



Introducing Sahara[®]

Self Healing Super Absorbent Polymer Technology

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Self healing super absorbent polymer technology...

Sahara[®], a novel water blocking chemistry, is both water and chemical resistant. The product is supplied in a liquid solution for impregnation within appropriate supporting substrates.

Supplied in two formats, **Sahara[®]** comes as either part of a factory applied system or as an in-situ application.

Sahara[®] is unique in its ability to create a barrier against not only water, but ionic chemicals and petrochemicals, as well as having self healing properties which allow for the regeneration of the seal after mechanical damage to the relevant substrate.

The chemical structure of **Sahara[®]** is capable of permanently bonding itself within the supporting substrate. This means it may be used in a number of environments, typically water containment, drainage, infrastructure and civil engineering projects, and land conditioning.



Sahara may be applied to a variety of substrates using most commonly used industrial coating methods to form a waterproof barrier

Key Features of Sahara Products

Sahara[®] technology creates a stable self-healing liquid barrier.

Sahara[®] may be easily applied to an appropriate substrate material creating a light weight coated substrate that is a safer, faster, greener in it's application, transportation and installation.

Sahara[®] coated substrates are effective against water as well as many chemicals and acidic materials...typically leachates, oils, saltwater and solvents, to name but a few.

Sahara[®] coated substrates boast long-term effectiveness as a liquid barrier even after freeze/thaw and wet/dry cycles in accordance with EU test protocols.



Supplied as a liquid solution for application to a variety of porous supporting substrates

Suggested Coating Methods For Sahara Products

Sahara[®] may be applied using most commonly used industrial coating methods;

Sahara[®] GT: Meyer bar, kiss roll, impregnation, spray, submersion, screen printing and flexology.

Once applied **Sahara[®] GT** must be heated to at least 120°C for sufficient time to fully dry and activate the **Sahara[®]** within the substrate to ensure thorough cross-linking.

Sahara[®] Geoblok: coating methods as **Sahara[®] GT**, plus spraying, brush, and roller or by other means of saturation coating.

Once applied **Sahara[®] Geoblok** requires no additional heat and cures at ambient temperature to form an effective liquid barrier.

Suitable substrates include nonwoven polypropylene and polyester fabrics, glass fibre yarns, woven glass fibre tapes, polyester yarns.



Self healing properties allow the regeneration of the seal after mechanical damage to the substrate



Sahara® GT is a water-borne heat cured polymeric solution impregnated within an appropriate textile or other porous substrate to create a barrier that immediately reacts to water or other liquids.

A Sahara® GT enhanced textile is lightweight in its dry form and easily moved around the site for installation. Once introduced to water it will absorb and swell to create a waterproof membrane that is self healing.

Sahara® GT is an aqueous, solvent free solution may be used in a variety of water containment solutions and **Civil Engineering** projects to include **Ponds, Rivulets and Canal Systems, Dams and Dykes, Roofing, Tunnels, Basements** and other **Underground Structures**.

Physical Properties

Non-volatiles Content	H&R Method*	25% Typical
Viscosity at 25 C/mPa.s	ASTM D2669	2100 Typical
pH	9.0 Typical	
Swell Height after 1 minute	H&R Method*	1200µm/min
Swell Height after 3 minutes	H&R Method*	4000µm/min
Swell Height after 10 minutes	H&R Method*	7000µm/min

Sahara® Tests and Results

Test Method	Property	Unit	Sahara-Coated non-woven
DIN EN 10319	Tensile Strength (untreated)*	kN/m	F max: 3.0 T max: 13.2
DIN EN 10319	Tensile Strength (treated, wet, dried)*	kN/m	F max: 2.9 T max: 14.7
DIN EN 18130 (14 days)	Permittivity*	m/s	4.3 x 10 ⁻⁹
DIN EN 18130 (14 days)	Permittivity (After 4 wet-dry cycles)*	m/s	6.4 x 10 ⁻⁹
DIN EN 18130 (4 days)	Permittivity (After 4 freeze-thaw cycles)*	m/s	3.1 x 10 ⁻⁹
DIN EN 12457 (7 days)	Leaching or loss of material in flowing Water for unprotected material*	%	13.7
DIN EN 12236	Puncture Resistance (untreated)*	kN/m	1.9
DIN EN 12236	Puncture Resistance (24 h in water)*	kN/m	1.4
DIN EN 12236	Puncture Resistance (24h in water, dried)*	kN/m	1.8
Measured with odeometer	Swelling pressure*	kPa	150 max
ASTM D5084-10	Hydraulic conductivity for 600 gsm Material - Cell pressure 550 kPa, back pressure 400 kPa.**	m/s	3 m head = 9.04 x 10 ⁻¹² 7.5 m head = 2.29 x 10 ⁻¹¹ 10 m head = 2.97 x 10 ⁻¹¹
ASTM D5890-11	Modified Free swell	ml/2g	179
BS EN ISO 10769:2011	Water Absorption of dry Sahara after 24 hours in water **	%	3481

*Test results based on 3mm thick, 450gsm impregnated nonwoven PP substrate (210gsm virgin material weight)

** Test results based on 3mm thick, 600gsm impregnated nonwoven PP substrate (300gsm virgin material weight)

Developed using Sahara® technology, Geoblok is both a unique and innovative, solvent free, two part polymeric solution that cures without heat and may be applied to a number of substrates to create a barrier against water, most chemicals and sea water.

Geoblok is especially beneficial where the containment of a potentially hazardous or damaging liquid is of concern, or where the control and management of contaminated water is a key priority.

Applications include **Chemical Tank Farms, Landfill Sites, Contaminated Land Barriers** and **Fouled Water Containment**.



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* H&R Modified Test Methods ~ copies of test procedures are available upon request.

