



Technical Sheet

Repelon™ - Superamphiphobic coating

Summary

Repelon™ is a superamphiphobic waterborne coating system for wide ranging substrates with extreme durability.

Superamphiphobic coatings are unique material class imparting liquid-repellency effect in entire spectrum of polarity/chemistry, from water to oils.

Waterborne and low viscosity formulation of Repelon™ enables easy integration with industrial processes at low environmental footprint. Simple dip rolling, impregnation or spraying can be utilized to apply the coating.

The substrates include but are not limited to; textiles, foams/sponges, paper & cardboard, polymer films, synthetic leathers, and hard polymer, metal, polymer surfaces.



Properties

Feature	Value
Physical form	Waterborne nano-colloid
Appearance	Semi-clear liquid
Mean colloid size (Zeta Sizer, DLS)	250 nm
Shelf-life	12 months
Contact angle (goniometer)	Contact angles on various substrates with four liquids (Figure 1, see below)

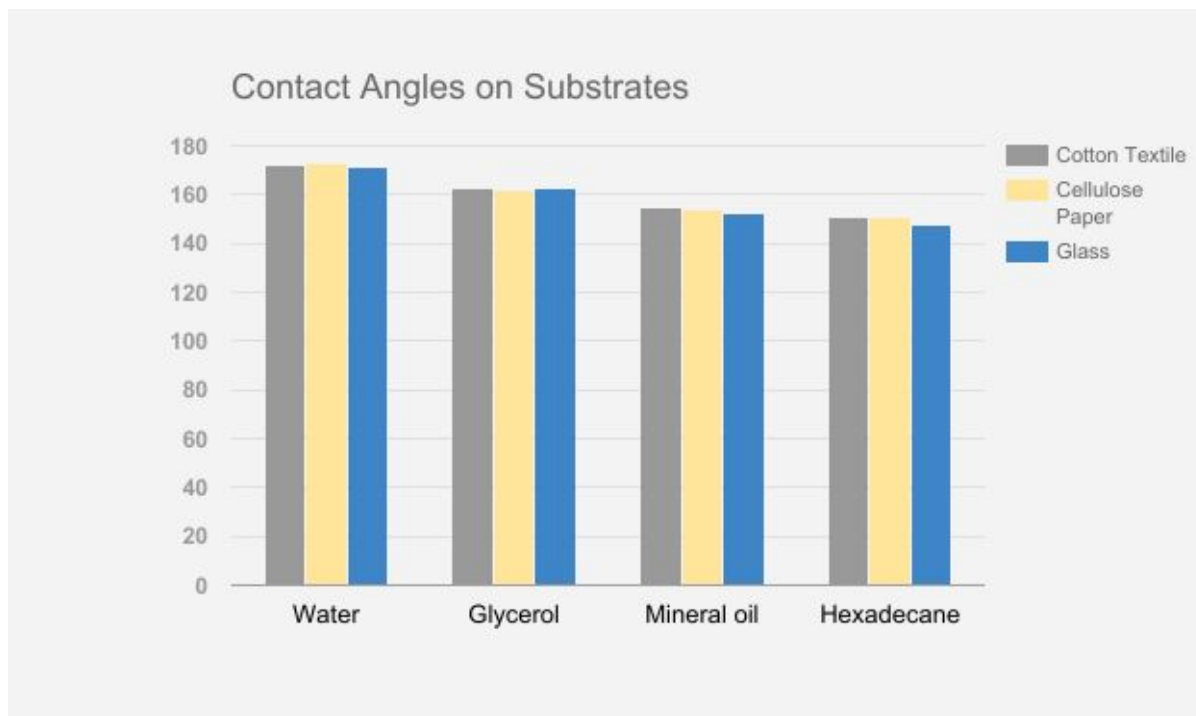


Figure 1. Contact angles (degrees) for water, glycerol, mineral oil and hexadecane on cotton, paper and glass.

Durability

Feature	Value
Washing (AATCC 61–2006 No:2A washing machine + steel balls)	+200 cycles
Abrasion (ASTM D4966 Martindale)	+2000 cycles
Chemical stability (5 h acid/base, 30 min flame, 2 min boiling)	No change in contact angle

Application Instructions

A generic coating process for the application of Repelon™ is presented here as a reference (Figure 2, see below):

1. Homogenization of stock dispersion
2. Treatment of the substrate with Repelon™
3. Padding/blading for excess removal
4. First curing at 50 °C until partial evaporation
5. Final curing at 130-140 °C

However exact industrial process must be designed considering substrate and available machinery. Major defining parameters would be wettability and surface chemistry of the substrates, texture, shape, heat treatment technique and limitations in the client's facilities.

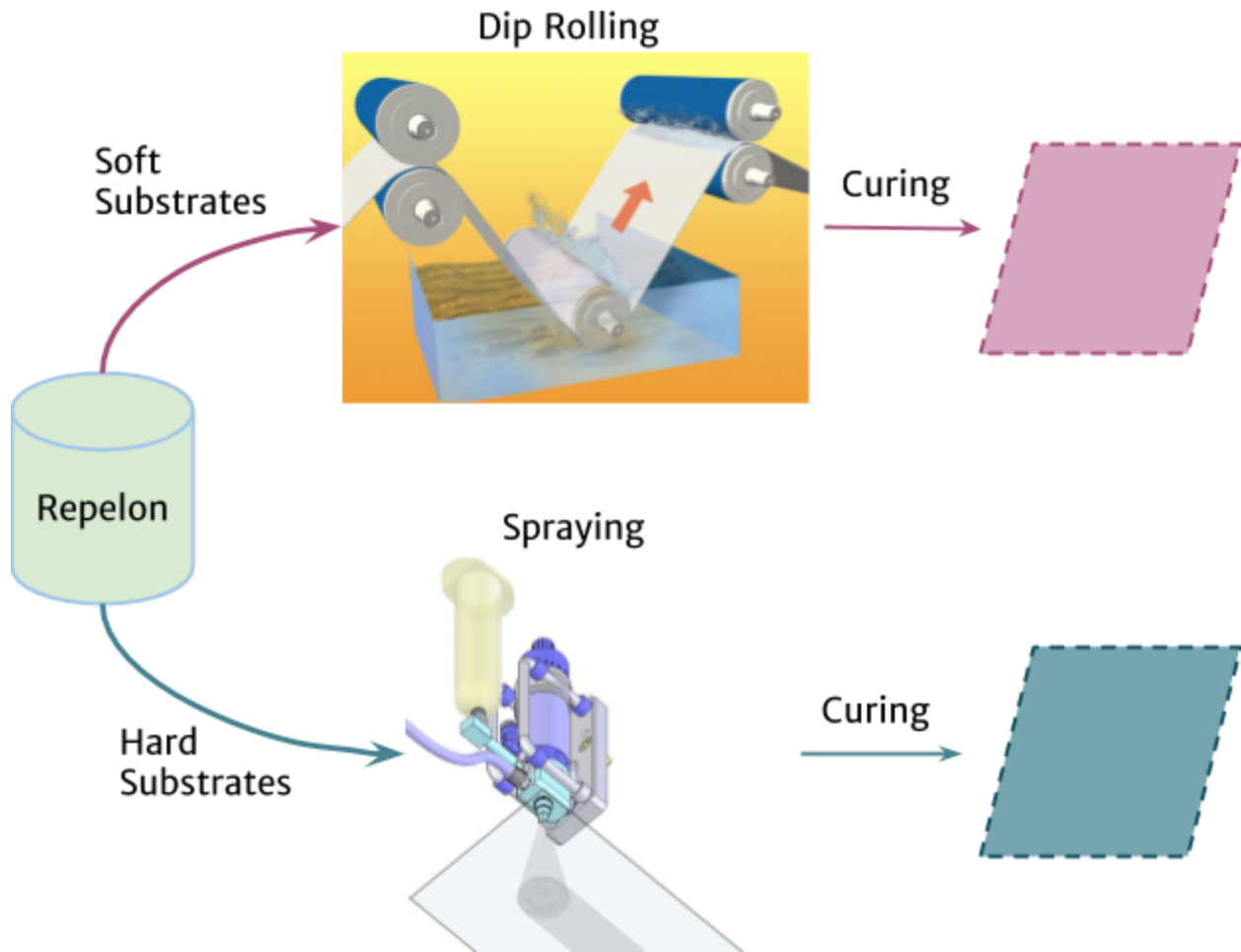


Figure 2. Generic coating process design for Repelon™.

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