



## BIO-LOGIC®

Back to nature and beyond fluorine-free.  
Water-repellent performance based on  
biologic waste and natural plant extracts

At **RUDOLF** science goes hand in hand with environmental responsibility.

R&D constantly explores new technologies and innovations that help transforming the textile and fashion industries. We work to gradually reduce dependency on conventional raw materials so that a significant fraction of our products can be made from either natural, renewable alternatives to oil, or waste and/or byproducts from other industries.

This is part of what we, at **RUDOLF**, call aspirational chemistry: R&D driven by *tangible, environmental consciousness*.

Our studies of natural models, such as lotus leaves and feathers, played an important role in redefining the environmental impact of some textile chemistry like the very first fluorine-free DWR's.

The early years 2020's gave birth to a new generation of DWR products which represent a real scientific leapfrog: **RUCO®-DRY BIO CGR**, based on plant-derived, food processing wastes; **RUCO®-DRY BIO NPE**, entirely based on hydrophobic components extracted from plants.

## RUCO®-DRY BIO CGR

---



**RUCO®-DRY BIO CGR** is the first durable water-repellent finish entirely based on natural waste: by-products that accumulate during the processing of cereal grains in the food industry. The excessive natural, organic material - that would otherwise be disposed of - is refined and combined with additives to create a powerful water and stain repellent textile finish. By turning natural waste into DWR, RUDOLF has created **RUCO®-DRY BIO CGR** where the active component is made, by more than 90%, by bio carbon. This is a new, valuable tool for a truly sustainable textile industry. Further ingredients are incorporated that do not only boost the water repellent performance, but also balance secondary features such as smooth runnability in production, breathability and fabric handfeel. Despite the massive content of recycled biomass, **RUCO®-DRY BIO CGR** easily meets the usual performance and durability standards applied to water-repellent textile finishes.

# RUCO®-DRY BIO NPE

---



**RUCO®-DRY BIO NPE** is the first durable water-repellent finish entirely based on a carefully selected mix of natural plant extracts. The well-balanced mix of plant-based ingredients combines excellent water and stain repellent effects with breathability and natural handfeel.

Unlike other 100% renewable raw materials, the water-repellent active ingredients in **RUCO®-DRY BIO NPE** are chemically and genetically non-modified and are not used as food, feed or fuel. Furthermore, all of the plant extracts that compose **RUCO®-DRY BIO NPE** are subject to a strict conservation and sustainability framework.

Because of this regulated agricultural scheme, the supply of **RUCO®-DRY BIO NPE** is sizable yet limited to creation and marketing of exclusive collaborations in performance outdoor and sports apparel that embed state-of-the-art, all-natural technology.



## Performance & Features

- Excellent, initial water repellency on synthetics, cellulosics and blends; spray rating 100 acc. to AATCC 22
- Superb home laundering resistance up to 30x acc. to DIN EN ISO 6330 (addition of crosslinker e.g. **RUCO®-LINK XHC** for cellulosics and blends is recommended for maximized durability)
- Initial performance is easily restored through tumble drying or ironing of finished articles after laundering
- Excellent repellence towards water-based stains such as coffee, tea, orange juice, etc.
- Retains the fabric's inherent breathability and comfortable wear features
- No impairment of the fabric's appearance or handfeel
- Active component made from > 90% bio carbon (**RUCO®-DRY BIO CGR**)  
> 99% bio carbon (**RUCO®-DRY BIO NPE**)

## Additional benefits

- Free of PFAS-based and halogenated compounds;
- Free of APEOs
- Free of solvents
- Non-flammable
- **bluesign®** approval to be finalized
- **GOTS 5.0** approved additive by ECOCERT Greenlife

## BIO-LOGIC® hangtag



Front



Back

It's bio-based and it's logic. It's **BIO-LOGIC®**.

