Indian Leather

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Hwaseung footwear to invest Rs.898 cr in A P

Hwaseung footwear, a leading South Korean manufacturer and one of the world's largest OEM suppliers for adidas and other global brands, has proposed a Rs 898 crore investment to set up a state-of-the-art non-leather footwear facility in Kuppam, Chittoor district, in Andhra Pradesh.

The Greenfield project, cleared by the State Investment Promotion Board (SIPBP), will span 100 acres at Pogurupalle, Gudupalle mandal, positioning Kuppam, as an emerging hub for global footwear manufacturing. The Unit is expected to generate Rs 17,645 direct jobs, significantly boosting local livelihoods and economic activity.

Hwaseugn will implement the project in three phases: Phase I with Rs.308.92 crore, Phase II with Rs. 298.44 crore and Phase III with Rs.291.53 crore. To fast track the development, the state govt. has approved a tailored incentive package including a 30% investment subsidy (capped at Rs. 299 crore) employment and local procurement subsidies, 10 year power tariff re-imbursement, 100% stamp duty and registration fee exemption and a de-carbonization subsidy for green manufacturing.

The government has also committed support for land allotment, infrastructure and streamlined approval via Single Desk Portal 2.0.

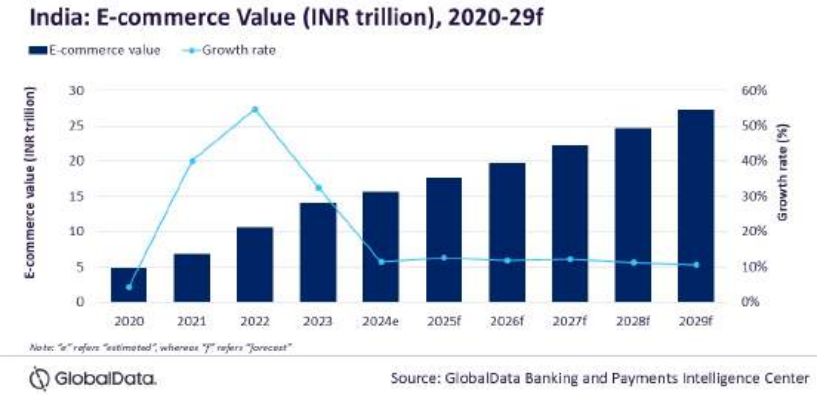
The investment aligns with CM Chandrababu Naidu's vision to position Andhra Pradesh as a premier global manufacturing destination and drive large-scale employment creation in Rayalseema. (*Times of India)*

GlobalData.

India e-commerce market to surpass $200 billion mark in 2025, forecasts GlobalData

India's e-commerce market is forecast to grow by 12.5% in 2025, reaching INR17.7 trillion ($211.6 billion). This rapid growth will be driven by strong consumer appetite for online shopping and growing trust in digital payments. The sector's momentum reflects deeper digital integration, government-led policy support, and rising adoption of AI-driven payment innovations, reveals GlobalData, a leading data and analytics company.

GlobalData's E-Commerce Analytics reveals that India's e-commerce market is projected to grow at a compound annual growth rate (CAGR) of 11.5% between 2025 and 2029 reaching INR27.3 trillion ($326.7 billion) in 2029.



Poornima Chinta, Senior Banking and Payments Analyst at GlobalData, comments: "The e-commerce market in India has experienced rapid growth in recent years, driven by broader digital adoption, increasing internet and smartphone penetration, and the availability of secure online payment tools. The growing popularity of online shopping events such as Flipkart's Big Billion Days, Myntra's

Big Fashion Festival, and Amazon's Great Indian Festival has further supported the surge in India's online shopping market."

The Indian government's Goods and Services Tax (GST) rate cuts, effective from 22 September 2025, on food and household essentials, electronics, and fashion and wellness products are also supporting discretionary spending and e-commerce sales. Leading e-commerce firms, including Reliance Retail, Amazon, and Flipkart, are participating in the government's 100-day "GST Bachat Utsav" campaign, which requires retailers to display GST discounts on invoices and submit reports on benefits passed to consumers.

Government and private-sector initiatives are another key driver of e-commerce growth. In December 2024, Amazon partnered with the government's Startup India initiative to help startups build and scale their e-commerce businesses through mentorship, training, and access to Amazon's technology, tools, and marketplace.

The deployment of AI and other innovative technologies are further accelerating the rise of online retail in India. In October 2025, the National Payments Corporation of India, Razorpay, and OpenAI launched a pilot program to integrate UPI within ChatGPT, enabling users to shop online and complete payments directly within the chat interface. Online supermarket "bigbasket" is among the first e-commerce platforms participating in the pilot.

In terms of payment tools, alternative methods are the preferred options, driven by the convenience and security of digital wallets and the strong preference for Unified Payments Interface (UPI)–based mobile payments among consumers and merchants. International brands such as Google Pay and Amazon Pay remain among the most widely used.

Payment cards are the second most popular e-commerce payment method with credit cards more preferred than debit cards due to the value-added benefits they offer, including interest-free instalment payment options, reward programs, cashback, and discounts. Their

usage is set to increase further with banks offering discounts in partnership with online retailers.

In August 2025, State Bank of India (SBI) partnered with Flipkart to launch the Flipkart SBI Co-Branded Credit Card offering cashback on purchases made at Flipkart, Cleartrip, and Myntra in addition to other rewards and discounts.

Chinta concludes: “India’s ecommerce market will continue its upward growth trajectory over the next few years with consumer appetite for online shopping showing no signs of waning. The country’s young, upwardly mobile demographic, growing popularity of alternative payment solutions, favorable regulatory initiatives, and technological advancements are converging to transform how Indians shop-creating new market opportunities, improving customer experiences, and attracting fresh investment.”

Back to School Column

Dr N K Chandra Babu

Spues on Leathers – Causes and prevention

As a continuation of the topic discussed in the last two columns, I originally planned to write about Pickle-less/salt-less chrome tanning, and in fact completed almost the first draft. But meanwhile, I received a call from an Industry friend regarding spue problem on leather. Hence I thought I will change gear and devote this article on spue formation – causes, its implication, prevention and remedies.

Spue is defined as an exudation of substances on the leather surface by their migration from inside to the surface aided by either mechanical, physical or chemical means (McLaughlin and Theis). There are many types of spues possible but those mostly encountered are powdery exudate from fatty matter, mainly fatty acids (fatty spue) and inorganic salts (salt spue). Migration of gummy resins, sugars and colloidal sulfur are also rarely encountered in some cases.

Sulfur spue

Sulfur spue mostly appears on leather tanned with chrome, the preparation of which involves hypo (thiosulfate) as reducing agent or thiosulfate is used for bleaching of pickled pelts for some reason or other. In the case of vegetable tanned picking band or other types of heavy leathers which require high tensile strength, sulfure tannage is carried out in combination, to deposit collidal sulfur inside to act as a solid lubricant. Sulfur tannage involves heavy pickling to very low pH followed by depickling to pH of 4.5-5.0 using hypo prior to heavy vegetable tanning. Sulfur spue on such leathers is also quite possible.

Gummy spue

Gummy spue, unlike powdery fatty spue, is caused by the oxidation of the oils, mostly oils with high level of unsaturation, fish oil being the common culprit. Needless to say, unlike fatty spue which is caused by mostly free fatty acids, triglycerides are the main cause for gummy spue. Triglycerides are the triesters of glycerol with long chain fatty acids. Oxidation is usually catalyzed by storage in warm and humid conditions with exposure to air and sunlight, and contact with metal compounds accelerates the oxidation process. Ironically, free fatty acids along with antioxidants are recommended for the prevention of gummy spue. Presence of considerable amount of water solubles also helps in keeping the migration of fat in check and hence not usually encountered in vegetable tanned or chrome retan (retanned with heavy vegetable tanning) leathers.

As mentioned earlier, fatty and salt spues are commonly encountered in leather industry and hence they require detailed discussion.

Fatty spue formation on leathers

This type of spue is the most common and the most menacing of all. It appears as white powdery exudation, and often confused with fungal infestation. Manytimes, microscopic examination may be necessary to differentiate them as heavy fungal growth often seen along with fatty spue formation. The lipase producing fungi can hydrolyze the natural fat/oils used in fatliquors into fatty acids. On microscopical examination, fungi will appear with typical branched structure, whereas fatty spue will appear as crystalline powder. Easiest way to confirm fatty spue formation is to warm the affected portion, on which the spue will disappear instantly whereas fungi or salt spue will remain intact. Needless to say, the spue will invariably reappear once the surface cools down.

Sources of fatty spue and factors that promote the formation

The main source of spue is the natural fat present in the hides and skins. The oils, mainly triglyceride based used for fatliquor preparation as well as free oils used in the formulations can also contribute to spue formation if the oils are not carefully chosen. Though the free fatty acids are mainly implicated in spue formation, oils with high melting points also can contribute to spue formation. Free fatty acids (often referred to as FFA) tend to crystalize at about 20^{o} C, whereas the high melting oils crystallize even at 40^{o} C depending on their melting points. Among the long chain fatty acids which make up the triglyceride fats and oils, the saturated fatty acids like stearic and palmitic are often implicated in spue formation, though the unsaturated fatty acid like oleic acid undergoing hydrogenation/oxidation in hot and highly humid conditions and also due to oxidizing functionality in the chemicals/reagents used in processing to become saturated can not be ruled out.

Having said that the natural fat present in the hides and skins is the main source for spue formation and mostly not under the control of tanners, and this aspect requires special attention to understand the phenomenon and to device strategies for the prevention.

Fat content varies quite considerably from one type of skin to another. In Cattle hides, the fat content may vary from 2-5%, from 3 to 10% in goat skins whereas sheep skins may have as high as 25-30%. Factors such as breed, sex, age, and nutrional status apart from the climatic conditions affect the fat content in the hides and skins. The nature of fat and the content present in the various layers of skin/hides are also found to vary considerably. The grain layer contains the least amount of fat (about 1%) fat and types of fats present are also different in nature from the rest of the layers and are contributed by phospholipids, cholosterol, waxes and some amount of FFA. The corium contains about 2-10% of the fat mostly triglycerides whereas the adipose layer has about 5-10%. The fat

present in these two layers are mostly triglycerides but the type of FAs may vary from one layer to another.

As mentioned earlier, FFAs in the oils and waxes used for the preparation of fatliquors and in formulation as well as crystallizing oils as previously explained can also contribute to spue formation on leathers. Naturally occuring oils, fat and lipid waxes are composed of mixer of glycerides, mono, di and triglycerides. Glycerides are esters of glycerol with long chain fatty acids formed by condensation process. Mostly, saturated fatty acids, palmitic and stearic acids and unsaturated FA, oleic acid are present in the naturally occurring oils with linoleic acid being present in some cases. The proportion of saturated FAs to unsaturated Fas will decide about the melting point of oils. More the saturated FA content, higher will be the melting point with the possibility of fat being present as solid at ambient conditions (around 30^{o}C), Tallow being the classical example. Conversely, fat with higher unsaturated FAs will be liquid oils.

Hence, there has to be due diligence in the selection of oils, especially natural oils to prevent occurrence of spue. The oils and other ingredients chosen for fatliquor formulation should be carefully screened for FFA content as well as their melting points. An idea about FAs constituting triglycerides will be also useful. But the recent studies have reported that the level of unsaturation in the fatliquors decreases during processing as well as during storage indicating that hydrogenation (catalyzed by enzymes) or oxidation by the oxidizing nature of the chemicals used in leather manufacture. Another recent finding is that oils containing methyl esters of fatty acids especially palmitic and stearic acids can contribute significantly to spue formation.

Fatliquors made from cold pressed oils (to remove the components that crystallize at cold temperature) were shown to reduce the chance of spue formation on the treated leathers. Nowadays, in leather processing there is a tendency to reduce the proportion of natural oil based fatliquors in fatliquor formulation and instead have

more of synthetic fatliquors based on mineral oils. Such Synthetic fatliquors, because of the linear chain molecules and fine particle sized emulsions easily penetrate well into the leather taking with the triglyceride based fatliquors and FFAs also very well inside with the possibility of distributing uniformly across cross section. Synthetic fatliquors used alone give a dry feel to the leather and hence has to be judiciously combined with natural oil based fatliquors. Mineral oils of certain carbon chain length range have good solubilizing action on the FFAs and hence spue formation is delayed/reduced to a large extent if used in combinatin. There are fatliquors available based on such a concept which are marketed for controlling spue formation in leather species susceptible for spue formation.

Since fatty spue due to FFAs are the most common and most difficult to get rid of once formed, the hydrolysis of triglycerides either from natural fat by ezymes from bacteria and fungi on one hand or by chemicals on the other should be prevented by careful process control during leather making. Suitable biocides should be used in optimal dosage levels at various stages of leather processing to effectively control growth of bacteria and fungi. Whenever, enzyme formulations are used in leather processing, post treatment follow up action is necessary to arrest continued action of enzymes. Since highly acidic condition promotes hydrolysis of triglycerides, the pH of water solubles should be kept above 3.5 through proper process control measures. Differential value should be also monitored to make sure mineral acids are not present even in traces. Good throrough neutralization of chrome tanned leather is the key with sufficient aging of wet blue leathers and rechromed leathers (this is not done often in commercial practice) prior to further processing.

Often queries are raised about what should be the FFA limit below which the leathers are safe from spue formation. It is a rather difficult question to answer due to the possibility of formation of FFA by splitting up of triglycerides due to the factors discussed during processing, storage and use/aging of leathers. But if these factors

are under control with pH of water solubles above 3.5 and a differential value below 0.7 and leathers are well protected from fungal growth, in my considered opinion based on my experience in dealing with the problem for more than 2 decades as Designated Authority for Leather related issues, FFA value below 2.0 (on the dry weight of the leather) would be ideal for being safe from fatty spue problem. Some Internationl standards are little more liberal with one specifying a value of <2.5%.

Strategies for minimizing the chances of spue formation

With the above basic information at our disposal, let us look at the ways of minimizing the chances of spue formation on leathers.

- First step starts with flaying. Flaying should be carried out carefully not to leave two much of flesh. In modern abattoirs in some countries (the author has witnessed this in Australia) where fleshing machines are used for the removal of excess flesh before the skins are salted for curing.

- Delayed curing can lead to staling (onset of putrefaction) and hence this should be avoided. Staling will lead to breakdown of triglycerides into glycerol and FFA due the action of lipase secreted by bacteria with the potential risk of spue formation later. Spue occurs frequently in leathers made from stale hides and skins. Another problem is with respect to calcium soap formation during liming operation, which may persist in the wet blue leather with the possibility of pink colored chrome soaps, which is very difficult to remove. In such cases, heavy permanganate bleaching/treatment with selected solvents may be necessary to remove the stains. FFA formation is also common with cured stock stored for long duration at conditions favorable for bacterial growth. Designing of process technology, especially in beam house and bating operation with good control can reduce the chance of formation of soap stains and spue.

- In the case of greasy hides and skins with which there exists a high risk of spue formation, certain interventions/cautions during leather processing are necssary. Some researchers recommend not to use any lipase during soaking and liming operations in such cases. If at all, lipase is used for some reason (some soaking enzymes may have lipase in combination with a protease), use of good amount of nonionic surfactants is necessary to wash away the FFA formed. Thorough washing is also critical. Removal of the adipose layer completely in fleshing operation also helps in reducing spue problem.Use of alkali like caustic soda (in small quantity) and soda ash in liming also helps in saponifying the natural fat and reducing the formation of calcium soap. Good degreasing is very critical for highly greasy skins, merino sheep is a classical example. Invariably, solvent degreasing is recommended to avoid the risk of spue formation on leathers. Deliming and bating should be so designed to end with easily washable saponified FFA and natural fat. Traditional machine scudding process can considerably remove fat from the epidermal layer quite considerably But nowadays, only drum scudding is carried out and hence it is necessary use effective emulsifiers/surfactants as an integral part of the process to wash away the fat/FFA.

- Good Neutralization with good choice of alkalis is necessary to ensure good diffusion/distribution of fatliquors without leaving fat near the surface

- Choice of fatliquors for lubrication is another important aspect, which has been discussed in the last section in detail. The sequence of retanning and fatliquoring and choice of retanning agents may have strong influence on the distribution of the fat as well retaining them inside reducing the chance for migration, and hence these processing aspects are also important apart from choice of fatliquors used in formulation.

Good fixing of fatliquors is important but use of too much of formic acid should be avoided.

- Good and effective fungicidal treatment is also critical for the avoidance of spue formation. The lipase enzyme secreted by fungi can hydrolyse natural fat into FFA. In my experience, I have seen that heavily fungi infested leathers frequently have spue formation as well especially with susceptible raw materials like greasy sheep skins.

- Rate of drying of fatliquored leathers also will have an influence on spue formation. Vacuum drying tends to bring the fat close to the grain surface with a potential risk of migration of FFA. For Leathers to be vacuum dried, fatliquor formulation has to be carefully designed to avoid the problem. The fatliquored leathers kept in wet pile for long duration, partially dried/conditioned leathers waiting too long for staking operation in hot and highly humid conditions can promote the spue formation at later stage.

- Some finishing auxiliaries containing high melting waxes in excess (surface feel modifiers) and polyethylene glycol esters of palmitic and stearic acid and amides of saturated FFA (topping oils) can themselves lead to waxy spue on leather and hence used in moderation to avoid the problem.

Though, some remedies are recommended in the literature by various researchers to remove spues from the leather, based on my personal experience, the focus should be on prevention than on cure. The main reason is that in the case of heavily affected leathers, the fatty spue reappears again especially taken to cooler temperatures (~20^{o}C). Some methods talk about swabbing the affected by portions gently with a cloth to remove the spue as much as possible with low melting mineral oil and then spray with a very diluted emulsion of the mineral oil and then tunnel dry to contain the problem. This author recommends use of highly stabilized cutting oil

formulation with suitable non-ionic emulsifiers for the purpose, which has been proven to delay the spue formation considerably. The softness and surface touch also improves on treatment. Some select solvents, such as diethyl ether and nonionic surfactants made with branched alcohol are also recommended for the removal of spue by swabbing with a cloth but extreme caution should be exercised while using them.

Salt spue formation on leather

In contrast to fatty spue, sometimes leathers are affected by salt spue formation due to migration of unwashed inorganic salts from inside to the surface of leathers with the formation of white crystalline deposits on leathers. It is a common site in a tannery that the piled wet blue leathers developing crystalline salts on the leathers, especially in the portions exposed to air. Common salt is used for curing of hides and skins which is removed during soaking process. Subsequently, during deliming process, neutral salts, calcium chloride and or calcium sulfate are formed depending on the deliming agents used. Calcium chloride, being very much soluble in water can be easily washed off whereas calcium sulfate being only sparingly soluble, requires thorough washing to remove the salt completely and many times, some amount is always retained in the pelt and subsequently in the final leathers. Considerable amount of salt (NaCl) is used in pickling to suppress acid swelling. BCS used for tanning contain about 25% sodium sulfate(on the weight of BCS). and in addition, sodium sulfate is formed during basification process. Considerable amount of these salts, NaCl and sodium sulfate are still present in the wet blue leathers. Subsequently, leathers after adjustment of thickness, again rechromed, basified and neutralized and in the process, sodium sulfate is added/formed. Good washing is necessary with two changes of water to remove all the salts before the leathers are taken for wet finishing operations of dyeing, retanning and fatliquoring and finally acid treatment is done to fix post tanning agents/chemicals using formic acid, at which stage

again neutral salts are formed. All the post tanning auxiliaries including powder dyes also have some amount of sodium sulfate in them. Hence, thorough washing and rinsing is necessary after the competition of post tanning operations.. In vegetable tanning especially in the E.I. tanning, Epsom salt (magnesium sulfate) is used for fixing unfixed vegetable tannins as well as for increasing the weight of leathers.

There is an interesting article from UNIDO about the mass balance of neutral salts at different stages of leather processing to get a quantitative idea about the neutral salt used, formed and discharged in/from various unit processes during leather making. Though washing is carried out to remove the neutral salts at different stages, still considerable amount of neutral salts are found in the final leather. When this exceeds certain threshold levels, they tend to migrate to the surface forming salt spue mostly aided by wetness or by the action of perspiration. This crystalline spue unlike fatty spue does not disappear by warming, and this is a simple method to differentiate them from one another. Spue can be scrapped and dissolved in water and tested qualitatively/quantitatively for the presence of chloride and/or sulfate. Sometimes, to identify the origin of salt, spue is tested for calcium as well. In my experience dealing with salt spues, more than 80% of the cases test positive for calcium. The tendency of leathers for salt spueing is tested by inorganic ash content in the leather (after deducting for chromium oxide content). Many standards talk about this content being less than 1.5% in leathers which will come into contact with water/perspiration during usage. Sole leather, lining and unlined shoe uppers and watch strap leathers are some of the classical examples. Only way to avoid salt spue formation is to resort to good washing at various stages of leather processing but water conservation measures may pose some serious challenges in this regard.

For any feedback, please mail to babunkc@yahoo.com

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Dr.Palanisamy Thanikaivelan is the New Director of CSIR-Central Leather Research Institute

The Council of Scientific and Industrial Research (CSIR), New Delhi, Ministry of Science and Technology, has appointed Dr.Palanisamy Thanikaivelan as the new Director of CSIR-Central Leather Research Institute, Chennai, India. Dr.Thanikaivelan has taken over charge from Dr. K.J. Sreeram, his predecessor and fellow alumnus of CSIR-CLRI, today ie. 28.11.2025. He did his B.Tech. and M.Tech. in Leather Technology from Anna University in the years 1997 and 1999 respectively. He did his Ph.D. from Anna University and started his research career as a Junior Scientist in CSIR-CLRI in the year 2002, and thereafter has held various positions in the Institute.

His area of specialization is 'Leather Science & Technology and Material Science for Technology Transfer & Industrial Research'. Dr.Thanikaivelan has focused his contributions research and development on causing paradigm shifts in leather processing. He has sought to develop integrated solutions to environmental

problems in leather processing based on deeper insights into the first principles of leather science. His integrated approach aims to develop 'Do-Ecology' solutions to leather processing as well as gaining economic values from the currently wasted resources posing problems in solid waste disposal. He was instrumental in the development and deployment of game-changing Waterless Chrome Tanning Technology for tanneries in India. His work of using collagenous wastes from leather processing as a precursor for developing carbon nano-onion like structures, Nano biocomposites and other advanced materials represents first-principle pioneering innovations. He has developed two synthetic agents for pickle-basification free chrome tanning. The application of the technology for the high exhaust chrome tanning developed by him ensures a reduction in the wastage of chromium by 30%. He explored the development of leather-like materials utilizing the plant wastes of agricultural industry for application in life style products. He has developed and transferred 12 technologies.

Dr.Thanikaivelan has been selected as the Young Associate of Indian Academy of Engineering (INAE) from 2013-2021, Indian Academy of Sciences, Bengaluru from 2007-2021; Life member of Materials Research Society of India, Chemical Research Society of India, and Indian Leather Technologists Association; Member of International Association of Advanced Materials, Materials Research Society of Singapore (2009-2011), the American Leather Chemists Association (2004-2008). He is the recipient of CSIR Diamond Jubilee Tech. Award, 2016; CSIR Technology Award for Innovation, 2017; Fulbright-Nehru Fellowship, 2010 (USIEF); WIPO Certificate of Merit, 2008 & NRDC Award, 2007; Young Engineer/Scientist Award2006, INAE & CSIR; Product/Process Comm. Award, 2005 DBT among other awards and recognitions. He has to his credit 145 research publications, filed 30 National patents out of which 20 have been granted and 9 have been licensed. He has also filed 17 International patents, out of which 10 have been granted.

Indian Leather wishing him all the very best.

AILPA-the All India Products & Allied Industries from 28 to 30 October, 2025 at the Biswa Bangla Convention centre, Kolkata.


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Deforestation: Council ready to start talks with Parliament on a targeted revision of the regulation

The EUDR, or EU Deforestation Regulation, is EU legislation that requires companies to prove that commodities and products placed on the EU market are deforestation-free. It applies to seven key commodities: cattle, cocoa, coffee, oil palm, rubber, soy, and wood, as well as their derivatives, and demands that companies exercise due diligence to ensure these products do not originate from land deforested or degraded after December 31, 2020. This regulation aims to combat global deforestation and forest degradation, and its compliance includes a three-step process of information gathering, risk assessment, and risk mitigation.

The Council adopted its **negotiating mandate** on a targeted revision of the EU regulation on deforestation-free products (EUDR). The aim is to **simplify the implementation** of the existing rules and to **postpone their application** to allow operators, traders and authorities to prepare adequately.

Following concerns from member states and stakeholders about the readiness of companies and administrations, as well as about technical issues related to the new information system, the Council supports the Commission's **targeted simplification of the due diligence process**. The Council also pushes to introduce a **uniform one-year postponement of the application of the regulation** for all operators, until 30 December 2026, with an extra six-month cushion for micro and small operators.

The Council removed the 'grace period' initially proposed by the Commission for large and medium companies, opting instead for a clear **extension of the application date** for all operators, regardless

of their size. The mandate maintains and adds on the simplification measures originally proposed by the Commission, focusing on reducing administrative burdens while preserving the objectives of the regulation.

Main elements of the Council position

The Council's mandate has introduced a number of changes to the Commission's proposal to further reduce the administrative burden on operators, particularly small and micro operators, and allow for a smooth implementation of the regulation.

Under the Council's position:

- the provisions of the EUDR would apply from **30 December 2026** for medium and large operators and **30 June 2027 for micro and small operators**
- the obligation and responsibility for submitting the required due diligence statement would fall exclusively on the **operators who first place the product on the market**
- downstream operators and traders **would no longer have to submit separate due diligence statements,** but only the first downstream operators must keep and pass on the reference number of the initial statement
- micro and small primary operators would submit only a **one-off simplified declaration**

The Council also tasked the European Commission with carrying out, **by 30 April 2026**, a **simplification review** assessing the EUDR's impact and administrative burden on operators, particularly small and micro operators. Where appropriate, the review should be accompanied by a legislative proposal.

Next steps

On the basis of this mandate, the Council will start negotiations with the European Parliament in order to reach a final agreement in the coming weeks and before the current EUDR becomes applicable as of 30 December 2025.

Background

The regulation on deforestation-free products entered into force in June 2023 with the aim of ensuring that certain commodities, such as cattle, cocoa, coffee, oil palm, rubber, soya and wood, and their derived products placed on or exported from the EU market have not caused deforestation or forest degradation.

Its main provisions were initially due to apply from 30 December 2024. Following concerns raised by member states, third countries, traders and operators about readiness, an initial one-year postponement was adopted in December 2024.

The new amendment, proposed by the Commission in October 2025, responds to continuing implementation challenges, in particular the need to ensure the effective functioning of the EU information system and to alleviate administrative burdens for smaller operators.

COTANCE SUBMITS FEEDBACK ON THE EU CIRCULAR ECONOMY ACT

Leather is one of Europe's oldest circular materials - renewable, bio-based, durable, and biodegradable. Yet, it's often overlooked in current EU policy frameworks.

In its submission to the European Commission, COTANCE calls for fair recognition of leather's circular value and puts forward four key asks for the upcoming EU Circular Economy Act:

1. Recognise and incentivise the use of animal by-products in EU circular and bioeconomy strategies.

2. Extend authenticity and labelling rules to leather to ensure consumer transparency and stop misleading claims (like "vegan leather").

3. Include leather in sustainable public procurement to promote renewable, durable materials.

4. Invest in R&D, innovation, and skills to accelerate the green and digital transition of Europe's leather SMEs.

Leather is not just a natural material - it's a circular solution that valorises by-products and prevents millions of tonnes of hides and skins from becoming waste.

Leather has just been officially recognized as a bio-based material.

Leather just got the bio-based certification

And it might be the most natural choice in your wardrobe.

If you've ever stood in a store holding two handbags, one labelled "vegan leather," the other simply "leather", and wondered which was the more sustainable choice, you're not alone. We've been led to believe that "vegan" equals plant-based, planet-friendly, and guilt-free. But here's something many don't realize: most "vegan leather" isn't made from plants at all; it's made from plastic. And not just any plastic, but PU (polyurethane), a petroleum-derived material with a short lifespan and a long environmental footprint.

Now here's the real news: **Leather has just been officially recognized as a bio-based material under European Standard CEN/TC 411**.

CEN/TC 411 develops European standards for **bio-based products**, focusing on **horizontal aspects** like terminology, bio-based content calculation, sustainability criteria, and business-to-consumer communication. These standards aim to harmonize methodologies, promote market growth, and support the bioeconomy by ensuring quality and sustainability for products derived from biomass.

In other words, leather-when made responsibly - is not only natural, it's now formally classified as derived from renewable biological sources. A far cry from the synthetic alternatives that have been marketed as "better" for the planet.

So what does that mean for us as consumers?

It means we need to start asking better questions. Not just "what is it called?" but "what is it made of?" and "how long will it last?" A well-made leather bag can last decades. It can be repaired, reconditioned, passed down. And with innovations like **Zeology**, leather can even be composted at the end of its life. That's not just sustainability - it's circularity in its most elegant form. By contrast, PU "leather" can crack within a season. It can't be repaired. And when it's done, it's done… Destined for landfill, never to break down. This isn't about guilt. It's about empowerment. About knowing that the material you choose isn't just stylish today. It's aligned with a future we want to live in.

So yes, leather just got a bio-based badge. But more importantly, it's earned a place in the modern sustainable wardrobe. N*ot despite its origins, but because of them*.

Next time you're choosing a bag, a jacket, or a pair of shoes, ask the quiet question behind the label: **what's the story of this material?**

You might be surprised where the real sustainability lies.

Source : Smit & Zoon

Consumers Change Buying Habits: 9 Out of 10 Seek More Sustainable Solutions

A survey conducted by APICCAPS, in partnership with the Catholic University of Portugal, among 1,531 consumers from more than 50 countries, reveals a profound shift in consumption patterns: **90.9% state they have adopted more sustainable habits in the past five years, while only 9.1% resist this global trend.**

The results show that sustainability has ceased to be a niche and has become a dominant criterion in consumer choices. Environmental awareness is now a decisive factor for the vast majority of customers, with a direct impact on the fashion and footwear sectors.

When asked about their priorities, almost half (48.1%) of consumers highlighted the search for more sustainable footwear as their main concern. This was followed by reducing consumption (26.6%), repairing shoes (15.5%), and donating footwear (9.8%)-confirming a cultural shift around the value, longevity, and circularity of products.

According to Luís Onofre, President of APICCAPS, “we are all aware that there is still a long way to go, marked by the rampant consumption of low-value products and the excessive concentration of

production in Asia, which accounts for 88% of global output." Still, he stresses that these are "encouraging results, since consumers are increasingly aware of environmental issues."

He adds: "Portugal is on the right track. We have a dynamic, innovative sector that is increasingly committed to sustainability. In our latest Strategic Plan, we made it a priority to become an international benchmark in developing sustainable solutions. That is why we are currently implementing the largest investment ever in automation, robotics, and, above all, sustainability."

For Luís Onofre, "this evolution shows that investing in more responsible solutions is not just a trend, but an unavoidable requirement of the international market. Sustainability will increasingly be synonymous with competitiveness."

The survey was carried out within the scope of the *BioShoes4All* project, supported by the PRR, and represents the largest collective innovation initiative ever in the Portuguese footwear sector. The program brings together companies, technology centers, and academic partners with the aim of developing new materials, processes, and business models that strengthen Portugal's leadership in sustainable footwear.

According to Maria José Ferreira, Director of the Portuguese Footwear Technology Centre (CTCP), "*BioShoes4All* is a truly transformative project, because it acts across the entire value chain, from the development of new bio-based materials to the creation of cleaner and more efficient production processes."

She emphasizes that "the project's strength lies in its collaborative dimension, as it brings together companies, research centers, and universities around a common goal: to make Portugal a global benchmark in sustainable footwear. This network of cooperation accelerates innovation and transfers knowledge directly to the industry."

Maria José Ferreira further highlights that "*BioShoes4All* is laying the foundations for the development of a genuine new generation of products, combining design, technology, and sustainability. This investment not only addresses environmental demands, but also reinforces the competitiveness of the sector." (Source APICAPPS):

The transformations that will shape the future of footwear and accessories, and what to expect at Expo Riva Schuh and Gardabags

The innovations emerging from the most recent international events dedicated to footwear technology – the UITIC Congress in Shanghai and the Italian trade fairs visited by the Scientific Committee of Expo Riva Schuh and Gardabags – clearly show that the industry is experiencing a period of radical transformation. These innovations are not confined to laboratories or R&D departments; they are finding tangible application in the products that will be presented at **Expo Riva Schuh and Gardabags**, organised by Riva del Garda Fierecongressi and taking place in Riva del Garda from **10 to 13 January 2026**.

As the first international trade fairs on the calendar for the **Autumn/Winter 2026/2027** season, the Riva del Garda exhibitions are key moments when the entire supply chain meets the market. Here, buyers and distributors will be able to see first-hand how new technologies are being integrated into models destined for both high-volume production and the premium segment.

ARTIFICIAL INTELLIGENCE AND NEW INDUSTRIAL MODELS

The UITIC Congress strongly highlighted the central role of **artificial intelligence** – not as an accessory, but as a true “nervous system” capable of connecting business processes, from product design to logistics management. AI makes it possible to forecast demand, optimise resources, reduce waste and accelerate development. At the same time, human input remains essential: as reiterated in Shanghai, clear rules are needed to guide its use.

This vision aligns perfectly with the discussions already taking place within the **Expo Riva Schuh and Gardabags** community, which for

years has explored the contribution of AI to sustainability and industry competitiveness through the Innovation Village Retail project. International start-ups such as Sangrove, IFReturns and ACBC have demonstrated how data and algorithms can improve planning, returns management and material selection – reducing waste and minimising environmental impact.

LIGHTWEIGHT AND CIRCULAR MATERIALS FOR SOLES

While AI is reshaping business organisation, materials are at the heart of product innovation.

Recent events dedicated to new technologies have highlighted the intense activity surrounding innovation in sole production – with solutions designed to meet performance requirements, comply with increasingly strict regulations, and respond to market pressures on sustainability and safety.

The first key area of development concerns **lightness**: reduced material density through the controlled expansion of PU and EVA, now enhanced by gas-based techniques, makes it possible to lighten even more compact materials such as TPU. These technologies require strong collaboration between machinery manufacturers and chemical suppliers, giving rise to new strategic partnerships.

The second focus is on **process innovation**. The difficulty in finding workers willing to operate in high-risk environments has accelerated automation. The use of robots to handle high-risk processes and the development of co-moulding solutions reduce the need for adhesives and chemicals, creating advantages in terms of safety, time and cost efficiency. The most advanced technologies now make it possible to produce outsoles and midsoles in a single injection cycle, improving both efficiency and quality.

Lastly, **circularity** lies at the core of future strategies. Research is increasingly aimed at using thermoplastic materials (which can meet current performance standards) in place of thermosetting ones, thus

promoting recycling by eliminating the complexity of chemical cross-linking. The trade fairs showcased examples of multi-level supply chains: from mechanical recycling, which preserves polymer chains, to chemical recycling, and even advanced techniques such as pyrolysis, which restore materials to their original state. In all cases, a crucial factor remains the ability to collect and separate materials correctly according to their composition.

AN INNOVATION ECOSYSTEM

At the UITIC Congress, the concept of an **innovation ecosystem** was discussed, highlighting the importance of synergies between companies, research centres and the academic world. An approach successfully put into practice at the Riva del Garda trade fairs, where collaboration between start-ups, manufacturers, retailers and institutions takes shape within the **Innovation Village Retail**. Here, solutions are presented that range from virtual fitting rooms and predictive supply-chain planning to new repair services and material reuse platforms.

“Our fairs are not just product showcases but also spaces for dialogue on the trends reshaping the market,” says **Alessandra Albarelli, General Manager of Riva del Garda Fierecongressi**. “The innovations discussed in Shanghai show that the future of footwear and accessories will be defined by cross-cutting technologies that impact both luxury and mass production alike. Expo Riva Schuh and Gardabags are the moments when these transformations take shape and turn into real business opportunities.”

FROM INNOVATION TO MARKET

In a global context marked by fragmented supply chains and new trade barriers, **innovation is becoming a crucial competitive factor**. Expo Riva Schuh and Gardabags will offer companies the chance to explore how technological insights have evolved into tangible collections.

Here, the solutions showcased at recent international fairs or discussed at the UITIC Congress will find real-world application in finished products: lighter, more sustainable and customisable shoes; accessories created from new circular materials; collections developed with the support of artificial intelligence; and production processes that are safer and more efficient.

The direction is clear: **the footwear industry is moving towards smarter, more sustainable and more integrated production models**. Expo Riva Schuh and Gardabags reaffirms its role as an international platform capable of connecting innovation and the market, building a bridge between the technologies developed in research centres and the products destined for millions of consumers around the world.

OrthoLite® Partners with Bureau Veritas to Elevate Quality, Compliance, and Sustainability Standards in Footwear Manufacturing

OrthoLite®, a global leader in innovative footwear comfort solutions, announces a new strategic partnership with Bureau Veritas Hong Kong Limited ("Bureau Veritas"), a world-renowned leader in testing, inspection, certification, and auditing services. This collaboration highlights OrthoLite's commitment to establishing standardized testing practices across all global operations, ensuring consistency while staying a step ahead of upcoming regulatory requirements in material traceability, safety, and compliance.

Under this partnership, Bureau Veritas will provide OrthoLite with comprehensive services including product testing, inspections, social audits, factory audits, security audits, and environmental audits in production facilities worldwide. These rigorous evaluations ensure OrthoLite's products and manufacturing processes conform with stringent quality assurance protocols and supplier compliance measures.

Bureau Veritas' audits will assess various aspects such as environmental management systems, workplace conditions, factory security, and product conformity to industry and legal standards. Through ongoing inspections and testing performed at Bureau Veritas' accredited facilities and client-designated sites, OrthoLite's leadership in responsible manufacturing will be further solidified.

"Collaboration with Bureau Veritas supports OrthoLite's goal of delivering sustainable, high-quality footwear solutions responsibly," said Richard Bevan, COO of OrthoLite. "This partnership strengthens our ability to uphold transparency and accountability across our supply chain, ensuring superior product performance and ethical manufacturing practices."

The multi-year agreement includes provisions for confidentiality, ownership of intellectual property, and adherence to stringent audit protocols, reflecting the mutual dedication to professionalism and data integrity. Furthermore, Bureau Veritas will work closely with OrthoLite's vendors to identify and address any quality or compliance issues proactively.

As consumer demand for sustainable and ethically produced products grows, OrthoLite's investment in third-party verification demonstrates a strategic approach to maintaining industry leadership and supporting brand partners worldwide.

OrthoLite Expands Global Footprint with New Facility in North Vietnam

OrthoLite, a global leader in sustainable footwear solutions, announces the opening of its new facility in the Ninh Binh Province in North Vietnam. This key milestone marks a significant step forward in OrthoLite's strategy to localize the entire product creation process from end to end while strengthening the company's production capabilities to better support regional and global brand partners.

OrthoLite North Vietnam (ONV) is a state-of-the-art manufacturing facility that catalyzes local-for-local production and service. OrthoLite's commitment to the northern Vietnam region furthers its unique global vertical integration strategy and investment in its owned and operated facilities.

OrthoLite's global quality standards ensure consistency and excellence across all foam formulations, assuring the highest standards while qualifying new programs, reducing waste, and launching advanced digital monitoring tools for transparency and reliability.

OrthoLite is well positioned to deliver high-performance comfort solutions locally for global brands.". The acquisition of OrthoLite is the latest step in Coats' ambition to shape the future of the global apparel and footwear supply chain through innovation, sustainability, and digital technologies that improve quality, efficiency and performance.

Portuguese biomimetic soles were highlighted in Milan

Inspired by nature, says its creator: the new product developed by PIEP (Polymer Engineering Innovation Hub), a technology and innovation center located in Guimarães, in collaboration with Atlanta Steps and CTCP, promises to be a small revolution in footwear. And with it, Portugal once again stands out in footwear innovation, with the world premiere presentation of a new generation of biomimetic soles at the Lineapelle Fair, the largest international footwear accessories event, concluded recently.

The development of this new type of sole is the result of PIEP's collaboration within the BioShoes4All project. "Inspired by natural forms - namely the structures of the human heart, spider webs, and octopus suckers - these innovative soles combine design, functionality, and sustainability, paving the way for the future of casual footwear."

"Learning from nature to solve human challenges is nothing new for PIEP researchers and was the starting point for this new innovation, which combines science, technology, and sustainability for the benefit of users and the environment," emphasizes Bruno Pereira da Silva, Director of Public Affairs and Sustainability at PIEP.

The biomimetic soles offer 22% less weight, for greater lightness and daily comfort, while allowing a 60% increase in energy absorption,

better distributing plantar pressure and protecting against impacts. Furthermore, they are made from more sustainable materials, incorporating bio-TPU (thermoplastic polyurethane produced from materials derived from renewable biological sources), contributing to a reduction of up to 8% in CO_2 emissions and a 6% reduction in the use of fossil resources.

"Our collection of biomimetic soles is generating excitement at the fair, with validated results and engaging storytelling that wins over customers and adds value to the product," said João Carvalho, from the Atlanta Steps sales department.

The solution, which is already in the process of obtaining an international patent under the title “Sole structure for an article of footwear”, has been validated in certified tests and complies with the international standard ISO/TR 20880:2007 with regard to safety and grip.

This innovative solution, developed by PIEP with Atlanta Steps and CTCP, is part of the BioShoes4All project, considered the largest project ever in the history of the Portuguese footwear industry, involving an investment of over 72 million euros financed by the PRR - Next Generation EU. This project strengthens the international competitiveness of the Portuguese cluster and establishes the country as a global leader in sustainable innovation in the sector.

Founded in 2000 in Guimarães, PIEP is a renowned Portuguese Technology and Innovation Center specializing in polymer engineering and innovative solutions for the plastics industry and related sectors, such as automotive, packaging, aeronautics, space, railways, energy, footwear, construction, and medical devices. The result of continued investment in state-of-the-art equipment, PIEP boasts expertise in ecodesign and product development, advanced manufacturing processes, testing, smart and sustainable polymers, the circular economy and environment, digitalization, and automation. PIEP collaborates with universities, research centers, and industry to promote sustainability and technological advancements in the sector, applying laboratory innovation to the challenges facing our society.

BFSHOW CONCLUDES WITH RECORD INTERNATIONAL ATTENDANCE

The 5th edition of BFSHOW, the largest footwear trade fair in Latin America, held between November 10th and 12th at the Anhembi District in São Paulo/SP, concluded with record international attendance. According to data compiled by the Brazilian Association of Footwear Industries (Abicalçados) and NürnbergMesse Brasil, partners in the promotion and organization of the event, over 10,000 buyers were received during the three days, with 13% (1,300) of them coming from 46 countries.

Export data, which came as a positive surprise for the industry, was also revealed first-hand during the press conference by Haroldo Ferreira, Executive President of the Brazilian Footwear Industries Association (Abicalcados). According to figures compiled by Abicalçados, from January to October exports totaled 87.3 million pairs and US$819.4 million, representing a 7.5% increase in volume and a 1% decline in value compared to the same period last year. In October alone, exports grew in volume (+10.4%) but dropped in value (-9.1%) compared to the same month in 2024. Ferreira explained that the challenges of exporting to the United States, due to the heavy tariffs on Brazilian products, have been mitigated by an increase in shipments to Latin American countries

Challenges

Ferreira also outlined the main challenges faced by Brazil's footwear industry, including the growing influx of footwear imports from Asia. "In the first ten months of 2025, imports increased by 23.8% in value and 22.9% in volume compared to the same period last year. It is alarming that the pace of import growth is nearly 20 times higher

than the expansion rate of the Brazilian domestic market," he warned. The Executive President also emphasized the importance of implementing taxes (CID-BETs) on online betting and reinstating payroll tax relief

With approximately 350 Brazilian brands gathered in a total space of over 25,500 square meters, BFSHOW consolidated its position among the leading trade fairs in the footwear sector worldwide. According to the CEO of Abicalçados, Haroldo Ferreira, the fair reflected the current state of the Brazilian footwear industry, which is expected to grow by up to 1.4% by 2025, exceeding 940 million pairs produced. "BFSHOW signals that we should see a recovery in the last quarter, with production growth of over 2%, ending the year with a positive figure," explains the executive.

International visitors to the event were a positive surprise, especially given the challenging external environment. "We had a large presence of importers, mainly from Latin America, as well as countries in the Middle East, Africa, and even Oceania," celebrates Ferreira, highlighting that alternative markets have mitigated the challenge of exports to the United States, the main international destination for Brazilian products.

Buyer Program

The national and international presence at the event was boosted by the BFSHOW Buyer Program, which brought 520 national and 165 international buyers from 32 countries to the event. The CEO of Nürnberg Messe Brasil, João Paulo Picolo, says that the investment brought importers selected for their purchasing potential and market diversification, a strategy for destination diversification. "The *feedback* is positive, mainly due to the quality of the buyers present, who didn't just come for networking, but to finalize purchases and partnerships," he emphasizes.

According to the participants, business was conducted with both the domestic and international markets. “The international market has improved significantly in recent months, and here we confirmed this positive momentum. The fair helped us validate new projects, in addition to conducting important business with national and international buyers, the booths received a highly qualified number of visitors, especially interested in the launch of the Localize sneaker, which took place during BFSHOW. “Today, if we work with the footwear market, we have to come to BFSHOW. I really enjoyed the fair, which presented a great variety of brands and was well organized. At the event, we also took the opportunity to meet new suppliers and close deals,” says Pablo Vega of Ferratti Stores in Ecuador.

The next edition of BFSHOW will launch the Spring/Summer collections of the Brazilian industry between May 18th and 20th, 2026, also at Distrito Anhembi, in São Paulo/SP.

GTE Ahmedabad 2025 concludes with good turnout of visitors

A High-Impact Technology Showcase Sets the Stage for Upcoming Editions in Greater Noida and Bengaluru

The **38th Garment Technology Expo (GTE)** Ahmedabad 2025, co-located with the **Lace & Trims Show**, came to a close after 3-day successful run, recording around **9,700 B2B visitors**.

Across three days, the event showcased **over 225 brands across 50,000 sq. ft.**, bringing together cutting-edge garment machinery, digital printing systems, embroidery solutions, automation tools, and a comprehensive selection of laces, trims, and essential components for apparel production. This edition also strengthened India's garment manufacturing supply chain by offering a **complete sourcing ecosystem under one roof**.

GTE Ahmedabad 2025 which was jointly organised by **Garment Technology Expo Pvt. Ltd. (GTE)** and **India Exposition Mart Ltd. (IEML)**, reported exceptional engagement across all three days, with exhibitors experiencing consistent buyer interactions and high-volume inquiries from manufacturers, exporters, and sourcing professionals

Ambrish Chopra, Director, GTE, shared that the response from the industry has exceeded expectations, noting that the collaboration between GTE and IEML has strengthened the show's ability to deliver a seamless, high-value business experience for exhibitors and visitors alike

The strong industry turnout reaffirmed the expo's role as one of the most influential and business-driven platforms for garment and apparel technology in the western region.

Speaking on the successful turnout, **Dr. Rakesh Kumar, Chairman, India Exposition Mart Ltd.**, said that the robust B2B participation highlights the growing appetite for technology upgrades across

MSMEs and mid-sized garment manufacturers. He added that the event has created a powerful bridge connecting global machinery suppliers with India's fastest-growing apparel clusters.

Most of the exhibitors expressed their satisfaction over their participation in the event and were happy with the turnout of the targetted visitors. Mr Rohit Gupta, MD, Balaji Sewing Machine Pvt Ltd., Mr Kundan Gupta, Marketing Director, India, ZOJE Sewing Machine Co Ltd., Mr Navin Roy, Director, Om Satya Company were some of the exhibitors who endorsed GTE is an ideal platform to establish good contact with the potential clients. They said, GTE, over the years has emerged as a brand in the exhibition industry and there is a tremendous scope in the textile industry and GTE could be a catalyst to grow this multiple-fold.

Visitors too, shared enthusiastic feedback on the show's relevance and reach. **Bipin Kumar, Proprietor, MK Sports**, said, "I have been coming to this exhibition organised by GTE for the last five years. This is a great expo for our garment industry, especially for MSMEs and startups." Designer **Manthan Shiroy, DTF**, added that "garment industry professionals should visit here once and they will surely discover something new about trends, technologies, techniques, and innovations in garment making."

Representing the training and skill ecosystem, **Ms. Trupti K. Mahadik, Regional Manager (Principal), ATDC Surat**, said, "GTE is known for organising categorical exhibitions. This is a great platform for exhibitors, B2B buyers, and startups to explore business opportunities. More such exhibitions should be there."

The organisers further announced the next two major editions of GTE which will be co-located with the Lace & Trims Show will take place at :

GTE Greater Noida, scheduled for **20–23 March 2026** at India Expo Centre & Mart, GTE **Bengaluru in September 2026**, expanding the platform's reach into South India's dynamic textile and apparel clusters.

44th IITF concluded successfully

- **More than 18 lakh people visited the 14 day fair with enhanced participation**
- **Awards for Excellence in various categories presented**

The 44th edition of the India International Trade Fair, the iconic event of the India Trade Promotion Organisation (ITPO), held in Bharat Mandapam, New Delhi, from 14-27 November, 2025 closed with a successful note. This edition highlighted the potential of 'aspirational India' as an emerging economic power of the world. Inspired by **"Viksit Bharat @ 2047"** vision of the Hon'blePrime Minister with focus on the theme **"Ek Bharat Shreshtha Bharat".**

It also featured a globally confident, technologically advance and economical resilient country Such events are imperatives to make a self – reliant India "pointed out by the Hon'ble Minister of State for Commerce & Industry; and Electronics & Information Technology, Shri Jitin Prasada while inaugurating IITF2025.

Complimenting ITPO for holding this edition of the fair with an enhanced stature and size, the Hon'ble Minister expressed happiness over the participation of the Defence Pavilion after a gap of a decade. He said that this year, the fair features India's

intrinsic strength, and considerable GDP growth in diverse sectors which is contributing in socio-economic progress and employment opportunities. Strengthening India's trade relations, the country is signing FTAs with a number of foreign countries .The entire world is recognizing India's process due to its political stability and secure economy for investment .India is poised to become a **'Skill Capital of the world'** in near future, he expected.

The Hon'ble Minister mentioned that under the visionary leadership of Hon'ble Prime Minister, India has emerged as a **global brand** synonymous with innovation, resilience, and growth. He noted that India's rising stature on the world stage is a testament to the country's strengthened economic fundamentals, robust policy frameworks, and expanding global partnerships. He emphasized that this transformation has positioned India as a trusted hub for trade, investment, and opportunity, reinforcing its role as a driving force in the global economy.

In his welcome address, CMD; ITPO Shri Nitin Kumar Yadav highlighted the salient features of the fair. He informed that the fair stands as a premier platform for business collaborations, technology exchange, and investment partnerships. Attracting over 3500 participants from India and abroad, the fair has elicited as many as 31 States and UTs including Bihar, Maharashtra, Rajasthan and Uttar Pradesh as the "Partner States" and Jharkhand as the "Focus State." As many as 11 countries including **China, Thailand, UAE, Malaysia, Sweden, Turkey, Iran, South Korea, Egypt, Lebanon, The Republic of Tunisia, Tibetan Chamber of Commerce have taken part** at the International Pavilion.

This year the fair has elicited a comprehensive participation from government departments, PSUs, MSMEs, Start-ups, and foreign exhibitors underlines IITF's growing role as a global meeting point for trade, technology, and cultural exchange. On the Socio-economic front too, the participants of SARAS, Jute Manufactures development

council, Small and medium enterprises, handlooms, handicrafts, Coir Board, Khadi & Village industries etc feature achievements of traditional sectors in proper perspective to reinforce their global appeal and standing.

The iconic business event concluded with a colorful Award Presentation ceremony at musical fountain stage, Bharat Mandapam, New Delhi, on 27th November. Speaking on this occasion, Dr. Neeraj Kharwal, IAS, Managing Director, ITPO informed that more than 18 lakh people visited the 14 day fair with enhanced participation. He invited suggestions from the visitors to further improve the quality of event in future. Complimenting the Award Winners in different categories, he pointed out that theme **'Ek Bharat, Shrestha Bharat**", the theme of the fair has truly lived up to its vision from cutting – edge technologies to state - of - the - art pavilions, from agriculture to eco- concern, we witnessed the very best of what India stands for resilience, creativity, and limitless potential. Present on the occasion were Shri Vinay Kumar, Chairman of the Airport Authority of India, Shri Premjit Lal, Executive Director, ITPO, Lt. Col. Harsh Kondilya, OSD, ITPO and Shri S.N. Bharti, General Manager, ITPO.

In his welcome address, Lt. Col. Harsh Kondilya, happily announced that this year a good amount of business has been generated by the participants. He praised the media/press for their extensive coverage not only in print media but electronic and social media too. Complimenting all the Award winners in different categories, Lt. Col. Kondaliya appreciated the participants and visitors for their continued faith in the IITF format. He also appreciated Delhi Police and other law enforcement agencies for their continued efforts in making the event incident free.

The IITF2025 Awards for Excellence in Display were given away by Dr. Neeraj Kharwal, IAS, MD, ITPO in different categories.

1st AILPA concluded with good results

(A report by Vasan Suri, Hi-Tech Consultancy)

The Indian Leather Products Association (ILPA), had organised its maiden event, AILPA-the All India Products & Allied Industries, with the support of India Mart Exposition, Greater Noida and the Consultants from Germany, from 28 to 30 October, 2025 at the Biswa Bangla Convention centre, Kolkata.

The Stalls were well decorated and well lit to lift up the look of the products on display. The moment you enter in, it gives a feeling to be at a European Fair and that impression is the best. All the participants gave their best with all uncertainties creating doubts but, they all brought out the best collection for display at the stall.

Leather Bags & Accessories, Allied Industries like lining, metal fittings, Inlays were present. Logistics, packaging, leather alternatives, zippers, Machinery, Adhesives were also present. The whole atmosphere had positive vibes with good air conditioning and fresh fragrance from the leather products.

The team at the reception was so courteous to all the customers and trade visitors. As a surprise Element, a fashion walk, road show was organised with the best of the models from Kolkata twice a day and every time walking around in various costume themes and matching accessories. All the three days went busy for all concerned as the display of products had unique appeal in the making and quality and no two factories had the same style or product.

Every product presented in the exhibition had the International appeal and the customers were happy moving around and picking up their choice of products or suggesting their requirements with slight changes from the existing designs.

High quality leathers, Economy Leathers and Products made to satisfy every section of the society from being a luxury product to be a utility product with economy price level were on display.

Buyers from Germany and all over the Europe, Russia, Middle East were present. In all 90 customers from various brands attended the event. There were also domestic brands and buyers who took lot of interest in the products.

The buyers, participants and visitors were kept engaged even after the fair timings with Cocktail evening and a good get-together. This offered a healthy, casual interaction between humans which of course turns in to business.

"Leather on the Ramp" - The 28th edition of fashion show was organised so well with eight exporters presenting their products which were beautifully carried by the lovely models with a great back drop of LED screens to illuminate the whole show. This was on the second day wherein the customers were presented with a fashion extravaganza along with the exporters and trade visitors and their families, followed by a lavish dinner.

There was a special hall booked to conduct the seminars on all the three days of the event.

1. EUDR - A lecture was organised with speakers from EU explaining the importance of EUDR (European Union Deforestation Regulations) and the precautions to be taken for smooth conduct of business.

2. FDDI - The Footwear Design and Development Institute of India presented the opportunity of growing footwear business and how the Kolkata based entrepreneurs can take advantage in diversifying their business also in footwear along with leather accessories.

3. Modeurop - The Modeurop team from Berlin, made their presentation about the bag trends & designs for the upcoming AW

season 2026/27 highlighting the designs, material, shapes, colors etc., They also unveiled the colors for SS 2027 along with trends and designs.

There were also prize distribution for the best design of products, best stall presentation at the fair, adjudicated by the Modeurop team.

4. Beyond Design - The science of ergonomically designing of bags Bio-mechanics and Ergonomics in leather bag - This seminar was conducted by an expert from FDDI and with industry experts on the chair. It is important to design the bags ergonomically to help the persons carrying it without any side effects. How do you balance the weight of the bag to suit the human body with all functionality. The weight of the bags including the contents should not be more than 8-10% of the weight of the person carrying it.

The West Bengal Government have created the best infrastructure to conduct exhibitions and it houses the best facility, comparable to International Standards.

Spacious, Good parking spaces, Well lit with Electricity and Natural lights and the best part is that, it is internally connected to a 5 star business hotel.

To conclude, AILPA, was a great event and that too as the first time event, with lot of positivity and enough business discussions, opening up opportunities for the future. It was a challenge for members & leaders of ILPA to organise an exhibition on their own. No event management team. Everything had to be done by the committee which was formed.

Kudos to the entire team of ILPA, Organising committee of AILPA, spirit of Kolkata Exporters, Office & Team of ILPA, Freya, Fashion Show Team, both at the fair and at the ramp, the Sponsors, the Hospitality Partners and all the Trade Visitors.

STAHL TO SHARPEN ITS STRATEGIC FOCUS WITH A FULL SEPARATION OF ITS WET-END LEATHER BUSINESS INTO AN INDEPENDENT COMPANY

Stahl, the global leader in speciality coatings for flexible materials has announced on 17th November 2025 that it will complete the carve-out of its wet-end business independently, and will no longer proceed with the sale to Syntagma Capital.

A new wet-end leather company

The intention to divest was announced on 18 November 2024, as part of Stahl's strategic redirection towards a pure-play speciality coatings and finishes provider. An agreement was made with European investment firm Syntagma Capital to acquire the wet-end division once the carve-out from Stahl was completed. Negative current market conditions have impacted the performance of the business and made the sales terms less favourable for Stahl, allowing Stahl not to close the transaction. As such, Stahl and Syntagma Capital have together agreed to exit the agreement.

Stahl will continue the carve-out of the wet-end leather business to create a fully independent company, led by CEO Xavier Rafols, under a new brand: Muno. Its leather experts will continue to provide innovative solutions to customers globally.

Sharpening the strategic focus

Stahl was founded in 1930 as a leather finishing company for the tanning industry, and nearly a century later, it continues to build on that heritage as the portfolio evolves with changing market demands and opportunities.

In recent years, Stahl has made a deliberate strategic shift towards a pure-play speciality coatings formulator. The separation of its wet-

end leather chemicals business will allow the company to sharpen its focus on speciality coatings for flexible materials, extending its expertise beyond leather finishing into high-growth segments such as performance coatings and packaging coatings.

Maarten Heijbroek, CEO of Stahl, says: "At Stahl, we will focus to strengthen our leadership in coatings for flexible materials. We believe in shaping a better world through responsible innovation. The carve-out is expected to be completed within the next few months, at which point both businesses will operate as two fully independent companies".

"Separating global companies is a huge undertaking and I would like to thank everyone involved for their contributions," Heijbroek concludes.

ECHA adds one hazardous chemical to the Candidate List

The Candidate List of substances of very high concern (SVHC) now contains 251 entries for chemicals that can harm people or the environment. Companies are responsible for managing the risks of these chemicals and giving customers and consumers information on their safe use.

ECHA's Member State Committee confirmed the addition of 1,1'-(ethane-1,2-diyl)bis[pentabromobenzene] (DBDPE) to the list in its October meeting. The substance has very persistent and very bioaccumulative properties and is used as a flame retardant in various industries. This identification will support the potential restriction work on brominated flame retardants.

Entry added to the Candidate List on 5 November 2025:

Substance name	EC/List number	CAS number	Reason for inclusion	Examples of uses
1,1'-(ethane-1,2-diyl) bis[pentabromobenzene]	284-366-9	84852-53-9	Very persistent and very bioaccumulative, vPvB (Article 57e)	Flame retardant

The list now contains 251 entries – some are groups of chemicals, so the overall number of impacted chemicals is higher.

This substance may be placed on the Authorisation List in the future. If a substance is on this list, companies cannot use it unless they apply for authorisation and the European Commission authorises its continued use.

Consequences of inclusion on the Candidate List

Under **REACH**, companies have legal obligations when their substance is included – either on its own, in mixtures or in articles – in the Candidate List.

If an article contains a Candidate List substance above a concentration of 0.1 % (weight by weight), suppliers have to give their customers and consumers information on how to use it safely. Consumers have the right to ask suppliers if the products they buy contain substances of very high concern.

Importers and producers of articles have to notify ECHA if their article contains a Candidate List substance within six months from the date it has been included in the list (5 November 2025).

EU and EEA suppliers of substances on the Candidate List, supplied either on their own or in mixtures, have to update the safety data sheet they provide to their customers.

Under the **Waste Framework Directive**, companies also must notify ECHA if the articles they produce contain substances of very high concern in a concentration above 0.1 % (weight by weight). This notification is published in ECHA's database of substances of concern in products (SCIP).

Under the **EU Ecolabel Regulation**, products containing SVHCs cannot have the ecolabel award.

New WebPages on ECHA's Scientific Work

ECHA is a science-based EU Agency aiming to protect health and the environment through its work on chemical safety

The pages showcase how the European Chemicals Agency works for chemical safety through science.

The new science web section serves as a one stop shop for ECHA's science related work, improving its visibility and facilitating access to discussions on scientific topics. The new pages enhance the transparency of the scientific work supporting ECHA's core tasks.

Mike Rasenberg, Director of Hazard Assessment, said:

"Science is at the heart of ECHA's vision; chemical safety through science, collaboration and knowledge. It is a key driver helping us to reach our goals, and scientific evidence is the basis of all our regulatory decisions, opinions and advice. Our scientific knowledge base is built on close collaboration with researchers, industry and other regulatory bodies."

The pages describe the work of ECHA's scientific committees and expert groups and provide details on the scientific partnerships and collaborations, and highlight the Agency's regulatory research needs.

A new section focuses on the knowledge hub where ECHA shares the latest scientific and technical updates in the field of chemical safety. The section compiles the science seminars, conference presentations and scientific publications.

Further information
https://echa.europa.eu/

Leather Auxiliaries – A Review PART – III

NSK SRINIVASAN [1] & HASMUKH SHAH [2]

UMTA Management & Texstyles Academy, Vapi, Gujarat, India [1 & 2]

nsk_sriya@yahoo.com[1] textiles.vapi@gmail.com [2]

(Contd. from October issue)

15. Product stewardship at Archroma focuses on three strategic areas – Archroma

Product stewardship at Archroma focuses on three strategic areas – Archroma Table – 15 A
1. Laboratory support to ensure compliance of our raw materials and resultant manufactured products to the health, safety and environmental standards of authorities, or brands and retailers. We continuously develop our expertise within our team of dedicated scientists, in order to provide accurate compliance assessments of our products against the increasing number of regulatory, brand and consumer requirements.
2. An advocacy program, aimed at assisting authorities, NGOs, brands and other stakeholders to increase understanding of the environmental and health impact of our products and their chemical components. In this respect, Archroma acts as a partner and regularly consults on topics and ingredients which are under scrutiny or evaluation. We are engaged to work hand in hand with regulators and various ecolabels in order to implement proportionate and enforceable restrictions/limitations. We welcome the new Chemical Strategy for Sustainability presented by the European Commission, and work together with CEFIC and the Commission on a strategy that drives the design of the “chemistries of tomorrow”.
3. An annual operating plan with strict targets and monitoring tools and processes, aimed at increasing the efficiency of the safety assessment of chemical substances at an early stage of the product development. Building on the REACH database, we use predictive toxicology tools to accelerate chemical safety testing while minimizing animal testing in order to support the move to less hazardous chemicals where technically and economically possible.

Archroma is committed to ensuring the safety of chemicals and to providing all the necessary and relevant information on the potential impact of the substances on human health and environment, as required by REACH. Therefore, we voluntary committed to contribute to improving REACH dossier quality, and address data gaps, if any, to better identify substances of potential concern, and ensure the safety of chemicals.

15.1 Archroma – Products Launch

All new global products are launched with a package addressed to the marketing & sales organization and containing

Products Launch- Archroma Table – 15 B
1. An internal launch letter containing information on e.g., marketing positioning, business opportunity,
production site, packaging options, performance, application field, recipe, fastness tests, and the available certifications.
2. The respective technical data sheet(s).
3. The respective material safety data sheet(s).
4. Promotional information to support the new product(s), such as promotional flyers,
supporting technical customer presentations, etc.

Innovations are also further introduced to the marketing & sales organization in dedicated webinars allowing deeper training.

The marketing & sales organization is then responsible for the introduction of the product to the customers and market, supported on an ad hoc basis by media activities such as press releases and advertisement,or social media activities. Any products removed from the portfolio or reformulated trigger a similar communication process to the sales organization.

This information is provided in the form of:

This information is provided in the form of: Table – 15 C
• Technical Data Sheets (TDS) - which are established for each product and provide information about its technical properties (for example appearance, pH, density etc.), field of application, typical application recipe, available packaging and handling recommendation.

This information is provided in the form of: Table – 15 C
• An online database of product TDS is maintained and managed by the respective product manager and is accessible to all Archroma sales and marketing organizations for communication to customers

Innovations are also further introduced to the marketing & sales organization in dedicated webinars allowing deeper training.

The marketing & sales organization is then responsible for the introduction of the product to the customers and market, supported on an ad hoc basis by media activities such as press releases and advertisement, or social media activities. Any products removed from the portfolio or reformulated trigger a similar communication process to the sales organization.

15.2 SUSTAINABLE SOURCING - Archroma

Sustainable sourcing is critical as our vendor network has a significant influence on our production and our resultant systems sold to our customers. Not only in terms of the raw material conformance to specification (quality), but also product hazardous chemical contamination that directly affects the safety of our products and the environmental pollution in production and when in use.

Our aim is to establish mutually beneficial relationships with our third-party suppliers and contractors in order to support our objectives of internal safety, health, environment and quality standards, which incorporates corporate social responsibility and Responsible Care. We require our suppliers and service providers to adopt standards comparable to Archroma's policies. Our vendors shall also bind their own suppliers to a similar level of compliance.

A vendor’s sustainability performance affects our own overall sustainability profile as well as our brand image in the industry and therefore vendor management, including sustainability criteria, is essential. As a specialty chemical manufacturer, we have extensive knowledge and experience in purchasing, handling and inventory control for chemical raw materials.

15.3 CONSUMER PRODUCT SAFETY - Archroma

Of high importance to our value chains, increasing focus is being given to ensure that products used in manufacture do not pose a health and safety risk to the users and final consumers. Environmental health is referred to under the other topics of “Climate change”, “Resource optimization”, “Waste (solid)” and “Wastewater management”.

The Product Stewardship organization is fully integrated within Archroma's processes in order to ensure that hazardous chemical risks are identified and controlled. Deep knowledge of current and future regulatory requirements, often specific to countries and regions, is essential. In addition, other value chain stakeholders (consumers, brands, NGOs) influence market demand and specifications in order to manage the risk of chemistry which may pose a hazard to consumers and the environment. All these requirements have to be gathered, consolidated and communicated to all internal stakeholders to ensure that product design, innovation, registration, production and the resultant application conforms to these changing requirements.

The Product Stewardship organization has the gatekeeper function for raw material sourcing and production processes. In this respect, an essential process required in specialty chemical manufacturing is a competent chemical inventory management system incorporated in master data management systems.

The Archroma Product Stewardship organization has two dedicated testing laboratories at its disposal in order to control and confirm product compliance to market-related restricted substance lists in addition to regulatory requirements. These laboratories are located in Pakistan and India. In order to support the necessary regulatory support processes and market required compliance certifications, we have invested in a dedicated global team, trained and qualified with the necessary scientific knowledge in order to deliver the highest standard of product stewardship in the industry.

In particular, Archroma is committed to develop our products in compliance with the major eco-labels or other third-party certification requirements of our industries, such as bluesign® (985 compliant products), Global Organic Textile Standard (GOTS, 577 compliant products), ZDHC (2 973 products compliant withZDHC MRSL 2.0), Cradle to Cradle Certified™ (97 compliant products), Nordic Swan (151 compliant products),Blue Angel (189 compliant products). In addition, we currently have 325 products suitable for food contact applications.

Eco-labels and certifications:
https://www.bluesign.com/
https://www.global-standard.org/the-standard.html
https://www.roadmaptozero.com
https://www.c2ccertified.org/
https://www.nordic-ecolabel.org/product-groups/
https://www.blauer-engel.de/en

It's our nature to protect - For our innovation efforts, this means making chemical products that are safe to manufacture, safe to use by our customers, safe for consumers using our products, and safe for our environment at every stage of their products lifecycle.

In the face of the rapid spread of the coronavirus, Archroma mobilized our R&D experts and developed two products to support urgent needs in sanitizing products, even though this is not our usual scope of business.

Reference : 15. Tables – 15 A & 15 B & 15 C . Sustainability report Fiscal year 2020, Archroma

16. STAHL BETAN : LEATHER SOLUTIONS FOR RESPONSIBLE TANNERIES [16]

The leather industry is changing. The focus on sustainability puts processes and the use of resources in tanneries at the forefront. With the release of the Stahl BeTan® portfolio for beamhouse and tanning, Stahl offers support to tanners who intend to meet these challenges and produce responsible, high-quality leathers. For Stahl, staying ahead of the market and providing chemistry that enables the industry to meet the most stringent demands has always been our strength. Stahl BeTan® is our answer to current times, where a cleaner tanning process with a more positive footprint is necessary.

Stahl BeTan® is a portfolio of responsible tanning solutions, compliant with the Zero Discharge of Hazardous Chemicals (ZDHC) Manufacturing Restricted Substances List (MRSL). It aligns or tanning portfolio with Responsible Chemistry, combining sustainable technologies for the wet-end process, from soaking and liming to tanning auxiliaries.

16.1 Stahl BeTan® offers a one-stop-shop for tanners, who wish to:

Stahl BeTan® offers a one-stop-shop for tanners, who wish to:
• Meet environmental standards for fashion, mobility or interior products.
• Reduce water consumption and the effluent load of their processes.
• Limit the use of chemicals, energy, and salt.
• Implement cost-effective solutions that yield high-quality, responsible leathers.
• Speed up their process, possibly saving time and energy.

16.2 Solutions tailored to each tanner process

For tanners, who aim to reduce their environmental footprint, there are two main focus areas. One is machinery and equipment, where investments can help reduce energy use and maintenance costs. The second is in chemical-use, which is essential for turning hides into quality leather. This is a challenge, because every tannery functions differently and has specific requirements. Another issue is a new technology for one step might not be compatible with the rest of the process. Stahl BeTan® solves this concern with a diverse portfolio of compatible tanning solutions. For each process step, a variety of solutions is available. Experienced technicians help tanners find the perfect fit, tailored to their process demands. We even offer extended services to provide tannery staff with the right knowledge and training to optimize the implementation and guarantee the best possible results.

Reference: 16. & Tables 16 A & 16 B .STAHL BETAN : LEATHER SOLUTIONS FOR RESPONSIBLE TANNERIES WWW.STAHL.COM

17. Services – DyStar [17]

DyStar Textile Services (DTS) is dedicated to supporting brands, retailers and their industry partners with fast and innovative global solutions. DyStar has a unique approach to the textile supply chain. We not only work with brands and retailers at the design and specification stages of product development but also with the mills who process the fabrics that are required to meet the shade, fastness and ecological requirements of any given product line.

17.1 The elements of the DyStar offer

The elements of the DyStar offer Table – 17 A
Color Solutions - Color Solutions International (CSI) creates color inspiration, communication and realization tools for many or the best-known apparel brands and retailers in the fashion and sportswear sectors. CSI products use dyes and chemical auxiliaries covered by DyStar econfidence commitment.
Testing Solutions - Texanlab provides reliable eco testing service to ensure compliance and resolve failures in your supply chain. Texanlab is a boutique laboratory with ISO 17025 accreditation, in addition to having accreditation, to test on behalf of, leading brands and retailers in both apparel and home textiles.

The elements of the DyStar offer Table – 17 A
Ecology Solutions - econfidence from DyStar – ensures that for every product on the range there is an eco-specification in place to check for the most likely chemical contaminants which may be subject to legal or commercial prohibition or restriction. It is our commitment to keeping undesirable hazardous chemicals out of our customers' supply chains.

Reference : 17.& Table 17 A . Services – DyStar. The elements of the DyStar offer. www.dystar.com

18. Zero Discharge of Hazardous Chemicals (ZDHC) [18]

ZDHC is a multi-stakeholder organisation comprising over 170 contributors from across the industry including Brands, Manufacturers, Chemical Suppliers, and Solution Providers.

The Roadmap to Zero Programme, by ZDHC, leads the fashion industry to eliminate harmful chemicals from its global supply chain by building the foundation for more sustainable manufacturing to protect workers, consumers and our planet's ecosystems.

About ZDHC Table -18 A
How can we clean up the fashion industry's complex supply chain? Here's what we've achieved so far and where we're headed
Where we've come from. In 2011, Greenpeace issued a wake-up call to the fashion industry, its stakeholders and consumers with the launch of its Detox campaign. The campaign drew attention to the impact of hazardous chemicals in the manufacturing of clothing and footwear in production countries. Six brands individually signed public commitments with Greenpeace to commit to zero discharge of hazardous chemicals by 2020. This was the beginning of ZDHC's Roadmap 2020 Programme.

About ZDHC Table -18 A
In 2015, the ZDHC Foundation was established in Amsterdam with an updated vision of brands working collaboratively to implement sustainable chemistry, drive innovation and commit to best practices in the fashion industry to protect consumers, workers and the environment.
Who we are. The ZDHC Roadmap to Zero Programme is a collaborative initiative of fashion brands, chemical suppliers, manufacturers and laboratories working to reduce the chemical footprint of apparel and footwear. Together, we drive the global implementation of ZDHC's sustainable chemical management framework and empower the global value chain to substitute or phase out hazardous chemicals in the production process and drive chemical and process innovation.
What we do. We are advancing the apparel and footwear industry towards zero discharge of hazardous chemicals by: a) Creating aligned, industry-endorsed guidelines and tools for sustainable chemical management b) Driving effective implementation of these standards on the ground c) Engaging a network of relevant stakeholders to empower every point of the supply chain to manufacture safer products
Who we work with. The ZDHC Programme is a collaboration of 30 signatory brands, 101 value chain affiliates and 19 associates – all organisations that are active in the textile, apparel, leather and footwear industry. Our contributors are collaborating to develop and jointly implement ZDHC's sustainable chemical management framework.

Reference : 18. & Table -18 A. ZDHC Impact Report, November 2019.

19. The ZDHC Programme [19]

A holistic approach to Sustainable Chemicals Management

19.1 The Programme is divided into 3 FOCUS AREAS Figure -19 A

19.2 MRSL Conformance Levels and ZDHC accepted 3rd party certifications – Figure – 19 B

Reference : 19. & Figures 19A & 19 B .A presentation on The ZDHC Tools and Risk based testing by Prasad Pant Director- South Asia, ZDHC 29th May 2018 Coimbatore

20. ZDHC V2.0 MRSL

ZDHC V2.0 MRSL Table -20 A
Who is ZDHC? ZDHC stands for Zero Discharge of Hazardous Chemicals which is an organisation dedicated to eliminating hazardous chemicals and implementing sustainable chemicals in the leather, textile, and synthetics sectors.
The ZDHC Programme is a multi-stakeholder group that includes brands, value chain affiliates, and associates, that work collaboratively to implement responsible chemical management practices.

ZDHC V2.0 MRSL Table -20 A
The ZDHC V2.0 MRSL has been developed by an organisation commonly referred to as ZDHC. This tool is designed to support brands, retailers, suppliers, and manufacturers with a unified approach to managing chemicals during the processing of chemical formulations, within the apparel and footwear supply chain.
The ZDHC MRSL contains a number of restricted substances which are segmented into two chapters: Chapter 1: MRSL for Textiles and Synthetic Leather Processing Chapter 2: MRSL for Leather Processing

Reference : Table 20 A . ZDHC V2.0 MRSL https://mrsl.roadmaptozero.com

21.1 ZDHC V2.0 MRSL ZDHC MRSL Chapters [21]

21.1 Chapter 1: ZDHC MRSL

This applies to chemical formulations and substances used during creation and wet processing of textile fibres, and during creation and processing of (coated) fabrics, leather, rubber, foam and adhesives.

Group A: Supplier Guidance

Group A substances are banned from intentional use in facilities that process raw materials and manufacture finished products.

Group B: Formulation Limit

Group B substances are restricted to concentration limits in chemical formulations commercially available from chemical suppliers. These limits ban intentional use while allowing for reasonable expected manufacturing impurities, which should be consistently achievable by responsible chemical manufacturers.

21.2 Chapter 2: ZDHC MRSL Candidate List

Found in Chapter 2 of the ZDHC MRSL. Proposed ZDHC MRSL additions can meet listing criteria, as described in the Principles and Procedures, yet lack safer alternatives at scale. Including such substances on the Candidate

21.3 Chapter 3: ZDHC Archived Substances

Archived substances, or those without strong evidence of current use in Industry, but with clear evidence of historical use.

21.4 Process for ZDHC MRSL Revision

The ZDHC MRSL is a living document. It is updated as needed to expand the materials and processes covered and to add substances that should be phased out of the value chain. The Principles and Procedures document contains and explains the process used to update the ZDHC MRSL. Part of this process allows anyone to submit suggested changes to it. This includes the limits for existing compounds, the addition of new compounds, or delisting compounds through the ZDHC MRSL Submission Platform, which will be launched in the coming months.

22. From RSL to MRSL [22]

- The mind shift in chemicals management has been achieved by developing and implementing a manufacturing restricted substance list, or MRSL. This is a list of chemical substances banned from intentional use in the facilities that process textiles, leather and footwear.
- Before the ZDHC was formed in 2011, brands typically managed product safety through a restricted substance list, known as an RSL, which only addressed chemicals that may be present on finished products. Focusing on RSL compliance only meant that hazardous chemicals could be used in the manufacturing process, as long as they weren't present above a certain concentration on the finished goods.
- By introducing ZDHC's MRSL, we have expanded the industry's focus to manufacturing, in an effort to avoid hazardous chemicals even entering the supply chain. The textile manufacturers must commit to using chemicals that conform to our MRSL and chemicals manufacturers must also meet our requirements by testing and certifying that their formulations do not intentionally contain any of the chemicals listed in our MRSL.

22.1 Input Stream Management Figure - 22 A

Reference : Table 22 A. Restricted substances in leather .TFL Eco Guidelines. Guide through the maze of RSL lists

22.2 Chemical Management System Figure - 22B

Chemical Management System
Setting the framework

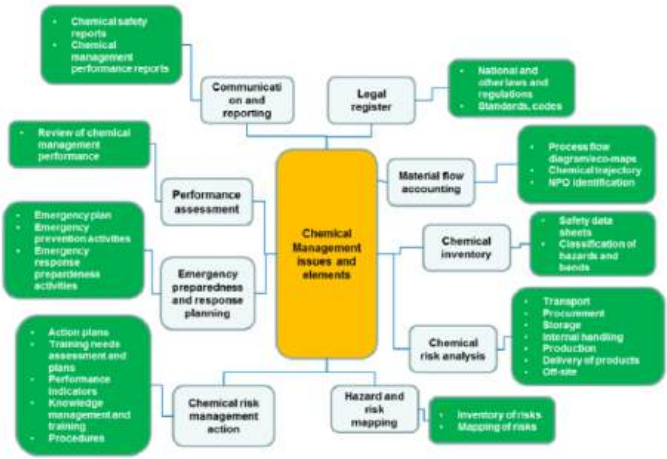
With focus on ZDHC Chemical Management System CMS frame work:

- Plan-Do-Check-Act cycle
- Elements of CMS (as per ZDHC CMS Guidance Manual)
- Further references

Resource Efficient Management of Chemicals (REMC)

22.3 Areas of Attention Figure 22 - C

Areas of attention



Resource Efficient Management of Chemicals (REMC)

Reference : Figures 22 B & 22 C. A presentation on Chemicals Management in textile and leather industry. Chemical Management System setting the Framework. Resource Efficient Management Of Chemicals (REMC)

23. ZDHC- What does ZDHC's Manufacturing Restricted Substances List (MRSL) mean for leather makers

What does the ZDHC MRSL mean for the Leather Industry? Table - 23 A
• The value of one standardised MRSL is that it provides a clear way for a tannery to communicate chemical restrictions with their chemical supplier. • One standard, used by all, reduces confusion and helps ensure consistent implementation across the supply chain.
• In contrast to an RSL, which sets product and material limits, the ZDHC MRSL clearly defines the standard that a chemical formulation must meet, making it much easier for the chemical industry to manage. • As Echols explains, "this is a great tool for helping to improve compliance and support a brands' goal of zero discharge of hazardous chemicals."

What can ZDHC's MRSL do for the Leather Industry? Table – 23 B
• Like all raw material manufacturers, moving to a system of 'input management' is a different way of managing chemical restrictions. This will take time to implement, so continued support and commitment from the industry is needed as we move forwards with this new approach.
• The ZDHC Programme encourage tanneries to download a copy of the MRSL and use this as a tool for procuring chemical formulations. Conformity guidance will be finalised shortly, and in the meantime the interim guidance is available here. • The value of the MRSL is driven by industry-wide adoption and we are hopeful that tanneries will see the value in using this; it is a milestone standard for our industry

Reference : Tables – 23 A & 23 B. What does ZDHC's Manufacturing Restricted Substances List (MRSL) mean for leather makers? ZDHC Foundation, www.zdhc.org

24. The ZDHC Toolbox [24]

The ZDHC Toolbox Table - 24 A
We have created chemical management tools which are designed to enable the industry to be more transparent about the use of chemicals in our value chain. They offer support in finding safer alternatives for the substitution of hazardous chemicals and help assess the performance of facilities in their efforts of implementing the ZDHC programme.
• **Chemical Module** is the world's first verified database of safer chemistry for the apparel and footwear industry. It enables suppliers to evaluate the ZDHC MRSL conformance level of chemical formulations used in production processes. • **Wastewater Module** is a global online platform to register and share verified wastewater test data against the ZDHC Wastewater Guidelines. Via the ZDHC Gateway - Wastewater Module, ZDHC continues to promote transparency in an opaque supply chain
• **ZDHC InCheck Report** is a universally accepted chemical inventory standard that enables suppliers to measure their input chemistry conformance via an online inventory assessment. • **ZDHC ChemCheck** is a ZDHC MRSL Conformity Certificate specifically for chemical formulators to use to prove the conformance of their products to their customers. • ClearStream gives suppliers a way to understand and communicate their laboratory's wastewater test results. By doing so it helps them to position as a leader in striving for environmental protection.
• **The ZDHC Academy** is the go-to training platform to create awareness, build knowledge and enable skills on sustainable chemical management and ZDHC tools along the textile, apparel, footwear (including leather) supply chains. • **The Implementation HUB** is the vehicle with which ZDHC is driving continuous improvements and progress around our offerings for brands, retailers and manufacturers with regard to baselining, strategy setting and implementation. The HUB leverages existing expertise and offers a platform to find ZDHC accredited experts for chemical and environmental management projects.

Reference : 24. & Table 24 A .ZDHC Impact Report, November 2019

25. Zero Discharge of Hazardous Chemicals (ZDHC) Certification and Testing Programs [25]

Help you manage your supply chain to reduce the amount of hazardous chemicals that are discharged into water waste. This is done in compliance with the ZDHC program, which supports the implementation of best practices to protect the environment.

25.1 Overview

The use of hazardous chemicals in the manufacturing process that can be discharged into waste water is under particular scrutiny. Numerous initiatives have emerged to address this issue, the most comprehensive being the ZDHC Program. The program supports the implementation of sustainable chemistry and best practices in the textile, leather and footwear industries to protect consumers, workers and the environment.

As an official contributor of the ZDHC Program, we can provide certification of compliance to the ZDHC Program's Manufacturing Restricted Substances List (MSRL) as well as testing, training and on-site assessment services to help reduce the discharge of hazardous chemicals into wastewater.

These comprehensive and customizable services, which are based on ZDHC and priority chemical substance groups, include:

- Wastewater testing – Seven UL laboratories have been granted provisional acceptance for testing in connection with the ZDHC Gateway – Wastewater module. Our analytical instrumentation and benchmarked limits of detection can be based on your specific needs.
- Wastewater sampling and pre-sampling coordination
- Posting of test results to public platforms including preparation, data input and data verification.
- On-site assessments that cover management systems, chemicals and hazardous substances, water use, quality and monitoring, wastewater treatment and emergency responsiveness, as well as supply chain training and education.
- Compliance certification to ZDHC MRSL Level 1, which requires a third-party documentation review (formulation disclosure, MSDS (safety data sheets), chemical inventory, test reports, etc.) to ensure the data meets requirements. If there is a lack of data, we can perform Verification testing.

25.2 Benefits

Our team is committed to helping you gain greater control and visibility over your supply chain by offering a full-range of sustainable chemistry and supply chain management services. We will help you integrate several ZDHC initiatives into your supply chain by providing comprehensive training on common textile production processes and guidance on the requirements of the Manufacturing Restricted Substances List (MRSL).

With so many resources at our fingertips, we can also offer a complete range of employee education services. Our experts can customize your training courses, including interactive exercises and case studies, and deliver them in multiple languages around the world.

Why UL - As a ZDHC MRSL Conformance accepted certification body, we can help you protect and advance by managing the amount of harmful wastewater that is discharged into surrounding ecosystems and communities - minimizing your risk.

Backed by our independent rigor and integrity, working with us will also enable you to demonstrate your commitment to environmental stewardship by complying with the appropriate safety regulations, including Greenpeace's global Detox campaign. By signalling a willingness to invest in the future through sustainable and ethnical practices, you will be differentiating yourself in a competitive green marketplace.

(to be Contd.)

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