

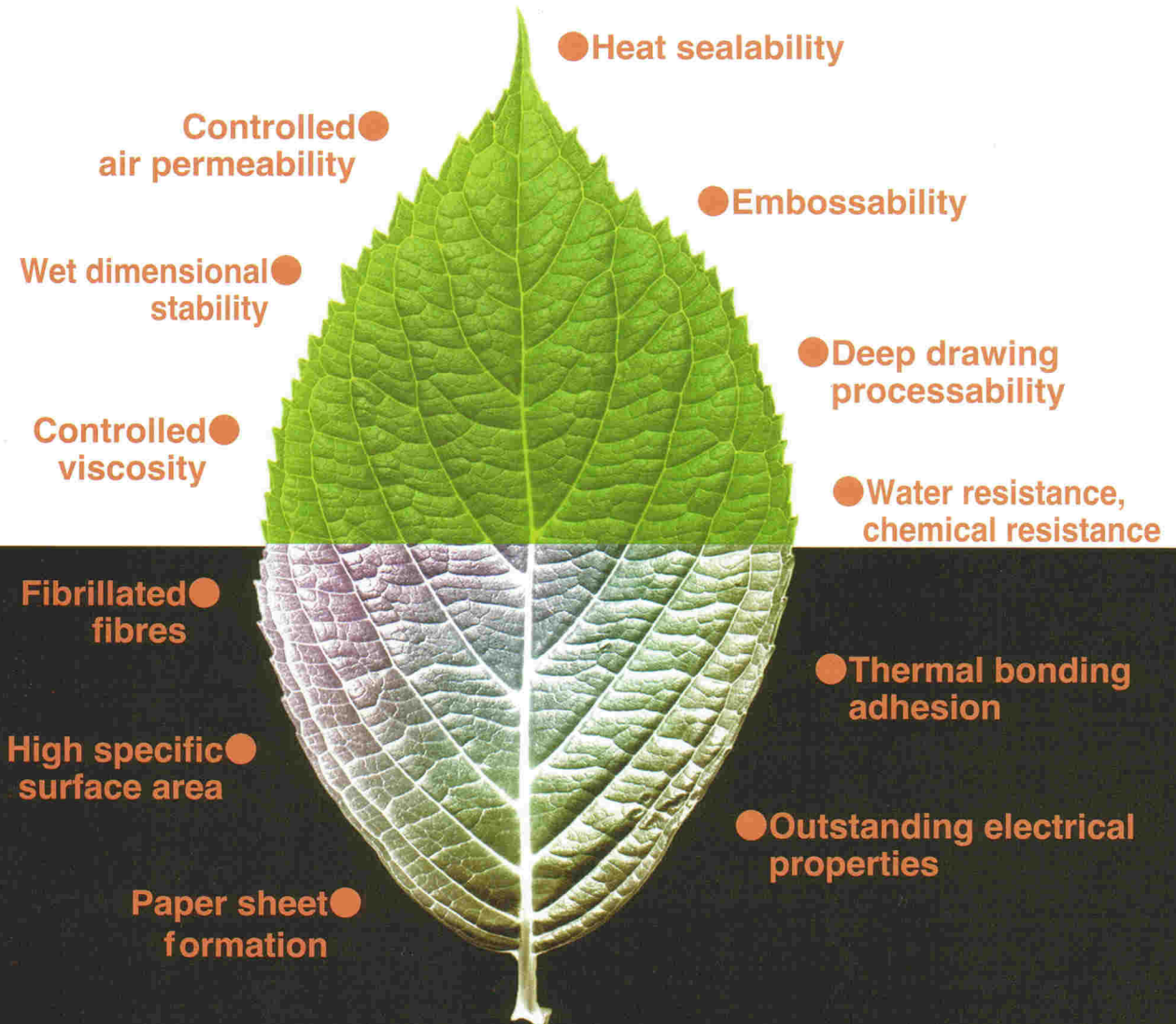
Synthetic Pulp (Polyethylene and Polypropylene)

FybreITM

MITSUI CHEMICALS, INC.

Potential of HALF PULP + HALF POLYOLEFINS

High-level functionality that's achieved by adding FybreI



Key physical properties of FybreI which extend the versatility and non-wovens

FybreI

By combining paper and plastic, we have broadened the range of possibilities...



Our everyday needs demand inventions which work, but our senses demand innovations which 'feel' right.

Synthetic Pulp Fybrel is a pulp-form, polyolefin fibre made by MITSUI CHEMICALS, INC.

Fybrel allows us to create paper and non-woven fabrics which satisfy both the practical and aesthetic demands of consumers.

Fybral products improve our quality of lifewhilst c

Every day products

Packaging materials,
absorption materials

Fybral has extensive uses. Heat sealability can be derived from its combination with natural pulps in everyday products such as food packaging through to medical supplies.

Air-laid products containing Fybral have excellent moisture absorption and flexibility.



Heat-sealed products

- Teabags
- Stock sachets
- Food wrapper
- Sachets for anti-oxidants
- Sterilization paper
- Medical packaging
- Moth ball bags



Sanitary products

- Diapers
- Absorption pads
- Core for fragrances
- Padding materials
- Wipes
- Towelettes
- Cosmetic sheets for removing facial oil

Cards &
labels

Paper products containing Fybral have outstanding embossability. Unlike conventional paper they facilitate 3-dimensional depth of design. Fybral becomes transparent when it melts enabling the embossing of a wide range of designs for stationery and commodities. The extremely smooth surface obtained from calendering can also be coated for producing printed labels and posters.



Fancy paper products

- Greeting cards
- Pamphlets
- Visiting cards
- Book covers
- Envelopes
- Lamp shades



Printing products

- Printing paper
- Labels
- Poster paper
- Wrapping paper
- Shopping bags

Contributing functionally to various industrial sectors.

Industrial materials

Residential construction materials

With its excellent embossability, printability and dimensional stability, Fybrel is used for interior construction materials such as wall paper and Fusuma-door paper.



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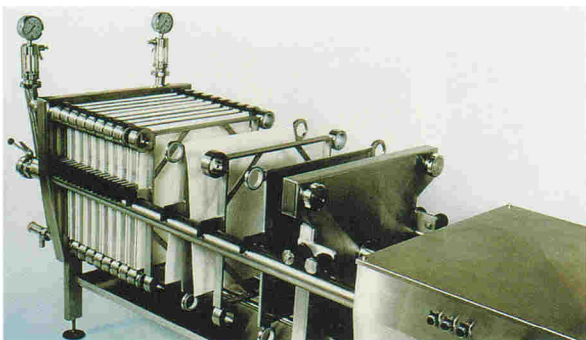
Interior decorative materials

- Wall paper
- Fusuma-door paper
- Shoji-screen paper



Other industrial products

With its excellent thermal bonding, mouldability, dimensional stability, and strong resistance to chemicals such as acids and alkali. Fybrel is used for various other industrial products.



Filter

- Filter for food products



Lead-acid battery separator

- Batteries for cars and motorbikes



Moulded products

- Formable board for door panels
- Food product tray-packaging
- Packing material for large components
- Stationery/office equipment

Construction materials

The vapour release characteristics of synthetic Fybril Sheet can be regulated by the application of heat. Water-resistant sheeting is made in this way as a breathable moisture barrier.

Furthermore, Fybril has the same fibrillar form, high specific surface area, and drainage factor, as natural pulp which has been fibrillated. Thus, it has excellent cement filler retention, mouldability, component-performance and thixotropy, and is used to make roofing tiles, paints, and adhesives.

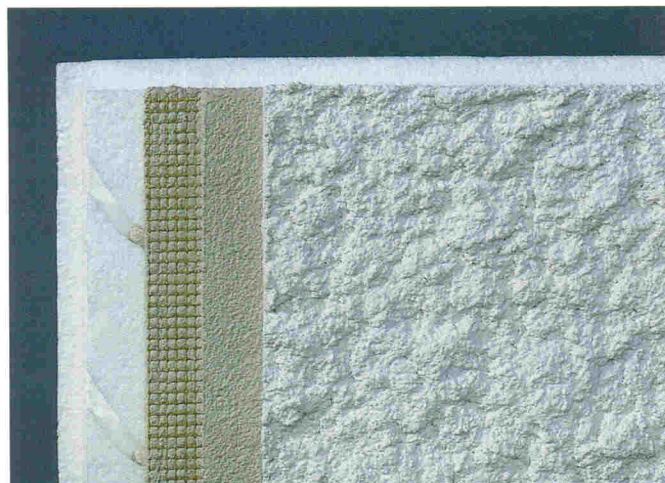
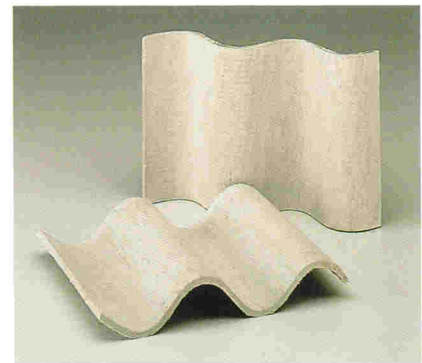


Residential materials

- Controlled vapour-release, water-proof sheet
- Roofing sheet
- Insulation board

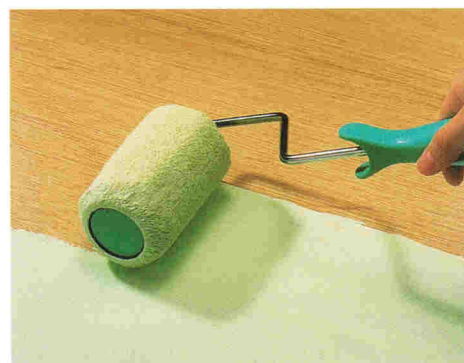


Roof tiles



Building Materials

- Resin plaster
- Paints
- Roof coating



Fybral brands

Grade	Type	Melt Pt.	Brand	Canadian Std. Freeness	CFL (mm)	Wetness (%)	Coarseness
Paper Making Grades	E-types (Polyethylene)	All 135°C	E790	680cc	1.5	50	Standard
			E400	580cc	0.9	62	Standard
			EST-8	540cc	0.9	60	Standard
			E620	340cc	1.2	64	Standard
	UL (PE)	125°C	UL410	600cc	1.0	55	Coarse
	NL (denatured PE)	100°C	NL490	720cc	1.0	55	Coarse
	AU (denatured PE)	125°C	AU690	680cc	1.2	55	Coarse
Y (Polypropylene)	165°C	Y600	720cc	1.0	60	Very Coarse	
Dry Process Grades	E-types (Polyethylene)	All 135°C	ESS-5	—	0.1	46	Standard
			ESS-2	—	0.6	46	Standard
			E380	—	0.7	40	Coarse
			E780	—	1.6	40	Coarse
			E990	—	2.0	50	Very Coarse
	UL (PE)	125°C	UL415**	—	1.0	50	Coarse

values quoted do not constitute product specifications but are representative values. **hydrophilic brands

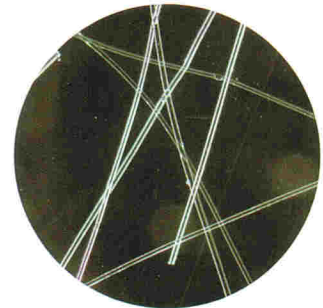
Fybral fibre diameter comparison (X150 micrographs)



Natural pulp



Fybral (E400)



Polyolefin cut fibre

Packaging

Fybral is supplied in bales approximately 75cm (L) x 65cm (W) x 65cm (H). One bale of SWP contains 150-170 wet sheets wrapped in PE film. The gross weight of a single bale varies according to the brand.

210 kg: type E

190 kg: type UL

170 kg: types NL, AU, Y

Each bale label quotes the air-dry weight ADkg. Fybral is sold by air-dry weight, inclusive of 10% wetness.

Air-dry weight Adkg = gross weight of 1 bale x (100 - wetness)/90



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Building Materials

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Note: Inhalation of Fybril processed into ultrafine fiber may cause pulmonary function disability. Please refer to our MSDS for further information.