

Zelan™ R3

Renewably Sourced, Non-Fluorinated,
Durable Water Repellent

Technical Product Information

Description

Zelan® R3 is a durable water repellent treatment for fabrics, textiles, and nonwovens. It is manufactured with renewably sourced, non-fluorinated, plant-based material that can be replenished naturally over time.

Features

- Excellent water repellency on natural fibers, synthetic blends, and synthetic fibers, providing protection to rain and water-based stains
- High durability to home laundering and dry cleaning, allowing for extended water repellent protection after multiple washes
- Breathability of fabrics will be maintained, making them comfortable to wear
- Good runnability, allowing for uninterrupted production process
- Compatible with commonly used finishing auxiliaries, including resins and cross-linking agents
- ~63% renewably sourced (ASTM D-6866-12)
- Not made with alkyl phenol ethoxylates (APEO)

Personal Safety, First Aid, Storage and Handling

See the Safety Data Sheet (SDS) for specific product information. Normal care should be taken to avoid skin and eye contact. Before using this product, please read the current SDS and the precautionary statement on the product package. Follow all applicable directions.

Application

This product is normally applied by padding. Contact your Chemours representative for other applications, such as garment or foam application.

Bath Preparation

- Adjust pH of water bath with acetic acid to between 4.0–5.5. When using a cellulose cross-linking agent on cotton fabrics, it may not be necessary to add acetic acid to the bath to adjust pH.
- If using combined with cross-linking agents, fillers, or additives, dilute each and add to the water bath.
- Dilute Zelan® R3 with an equal amount of cold water, and add to the bath last.

Application to Fabric

- pH of the prepared bath: Between 4.0–5.5
- Typical padding liquor pick-up of approximately 40–80%, based on the fiber
- Bath temperatures of 20–30 °C (68–86 °F)
- Drying at 110–130 °C (230–266 °F)
- Separate curing: 5 min at 150 °C (302 °F) on curing machine or
- Rapid curing process: 45–60 sec at 110–170 °C (230–338 °F) in stages (stenter)
- If combined with cellulose cross-linking agents, the details described in the respective technical data sheets are valid.

Suggested Recipes

Examples are demonstrated using Huntsman auxiliaries: INVADINE® PBN (wetting agent); KNITTEX® 7636 (cellulose cross-linking agent); PHOBOL® EXTENDER XAN (blocked NCO extender). All recipes are made in water.

1. 100% Twill CO for Bottom Weights

5 g/L INVADINE® PBN
20–50 g/L KNITTEX® 7636
30–80 g/L Zelan® R3
0–5 g/L PHOBOL® EXTENDER XAN

2. 100% CO Fleece

5 g/L INVADINE® PBN
1–2 g/L acetic acid 60%
50–100 g/L Zelan® R3
5–10 g/L PHOBOL® EXTENDER XAN

3. 100% Woven PES Outerwear, PES Spandex Blend, and PES/CO Blends

5 g/L INVADINE® PBN
1–2 g/L acetic acid 60%
30–50 g/L Zelan® R3
0–5 g/L PHOBOL® EXTENDER XAN

4. 100% Woven Nylon Outerwear

5 g/L INVADINE® PBN
2 g/L acetic acid 60%
30–80 g/L Zelan® R3
0–10 g/L PHOBOL® EXTENDER XAN

Product Characteristics

Ionic Type	Non-ionic/cationic
Appearance	Off-white to white liquid
Chemical Structure	Alkyl urethane
Active Matter, wt%	25 ± 1
Solvent	Water
Specific Density	1.001 g/mL
pH	4.0–7.0
Solubility	Readily dispersible in water between 10–35 °C (50–95 °F)
Storage Stability	Stable for 2 years when properly stored in closed containers at 20 °C (68 °F). Recommended storage temperature is 5–40 °C (41–104 °F). Keep tightly closed in a dry, cool, and well-ventilated place. Protect from freezing. Product is perishable if frozen.

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For questions regarding technical data, commercialization, and sampling, contact:

Asia Pacific—North
+86 21 3862 2539

Europe/Middle East/Africa
+34 985 12 3773

North America
1 302 996 7926

Asia Pacific—South
+91 124 409 1818

Latin America
+55 11 416 68 601

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