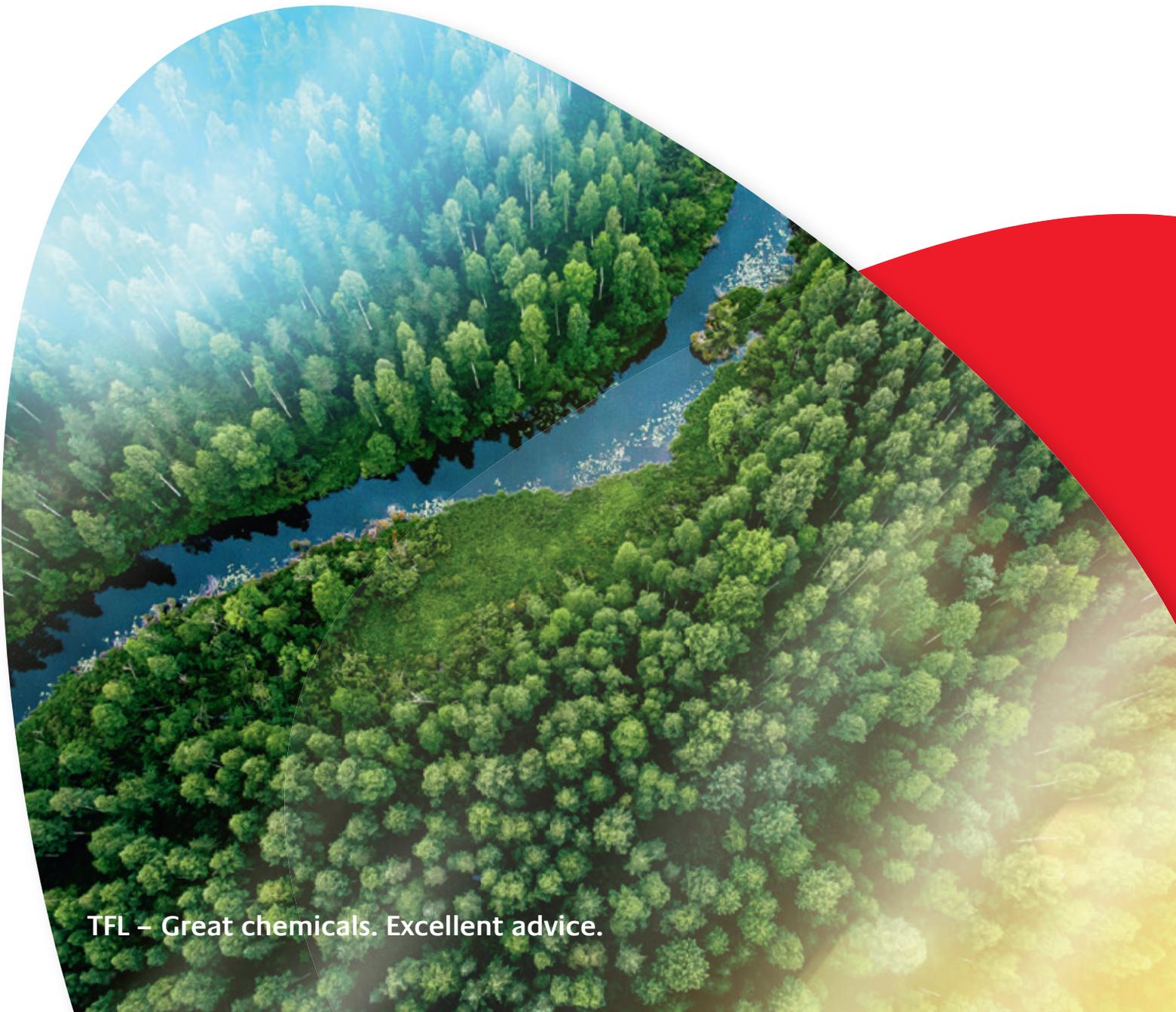




VEGTAN™

A bold new performance brand built on bio-based innovation

» VEGTAN™ bio-based products for leather
with a high share of biogenic carbon



TFL – Great chemicals. Excellent advice.

VEGTAN™ M, T-A and T Liq



A new era of bio-based products for leather

The Background

Sustainability is no longer an option, it is absolutely essential! The leather industry produces one of the world's ultimate sustainable materials as raw hides and skins are 100% renewable. Tanners are maximizing these sustainability credentials that are being increasingly demanded by the market. TFL's goal is to support tanners to produce leather with the highest possible bio-based carbon content.

- **VEGTAN™** products are bio-based, with their natural carbon being fixed into long-lasting leather.
- **VEGTAN™** can fully, or at least partly substitute tannins from traditional sources.
- **VEGTAN™** products are ideal for use together with TFL's 'Pure' range products that together enable the production of a vast range of leather types all with increased bio-carbon content.
- **VEGTAN™** products are suitable for performance applications including automotive, having been fully tested and matching the values of traditional vegetable tannins. This includes VOC, fogging (both gravi- and reflecto-metric) lightfastness, heat resistance and thus a reliable and valued alternative.



Sustainability is no longer an option, it is absolutely essential!

VEGTAN™ M



Sustainable competitive advantages without compromising

The Benefits

- can replace Mimosa and Quebracho fully or at least partly
- excellent tightness and softness
- especially when retanning chrome leather good fullness and embossing with print retention
- high tanning power together with fast penetration due to an integrated dispersing effect
- **biogenic / C14 bio-content of approx. 83%* / upcycled content of approx. 60%**
- uniform and appealing brown colour
- suitable for waterproof leather
- ideal partner for TFL's leading ultra-low to zero BPS/F **TANIGAN®** syntans, increasing fullness
- unique offering VEGTAN™ plus highly complementary 'Pure' range products
- non-human food grade materials

TFL's sustainability strategy:

- ✓ **Upcycling** of other industries waste
- ✓ **Reducing waste** by using by-products
- ✓ **By-products** from more sustainable sources



* ASTM D6866-24, Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis. DOI: 10.1520/D6866-24. Biogenic carbon (from biological sources) content determined according to ASTM D6866 and this value refers to the origin of carbon and does not constitute a full life-cycle or environmental assessment.

VEGTAN™ T-A and T Liq



Improved sustainability with performance



VEGTAN™ T-A and T Liq are used from tanning to retanning including for vegetable leather

The Benefits



- thanks to the genuine strong tanning power the resulting leather has a high shrinkage temperature
- high tightening effect due to its low astringency reducing risk of draw, giving a flat grain with excellent “lay out”
- highly recommended for all leather types including waterproof
- high natural antioxidant content reducing risk of chrome (VI) formation
- low bleaching, saving dyestuff
- good lightfastness with heat yellowing resistance at the same level as Tara and generally better than other common vegetable extracts.
- does not contain BPS or BPF

Pure Range



TFL's Pure range supports enhanced sustainability

MAGNOPAL® Pure A

→ is a modified natural film-forming polymer made of bio-based materials, with a staggering ca. 93%** bio-content! It is produced with sustainable chemistry and, therefore, free of acrylates, formaldehyde, phenol and naphthalene.

MAGNOPAL® Pure B

→ the new generation biogenic monomer-based polymer, with a ca. 74%** bio-content, replaces industry standard acrylics (with zero bio-content, 100% fossil fuel based) but without compromise, demonstrating excellent fastness, filling and level dyeing. A key combination product for your retanning recipe.

SELLASOL® Pure D

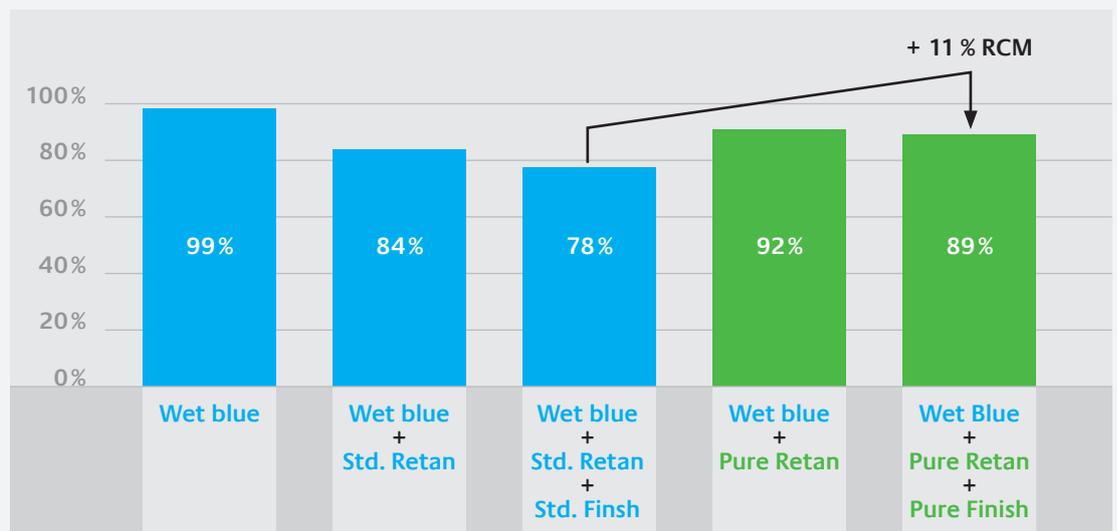
→ is a natural organic based dispersing agent, with a ca. 68%** bio-content, free of formaldehyde and phenol and thus with low environmental impact including on wastewater salinity.

CORIPOL® Pure LW

→ is a multipurpose light weight ultrasoft fatliquor, recommended for all leather types including automotive with a bio-content of ca. 78%.

CORIPOL® Pure LC

→ is a fatliquoring agent based on naturally occurring phospholipids with 83%** bio-content.



Key: Std. = Standard RCM = Radio-Carbon Method (EN 16640 and ASTM D6866)

New TFL bio-based products support leather radiocarbon content

- Wet blue has a radiocarbon content of ca. 99 %
- Traditional retanning and finishing reduces it ca. 78%
- Using TFL Pure products the radiocarbon content of leather can be increased to ca. 89% after finishing

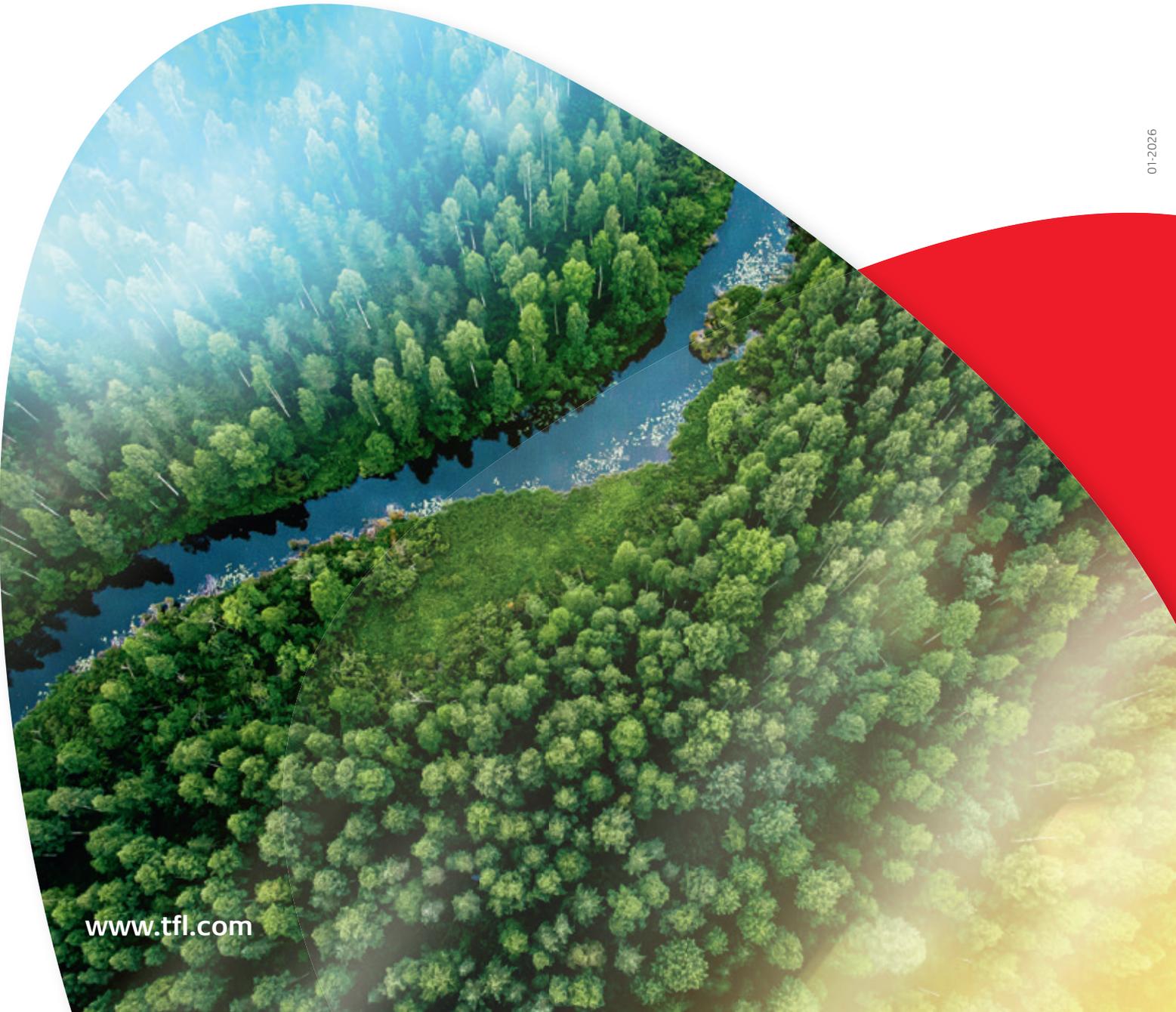


Forward-looking sustainability statements

We expect that the use of these raw materials can contribute to an improved sustainability profile and we continue to gather fact-based data.

General disclaimer

Sustainability-related statements refer to specific, measurable product attributes (e.g. biogenic carbon content) and do not represent an overall environmental or life-cycle assessment.



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