Data sheet InnoSolTEX® (ORMTEX 106 - 128)

Eco-friendly, water based ORMOCER®-technology for textile refining

	High Visibility Fabrics - Technical Textiles (protective clothing) LUMINEX, Klopman GmbH, Ratingen, Germany - 60 % cotton - 40 % polyester
Antimicrobial activity: DIN EN ISO 20645:2004	
Inhibiting effect	- 100 % - ORMTEX 106, solids add-on 0.76 % [1]
Hydrophobic properties: TEGEWA drop test	
Sinking time of drops	- > 300 sec - [1.65 sec for uncoated material] - functionalized ORMTEX 106, solids add-on 3.38 % [1]
Oil repellency - Hydrocarbon resistance test: DIN EN ISO 14419:2010-08	
Level of oleo phobic properties [1 to 8; bad to good]	- level 6, - functionalized ORMTEX 106, solids add-on 6.7 %[1]
Fire behaviour of building materials and building components: DIN 4102-1	
Flame inhibiting effect	- satisfiable results starting from 16 % solids add-on [1]
Domestic washing and drying procedures for textile testing: DIN EN ISO 6330:2012	

Change of textile characteristics	- no change at: - 60 °C intensive washing,
	                         - 50 g desinfection detergent per 54 liters of water,
	                         - normal drying

[1]_based on the solids add-on of the cured hybrid coating sol	

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	Technical Textiles - Polyester woven fabric (Hometech / Clothtech) Schneider Textilveredlung GmbH, Plauen, Germany - 100 % polyester
Protective clothing - Electrostatic properties: EN 1149-1:2006	
Surface resistance	- $3.7 * 10^9$ ohm; ORMTEX 106, 14.3 % solids add-on[1] - $10.0 * 10^{10}$ ohm; ORMTEX 106, 4.35 % solids add-on[1] - [$1.3 * 10^{14}$ ohm, for uncoated material]
Protective clothing - Electrical resistance through a material (vertical resistance): EN 1149-2:1997	
Volume resistance	- $5.0 * 10^9$ ohm; ORMTEX 106, 14.3 % solids add-on[1] - $2.3 * 10^{11}$ ohm; ORMTEX 106, 4.35 % solids add-on[1] - [$8.0 * 10^{12}$ ohm; for uncoated material]
Antimicrobial activity: DIN EN ISO 20645:2005	
Inhibiting effect	- 100 % - ORMTEX 106, solids add-on 14.0 %[1]
Hydrophobic properties: TEGEWA drop test	
Sinking time of drops	- > 300 sec - ORMTEX 106h, solids add-on > 6 %[1] - ORMTEX 128, solids add-on 1,5 - 3,0 %[1] - [81.1 sec for uncoated material]
Oil repellency - Hydrocarbon resistance test: DIN EN ISO 14419:2010-08	
Level of oleo phobic properties [1 to 8; bad to good]	- level 3 - ORMTEX 128, solids add-on 2.99 %[1]
Fire behaviour of building materials and building components: DIN 4102-1:1998	
Flame inhibiting effect	- satisfiable results starting from 16 % solids add-on[1]
[1]_based on the solids add-on of the cured hybrid coating sol	

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Eco-friendly, water based ORMOCER®-technology for textile refining

	Spun bonded, nonwoven fabrics from 100 % PA 6.6 CEREX®, anowo ltd., Basel, Switzerland
Wettability	
Results	- Very good - No change of textile characteristics [e.g. stability, air permeability, flexure] - With solids add-ons from 2.7 % to 25 %[*1]
Determination of abrasion resistance of fabrics by the Martindale method: DIN EN ISO 12947:1999	
Pillings	- Coated material: > 1000 rounds - no pilling - Uncoated material: pilling after 200 rounds
[*1]_based on the solids add-on of the cured hybrid coating sol	

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Eco-friendly, water based ORMOCER®-technology for textile refining

	Non-woven composite: Depth filter media and for surface and liquid filtration (SMS-composites made of polypropylene: voluminous filament spunbonded nonwoven with particle receiving capacity / highly-efficient zone for separation of ultra-fine particles: meltblown / lightweight filament spunbonded nonwoven as protective layer for the meltblown) HYCOSPUN® Saxon Textile Research Institute STFI Chemnitz, Germany	
Filter characteristics		
Initial efficiency	- Increase of the initial efficiency (DEHS) of the filter media up to 10 %[2] - In solid add-ons[1] up to 3 % - ORMTEX 124 - ORMTEX 125 - ORMTEX 126	
Pressure differences	- no significant influence - In solid add-ons[1] up to 3 %	- ORMTEX 106 - ORMTEX 124 - ORMTEX 125 - ORMTEX 126
Antimicrobial activity: DIN EN ISO 20645:2005		
Inhibiting effect	- 100 %	- ORMTEX 126, solids add-on >20 %[1] - ORMTEX 127, solids add-on from 4,5 %[1] - ORMTEX 128, solids add-on from 1 % %[1]
Hydrophobic properties: TEGEWA drop test		
Sinking time of drops	- > 300 sec, tested on material close to HYCOSPUN®	- ORMTEX 106 - ORMTEX 126 - ORMTEX 128
[1]_based on the solids add-on of the cured hybrid coating sol [2]_filter charged by an electrode		

Data sheet InnoSolTEX® (ORMTEX 106 - 128)

Eco-friendly, water based ORMOCER®-technology for textile refining

General Features of InnoSolTEX® Hybrid Coatings

Colour:	from clear to dimmish, from colourless to yellowish
Solid content:	according to DIN 53 216-A, Determination of the non-volatile matter content; method at elevated temperature for paints and varnishes as well as plastics [approx. 10 %]
Layer thickness:	< 2 µm, depending on application, solids add-ons and desired properties
Viscosity on delivery:	according to DIN 51 550 Ubbelohde, < 2.5 mm²/s at 20 °C
Processing pot life:	at 18 - 20 °C approx. 2 weeks
Shelf life:	at -30 °C at least 3 months

Application by conventional textile industrial methods

InnoSolTEX® hybrid coating can also been applied on yarns (tested with different yarns of ALTERFIL Deutschland GmbH, Germany)

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