h_da
HOCHSCHULE DARMSTADT
UNIVERSITY OF APPLIED SCIENCES
s:ne
SYSTEMINNOVATION FÜR
NACHHALTIGE ENTWICKLUNG

More Sustainable Leather Chemistry – Subproject 2

IT Tools and Governance for Traceability

Follow-up documentation of Workshop 3, July 20, 2021

Eleni Kaluziak and Julian Schenten, September 2021

This paper -together with the full presentation slides shown on July 20, 2021 - documents the key findings of the case study with Ricosta and discussion/ contributions of the workshop participants.

1. Background

Increasing societal demands as well as legal requirements regarding chemicals for products and their manufacturing processes are putting more and more pressure on all actors along the leather supply chains. The challenge is know and understand what chemicals are included in your products and therefore to make chemicals used in leather traceable in order to meet the existing and future requirements of regulation, brands, consumers and NGOs. This is the result of a scenario process in which stakeholders from the leather sector developed a common understanding of how a more sustainable leather chemistry can succeed in the future (2035). To this process, it was possible to overcome "status quo thinking".

The aim of the case study (hereafter also: pilot study) was to test an existing material data system / traceability tool to see whether traceability of chemicals in leather products can succeed and what opportunities, advantages and limitations arise.

"Traceability" in this context means the possibility to trace back which chemicals are present in which component of an article (or were also used in the process).

Suppliers must provide information on this.

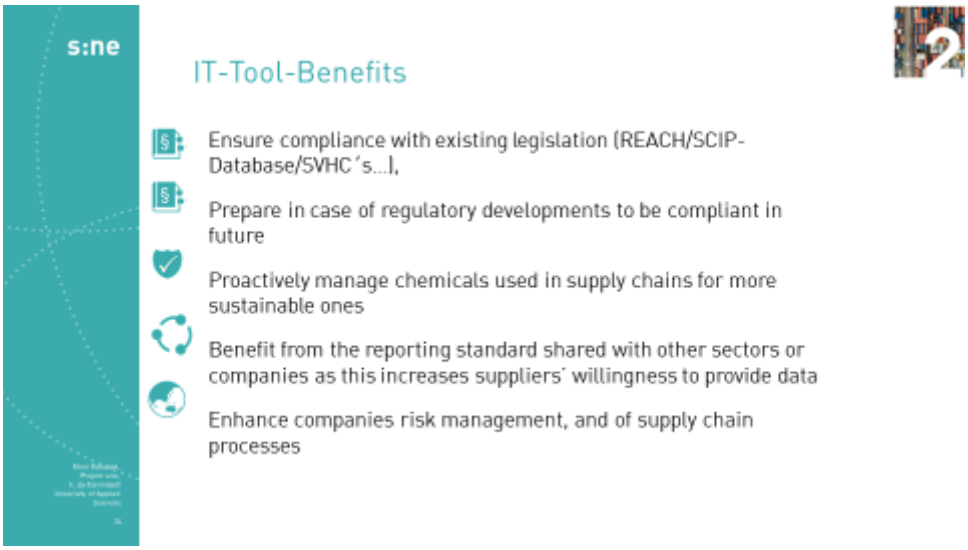
Technical testing of the IT-tool is only one perspective of the project. It is also about designing rules on how the leather industry wants to communicate chemicals related issues, using an open IT solution. The tool used in the study is only exemplary.

The project's aim is to develop in a multi-stakeholder approach an industry standard - so that not every single company in the leather industry invents its own traceability systems with rules. If the sector can agree on one system, reporting will be more efficient.

During the workshop, the Darmstadt University of Applied Sciences (h-da) and the pilot company Ricosta presented the results of the pilot study and discussed them with stakeholders from brands, tanners, chemical industries, certification schemes etc. in order to draw initial conclusions.

Section 3 summarizes experiences from the case study. Key aspects of the subsequent are summarized in section 4. At first, screenshots of the slides presented by h_da summarize the benefits of the traceability approach (section 2).

2. Benefits of an IT-Traceability Tool for Leather Supply Chains



3. The summarized result of the case study: Opportunities and challenges

View of the users of the case study	*Comments*
The IT tool can demonstrate the extent to which tanneries or suppliers are in control of their chemicals. They show that they know their recipes and check which regulations they have to comply with. What is difficult, however, is the handling in the tool of different product units that require conversions in the use of chemicals: In the case of leather, starting in kilograms when purchasing - then in the square meter range during further processing. There are also different tanning levels - from rawhide to wet blue, then to crust and to finished leather. How should the chemical process be mapped, including process chemicals that should not actually remain in the product? What actually washes out completely and what concentrations remain? If all suppliers fill in information in the IT tool, this creates transparency: what substances are contained in a product and how critically they are classified. This is important in case of consumer enquiries and changes in legislation, in order to be able to check products and processes. It is important to have an industry standard on how such a tool should be filled, also so that suppliers are spared from different reporting requirements on the part of the brands. It is also important that there are consistent global standards for chemical reporting in IT tools so that all suppliers can participate as efficiently as possible. In light of the German Supply Chain Act, it is also important to know one's suppliers and to enable a risk analysis not only with regard to chemicals management, but also on other topics.	Therefore, it should be considered to include further topics (environment/social issues) in the tool. In the default setup, the tool does however not disclose sub-suppliers to data requestors so that business relationship remain confidential
Supplier perspective: Using the tool is time-consuming: In order to fill the tool, training has to be done to understand the reporting principle.	

Once the basic mechanisms are understood, reporting gets easier. The tool requires data/chemicals and chemical quantities for the products, these have to be retrieved in the company. If recipes change, data records have to be updated accordingly.	Even today, without an IT tool, companies would have to conduct a risk assessment of the chemicals and process chemicals when they make changes to the formulation. The same applies to safety data sheets that must be update if changed recipes also alter the classifications If applicable, in-house databases may be linked to the IT tool (synchronisation with in-house systems). Note: Synchronisation with in-house systems was not the subject of the pilot study.

4. Extracts from the discussion topics

a. UNECE Connectivity	*Comments/alternative view*
The IT tool for chemical tracking is an important addition to the IT solutions that the UNECE project (Traceability for Sustainable Garment and Footwear | UNECE) is discussing or developing (Leather & Cotton Blog Chain). The iPoint-IT tool is planned to be connected to a blockchain as a future development.	

b. The disclosure of information	*Comments/alternative view*
Confidence is needed to disclose data related to chemicals/composition of formulations. Currently, the IT tool shows the brand a structure tree with all chemicals, but - for competition and trade secrets - not which chemical was entered by which supplier/tier. Each tier in the supply chain only sees the details of its previous tier. Step by step, the data set is consolidated, thus creating the complete structure tree; visible to the first enquirer.	It is a very deep look into the suppliers' company data or their recipes. The tool asks for more information than is legally required. Manufacturers do not want to declare everything completely in order to protect their intellectual property or to avoid perceived competitive disadvantages.

c. *What knowledge is needed?*	*Comments/alternative view*
Product manufacturers want to know what is in the product and how it has been treated throughout the supply chain so that it can be sold to customers with a clear conscience. Manufacturers are liable for their products, so at a minimum a full material declaration is necessary In the past, it was important for products to be free of harmful substances according to legal requirements. Today, brands are pushing for more information, more risk management. In addition, there is a desire for certification, such as GOTS; Umweltengel, Öko-Tex Standard: Today, it is no longer sufficient to present a test report, to be compliant with ZDHC or other standards, but more information is also sought on how the product is manufactured (water consumption, dyes, social standards); Customer information to be provided is becoming more detailed, because of allergies, processing of animal substances, etc.	What is the alternative to safety data sheets? A selection of information is important for efficiency in production. Would a Full Material Declaration overwhelm a tannery?

d. *Transparency and international competition*	*Comments/alternative view*
Certifications are becoming more and more important. The question is to what depth producers provide data, as far as processes are concerned. Luxury brands are very concerned and want certifications and detailed information about upstream suppliers. With the EU Digital Product Passport, high demands will be placed on digital reporting in the future. Safety data sheets are no longer sufficient. Companies that cannot provide proof of compatibility with the Digital Product Passport will not be allowed to import or will not receive contracts. Those who are proactive today have a competitive advantage. Direct imports are a problem; countries like China undermine the system and do not comply with regulations. Consumers react to cheap offers. Different standards around the world are problematic. Intermediary manufacturers/producers would have to join together and carry out random checks on suppliers in China to see whether requirements for products and working conditions etc. are being met. The results could be shared via an IT tool, i.e. an inspected product could represent the rest of the production. As a company, there is a desire to offer a lot of transparency. However, transparency offered by the chemical industry has been limited for years. The information is important for intermediate manufacturers as a basis for deciding on products, to know what is really in the products and how they were made within the production. This can bring certainty into the development processes. For example, with regard to the Co2 footprint of dyes. An IT tool that identifies chemicals makes sense.	In the pilot study, the tanning was carried out entirely by Heinen, in other supply chains possibly by different suppliers. An IT tool is important so that the entire tanning process is mapped in its preliminary stages and is transparent from an ecological and product safety point of view - but limited to the information in safety data sheets.

e. The role and limits of safety data sheets	*Comments/alternative view*
The information in a safety data sheet, i.e. the minimum requirements, are described in the REACH Regulation (Annex II). A manufacturer can decide whether he wants to provide more information voluntarily. The information contained in safety data sheets is NOT sufficient for disclosure or input into the tool. The purpose of the tool is specifically to make further information available so that companies can more proactively manage the set of chemicals and associated (legal) risks and opportunities. Safety data sheets have the following limitations: On the one hand, there may be cross-reactions with other chemicals in the further process that are not shown. Secondly, they only show the substances and mixtures classified as hazardous. This creates a gap with regard to supposedly non-hazardous substances that will be classified as hazardous in the future.	The information contained in safety data sheets is sufficient for disclosure or input into the tool. For now, it is much more important to focus on substances with a certain hazard potential than to try to discuss the complete formulations and associated problems. A big problem is the amount of chemical suppliers on the market that do not meet the compliance that the International Council of Chemical Associations has set as a target for 2020. In contrast, there are those chemical suppliers who are reliable and most of whom have a European or American history. The safety data sheet as a communication tool should be enforced consistently and it should be ensured that these comply with the requirements so that disclosure is made for *all ingredients with a hazard potential. (Comment on the part of h_da: Only specific hazard potentials are to be documented in the safety data sheets. Others - e.g. Endocrine disruptive effects, persistence and bioaccumulation - are not covered if the respective substances are not identified as SVHC at the same time).* Some chemical companies also provide confirmation on mixtures that the chemical does not contain a hazardous

	ingredient in a relevant quantity, without recipe disclosure. Many Chemical companies do not want additional work to be carried out. The aim is to use the systems that are already in place.

f. The current difficulty in handling safety data sheets	*Comments/alternative view*
The ambition of the project is not to transform the safety data sheet, but to consider what is needed if I want to know what a product contains and to what extend a SDS can help. The information content in the SDS is limited. Moreover, there are products with a longer shelf life. Products can contain substances in 5 years, which are then on the current SVHC list. However, products cannot be identified if they have not been recorded with their ingredients by a tool in the past. There would have to be a system on the market that e.g. ZDHC or LWG promote, which is not only oriented towards the large companies and established supply chains and offers service, but to which smaller companies also have access with their systems and remain connectable (compatibility) so that data can be exchanged on both sides.	The chemical industry has an interest in connecting to the existing safety data sheets. For example, in connection with the tracking system, the Gateway and the functionalities of ZDHC. There should be a system/format for safety data sheets so that they can be read electronically. Software providers are currently unable to agree on a unified format. Therefore, a transfer still takes place as a PDF file or XML file. As a user of a chemical, the product can be selected from the Gateway and automatically uploaded into the chemical management system. The chemical management can also be certified externally so that the selected chemicals can be verified against the chemicals actually in the warehouse, especially for non-European countries.
Contradiction (to the one on the right), in the car industry and for furniture, a longer lifetime than 12-24 months applies. Safety data sheets contain only partial information, do not contain the full substances and do not declare the	Products in the fashion industry have a lifespan of 12-24 months. Safety data sheet updates are legally required after 12 months in case of

components of a product. Product manufacturers need full information. SDS are not suitable as a means of communication. In addition, also from the perspective of the circular economy goals it is absolutely necessary to know all chemicals present in a product (irrespective of the shelf-life)	changes. With sensible purchasing planning, everything is used up after 6 months..

g. *Knowledge of chemistry is essential*	*Comments/alternative view*
Intermediary manufacturers in the leather industry must have expertise, chemical knowledge to evaluate and classify chemicals.	Chemical manufacturers cannot accept responsibility for further mixing by third parties when the chemicals described in the safety data sheet are mixed with third party formulations. Concerning the IMDS system of the automotive industry, the first data sheet is produced by the person who puts two chemicals together and gets an article out of them. These might not be the chemical companies. The creator of the data set has to identify whether mixing different process chemicals could produce substances, resulting in a hazardous or non-hazardous article.

h. How can future legal changes in the use of chemicals be foreseen?	*Comments/alternative view*
How foresighted should one be with regard to future legal requirements? It is important to gain knowledge: Observe legislation such as REACH and monitor substances and components that may become undesirable based on market developments. You have to know exactly what the product contains and take precautions, i.e. keep substances out of the product in advance. Suppliers must be contractually obliged to disclose information.	A responsive and proactive chemicals management has to be paid for, it is a cost factor. The SVHC process is an EU process to manage these chemicals, but not directly linked to CLP/GHS.

Not 100% to ensure intellectual property but maybe 90/95% and the rest as invisible - but automatically searchable - in the system. This way, the producer can still filter for hazardous substances in his products. Suppliers with incomplete material information have been listed out. Declarable substances are substances that may be banned in the near future. The question is, at what point does one switch to other alternatives or are there alternative substances at all? Foresight is important. What are the SVHC's of tomorrow? The European Chemicals Agency ECHA offers transparent online tools that show which substances are currently under review in the different Member States (e.g., the PACT tool). In most cases, these substances have already been burned by reputation. There are also SVHC lists from NGOs.	Many substances that might be banned in two years have to be listed on the safety data sheet already today, if the supplier of the safety data sheet is reliable (note from h_da: ...only applies if the hazard potential is covered by CLP (which e.g. is not the case for EDCs or substances problematic for the environment due to their persistent, bioaccumulative and mobile properties

i. *Fundamental question: What should be entered into an IT tool? Only chemicals that remain in the product? Or also the process chemicals that are important for the process and that are not actually intended to be present in the finished product?*	*Comments/alternative view*
<u>The role of process chemicals</u> The IT tool is able to show all chemicals, including process chemicals. Users can decide how much detail they want to report. The question is what is the demand in the supply chain and how far are the chemical suppliers willing to meet it. Process chemicals should be reported in the IT tool because customers of chemical manufacturers want to know if there are any residues of chemical XYZ in the product after all. In the IMDS of the automotive industry, no process chemicals may and should be reported; there, placeholders are used in the sense of "not do declare". But that is not the standard for the future.	All chemicals should be addressed, even those that are in the warehouse, such as cleaning chemicals. For example, a company actually washes its equipment with acetone while in contrast a solvent-free manufacturing process is required. Furthermore, high performance greases are used in many countries around the world, in leather processing machines with a roller, the grease goes into the bearings and is subsequently found in the leather unintentionally.

The point here is that we want to know something and the suppliers and the IT tools must therefore be able to do just that. A brand would like to know what process chemicals have been used in the supply chain, but the question is how much data is possible to be handled, especially for small and medium-sized companies. The smaller the companies are, the more likely they are to give out data, such as safety data sheets, because the chemical knowledge of intermediate manufacturers is not in-depth. This is critical when something is sold without valid knowledge.	A declaration of chemicals should be limited to what is hazardous, analogous to the safety data sheet. Carcinogenic substances should disappear completely from consumer products.