What problems may occur if one is not aware of chemical regulations?

Brainstorm as a group and take notes in your workbook, exercise (3-1).
LEARNING OUTCOMES & RESOURCES

Learning Outcomes

• Comprehensive understanding of the regulatory environment of chemicals.

Resources

• REMC Company Handbook.
• ZDHC Wastewater Guideline (+Video).
• ZDHC Guidance Sheets.
• REWE Group Chemical Fact Sheets.
• ZDHC MRSL (+Video).
• REWE Group MRSL.
• Tchibo MRSL.

Workbook

Refer to complimentary exercises in your workbook.
ZDHC REQUIREMENTS

ZDHC CMS 2.2.1 - Monitoring regulations and permits

ZDHC CMS 2.2.2 - Verification of compliance

- Standard Operating Procedures (SOP) for monitoring regulatory requirements
- Up-to-date inventory of legal requirements permits

ZDHC CMS 2.5.2 RSL and MRSL Process

- 2.5.2.1 Verification of Compliance
- 2.5.2.2 RSL and MRSL Update and Maintenance
- 2.5.2.3 Integration with Contracts of Suppliers
- 2.5.2.4 Business Process Compliance with Contracts
- 2.5.2.5 Going Beyond Regulatory

SOCIETAL, CUSTOMER AND END-USER DEMANDS

Conventions & International Agreements:

- Agenda 21
- Stockholm, Rotterdam and Basel Convention
- ILO Convention 170

National Legislations

- Factory Act
- Rules & Regulations
- Environmental
- Health & Safety

Societal, Customer and End-Consumer Demands

- MRSL, RSL
- Protection of Human Health and the environment
Regulatory Requirements – International Framework
Some conventions and protocols have been agreed on internationally.

These typically limit the use and production of hazardous chemicals or groups of chemicals.

**Examples**

- The Stockholm Convention – Persistent Organic Pollutants (POP’s) “The Dirty Dozen”.
- Minamata Convention – Mercury Compounds.
STAY AHEAD OF LEGISLATIONS TO AVOID PRODUCT RECALLS OR QUALITY FAILURES

USA
https://www.cpsc.gov/Recalls

Europe
https://ec.europa.eu/consumers/consumers_safety/safety_products/rapex/alerts/?event=main.listNotifications
• Agenda 21 is a non-binding, voluntarily implemented action plan of the United Nations with regard to sustainable development.

• A product of the Earth Summit (UN Conference on Environment and Development) held in Rio de Janeiro, Brazil, from 1992.

**What this means for Your Facility**

Check if your country is part of AGENDA 21 and follow the governmental regulations for sustainable development.
ILO CONVENTION 170, CHEMICALS CONVENTION


What this means for Your Facility
Ensures safe use of chemicals at work: any work activity which may expose a worker to a chemical, including: transport, handling, storage, production, disposal and treatment.
Regulatory Requirements – Regulation of importing countries
REGISTRATION, EVALUATION, AUTHORISATION AND RESTRICTION OF CHEMICALS (REACH)

Overarching framework regulating the production, usage and import of hazardous substances in the EU

• Since 1 June 2007.
• Targets all chemicals in (almost) all applications in the EU.
• Shifts responsibility from authorities to the industry “No data, no market”.
• Applies to substances manufactured or imported into the EU in quantities of 1 tonne per year or more.
• Under REACH manufacturers have to pay attention to, among others the Substances of Very High Concern (SVHC), the Authorisation List (Annex 14) and Restriction on Substances (Annex 17).

REACH has fundamentally changed the way chemicals are restricted, not just in the EU.

What this means for Your Facility
To be able to access the EU market, it has to be ensured that chemicals which are compliant with REACH are used for production. Substances that fall under Annex 17 must be be avoided.
Substances of Very High Concern under REACH (Registration, Evaluation, Authorisation and Restriction or Chemicals) Regulation:

**Criteria:** The criteria are given in Article 57 of the REACH Regulation.

A substance *may* be proposed as an SVHC if it found to be (one or more of the following):

- Carcinogenic.
- Mutagenic.
- Toxic for reproduction.
- Persistent, bio-accumulative and toxic.

According to the criteria set out in Annex XIII of the REACH Regulation (PBT substances); there is "scientific evidence of probable serious effects to human health or the environment which give rise to an equivalent level of concern"; such substances are identified on a case-by-case basis.
TOXIC SUBSTANCES CONTROL ACT OF 1976 (TSCA)

• United States law, passed by Congress in 1976.

• Regulates new and existing chemicals.

• Does not separate chemicals into toxic and non-toxic.

• Prohibits chemicals that are not covered on the TSCA inventory.

What this means for Your Facility
To access the U.S. market, check if a chemicals are classified as toxic under the TDCS. If you find chemicals on the list, stop using them in your production.
Children’s products should:

- Comply with all applicable children’s product safety rules.
- Be tested for compliance by a CPSC-accepted accredited laboratory.
- Have a written Children’s Product Certificate that provides evidence of the product’s compliance.
- Have permanent tracking information affixed to the product and its packaging where practicable.

**What this means for Your Facility**

To access the U.S. market, ensure testing and certification of children’s products are in line with the requirements of the CPSIA (Phthalate, flame retarder and heavy metal).
Regulatory Requirements – China
### CHINA’S ENVIRONMENTAL PROTECTION LAW

<table>
<thead>
<tr>
<th>Name of Legal Document</th>
<th>Type of Industrial Activities Regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Protection Law</td>
<td>All industrial activities including production, storage, transportation, sale and use of hazardous chemicals</td>
</tr>
<tr>
<td>Clean Production Promotion Law</td>
<td>All industrial activities involving production, use and discharge of hazardous chemicals</td>
</tr>
<tr>
<td>Regulation on the Safe Management of Dangerous Chemicals (Decree 591)</td>
<td>The production, storage, use, handling and transportation of dangerous chemicals</td>
</tr>
<tr>
<td>Circular on Further Enhancing Environmental Protection Information Disclosure</td>
<td>All industrial activities involving production, use and discharge of hazardous chemicals</td>
</tr>
<tr>
<td>Measures on Disclosure of Environmental Information (for trial implementation)</td>
<td>All industrial activities including production, storage, transportation, sale and use of hazardous chemicals</td>
</tr>
<tr>
<td>Guideline for Drafting Corporate Environmental Reports (HJ 617-2011)</td>
<td>All industrial activities including production, storage, transportation, sale and use of hazardous chemicals</td>
</tr>
<tr>
<td>Management Methods on Registration of Dangerous Chemicals</td>
<td>Production and import of hazardous chemical</td>
</tr>
<tr>
<td>Environmental Management Registration Methods for Dangerous Chemicals (For Trial Implementation)</td>
<td>Production, use, import and export of hazardous chemicals</td>
</tr>
<tr>
<td>Discharge Standard of Water Pollutants for Dyeing and Printing of Textile Industry (GB 4287-92)</td>
<td>Pollutants discharge</td>
</tr>
<tr>
<td>Integrated Emission Standard of Air Pollutants (GB 16297-1996)</td>
<td>Pollutants discharge</td>
</tr>
<tr>
<td>Cleaner production standard Textile industry (Dyeing and finishing of cotton) (HJ/T185-2006)</td>
<td>Production of textile products (dyeing and finishing of cotton)</td>
</tr>
</tbody>
</table>

**What this means for Your Facility**

Focus on all aspects of chemical management areas to ensure compliance with all legal requirements.
The plan covers the following four broad actions:

- Control pollution discharge.
- Promote economic & industrial transformation and save & recycle resources.
- Promote science & technology progress, use market mechanisms and enforce law & regulations.
- Strengthen management & ensure water environment safety; and
- Clarify responsibilities & encourage public participation.

What this means for Your Facility
Factories shall comply with relevant national policies, standards & industrial regulations to avoid heavy punishment.
SAFETY TECHNICAL CODE FOR INFANTS / CHILDREN TEXTILE PRODUCT GB 31701-2015

• Mandatory China national standard for infants and children textile products.

• Standardises the overall safety of children’s wear.

• Implemented on 1 June 2016 with a 2 years transitional period.

• Sets requirements on chemical and mechanical safety.

What this means for Your Facility
All infant and children textile products sold on the China market after 1 June 2018, shall comply with requirements of the standard.
DISCHARGE STANDARDS OF WATER POLLUTANTS FOR DYEING & FINISING TEXTILE INDUSTRY GB 4287-2012

• Encourages improvement of production methods in textile dyeing and finishing.

• Encourages improvement of pollution control technology.

• Covers discharge limits, requirements for monitoring and controlling water pollutants.

What this means for Your Facility
Focus on all aspects of chemical management areas to ensure sewage discharge compliance to the latest discharge standard and limits.
• Mandatory standard that regulates the safety and quality of textile products in China.

• Outlines general safety and technical requirements, testing methods, inspection rules and implementation guidelines.

• Different limits for 3 categories (products for: babies, with and without direct skin contact).

**What this means for Your Facility**

Ensure textile products which are produced, sold and used in China meet these requirements.
Regulatory Requirements – Bangladesh
The Bangladesh Environment Conservation Act (1995) is an act to protect conservation of the environment, provide improvements to environmental standards and control and mitigate environmental pollution.

What this means for Your Facility
Follow all the aspects of chemical management and environmental management to ensure compliance to this act.
Societal Demands
ACHIEVEMENTS OF THE DETOX CAMPAIGN
2011–2017 (2020)

• Campaign has secured global Detox Commitment from **76 international brands, retailers and suppliers.**

• Campaign contributed to **collaboration in Italy,** where 42 companies are working together to achieve Detox.

• Campaign had **political impact.** Achieved policy changes e.g. China’s enforcement of stricter wastewater standards.

---

**Aim:** Eliminating hazardous chemicals from textile supply chains by 2020.
GREENPEACE’S APPROACH

Use major brands as a political tool to push governments to demand public disclosure of discharge of hazardous chemicals from factories.

Existing systems in US, EU and Japan: PRTR - Pollutant Release and Transfer Register.

Greenpeace believes that everyone, especially those living close to factories, have the right to know what is being discharged.
 WHICH CRITERIA ARE GREENPEACE ASSESSING?

**Detox 2020 Plan**
Manufacturing Restricted Substances List (MRSL), to enable brands to eliminate all hazardous chemicals.

**PFC Elimination**
Commitment for the elimination of per/poly fluorinated chemicals (PFC) as a group.

**Transparency**
Publication of precise, relevant, up to date and locally accurate information on the use and discharge of hazardous chemicals.

Greenpeace aims to remove hazardous chemicals from the textile supply chain, engage consumers, whilst ultimately “closing and slowing the loop”.
ZERO DISCHARGE OF HAZARDOUS CHEMICALS (ZDHC)

Greenpeace

Zara: Time to Detox!

Image source: www.ecouterre.com

Ø ZDHC

2015 Joint Roadmap Update
BRANDS COMMITTED TO ‘DETOX’ AS OF OCTOBER 2017

More than 44 international brands & retailers are committed to stop the usage of hazardous chemicals

* Adopted the ZDHC MRSL

(+52 textile suppliers)
ZDHC TOOLS

• Joint initiative established in 2011.
• Released a shared roadmap “to advance towards zero discharge of hazardous chemicals”.
• Geographical regions include: China, Bangladesh, India, but not exclusive.
• Aims to create better tools and knowledge for the next step: Implementation.
  ✓ Have issued a publically available MRSL
  ✓ Chemical Guidance Sheets
  ✓ Chemical Management System Guidance Manual
  ✓ NEW Wastewater Guidelines

Chemical companies issue ZDHC chemical positives lists:
  ✓ DyStar
  ✓ Hunstman
  ✓ Rudolph GmbH
  ✓ Tanatex
  ✓ Transfar
The difference between the Manufacturing Restricted Substances List (MRSL) and Restricted Substances List (RSL) is:

**MRSL**
Input Chemistry

**MRSL** sets chemical limits for chemical formulations

**RSL**
Product Chemistry

**RSL** sets limits for chemicals in materials

The MRSL is a valuable tool for procuring chemical formulations that will help suppliers meet sustainability targets.
• The industry has a strong interest to work towards achieving zero discharge of hazardous chemicals.

• The requirements on a strong chemical management system are equal for REWE Group, Tchibo and ZDHC.

• REWE Group and Tchibo have defined their specific RSL/MRSLs which are updated on an annual basis.

• The intent of the REWE Group MRSL is to define which chemicals we regard as hazardous and which shall therefore not be used in the supply chain. These chemicals need to be eliminated in accordance to the indicated timelines. The MRSL encompasses also the REWE Group RSL and hence defines next to test methods and limit values for input chemicals, waste water and sludge also limit values for products.

• The intent of the Tchibo MRSL is to regulate the use of hazardous substances in chemical inputs and emissions of the same from production. The RSL is to regulate chemical residues (from production) in ready made items after production.

• The intent of the ZDHC MRSL is to provide brands and suppliers with a harmonised approach to managing chemicals during the processing of raw materials within the apparel and footwear supply chain.
INDUSTRY APPROACH: ZDHC MRSL

Ø ZDHC
Manufacturing
Restricted
Substances
List
# TCHIBO Manufacturing Restricted Substances List (MRSL V2.2)

Responsible handling of chemicals including purchase, use, disposal must be implemented at all stages of supply chains. TCHIBO will enhance both training and auditing of suppliers in order to continuously improve the chemical management and phase-out of hazardous chemicals in the supply chain.

**Detection limits**: have not been tested and compared extensively yet for each of the hazardous substances groups. Therefore research is required and more knowledge has to be gained before the limits values determined in this MRSL can become mandatory for the supply chain. TCHIBO will engage in collaborative initiatives to gain knowledge on the appearance of traces of hazardous substances in chemicals, analytical methods and detection limits for chemical formulations. Target of this engagement is the phase-out of hazardous substances until 2030 by the international chemical industry.

**Detection limits have not been tested and compared extensively yet for each of the hazardous substances groups.** Therefore research is required and more knowledge has to be gained before the limits values determined in this MRSL can become mandatory for the supply chain. Detection limits of hazardous chemicals tested by accredited laboratories can vary between different test methods and standards for certain chemicals. Additionally, methods might not be developed yet. Best current laboratory and analytical techniques must be replicable and comparable for each product or material which is subject to analysis. TCHIBO will work closely together with the accredited laboratories to work towards replicable and comparable results according to best current techniques.

### Substance groups

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic (As)</td>
<td>Arsenic</td>
<td>7440-34-2</td>
<td>1 ppm</td>
<td>GC/MS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonmetallic PMI</td>
<td>Nonmetallic PMI</td>
<td>12132-18-5</td>
<td>0.05 mg/l</td>
<td>ICP/MS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>ICP/MS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Detection Line** has not yet been determined and compared extensively yet for each of the hazardous substances groups. Therefore research is required and more knowledge has to be gained before the limits values determined in this MRSL can become mandatory for the supply chain. Detection limits of hazardous chemicals tested by accredited laboratories can vary between different test methods and standards for certain chemicals. Additionally, methods might not be developed yet. Best current laboratory and analytical techniques must be replicable and comparable for each product or material which is subject to analysis. TCHIBO will work closely together with the accredited laboratories to work towards replicable and comparable results according to best current techniques.

Download here: https://www.tchibo.com/servlet/cb/1122262/data/-/MRSL.pdf
## Manufacturing Restricted Substances List (MRSL)

**Version 2.0 - Status December 2016**

This MRSL builds the basis for REWE Group’s Detox Program. It defines the hazardous chemicals which need to be phased out till 2020. For all chemicals limit values for products, waste water, sludge and input chemicals have been defined. These limit values have not yet been tested and compared extensively for each of the hazardous substances groups. Additionally different accredited laboratories may use different technologies and methods for testing which could lead to different results. Therefore research is required and more knowledge has to be gained before the limit values determined in this MRSL can become mandatory for the supply chains. REWE Group will work closely with accredited laboratories as well as the chemical industry to drive forward the research and will support their suppliers with auditing and training.

Always the best available analytical testing method for sludge, waste water or input chemical formulation must be applied at the time of test performing.

### Substances

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS number</th>
<th>Limit values</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Products: single substances mg/kg</td>
<td>Waste water treatment pg/l</td>
</tr>
<tr>
<td>1. Alkylphenols (AP) and Alkylphenol ethoxylates (APEO)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP-Phenol</td>
<td>146-98-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>271-03-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Octylphenol</td>
<td>1929-26-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Nonylphenol</td>
<td>28164-62-9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonylphenol</td>
<td>104-42-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Triton X-100</td>
<td>9004-32-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonylphenol branched</td>
<td>9462-12-2</td>
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<td></td>
</tr>
<tr>
<td>Nonylphenol</td>
<td>1172018-92-0</td>
<td></td>
<td></td>
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<tr>
<td>Nonylphenol acetate</td>
<td>1178041-98-7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>APEOs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonylphenol ethoxylates NPEO (1-3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonylphenol ethoxylates NPEO (5-11)</td>
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<tr>
<td>Nonylphenol glycerides</td>
<td>9019-45-8</td>
<td></td>
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<tr>
<td>4 Nonylphenol, ethoxylated</td>
<td>107273-93-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPE-9-10 Polyoxyethylene 10</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4 Nonylphenol branched, ethoxylated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olefinic acid ethoxylate 64 (isocetohexyl-ethoxylate, EN 148)</td>
<td>37205-97-1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Olefinic acid ethoxylate EN 148 (1-3)</td>
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</tr>
<tr>
<td>Olefinic acid ethoxylate EN 148 (1-4)</td>
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<tr>
<td>OPNE-28 (glycerin 4-11, 28)</td>
<td>30822-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 tet- Octylphenolglycol</td>
<td>9018-15-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 tet- Octylphenolthiole</td>
<td>86667-99-6</td>
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<td></td>
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</tbody>
</table>

*Timelines:

- **Banned 31.12.2016**

Download here: www.rewe-group.com
## MAINTAINING INVENTORY OF REGULATORY REQUIREMENTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Descriptions</th>
<th>Applicable to</th>
<th>Area of Applicability</th>
<th>Licenses / Compliance Records Required</th>
<th>Reviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Environment Conservation Act 1996 (section 2)</td>
<td>Regulates air pollution from stationary sources and motor vehicles. Enables promulgation of regulations.</td>
<td>✔️</td>
<td>Air emissions from plant (e.g. cranes, generators, excavators, vehicles), and dust.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Environment Conservation Act 1996 (section 3)</td>
<td>Regulates water pollution, including reference to specific discharge standards.</td>
<td>✔️</td>
<td>Discharge of wastewater from production and other sources in the company.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Sludge ordinance</td>
<td>Regulates management and the disposal of treated sludge.</td>
<td>✔️</td>
<td>Disposal of treatment sludge from ETP.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: GIZ, 2014 and ZDHC CMS 2.2.2 Verification of Compliance
ACTIVITY

GROUP WORK

Form groups of 5-6 persons, mix with people from different facilities and professions.

As a team create an inventory of international and national regulatory requirements.

One group to present results to peers.

Fill in the table in your workbook, exercise (3-2).
Chemicals Of Concern
Which are the 11 Detox Priority Chemical Groups?
1. Phthalates (ortho-phthalates)
2. Brominated and Chlorinated flame retardants
3. Azo dyes
4. Organotin Compounds (e.g. TBT)
5. Chlorobenzenes
6. Chlorinated Solvents
7. Chlorophenols
8. Short-Chained Chlorinated Paraffins (SCCPs)
9. Heavy Metals (cadmium, lead, mercury, chromium (VI))
10. APEOs/NPEs
11. Perfluorinated Chemicals (PFCs)
1. Alkylphenols/Alkylphenol Ethoxylates (AP/APEOs)
2. Chlorobenzenes & Chlorotoluenes
3. Chlorophenols
4. Dyes, including Azo, Navy Blue Colourant, Carcinogenic and Disperse (Sensitising) Dyes
5. Flame retardants
6. Glycols
7. Halogenated Solvents
8. Organotin Compounds
9. Polycyclic Aromatic Hydrocarbons (PAHs)
10. Perfluorinated and Polyfluorinated Chemicals (PFCs)
11. Phthalates
12. Heavy Metals
13. Volatile Organic Compounds (VOCs)
ZDHC GUIDANCE SHEETS FOR EACH CHEMICAL GROUP

Chlorobenzenes  Chlorophenols  Halogenated Solvents  Organotins  Polycyclic Aromatic Hydrocarbons/Naphthalene

Toluene Guidance Sheet  Long-chain Perfluoralkyl Acids (LCPFAAs)  Nonylphenol (NP)  Nonylphenol Ethoxylates (NPEOs)  Phthalates Guidance Sheet

EXAMPLE: PHTHALATES

PHTHALATES

Class or Substance Name
Esters of Ortho-Phthalic Acid (phthalates): Esters of 1,2-benzenedicarboxylic acid

Substance List by CAS Number
Phthalates are a large class of substances. Commonly used phthalates include:

- 117-81-7 Di(ethylhexyl) phthalate (DEHP) 85-68-7 Benzy l butyl phthalate (BBP)
- 117-82-8 Bis(2-methoxyethyl) phthalate (DMEP) 84-75-4 Dinonyl phthalate (DNP)
- 117-84-0 Di-n-octyl phthalate (DNOP) 84-64-2 Diethyl phthalate (DEP)
- 26761-60-0 Di-iso-decyl phthalate (DIDP) 131-16-8 Di-n-propyl phthalate (DPPP)
- 28553-12-0 Di-isophoronyl phthalate (DIPN) 84-69-5 Dibutyl phthalate (DBP)
- 84-75-3 Di-n-hexyl phthalate (DNP) 84-61-7 Di-cyclohexyl phthalate (DCHP)
- 84-74-2 Dibutyl phthalate (DBP) 27554-26-3 Di-is-octyl phthalate (DOP)
- 68515-42-4 1,2-benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DNUP)
- 71888-81-6 1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-11th (DHP)

Description of Use in Apparel and Footwear
Esters of ortho-phthalic acid (phthalates) are commonly added to plastics to make them soft, increase flexibility, prevent cracking and facilitate moulding by decreasing its melting temperature.

Legislation around the world, including in the European Union and the United States, restricts the use of certain phthalates in apparel, footwear and accessories. Leading apparel and footwear brands have banned the use of phthalates in production of their products.

Why are Phthalates Restricted?

- Some phthalates, above certain exposure levels, may impair human fertility or cause harm to unborn children.
- Some phthalates, above certain exposure levels, may result in the development of certain cancers.1
- Some phthalates are very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

Guidance: Sourcing Phthalate-Compliant Materials from Your Material Suppliers (Textiles, Components and Trim Parts)

- Contact your suppliers and explain that you require materials with a sum of all phthalates <500 ppm (0.05%).1
- This includes textiles and natural/synthetic leather with polymeric coatings or finishes, since phthalates are common ingredients in coating, screen-printing and finishing formulations.
- Pay special attention to plastic trims like buttons, shoelace aglets (tubes) and fiber components that provide structural support in products like handbags, since phthalates are commonly used to provide flexibility.

Additional information about these alternatives is available at the following links:


Guidance: Sourcing Phthalate-Compliant Chemical Formulations from Your Chemical Suppliers

- Contact your chemical suppliers and explain that you require chemical formulations with no intentionally added phthalates. The sum of all phthalates in chemical formulations should be <250 ppm (0.02%),4
- Pay special attention to suppliers of chemicals used for coating textiles, natural leather1 and synthetic leather, including printing pastes. Consider that leather-finishing formulations may contain phthalates.
- Check the Material Safety Data Sheets (MSDS) of all chemical formulations to ensure that none of the phthalate CAS Numbers above is listed as an ingredient.
- Have your chemical suppliers confirm that their chemical formulations meet the sum of all phthalates <250 ppm limit with a certification or, if necessary, by providing a test report from a third-party laboratory.
- Perform risk-based checks of your suppliers’ materials by submitting samples to a third-party laboratory for testing to ensure the sum of all phthalates <500 ppm limit is not exceeded.

Safer Phthalate Alternatives

The following substances have been identified as examples of safer alternatives by the U.S. Environmental Protection Agency and/or by the Danish Environmental Protection Agency. These substances may be suitable for your production needs. Any chosen alternative must be ZDHC MRSL compliant.

- Acetyl tributyl citrate (ATBC)
- Bis(2-ethylhexyl) terephthalate (DEHT/DOTP)
- Dicyclohexyl phthalate (DCHP)
- Diisophoronyl phthalate (DIPN)
- Dicyclopentadienyl phthalate (DCP)
- Dibutyl phthalate (DBP)
- Dibutyl sebacate (DDBS)
- Di-n-octyl sebacate (DOS)
- Tricyclohexyl trimellitate (TCT)
- Tris(2-ethylhexyl) adipate (DEHA)
- Tris(2-ethylhexyl)sebacate (TFS)

Reference: ZDHC Guidance Sheets

Version 1.4
REWE GROUP CHEMICALS FACT SHEETS


Version 1.4
Open To Questions
SUMMARY

Every participant to feedback one key learning from this session.

Take notes in your workbook, exercise (3-3).