

Legal requirements & stipulations from international agencies, global standards and regulations

Promotion of Sustainability in the Textile and Garment Industry in Asia -FABRIC

Day 1: Monday

Presentation 1, 10:30 - 11:30

Legal requirements & stipulations from international agencies, global standards and regulations



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Agenda

- ✓ International regulations as per EU guidelines and US EPA regulations
- ✓ Waste and pollutant related conventions
- ✓ Best available techniques to manage hazardous waste
- ✓ National regulations and gaps
- ✓ Importance of hazardous waste management

Waste related International conventions

- Europe follows several conventions to control the processing and transport of waste, i.e.,
- Basel Convention – for waste (started in 1992)
- Rotterdam Convention – for chemical (started in 2004)
- Stockholm Convention – for persisting organic pollutants (started in 2004)
- Minamata Convention – for stopping the use of mercury (started in 2013)

Basel Convention

- On The Control Of Transboundary Movements between nations
- Of Hazardous Wastes And Their Disposal
- Protocol On Liability And Compensation For Damage Resulting From Transboundary Movements Of Hazardous Wastes And Their Disposal
- Adopted On 22 March 1989 By The Conference Of Plenipotentiaries In Basel, Switzerland. The Convention Entered Into Force On 5 May 1992.
- Specifically, to prevent transfer of hazardous waste from developed to less developed countries
- However, it does not address the radioactive wastes
- It also intends to minimize the amount and toxicity of wastes generated
- To ensure environmentally sound management and help LDCs to manage wastes more efficiently
- As of February 2018, 185 states and the European Union are parties to the Convention

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Categories of Waste (Basel convention, Annex-I-III)

Waste Streams

- Y1 Clinical wastes from medical care in hospitals, medical centers and clinics
- Y2 Wastes from the production and preparation of pharmaceutical products
- Y3 Waste pharmaceuticals, drugs and medicines
- Y4 Wastes from the production, formulation and use of biocides and phytopharmaceuticals
- Y5 Wastes from the manufacture, formulation and use of wood preserving chemicals
- Y6 Wastes from the production, formulation and use of organic solvents
- Y7 Wastes from heat treatment and tempering operations containing cyanides
- Y8 Waste mineral oils unfit for their originally intended use
- Y9 Waste oils/water, hydrocarbons/water mixtures, emulsions
- Y10 Waste substances and articles containing or contaminated with polychlorinated biphenyls (PCBs) and/or polychlorinated terphenyls (PCTs) and/or polybrominated biphenyls (PBBs)
- Y11 Waste tarry residues arising from refining, distillation and any pyrolytic treatment
- Y12 Wastes from production, formulation and use of inks, dyes, pigments, paints, lacquers, varnish
- Y13 Wastes from production, formulation and use of resins, latex, plasticizers, glues/adhesives
- Y14 Waste chemical substances arising from research and development or teaching activities which are not identified and/or are new and whose effects on man and/or the environment are not known
- Y15 Wastes of an explosive nature not subject to other legislation
- Y16 Wastes from production, formulation and use of photographic chemicals and processing materials
- Y17 Wastes resulting from surface treatment of metals and plastics
- Y18 Residues arising from industrial waste disposal operations

Categories of Waste (Basel convention, Annex-I-III)

Waste having as constituents

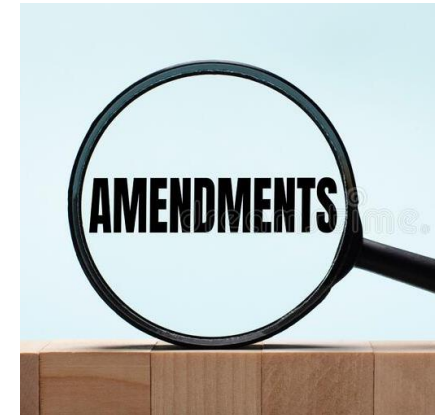
- **Y19** Metal carbonyls
- **Y20** Beryllium; beryllium compounds
- **Y21** Hexavalent chromium compounds
- **Y22** Copper compounds
- **Y23** Zinc compounds
- **Y24** Arsenic; arsenic compounds
- **Y25** Selenium; selenium compounds
- **Y26** Cadmium; cadmium compounds
- **Y27** Antimony; antimony compounds
- **Y28** Tellurium; tellurium compounds
- **Y29** Mercury; mercury compounds
- **Y30** Thallium; thallium compounds
- **Y31** Lead; lead compounds
- **Y32** Inorganic fluorine compounds excluding calcium fluoride
- **Y33** Inorganic cyanides
- **Y34** Acidic solutions or acids in solid form
- **Y35** Basic solutions or bases in solid form
- **Y36** Asbestos (dust and fibres)
- **Y37** Organic phosphorus compounds
- **Y38** Organic cyanides
- **Y39** Phenols; phenol compounds including chlorophenols
- **Y40** Ethers



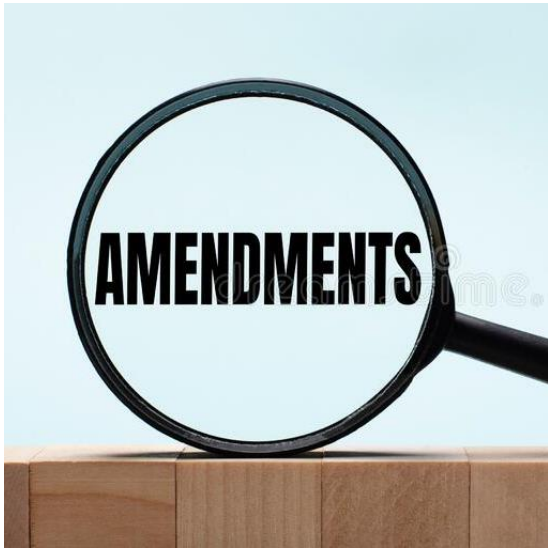
The Basel Convention Amendment

Basel convention amendments

- 1st amendment (Annex VIII): insertion of a new entry A3210, clarifies the scope of plastic wastes presumed to be hazardous and therefore subject to the Prior Informed Consent (PIC) procedure.
- 2nd amendment (Annex IX): new entry B3011 replacing existing entry B3010, clarifies the types of plastic wastes that are presumed to not be hazardous and, as such, not subject to the PIC procedure.



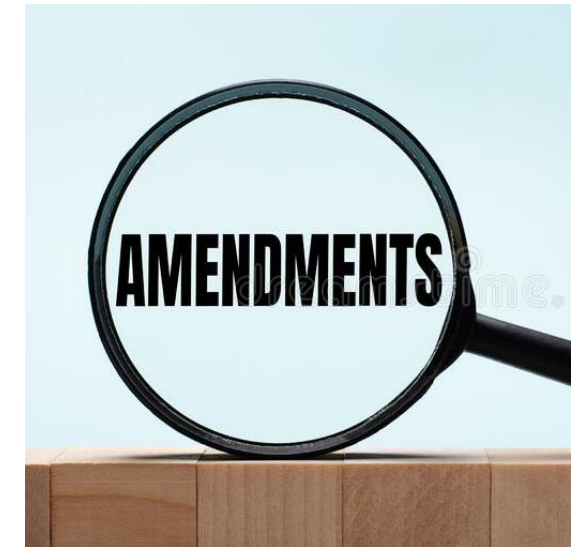
Basel convention amendments



- (includes a group of cured resins, non-halogenated and fluorinated polymers, mixtures of plastic wastes consisting of polyethylene (PE), polypropylene (PP) or polyethylene terephthalate (PET) provided they are destined for separate recycling of each material and in an environmentally sound manner, and almost free from contamination and other types of wastes).

Basel convention amendments

- 3rd amendment: insertion of a new entry Y48 in Annex II which covers plastic waste, including mixtures of such wastes unless these are hazardous (as they would fall under A3210) or presumed to not be hazardous (which would fall under B3011).
- The new entries become effective as of 1 January 2021.



Rotterdam Convention

- Prior informed consent procedure related to Hazardous chemicals and pesticides in international trade
- Shared responsibilities among the importer and exporter
- At a conference in Rotterdam in 1998 and adopted in 2004
- It is intended to protect human health and environment from potential harm
- Environmentally sound use of those hazardous chemicals by facilitating information exchange about their characteristics for national decision making
- It is to create legally binding obligations for the implementation of the Prior Information Consent (PIC) procedure
- It promotes open exchange of information and calls on exporters of hazardous chemicals to use proper labelling, safe handling and inform purchasers of known restrictions
- Signatory nations can decide whether to allow or ban the importation of chemicals listed in the treaty

Stockholm Convention

- Signed in 2001 and effective from 2004
- Aims to eliminate or restrict the production and use of persistent organic pollutants (POPs)
- POPs are chemical substances that persist in the environment, bioaccumulate through food web, and pose risk of causing adverse effects on human health and the environment
- Identified several POPs which are significantly hazardous to health
- Out of initial 12 dirty POPs, three of them are restricted for limited use (such as DDT, dioxins and furans), rest are outlawed
- More POPs are being identified and targeted for elimination their use (29 now)

Minamata convention

- To restrict the use of mercury and minimize their impact on health and environment
- Adopted and signed in 2013, named after the Japanese city Minamata
- The idea is to ban new mercury mines and phase out existing ones
- Also, to implement control measures on air emissions
- Stopping trading of any mercury containing products, such as batteries, lamps, switches, relays, soaps, cosmetics, thermometers, dental fillings
- Mercury release from coal-fired power plants etc.

Hazardous waste Characteristics (European Waste Regulation)

UN Class	Code	Characteristics
1	H1	<p>Explosive</p> <p>An explosive substance or waste is a solid or liquid substance or waste (or mixture of substances or wastes) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings.</p>
3	H3	<p>Flammable liquids</p> <p>The word “flammable” has the same meaning as “inflammable”. Flammable liquids are liquids, or mixtures of liquids, or liquids containing solids in solution or suspension (for example, paints, varnishes, lacquers, etc., but not including substances or wastes otherwise classified on account of their dangerous characteristics) which give off a flammable vapour at temperatures of not more than 60.5°C, closed-cup test, or not more than 65.6°C, open-cup test. (Since the results of open-cup tests and of closed-cup tests are not strictly comparable and even individual results by the same test are often variable, regulations varying from the above figures to make allowance for such differences would be within the spirit of this definition.)</p>

Hazardous waste Characteristics (European Waste Regulation)

UN Class	Code	Characteristics
4.1	H4.1	Flammable solids Solids, or waste solids, other than those classed as explosives, which under conditions encountered in transport are readily combustible, or may cause or contribute to fire through friction.
4.2	H4.2	Substances or wastes liable to spontaneous combustion Substances or wastes which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up on contact with air, and being then liable to catch fire.
4.3	H4.3	Substances or wastes which, in contact with water emit flammable gases Substances or wastes which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.
5.1	H5.1	Oxidizing Substances or wastes which, while in themselves not necessarily combustible, may, generally by yielding oxygen cause, or contribute to, the combustion of other materials.

Hazardous waste Characteristics (European Waste Regulation)

UN Class	Code	Characteristics
5.2	H5.2	Organic Peroxides Organic substances or wastes which contain the bivalent-o-o-structure are thermally unstable substances which may undergo exothermic self-accelerating decomposition
6.1	H6.1	Poisonous (Acute) Substances or wastes liable either to cause death or serious injury or to harm human health if swallowed or inhaled or by skin contact.
6.2	H6.2	Infectious substances Substances or wastes containing viable micro-organisms or their toxins which are known or suspected to cause disease in animals or humans.
8	H8	Corrosives Substances or wastes which, by chemical action, will cause severe damage when in contact with living tissue, or, in the case of leakage, will materially damage, or even destroy, other goods or the means of transport; they may also cause other hazards

Hazardous waste Characteristics (European Waste Regulation)

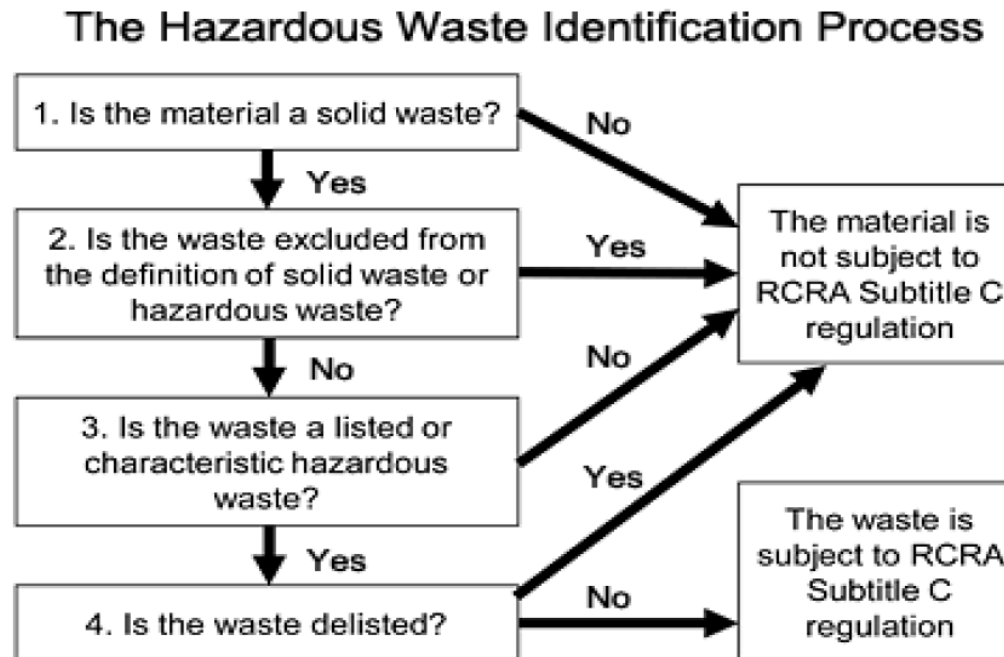
UN Class	Code	Characteristics
9	H10	Liberation of toxic gases in contact with air or water Substances or wastes which, by interaction with air or water, are liable to give off toxic gases in dangerous quantities.
9	H11	Toxic (Delayed or chronic) Substances or wastes which, if they are inhaled or ingested or if they penetrate the skin, may involve delayed or chronic effects, including carcinogenicity.
9	H12	Ecotoxic Substances or wastes which if released present or may present immediate or delayed adverse impacts to the environment by means of bioaccumulation and/or toxic effects upon biotic systems.
9	H13	Capable, by any means, after disposal, of yielding another material, e.g., leachate, which possesses any of the characteristics listed above.

Classification of Chemical Waste according to EPA, USA

- Collected as a Hazardous Waste: A chemical which exhibits a 'hazardous' characteristic, is listed according to Federal or State regulation.
- Collected as a Non-hazardous Waste: A chemical which does not exhibit a state or federal hazardous characteristic and isn't listed as a 'hazardous waste' isn't necessarily safe for disposal via sink or in the regular trash. Such as 'Ethidium Bromide'.
- Collected as a Universal Waste: A small subset of chemical wastes have been de-regulated to some extent since they are so widespread. Such as: batteries
- Safe for Sink or Trash disposal: A very small percentage of chemical wastes are un-regulated and safe to pour into sinks or place in the trash. Such as NaCl

What is a Hazardous Waste?

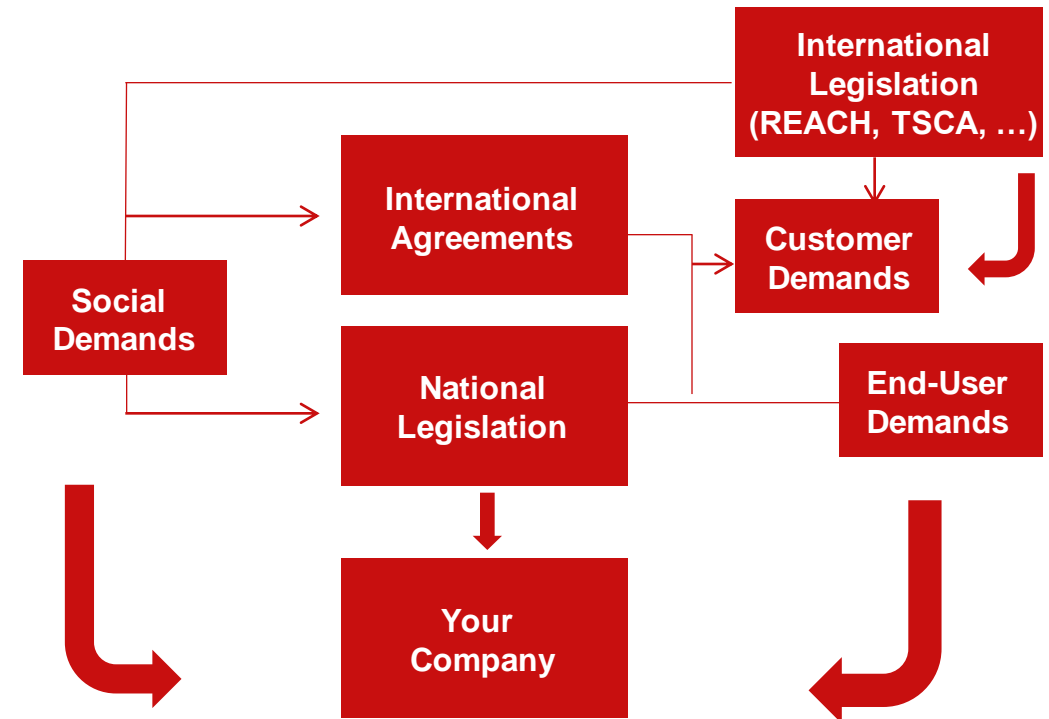
According to US EPA, a hazardous waste is a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment. Hazardous waste is generated from many sources, ranging from industrial manufacturing process wastes to batteries and may come in many forms, including liquids, solids gases, and sludges.



Regulatory Requirements

Apart from the national legislation in the country of the company's residence, you may also be obliged to comply with or be at least aware of regulations outside your country, such as with those of your export markets (for example, the European chemical regulations REACH). Legal requirements include, but are not limited to national requirements, state and local requirements, permit conditions but also other requirements such as industry codes of practice, pledges or commitments made voluntarily by your company or customers' requirements (e.g. supplier code of conducts)

Chemical Management-Legislative and Regulatory Changes



Source: GIZ, 2014



Upcoming restrictions and stipulations

Some trends and initiatives



- EU Textile Regulation on fibre names and related labelling and marking of the fibre composition of textile products.
- EU laws will focus on reducing the amount of resources used across supply chains.
- Promote circular concepts, upcycling concepts and repairable textiles.
- Promotion of changes towards the reduction of Fast fashion's linear and exploitative business model.

A blue book with the word 'GUIDELINES' printed on its spine in large, light-colored letters. A red bookmark is visible at the bottom of the book. The background is a dark, textured surface.

Guidelines and requirements of ZDHC

Objectives and Benefits



- Safeguard the environment by preventing the discharge of harmful wastewater.
- Unified monitoring and testing programme - reducing supplier operating costs and increase efficiency.
- Defines pass/fail reporting limits.
- Helps to estimate and control chemical concentration loads and loads discharged for treatment.
- Better understand the root cause of any hazardous chemicals or residue that poses a risk to WWTP.

Out of scope



- Wastewater management beyond the property boundaries of facility.
- Wastewater treatment or pre-treatment systems that are not owned & operated by facilities.
- Centralised or common wastewater treatment plant.
- Cotton field, cattle range, slaughterhouse, chemical synthesis industry, and polymer industry.

Three Level Approach to Wastewater Limits

The guidelines provide a three-level approach for wastewater discharge limits, with the intent that suppliers actively execute a continuous improvement plan to reach the next level.

The three levels are:

- **Foundational:** At a minimum, meets legal discharge requirements and ensures effective control of ZDHC MRSL chemicals.
- **Progressive:** Demonstrates increasing knowledge of chemical management and applies advanced wastewater treatment processes.
- **Aspirational:** Demonstrates best-in-class performance and strives for continuous improvement in both chemicals and wastewater treatment process knowledge; creates industry best practices

Wastewater Parameters - Two Categories

- **Conventional Parameters:** Their limits are defined on the next slide and for standard methods for analysis refer to 2016 Wastewater Guidelines.
- **ZDHC MRSL Parameters:** These parameters, their reporting limits, and standard methods for analysis are defined for wastewater Tables 2A - 2N in 2016 Wastewater Guidelines.

Wastewater Parameters - Two Categories

The list includes:

- Alkylphenol (AP) and Alkylphenol Ethoxylates (APEOs): Including All Isomers.
- Chlorobenzenes and Chlorotoluenes.
- Chlorophenols.
- Dyes – Azo (Forming Restricted Amines).
- Dyes – Carcinogenic or Equivalent Concern.
- Dyes – Disperse (Sensitising).
- Flame Retardants.
- Glycols.
- Halogenated Solvents.
- Organotin Compounds.
- Perfluorinated and Polyfluorinated Chemicals (PFCs).
- Phthalates – Including all other esters of phthalic acid.
- Polycyclic Aromatic Hydrocarbons (PAHs).
- Volatile Organic Compounds (VOC).

Conventional Parameters

Zero discharge cannot be applied to conventional parameters, such as pH, COD. Hence foundational, progressive and aspirational limits are applied.

Where local legislation and/or permits do not cover one or more conventional parameters listed in these guidelines, the foundational level stated in these guidelines shall apply.


Conventional Parameters + sum anions + metals (mg/L unless otherwise noted)	Limits		
	Foundational	Progressive	Aspirational
Temperature [°C]	Δ15 or 35	Δ10 or 30	Δ5 or 25
TSS	50	15	5
COD	150	80	40
Total-N	30	10	5
pH	6-9		
Colour [Pt-Co]	150	50	10
BOD ₅	30	15	5
Ammonium-N	10	1	0.5
Total-P	3	0.5	0.1
AOX	5	1	0.1
Oil and Grease	10	2	0.5
Phenol	0.5	0.01	0.001
Coliform [bacteria/100 ml]	400	100	25
Persistent Foam	Not visible		

ZDHC Guideline Document Draft Version

Conventional parameters showing foundational, progressive and aspirational limits.

Conventional Parameters + sum anions + metals (mg/L unless otherwise noted)	Limits		
	Foundational	Progressive	Aspirational
Anions			
Sulfide	0.5	0.05	0.01
Sulfite	2	0.5	0.2
Metals			
Antimony	0.1	0.05	0.005
Chromium, total	0.2	0.05	0.005
Cobalt	0.05	0.01	0.005
Copper	2	0.1	0.05
Nickel	0.2	0.02	0.005
Silver	0.1	0.01	0.001
Zinc	5	1	0.1
Arsenic	0.05	0.01	0.005
Cadmium	0.1	0.005	0.001
Chromium (VI)	0.05	0.005	0.001
Lead	0.1	0.01	0.005
Mercury	0.01	0.001	0.0005

EU laws should focus on reducing the amount of resources used across supply chains and on boosting the market for second-hand and repairable textiles. Fast fashion’s linear and exploitative business model must become a thing of the past.”



Other stipulations from international agencies and buyers regarding hazardous waste discharge

Extended producer responsibility

Definition:

Environmental policy approach in which a producer's responsibility for a product is extended beyond the use phase.

An EPR policy is characterized by:

- The shifting of responsibility (fully or partially) upstream towards the producer;
- The provision of incentives for producers to consider environmental consequences when designing or deciding on their products;
- EPR can be applied to different waste streams but is not suitable for all types of waste.

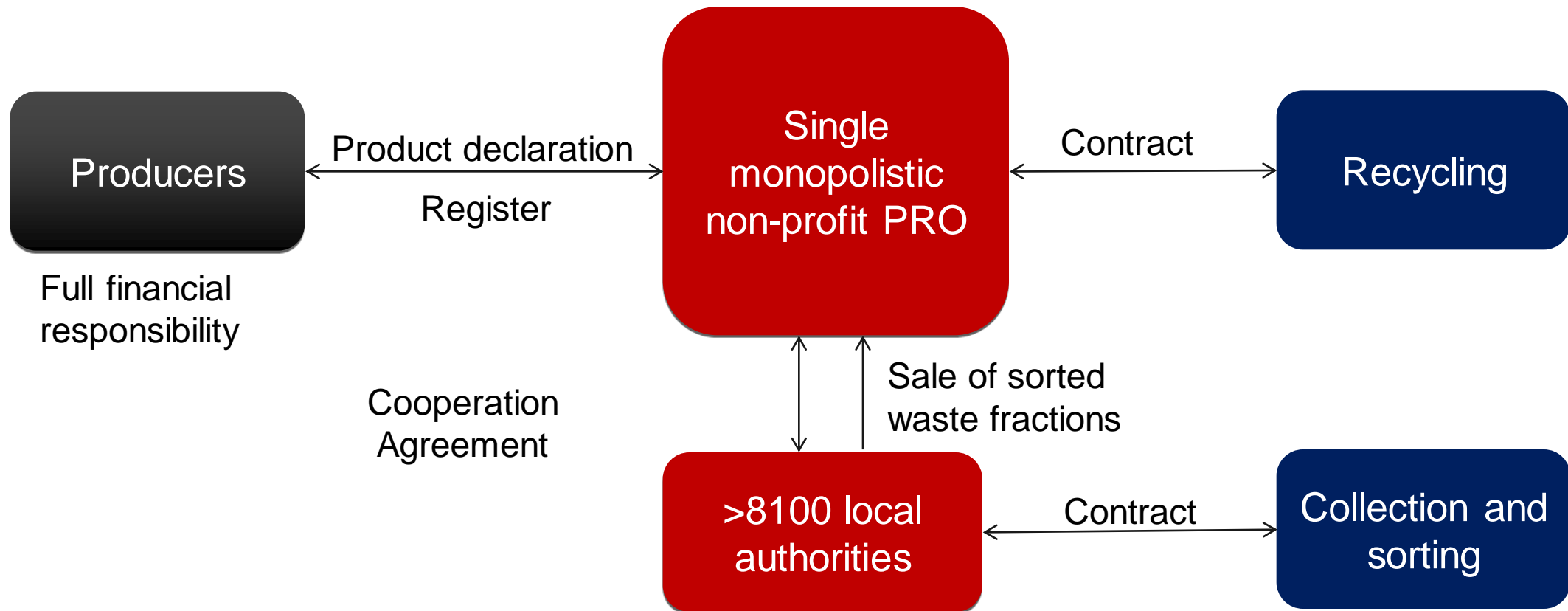
Implementation of EPR by PRO

Producer Responsibility Organization (PRO):

- Is a legal entity which organizes the compliance of producers with EPR obligations and/or targets.
- Funded by producers, generally in proportion of each producer's market share for the products or streams under EPR.

Implementation Extended producer responsibility

Example: Spain



Due Diligence Guideline, OECD



The OECD Due Diligence Guidance for responsible Supply Chains in the Garment and Footwear sector describes objectives for Corrective Action Plans (CAP's) to cease, prevent or mitigate harm in the enterprise's own operations.

Recommendation - Be sustainable: Long term solutions should lead to long term outcomes. In many cases this means that processes should be embedded into management systems.

Risk: Handling and disposal of hazardous chemicals.

Example: Training for workers on how to handle and dispose of chemicals safely is incorporated into worker orientation and ongoing refresher courses.

OECD Due Diligence Guidance for responsible Supply Chains, 2018, p. 69

German Supply Chain Due Diligence Act, (Duty of Care Act)



The Supply Chain Due Diligence Act, will go into force on 1. January 2023.

The Act primarily means that companies will need to adapt and update their compliance, purchasing and contract drafting processes.

The companies concerned must make reasonable efforts to ensure that there are no violations of human rights in their own business operations and in the supply chain.

Binding for: German companies with 3000 or more employees (from 2024: 1000 or more employees) and their direct suppliers (in some cases also indirect suppliers)

EU Due Diligence Act



The EU is working on an EU Due Diligence Act which may be in effect in 2024.

Binding duty of care for companies in relation to human rights, environmental protection and working conditions

Liability under public law and perhaps criminal law

Broader duty of care, companies obligated to conduct active analysis of potential risks throughout entire value chain – not just for their own operations and direct suppliers, but also for subsidiaries

Import ban on products associated with forced labour

Future goals?



Future policy options to reduce the textile waste production



Eco-design Directive

Mandatory recycled content

(Eco-)modulated Extended Producer Responsibility

Correct disposal/collection/take-back systems

Circular business model pathways should support the shift towards a circular textiles system and underline how the design phase plays a critical role. The circular business model should focus on longevity and durability, optimised resource use, collection and reuse, and recycling and material use.

Group Work 10 min



What are your experiences with legal requirements and stipulations concerning waste management from international brands?

Brainstorm as a group and document the results in a short summary

QUIZ



What are the three levels of ZDHC wastewater limits?

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