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SYSTEM INNOVATION FOR
SUSTAINABLE DEVELOPMENT

IT Tools and Governance for Traceability (of chemicals in leather)

Workshop #3(2) | Subproject 2 | Eleni Kaluziak, Julian Schenten | 08.10.2021





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Agenda

- (1) A system for traceability of chemicals is an important approach for proactive companies
- (2) Is it (technically) feasible (case study)?
- (3) How can we move towards a chemicals traceability governance framework?



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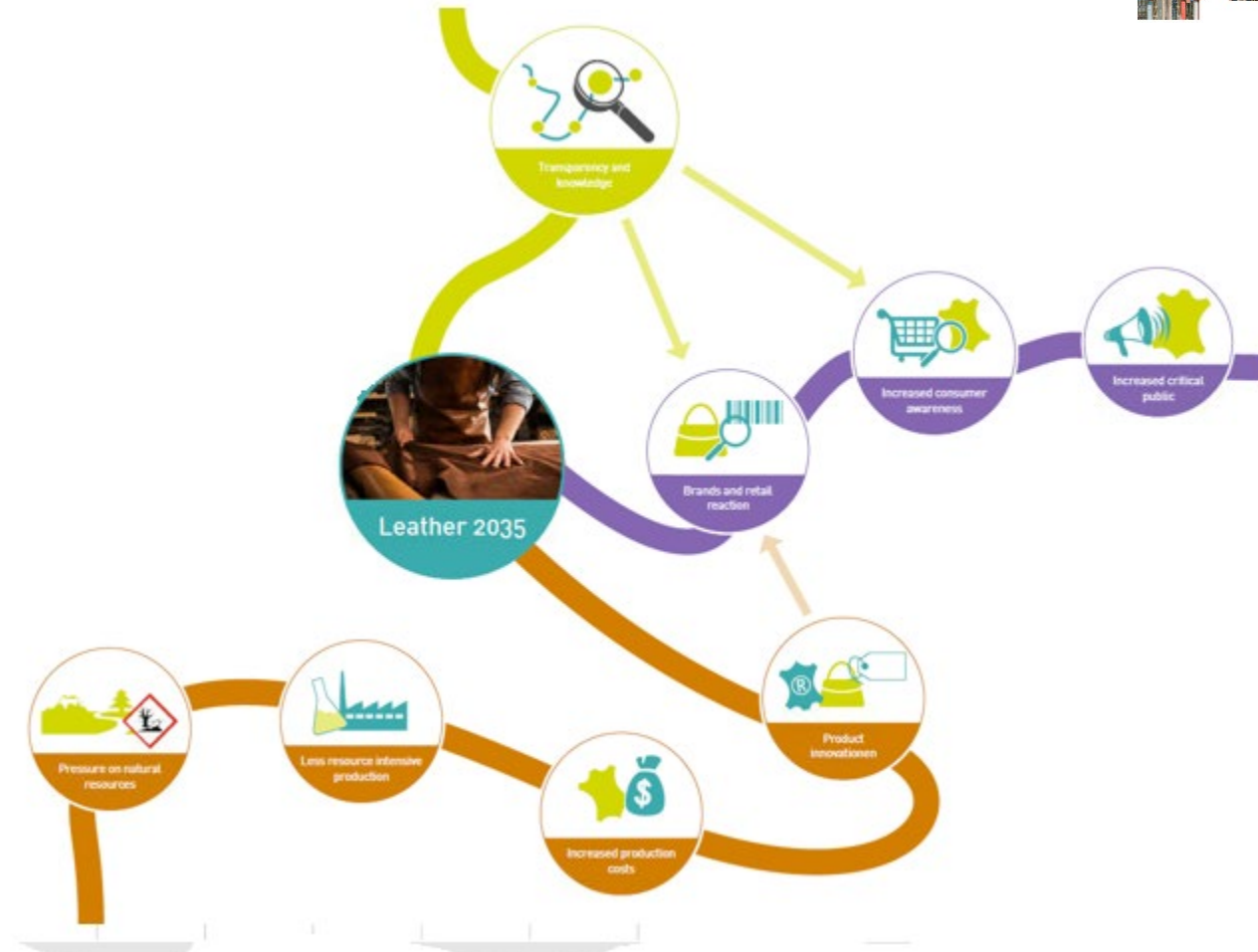
- (1) A system for traceability of chemicals is an important approach for proactive companies
- (2) Is it (technically) feasible? (case study)
- (3) How can we move towards a chemicals traceability governance framework?

Why is a system for traceability of chemicals an important approach for proactive companies?

Future perspective: Traceability as an enabling factor in 2035



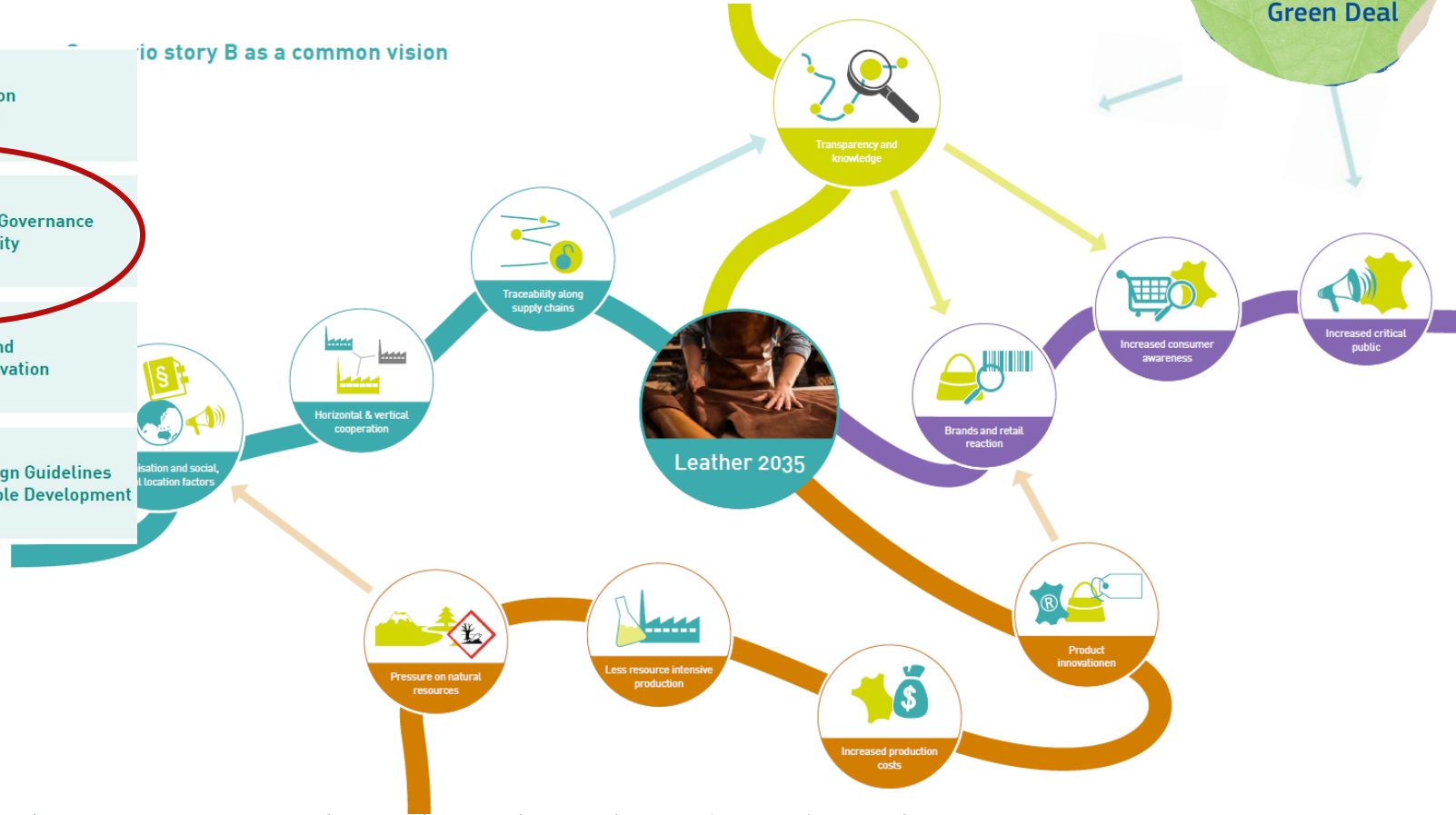
2



Subprojects

- 1 Harmonisation of Standards
- 2 IT Tools and Governance for Traceability
- 3 Chemicals and Process innovation
- 4 Leather Design Guidelines for Sustainable Development

io story B as a common vision

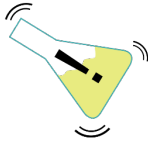


Subproject focus

to build a framework for the reporting of chemicals along the leather supply chains



Traceability of chemical substances along the supply chains
Know what substances are in your products (and processes)



Data basis provided by suppliers
Facilitated by IT tools and governance framework

Why is a system for traceability of chemicals an important approach for proactive companies?

Benefits of IT and Governance for Traceability (1)



Ensure compliance with existing legislation



Prepare in case of regulatory developments to be compliant in future



Enhance companies risk management, and of supply chain processes



Reduce costs of risk based testing



Benefit from the reporting standard shared with others as this increases suppliers' willingness to provide data

Benefits of IT and Governance for Traceability (2)



Proactively manage chemicals used in supply chains / move towards for more sustainable chemistry



More informed product design



Facilitate the material classifications needed for circular business models



Substantiate green claims (consumers, investors, NOGs) / trustful transparency



Establish new business models

Specific Objectives of Subproject 2

Among others:

- ✓ Have an **EARLY PILOT TEST** of such a system using an available system (also involve a tannery).
- ✓ **Initiate, i.e. create a momentum, for an international sector wide dialogue to define common rules for the application of such a system. Taking into account interlinkages with other initiatives and interoperability with existing approaches.**
(GOVERNANCE FRAMEWORK)



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Q&A



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Agenda and Goal of the Workshop

- (1) A system for traceability of chemicals is an important approach for proactive companies
- (2) Is it (technically) feasible? (case study)
- (3) How can we move towards a chemicals traceability governance framework?

“Pilot study” Design



Purpose:

Test an exemplary IT-Traceability Tool for feasibility in the leather industry.

Can it help to trace chemicals in leather articles?

What are benefits, limitations, lessons learned so far?

→ Proof of concept

“Pilot study“ Design








German shoe brand **RICOSTA** launched a pilot test with the **IT traceability tool** provided by Darmstadt University h_da under the project **LIFE AskREACH**.



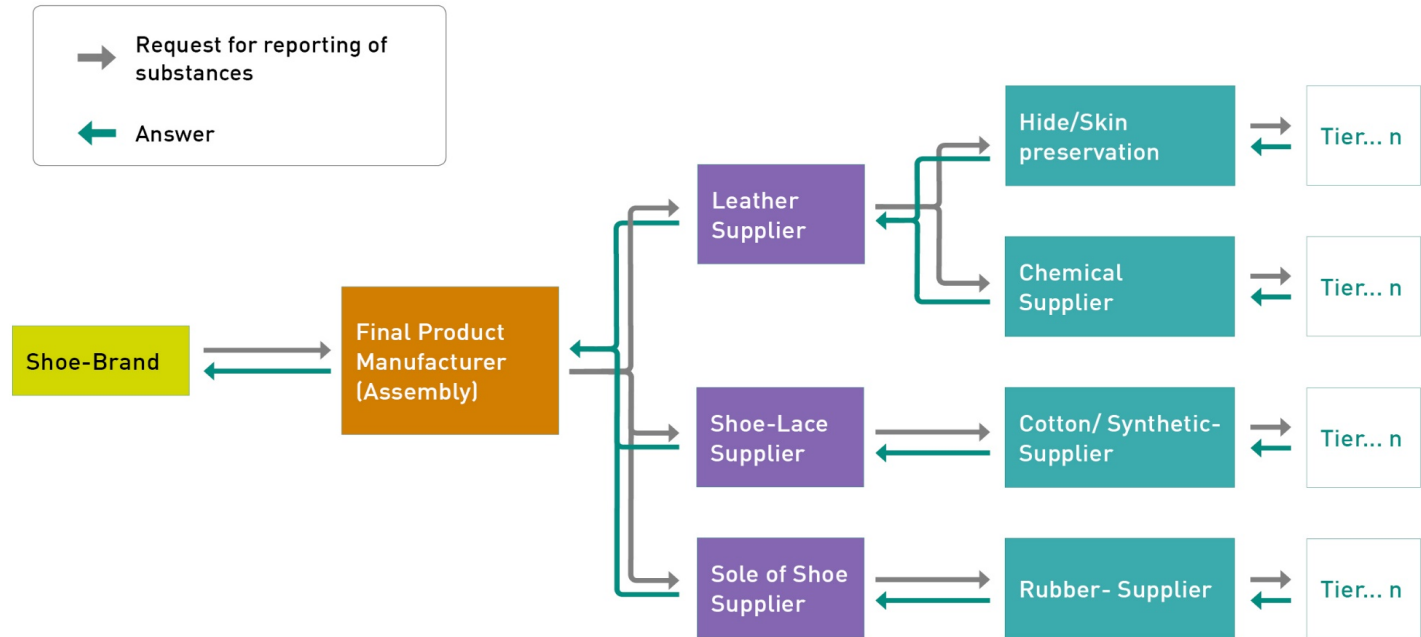
Ricosta selected for the pilot test one of its leather supplier, Lederfabrik Josef Heinen GmbH & Co. KG

“Pilot study” Design – Tool Description

-  Quick introduction of the (iPoint-systems) Traceability-Tool (a MDS – Material Data System)
-  Provided within the framework of the EU LIFE project „AskREACH“ - <https://www.askreach.eu/>
-  (Co-)Funded by EU Commission / aligns well with green deal
-  Procurement criteria based on interviews and IT tool benchmarking
-  Video tutorials etc. at www.askreach.eu/supply-chain-tool/



IT-Tool Workflow (Example for shoes)



IT-Tool Workflow



The tool controls communication (requests and responses). Supplier information/ email addresses can be stored.



- The brand sends a request (for reporting of substances) to its direct supplier (Tier 1), Tier 1 also sends a request to its supplier (Tier 2), ...etc.
- ...Tier 2 sends a response to Tier 1; Tier 1 provides information to the brand,
- i.e. each actor writes to the next actor in the supply chain without knowing who the previous actor is.





Competitive relationships are protected.



“Pilot study” Design-Example



Material Compliance   LIFE16 GIE/OE/000738
LIFE AskREACH

Dashboard Requests Statistics + Reports

Requests to Suppliers Batch Requests Requests from Customers

Regulations

Select the regulations you need a compliance statement for.

<input type="checkbox"/>	NAME	
<input type="checkbox"/>	CMR 1A&1B	8/20/19
<input type="checkbox"/>	Proposition 65	9/15/19
<input type="checkbox"/>	REACH Annex XIV	8/15/19
<input type="checkbox"/>	REACH Annex XVII	7/26/19
<input type="checkbox"/>	Halogenated Flame Retardants - Selected	12/5/18
<input type="checkbox"/>	SVHC material	7/1/20
<input type="checkbox"/>	SVHC each level	7/1/20
<input type="checkbox"/>	SVHC mixtures	7/1/20
<input type="checkbox"/>	GADSL	4/9/20
<input type="checkbox"/>	RoHS (2011/65/EU)	3/12/19

A compliance statement is not enough?

☐ Ask for product declarations instead of compliance statements.

Declaration Scope

☐ Full-Declaration

☐ Partial-Declaration

☐ Suppliers may change the product type from the requested to or from Article, Semicomponent or Mixture.

A Declaration Scope needs to be selected.

Surveys

Add surveys for your suppliers to this request. To ensure a high answer rate, please choose the surveys carefully.

Please confirm before sending the requests:

☐ I have checked the data and confirm their accuracy. I am aware that an information email about the request will be sent to the primary contact of the supplier as well as a copy to all other contacts of the supplier.

Example for the substance regulation (REACH; RoHS; etc). that a brand can request its supplier to report on.



“Pilot study” Design-Example



MC Material Compliance

LIFE16 GIE/DE/000738
LIFE AskREACH

Dashboard

Anfragen von Kunden

Anfrage-Details

Produktdeklaration

Kontaktdaten

NAME	INFO	GEWICHT	KONZENTRATION	CAS-NR
Ein neues homogenes Material hinzufügen				
Product name		deklariert: 14,577g / 30g	deklariert: 48,59%	
▼ Leder		deklariert: 14,577g / 30g	deklariert: 48,59%	
▲ Reactior		0,486g	1,62%	
▲ 2-(2-But		4,2g	14%	112-34-5
▲ Natriuml		0,021g	0,07%	1310-73-2
▲ C.I. Acid		1,95g	6,5%	12270-00-7
▲ 1-Metho		3,15g	10,5%	107-98-2
▲ Ameiser		4,5g	15%	64-18-6
▲ Tetranat		0,21g	0,7%	64-02-8
▲ Glycine,		0,06g	0,2%	3624-77-9

Substances

Weight

Concen-
trationCAS-
Nr.

Produkt bearbeiten

Typ: * Halbleug

Produktname: * Product name

Produktnummer: * 028400/4214/14

Menge: * 0,03 Quantity m³

Gewicht: * 30 Weight g

UNITS

Ausnahmen

Angefragte Regularien: REACH-Annex XVII, SVHC material, REACH Annex XVII, REACH Annex XIV

REGULARIUM	NUMMER	BESCHREIBUNG

Hinzufügen

Entfernen

Example for a Product-
Structure-Tree (not
finished) of cowhide

LIFE • ASK
REACH

“Pilot study” Design-Example

Material Compliance

LIFE16 GIE/DE/000738
LIFE AskREACH

Dashboard

Requests from Customers

Review Request

Declare Product

Contact Data

Attach Documents

Legend and Help

NAME	INFO	WEIGHT	CONCENTRATION	CAS-NO
▼ Dress SS 21 (1)		declared: 400g / 400g	declared: 100%	
▼ Front part (1)		declared: 200g / 200g	declared: 100%	
▼ Cotton		declared: 200g / 200g	declared: 100%	
▲ Poly(10g	5%	9002-92-0
▲ Cellu		190g	95%	9004-34-6
▼ Back part (1)		declared: 200g / 200g	declared: 100%	
▼ Polyeste		declared: 200g / 200g	declared: 100%	
▲ Form		2g	1%	50-00-0
▲ Polye		198g	99%	9002-88-4

Edit product

Type: Article

Product Name: Dress SS 21

Product Code: 0987-0986

Defined Weight: 1 Each weighs 400 g

Exemptions

Requested regulations: REACH Annex XIV, RoHS (2011/65/EU), REACH Annex XVII

REGULATION	NUMBER	DESCRIPTION
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Add Remove

Update Cancel

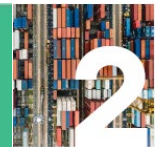
Further Example for a Product- Structure-Tree of a dress with different components generated by the Traceability Tool



LIFE + ASK
REACH



“Pilot study” Design-Example



Further Example for a (non-leather) Product-Structure-Tree with automated red flags in Traceability Tool

REACH Annex XIV
 Product Fails to Meet Regulation Requirements
 REACH Annex XIV acc. EU Regulation amended by EC 2017/999, http://eur-lex.europa.eu/Result.do?T1=V1&T2=2013&T3=348&RechType=RECH_naturei&Submit=search

Product Meets Regulation Requirements Product Meets Regulation Requirements with Ex

COMPLIANCE CHECK RESULT	REMARK
Checked with errors	Sunset date: only to use if a notification has occurred to ECHA REACH Annex XIV and or granted by EC Commission
Checked	This substance is listed in REACH Annex XIV. Mind sunset dates and granted authorisations

Regulatory compliance status calculated at: 2020-03-16

Product Declaration

Declared Product

NAME	INFO	WEIGHT	CONCENTRATION	CAS-NO
▼ SURFACE MOUNT TRANSORB TRANSIENT VOI		declared: 93mg / 93mg	declared: 100%	
▼ Solder		declared: 3.4mg / 3.4mg	declared: 100%	
▲ Confidential Substances	⛔	0.17mg	5%	*****
▲ Lead chromate	⚠	3.15mg	92.647059%	7758-97-6
▲ Silver		0.08mg	2.352941%	7440-22-4
▼ Encapsulation		declared: 48.5mg / 48.5mg	declared: 100%	
▲ Confidential Substances	⛔	0.12mg	0.247423%	*****
▲ Additive 460		0.36mg	0.742268%	
▲ Antimonytrioxide		0.49mg	1.010309%	1309-64-4
▲ Reaction mass of Charcoal and Formaldehyc		5.82mg	12%	
▲ Formaldehyde, polymer with (chloromethyl)ox		7.76mg	16%	29690-82-2
▲ Quartz (SiO2)		33.95mg	70%	14808-60-7
▼ Surface Finish		declared: 2.1mg / 2.1mg	declared: 100%	

Substance

Name: Lead chromate
 CAS No.: 7758-97-6
 EINECS/ELINCS: 231-846-0
 EU-Index: 082-004-00-2
 Weight: 92.647059
☐ Confidential Substance ☒ SVHC
 Regulated by: RoHS (2011/65/EU) (v.14)

1 2 3

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“Pilot study” Design

Ricosta´s Expectation of the IT-Tool



German shoe brand **RICOSTA** launched a pilot test with the **IT traceability tool** provided by Darmstadt University h_da under the project [LIFE AskREACH](#).

Ricosta selected for the pilot test one of its leather supplier, Lederfabrik Josef Heinen GmbH & Co. KG



Expectation:



To demonstrate how the communication and exchange of information on the IT-Tool works



To receive a Full Material Declaration (FMD) - Bill of Material (BOM) on the chemicals present in the supplied leather







To search for products containing e.g. future SVHCs (Substance of Very High Concern) to ensure REACH-compliance in case of legislation changes




Ensure due diligence in the supply chain („German Lieferkettengesetz“)




IT-Tool - Features I


-  Display a structure tree for a product, showing which components and materials a product is made of
-  Questionnaires/ attachments on e.g. sustainability aspects such as land use, animal welfare and social criteria can be uploaded
-  Reuse of existing declarations for new requests, data can be duplicated. Business added value for companies (brands and suppliers).
-  Supplier can report substances in a standardized way for all customers: Mixtures (e.g. pure tanning process chemicals) can be recorded as modules and stored in the tool

IT-Tool – Features II

 Show, via CAS-numbers, which leather chemicals are contained in the product

 Show, also which process chemicals have been used:

Via a BOM: one for the composition material and
one for process chemicals

 „Placeholders" can be selected, if quantity information is uncertain

 Create a FMD for leather, i.e. substances used can be declared up to 100%

 Present which substances/ materials are in products and at what concentration

IT-Tool – Features II



Dashboard Anfragen

Reinstoff auswählen □ ×

Suchargumente

Name:

ⓘ Für eine exakte Suche muss der Name in Anführungszeichen gesetzt werden.

SVHC:

CAS-Nr.:

EINECS/ELINCS:

EU-Index:



[Zurücksetzen](#)

NAME	SVHC	CAS-Nr.	EINECS/ELINCS	EU-INDEX
Misc., not to declare	nein	system	system	system
not yet specified, not to declare	nein	system	system	system
Inorganic Ingredient, not to declare	nein	system	system	system
Organic Ingredient, not to declare	nein	system	system	system
Impact modifier, not to declare	nein	system	system	system
Plasticizer, not to declare	nein	system	system	system
Flame Retardant, not to declare	nein	system	system	system
Further Additives, not to declare	nein	system	system	system
Pigment portion, not to declare	nein	system	system	system
Other Ingredients	nein	system	system	system
Request/Hg/Cr6/Cd/Pb	nein	system	system	system
Cannot be answered at the moment	nein	system	system	system
Reinforcement/Filler	nein	system	system	system
Stabilization UV, light, heat	nein	system	system	system
Biocide	nein	system	system	system
Lubricant	nein	system	system	system
Antistatica	nein	system	system	system
Inorganic Ingredient, not to declare	nein	system	system	system
Impact modifier, not to declare	nein	system	system	system
Plasticizer, not to declare	nein	system	system	system
Further Additives, not to declare	nein	system	system	system

[Auswahl hinzufügen](#)

IT-Tool – Features II

Example for a product with two BOMs -Bill of Materials: 1. Finished Shoe / 2. Process Chemicals and Mixtures

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LIFE AskREACH

Dashboard **Requests** **SL**


Requests to Suppliers **Requests from Customers**

Review Request **Declare Product** **Contact Data** **Attach Documents**

01 **02** 03 04

Load a product from your master data, or insert product and substance information manually.

Apply Product Declaration:

 Legend and Help Autosave ☐

NAME	INFO	WEIGHT	CONCENTRATION	CAS-NO
▼ Material/Works				
● finish Shoe		declared: 0g / 10g	declared: 0%	
▼ Process Ch		declared: 0g / 100g	declared: 0%	
▼ Mix 1 (r		declared: 0g / 10g	declared: 0%	

Product

Parent Product: Process Chemicals (PC001)

Type: Mixture

Product Name: Mix 1

Product Code: mix1

Quantity: 1 Liter

Weight: 10 g

Product Categories: No categories specified.



IT-Tool – Features III



Automated signals for regulated substances:

- ➡ When displaying chemicals/substances, red flags appear in case they are regulated substances, currently SVHCs + Annex XVII are deposited.

Other relevant substances/lists can be included.



Product Screening/Search Functions:

- ➡ Brand can search for recorded specific substances via the tool on its products: Full Material Declaration (FMD) helps identifying substances that are not yet declared in Safety Data Sheets (SDS).

If their legal status changes, a decision can be made immediately by the brand as to whether action is required.

Ricosta 's feedback

**Lederfabrik Heinen 's
feedback**

“Pilot study” – Points of Discussion I

What should be reported?



Full Material Declaration 100% (FMD) or Partial Material Declaration x?



Should the IT tool only report what remains in the product?



Should additionally also the process chemistry be reported and how can we manage that?

Background: Groups of chemicals in relation to leather:

- ➡ Chemicals intended **to be present** in the product (e.g. coating)
- ➡ **Process chemicals**: these are not intended to remain in the finished product (e.g. salt, biocide, tensids)



Boundaries to be discussed with the leather sector

“Pilot study” – Points of Discussion II



Leather supplier may need to test his product for chemicals prior to provide data to the tool:

- The composition/ recipe of chemicals for the treated leather is difficult to provide:
- Substances may be washed-out during the treatment of leather (how much remains in the product?)






Safety Data Sheets of chemicals to not declare every single chemistry contained (black box). Supposedly (non classified) harmless substances are missing.



There must be communication from actors in multiple directions.

“Pilot study” – Points of Discussion III

-  Preparation needed for tool: Shoe manufacturer needs to tell suppliers how much weight (grams) of leather goes into the finished shoe:
-  If goal is to end up with a full declaration for all components of the shoe: material/ substances would have to add up to 100 percent by weight, so it is important to know exactly how much of that is leather.
-  Therefore, it makes sense that the supplier of the leather already indicates the appropriate number of grams.



There needs to be communication from actors in both directions.

How many shoes will be manufactured out of 1 sqm (squaremeter) leather?

What chemicals/ at what concentration are in 1 sqm leather?



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Agenda and Goal of the Workshop

- (1) A system for traceability of chemicals is an important approach for proactive companies
- (2) Is it (technically) feasible? (case study) (Yes! A common framework is needed, though)
- (3) How can we move towards a chemicals traceability governance framework?



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Towards a Governance Framework for Traceability of chemicals along the leather supply chains

Outline of the framework

Time frame

Discussion

Our Leather Subprojects



Subproject #1

Harmonisation of standards for a “more sustainable” leather chemistry

Dr. Julian Schenten | julian.schenten@h-da.de



Subproject #2

IT Tools and Governance for Traceability

Dr. Julian Schenten | julian.schenten@h-da.de

Eleni Kaluziak | eleni.kaluziak@h-da.de



Subproject #3

Chemical und Process Innovation

Prof. Dr. Frank Schael | frank.schael@h-da.de



Subproject #4

Leather-Design-Guidelines for Sustainable Development

Dr. Jonas Rehn | jonas.rehn@h-da.de



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Thank you for your attention
For any comments or questions please reach out to us

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