	4
Phthalates	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	5
Fluorinated compounds	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	6
Chlorinated compounds	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	7
Organic tin	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	8
Organic lead	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	9
Organic mercury	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	10
Organic arsenic	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	11
Organic cadmium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	12
Organic chromium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	13
Organic cobalt	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	14
Organic copper	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	15
Organic nickel	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	16
Organic manganese	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	17
Organic selenium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	18
Organic silver	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	19
Organic zinc	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	20
Organic boron	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	21
Organic molybdenum	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	22
Organic vanadium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	23
Organic antimony	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	24
Organic tellurium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	25
Organic bismuth	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	26
Organic thallium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	27
Organic barium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	28
Organic strontium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	29
Organic calcium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	30
Organic magnesium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	31
Organic potassium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	32
Organic sodium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	33
Organic lithium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	34
Organic rubidium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	35
Organic cesium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	36
Organic francium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	37
Organic actinium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	38
Organic thorium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	39
Organic uranium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	40
Organic plutonium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	41
Organic americium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	42
Organic curium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	43
Organic berkelium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	44
Organic californium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	45
Organic einsteinium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	46
Organic fermium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	47
Organic mendelevium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	48
Organic nobelium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	49
Organic lawrencium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	50
Organic rutherfordium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	51
Organic dubnium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	52
Organic seaborgium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	53
Organic bohrium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	54
Organic hassium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	55
Organic meitnerium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	56
Organic darmstadtium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	57
Organic roentgenium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	58
Organic copernicium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	59
Organic nihonium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	60
Organic flerovium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	61
Organic moscovium	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	62
Organic tennessine	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	63
Organic oganesson	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	0.1 mg/kg	64

“External” Classification Schemes

- Retail
- NGO’s
- EN 71
- RoHS

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Chemical Categories



Classifications in progress

- US EPA decision on PFOA's (chemical for fluorocarbons)
- Phthalates to be integrated under California Proposition 65

- **REACH**

Registration, Evaluation and Authorisation of Chemicals

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Chemical Categories

Examples of Restricted Substances

Heavy Metals

Cadmium (dyes and stabilizers => accumulating, bone and renal damage)

Chrome VI (tanning agent => carcinogenic, strong sensitizer)

Lead (dyes and stabilizers => accumulating, neurotoxic, damage of haematopoiesis)

Mercury (pesticides => accumulating, neurotoxic, renal damage)

Nickel (metal/alloy => strong allergen, carcinogenic)



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Chemical Categories

Examples of Restricted Substances

Phenols

Pentachlorophenol PCP (fungicide, pesticide => hepato- and renal toxic, carcinogenic, contains dioxins)

Tetrachlorophenol TeCP (fungicide, pesticide => hepato- and renal toxic, carcinogenic, contains dioxins)

Ortho-Phenylphenol OPP (preservative, pesticide => toxic)

Sum of Pesticides

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Chemical Categories

Examples of Restricted Substances

Inks and Dyes

azo-amines

actual 24, all are carcinogenic

disperse dyes

sensitizing to skin

§

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Chemical Categories

Examples of Restricted Substances

Halogenated Organics

Polychlorinated Biphenyls PCB (lubricants => accumulating, mutagenic, teratogenic, some carcinogenic, immunocompromizing)

Chloroorganic carriers (hepatotoxic)

Short chained Chloroparaffines C10 to C13
(leather greasing, flame retardants => accumulating, toxic for aqueous life, environmental hazard)

Flame retardants (including Brominated / Phosphor) accumulating, toxic, environmental hazard

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Chemical Categories

Examples of Restricted Substances



- **Formaldehyde** (preservative, textile auxiliaries => carcinogenic, sensitizing)
- **Phthalates** (polymer plasticizer => endocrine disrupter)

Tin-organic Compounds

Tributyltin TBT (antimicrobial agent, polymerisation => endocrine disrupter, aquatic toxicity)

Dibutyltin DBT (polymers, cements, glues, lubricants => endocrine disrupter, aquatic toxicity)

Monobutyltin MBT (polymers, cements, glues, lubricants => aquatic toxicity)

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Chemical Categories

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commitment

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Examples of RSL Failures

SYSTEM FAILURE

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WHY DO WE WORRY?

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**WRONG
WAY**

WHEN THINGS GO WRONG

....and they will

FACT: Every company in our industry has or will have an RSL related failure.

FACT: Failures will disrupt business.

FACT: Failures will damage your brand image.

FACT: Failures will be expensive.

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EVERYONE WATCHES

Chemical issues are a focus of:

- Governments
- Legislation (REACH)
- NGOs
- Consumers

We are all concerned.

We are all targets.

We are all responsible.

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JERSEY - TBT



TBT

Issue:

- TBT (traces) found in a Borussia Dortmund jersey
- Total unknown substance to Nike/apparel industry

Solution:

- Scramble for chem and tox info
- Prompted RSL development
- No recall

Cost:

- ~\$4.8M (USD)
- Bad public perception

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CAPS - Formaldehyde



Formaldehyde

Issue:

- Formaldehyde used to give cap shape

Solution:

- Some materials washed
- Some materials replaced
- Led to phase out of formaldehyde in contract factories

Cost:

~\$1.2M (USD)

- Unable to ship some product for several months

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CADMIUM - Ball



Cadmium

Issue:

- Cadmium found during routine testing
- Source = clear outer pvc layer

Solution:

- Replaced with technically and environmentally superior TPU
- No cost increase.

Cost:

- Costs ~ €900,000
- Could have been MUCH worse!

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GOLF GLOVE - Cadmium



Cadmium

Issue:

- Cadmium in metal ball marker.

Solution:

- Consumer research led to dropping ball marker on future designs.

Cost:

- Lower

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BABY JORDAN - Lead



Lead

Issue:

- Paint peeling from a toddler's shoe contained lead

Action:

- Voluntary recall ~110,000 pairs

Cost:

- \$4.4 million USD
- > \$2.3 million in supply chain logistics and management

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Sources of Failure



Phil Patterson

Marks and Spencer

**Dyeing, Printing, Finishing and Colour
Manager**

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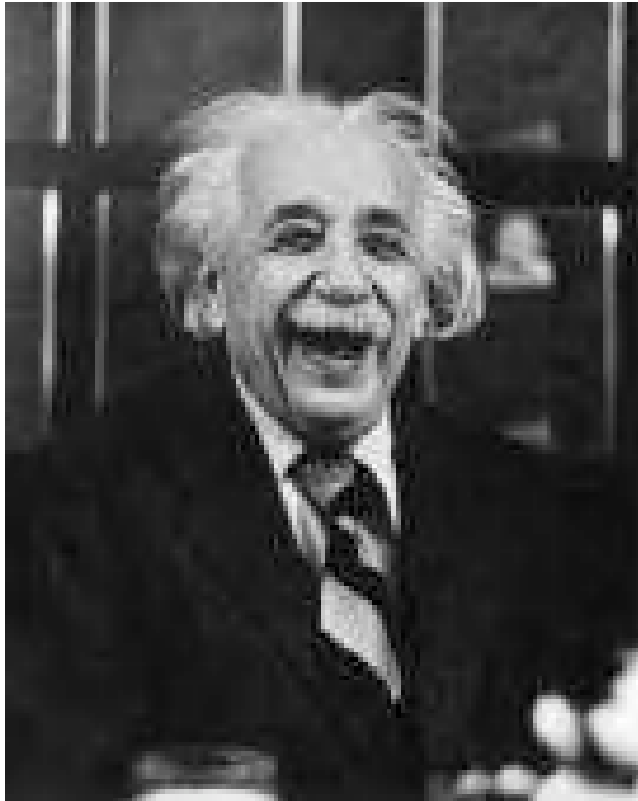
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Recap.....



By now you have.....

**Gained an understanding of
common principles**

Seen why we have RSL's

Seen some chemicals we control

Seen the consequences of failure

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Sources of Restricted Chemicals



Raw Fibre, Ecrú Yarns, Greige Fabric, Undyed Hides

Dyes and Chemicals

Ancillary Chemicals

Poor Process control

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1 Fibre, Yarn, Fabric and Hides

Never Assume it's clean....e.g.

Most silk contains APEO

Cotton and wool may contain pesticides

Some process oils are carcinogenic

Always verify your raw materials

Know what you bring in

Know what you put on

Know what you send out

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2 Dyes and Chemicals



Most failures are due to dyes and chemicals that are.....

- **Harmful themselves**
- **Contain significant concentrations of harmful chemicals**

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Someone Knows What's in the Drum !



Good suppliers know what's there (and should tell you)

MSDS essential....

But many have incomplete information

Many RSL failures due to non-deliberate application

Some companies don't provide MSDS!

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Chemical Management Risks

Unspecified chemicals in a formulation

Unlabelled drums in the store

Unlabelled buckets by the machine

..All a risk to our customers and your workers



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3 Ancillary Chemicals



What are you using to....

Clean the machines?

Clean the floors?

Lubricate the machines?

Polish the tables?

Wrap the finished product?

Remove stains?

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Ancillary Chemicals



Have you assessed your non-textile/ non-product chemical inventory?

Many common household products are not permitted on our merchandise

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4 Inadequate Process Control

Dyeing and Finishing processes are chemical reactions

Poorly controlled reactions = Risk

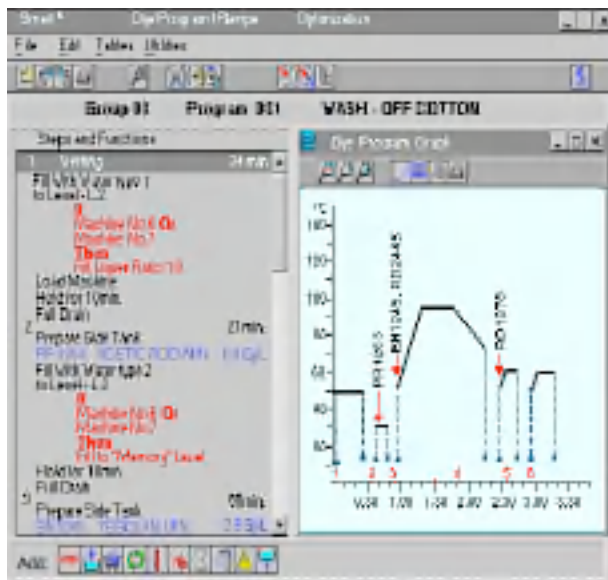
Reactions are controlled by...

Ratio of reagents

Temperature

pH

Time



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Common Control Issues



Inaccurate weighing and dispensing

Poor temperature control

Poor pH control

Poor humidity control

No written Standard Operating Procedures

Unlabelled chemicals

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And now the Good News

You've seen the sources of failure

Now Mattias will share best practice on avoiding failure

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TIPS FOR COMPLIANCE



MATTIAS BODIN

H & M HENNES & MAURITZ AB

Chemical Responsible, Asia

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CONTENTS

Why do failures occur?

How to avoid failures?

Why avoid failures?



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WHY DO FAILURES OCCUR?



To act responsibly, you must know:

Why and how failures occur

What is inside the product

Who has the information

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WHY FAILURES OCCUR?

Is it because of:

Bad luck?

Test problems?

} **NO!**

Restricted chemicals are used
in production?

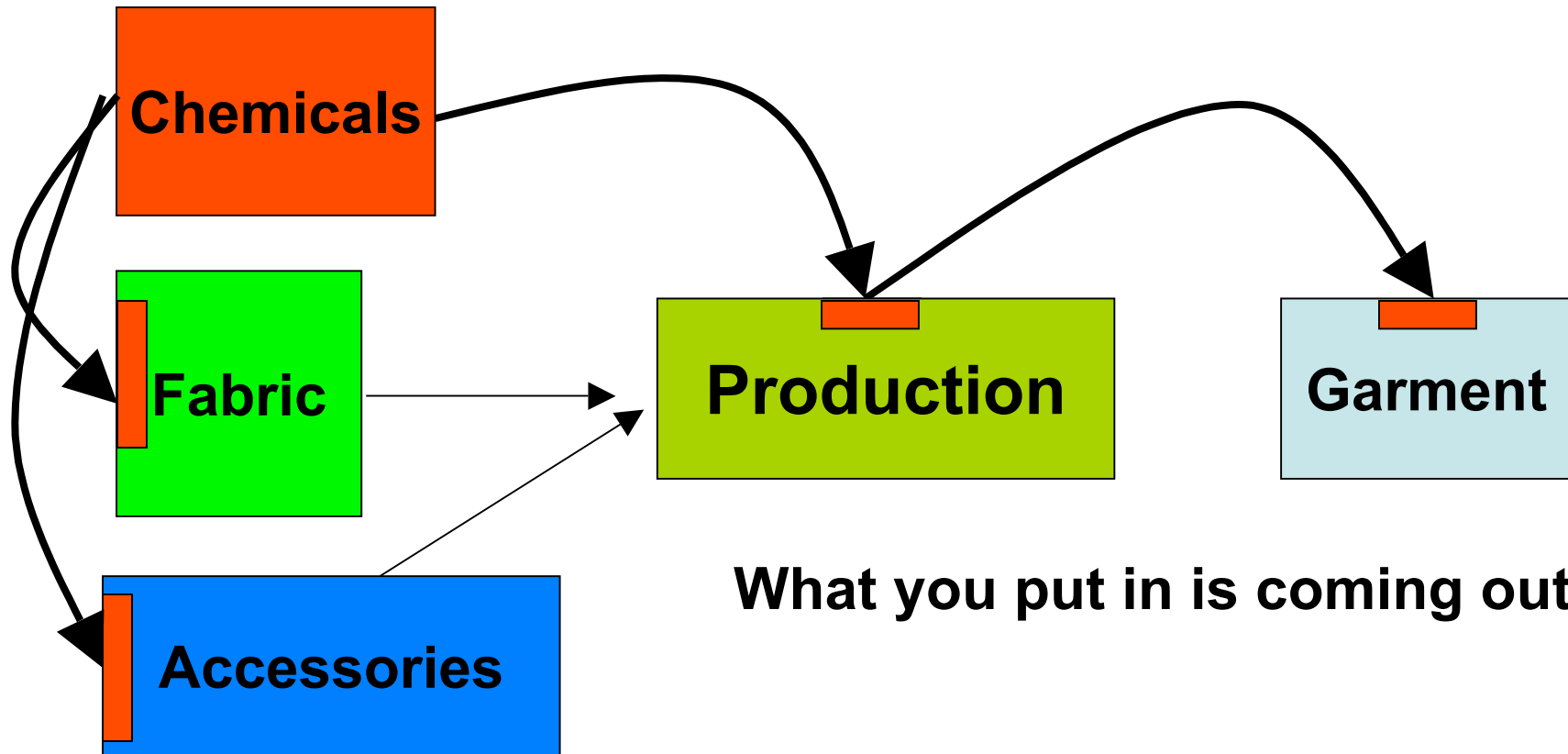
YES!



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PRODUCTION CONTROL

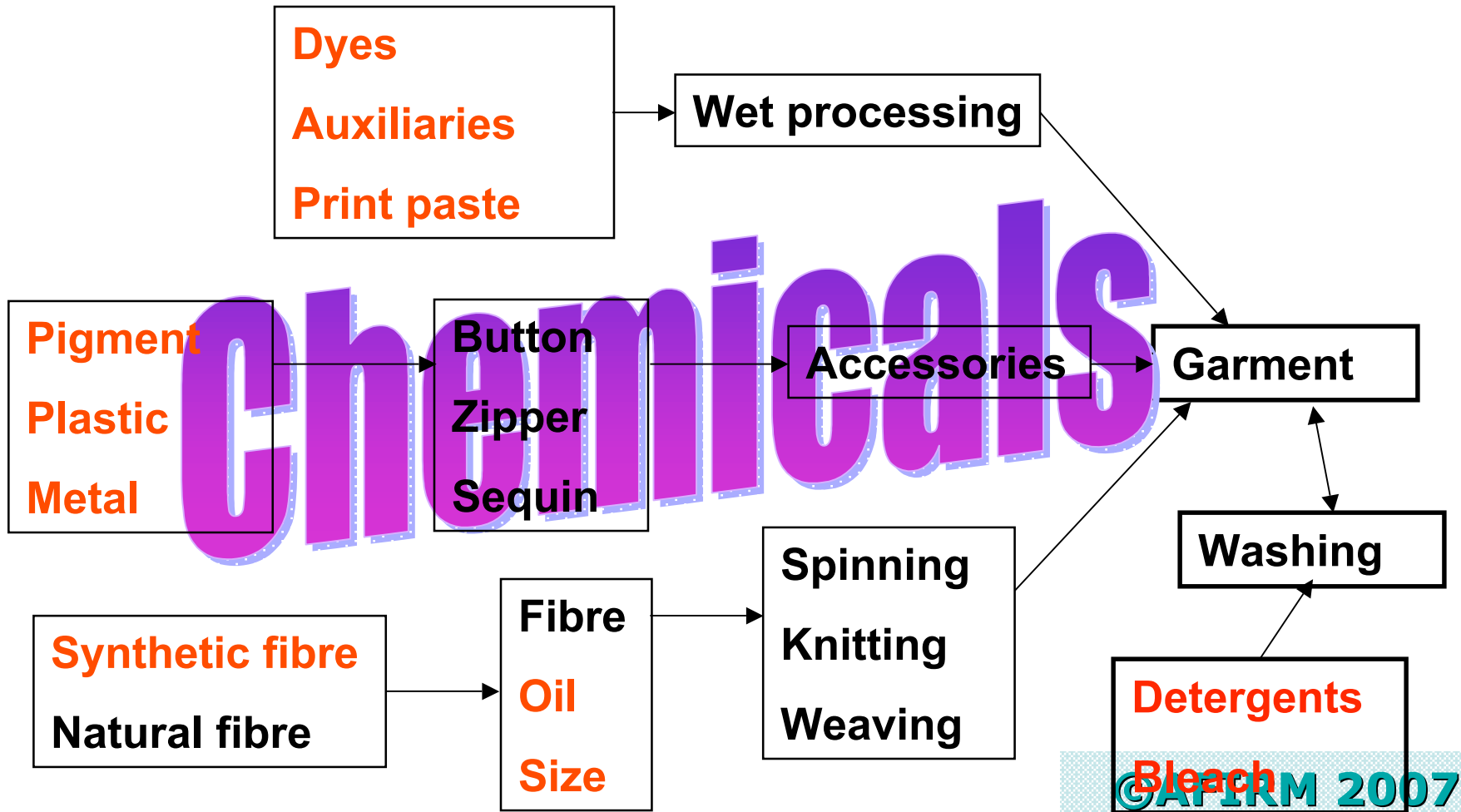


What you put in is coming out!

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WHAT IS INSIDE THE PRODUCT?



WHO HAS THE INFORMATION?



Chemical companies must know what their products contain....

BUT, you need to ask!

If they don't know – don't use them

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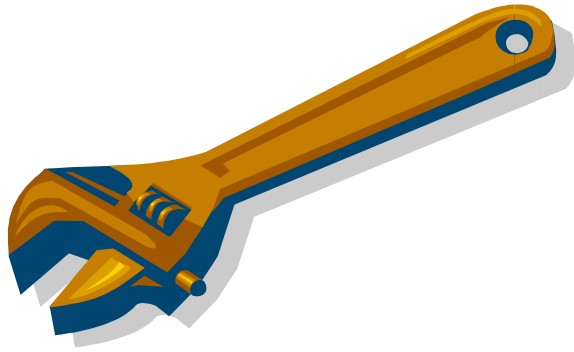
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HOW TO SUCCEED?



Now we know how to act responsibly.

So,

How do we do it?

What tools do we have?

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HOW TO AVOID FAILURES?



Production control:

- 1) Communicate RSL
- 2) Record of chemical products used
- 3) Require necessary information about chemical products
- 4) Person responsible (chemist)

Test products/materials

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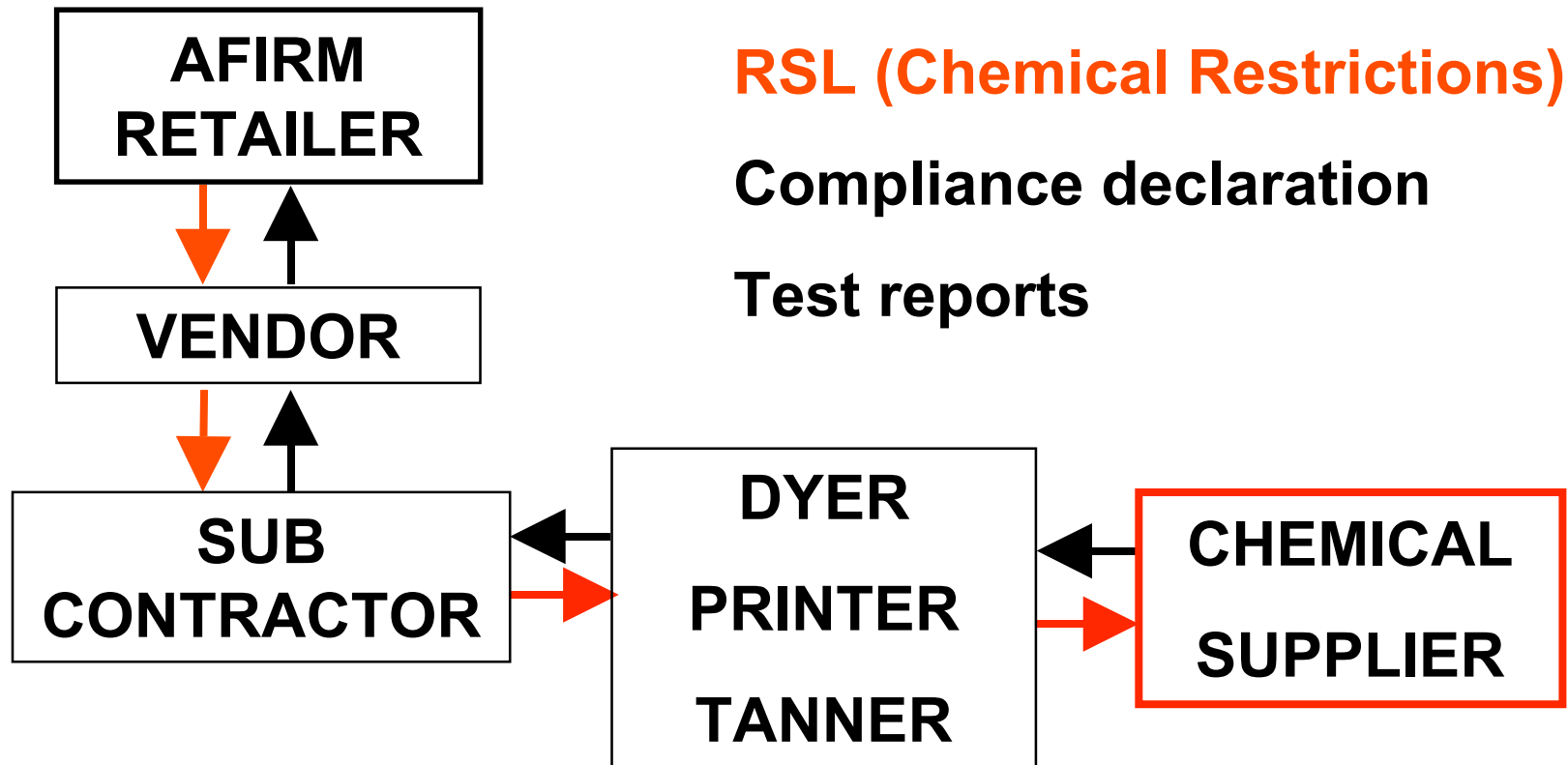
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COMMUNICATE RSL



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RECORD OF CHEMICALS

Know what you are using:

Pre-treatment (scouring, bleaching etc.)

Dyeing/Printing

Finishing (softening, easy-care)

Not only dyes.

**Everything is important (wetting agents,
dispersing agent, levelling agents, etc.)**

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NECESSARY INFORMATION

Require for all chemicals:

MSDS (Material Safety Data Sheet)

Compliance declaration to RSL

Labelled containers

What if Chemical Supplier:

Has no MSDS

Won't sign declaration

Needs to test

They don't know →

You can not act responsibly →

Don't use it!

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EXAMPLE



APEO in Cotton fabric:

- Suspected scouring agent.
- Called chemical supplier and received confirmation that the chemical contained APEO.

Time needed: 5 min

Cost: almost nothing

**BUT nobody asked the question
before**

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EXAMPLE

Lead in Polyurethane (PU) fabric:

Reason: PU manufacturer received incomplete RSL from garment supplier

- PVC and phthalates
- not heavy metals

Action:

Give complete RSL

Time needed: 5 min

Cost: almost nothing

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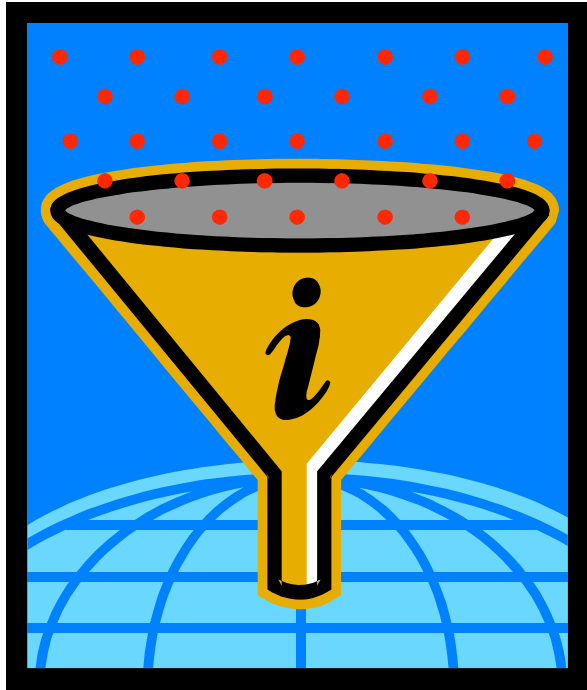
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SUMMARY



Communicate

Know and control your chemicals

Request information from chemical suppliers

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TESTING



AFIRM companies perform testing because:

We don't own production

To make sure you act responsibly

Soon, Reiner from PUMA will talk more about testing

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BENEFITS FROM AVOIDING FAILURES?



Cost avoidance due to:

No cancelled orders

No delays

Time saving (less testing)

Better:

- Environment
- Working conditions
- Quality
- **Product**

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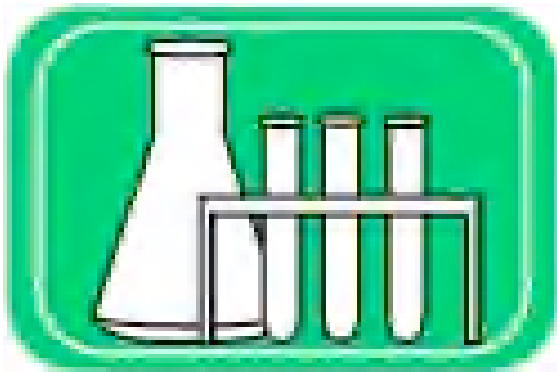
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TESTING



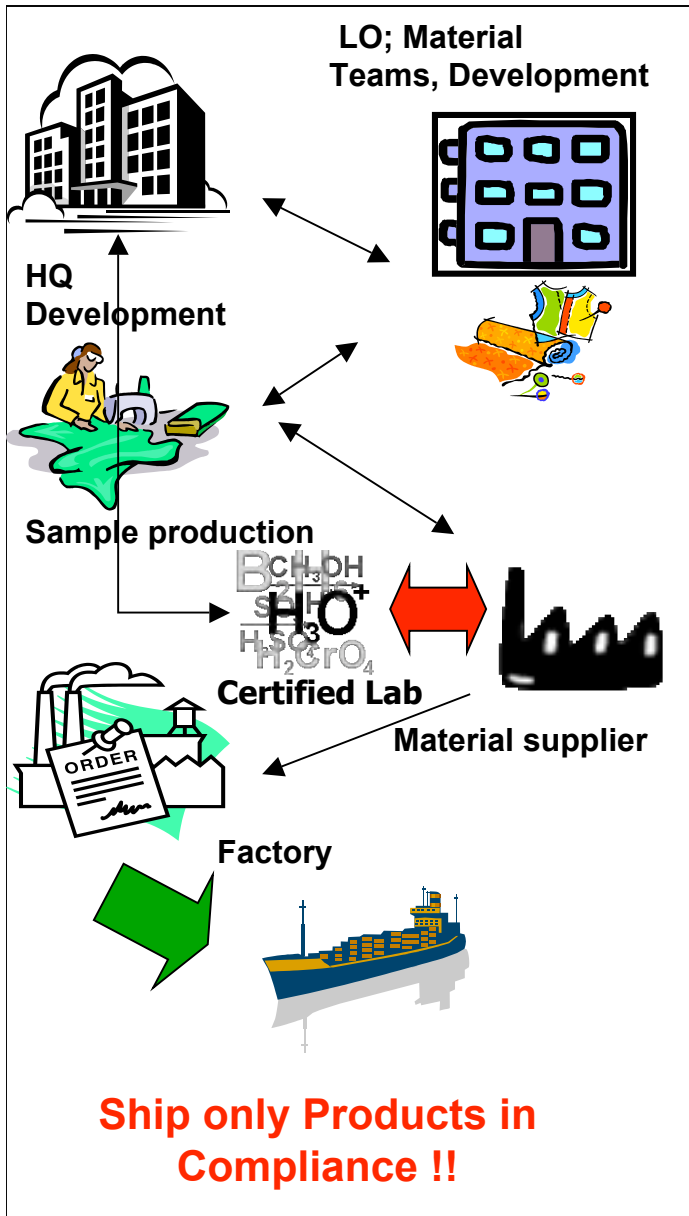
Reiner Hengstmann

**Social & Environmental
Affairs**

PUMA AG

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TESTING

GENERAL PROCEDURE

- Get certificates or follow the testing procedure
- All materials have to be verified
 - Use accredited labs
- Company RSL must be fulfilled
 - Ship only products in compliance with company RSLs!

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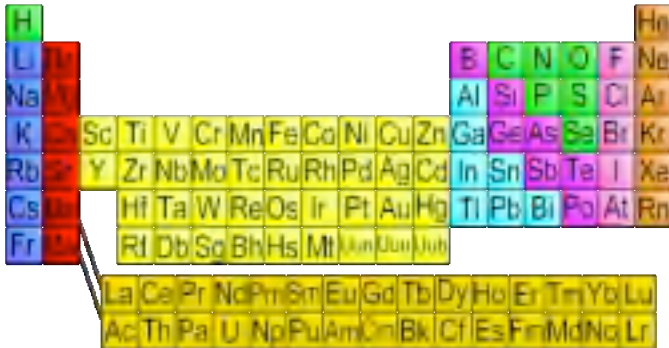


TESTING GUIDANCE

All materials which are used in production must be compliant

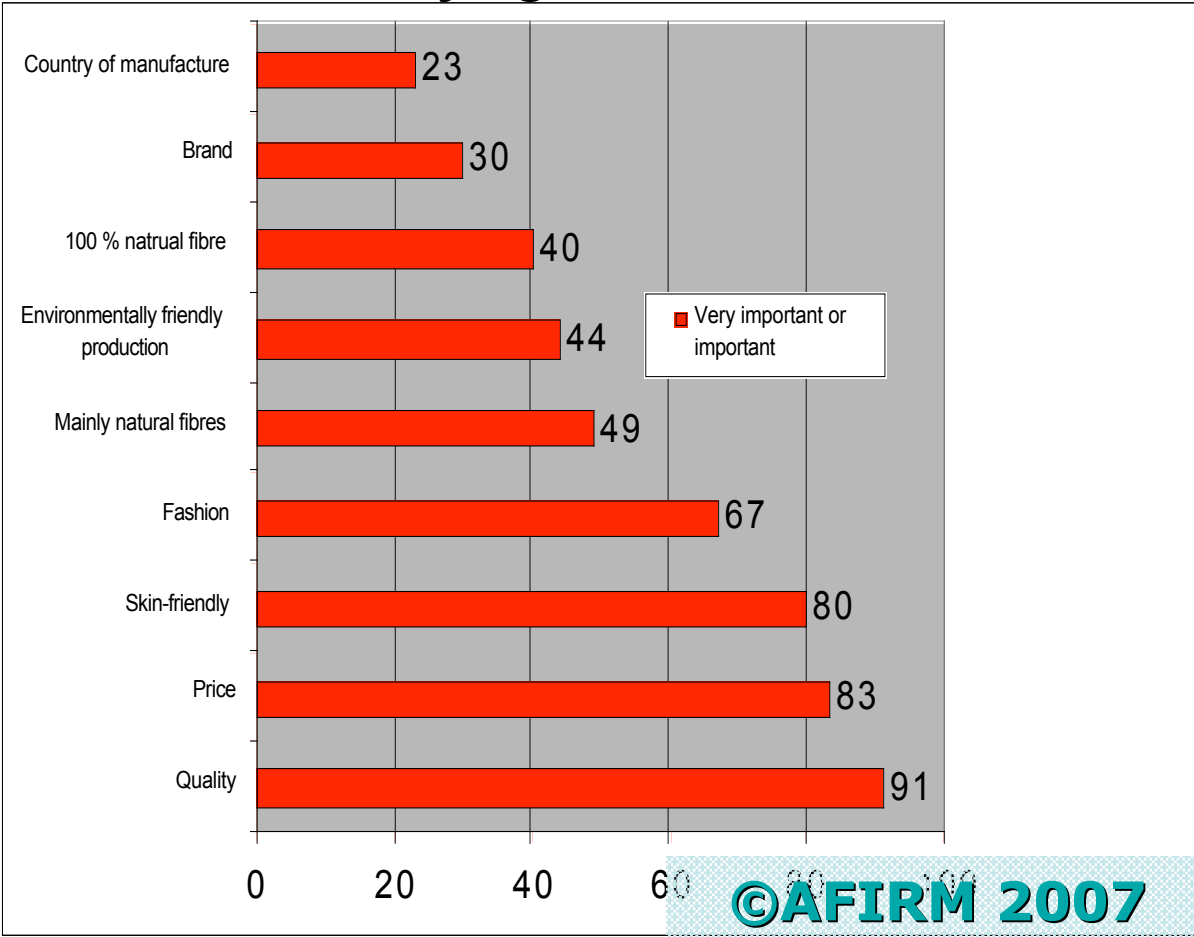
- Dark colors present a higher risk of failure
- Whites randomly for certain parameters
- New and not yet known materials/compositions
- Only production related material and no samples

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TESTING

What is the customer preference for buying textiles?



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TESTING

WHY IS IT IMPORTANT TO TEST?

- Consumer safety
- Product safety
- Production safety
- Environment safety
- Workplace and worker safety

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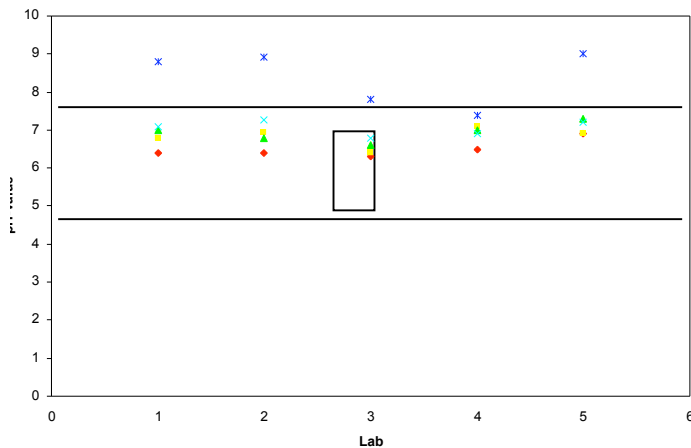
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TESTING

pH round robin test

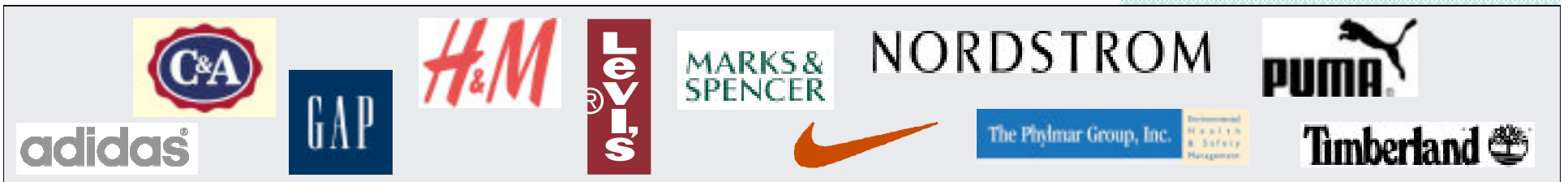


5 labs
only one passed

WHO SHOULD DO THE TESTING?

- Labs with an international reputation
- Labs which are accredited
- Labs which participate frequently in round robin testing

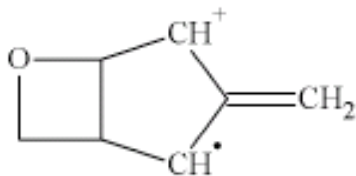
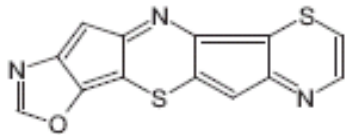
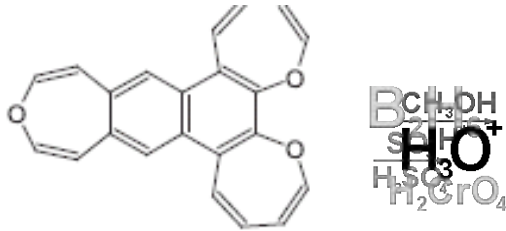
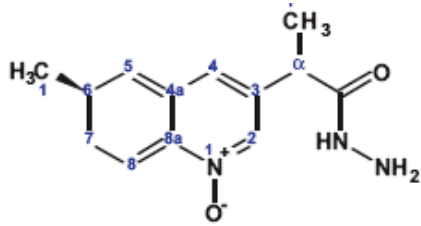
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TESTING

WHEN AND WHAT TO TEST?

- Follow company RSL requirements
- Oeko-Tex 100 Standard, if required by customer



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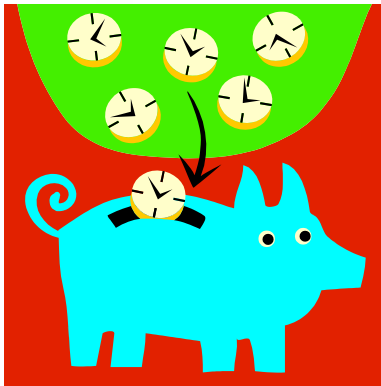


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TESTING GUIDANCE



- **Have a standard procedure**
- **Test every season or every new material, as required by customer**
- **Be proactive to avoid wasting money**
- **Make testing as efficient as possible**

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TESTING GUIDANCE



Keep the balance

- Use company specified test methods. If none specified, use internationally recognized test methods.
- Make sure results will be globally comparable.
- In case of questions, do not act on your own. Contact your customer.

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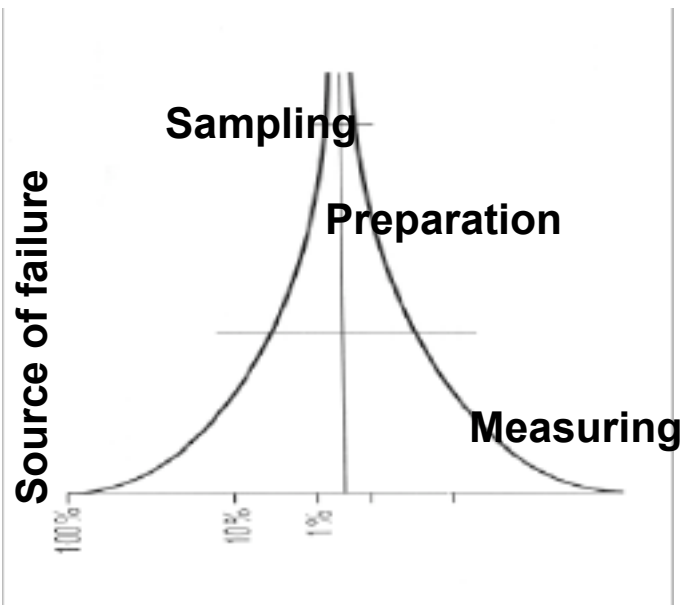
TESTING GUIDANCE



- The testing procedure starts with the sampling

- Poor sampling may cause failures, delays, and increase costs

- Every test result is only as good as the technique of taking the sample



— Total = — Sampling + — Preparation + — Measuring

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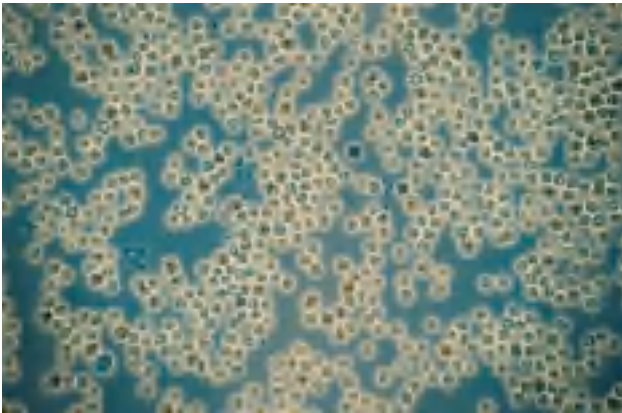


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TESTING

Example:

- Supplier collected a fresh water sample
- Sent for testing according to potable water guidance
- Failed because it contained 3,000 Coliform bacteria which may lead to serious health effects
- Could have led to needless investment to improve water supply
- Finally found out that the sampling technique was wrong, correct sampling and retesting resulted in acceptable results



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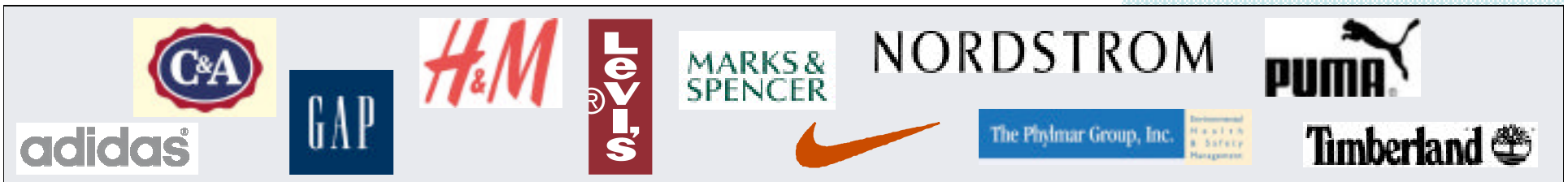
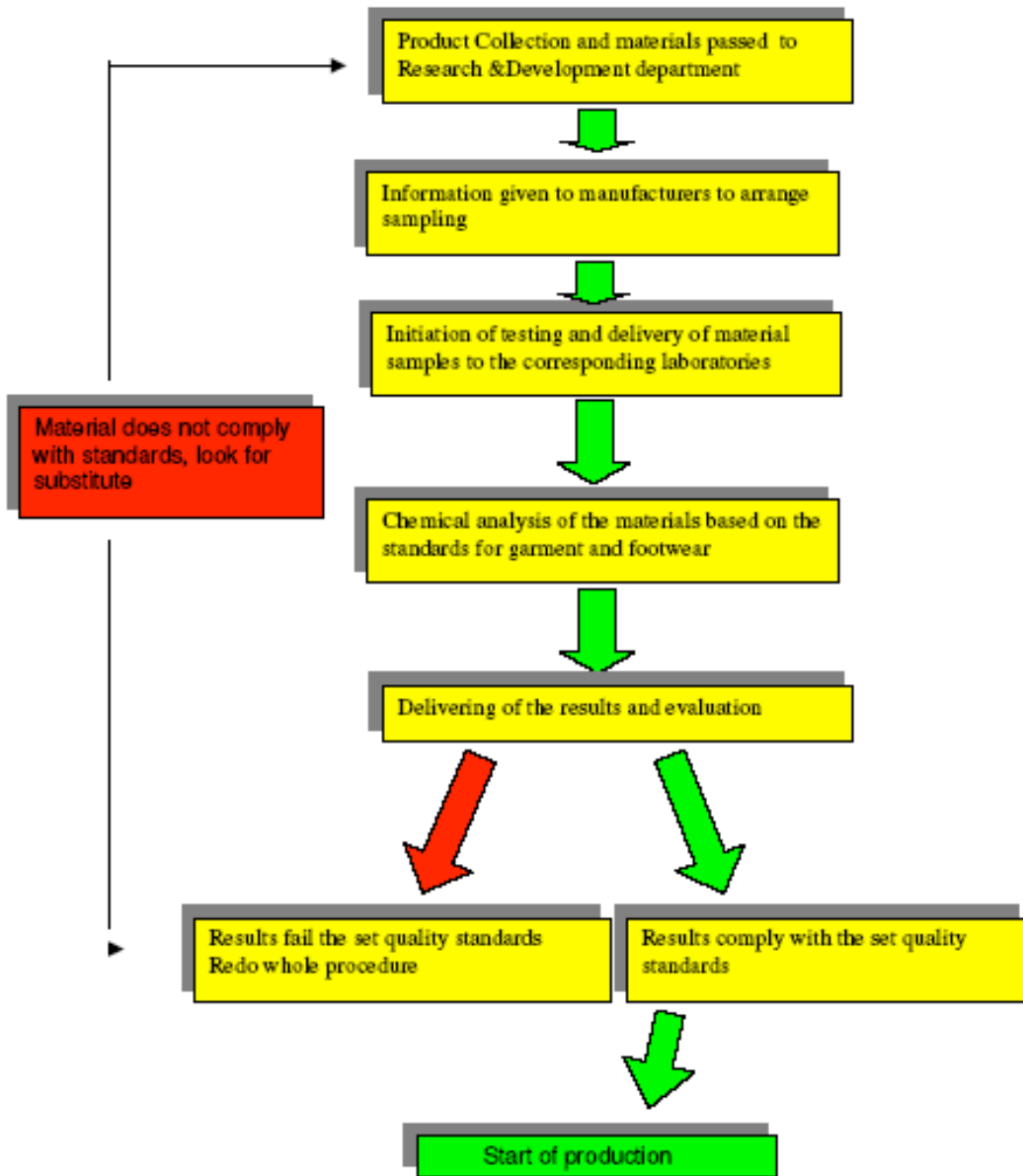
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TESTING GUIDANCE

Before you do the sampling of material, please ask:

- **HOW?** Should I take the sample
- **FROM WHERE?** Should I take the sample
- **HOW MUCH?** Should I take
- **HOW?** Should I prepare the sample
- **HOW?** Should I send the sample

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Apparel and Footwear
International RSL Management
(AFIRM) Working Group

***RESTRICTED
SUBSTANCE LIST
SEMINAR***

Questions and Answers

Pam Utz

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Common Questions - Question 1

QUESTION:

Can RSL data for one company be shared with another company?

ANSWER:

It depends. Currently there are differences in:

- Test method requirements
- Data formats
- Labs that are approved for testing

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Question 2



QUESTION:

In children's wear, what substances are restricted by major US and EU brands?

ANSWER:

- Children at greater risk
- All chemicals important, some limits lower for children (formaldehyde)
- EU – phthalates (PVC)
- US – lead (metal trim)

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Question 3

QUESTION:

If raw materials comply with the RSL, does the end product automatically pass?

ANSWER:

It depends on . . .

- . . . Process
- . . . The chemical
- . . . Additional chemical reactions

The limit applies to the final product not the raw material inputs. You only know by testing!

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Question 4

QUESTION:

How do you integrate Oeko-Tex into this program?

ANSWER:

- The Oeko-Tex 100 standard is highly comparable with the RSLs of the AFIRM group.
- This standard is not a substitute for all RSLs.

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Question 5

QUESTION:

When will there be a harmonized global RSL?

ANSWER:

- 80% to 90% of restrictions on RSLs are the same.
- Differences are mainly based on different distribution channels.
- Individual company RSLs must be tailored to a company's specific market.
- AFIRM companies strive to align requirements.

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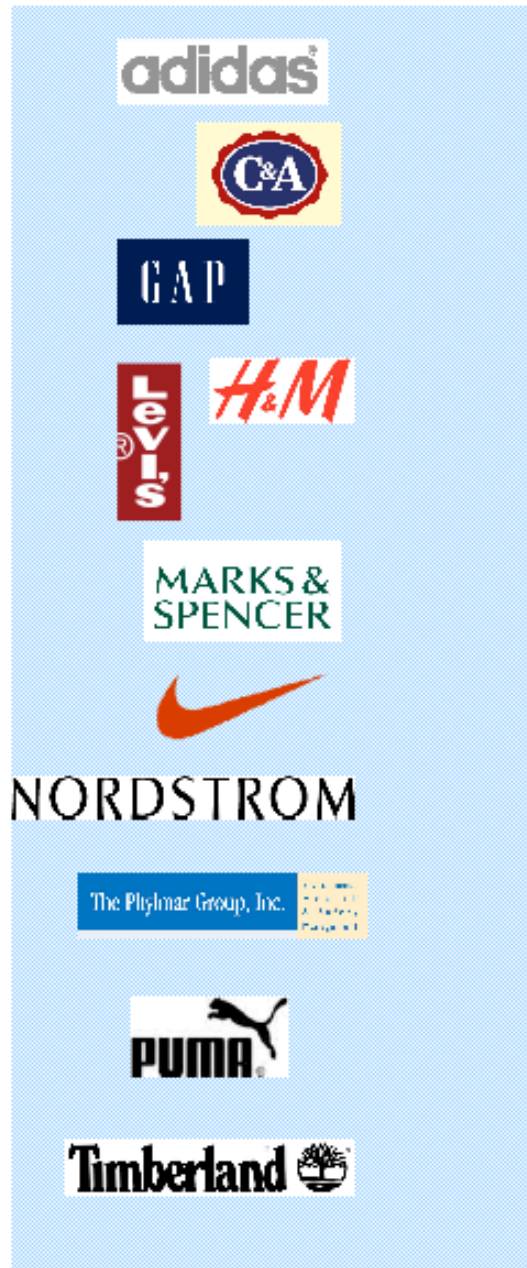
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Thank you – You're terrific!



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