Mitsui Chemicals

SYNTEX & TAFNEL

Dealer

Contact information

Mitsui Chemicals

MITSUI CHEMICALS, INC.
Shiodome City Center, 1-5-2 Higashi-shinbashi, MInato-ku, Tokyo 105-7122, Japan
TEL: +81-3-6253-3637 FAX: +81-3-6253-4226

Mitsui Chemcials' non-woven materials can be applied in a wide variety of products and applications.

Through the development of “novel non-woven materials”, Mitsui Chemicals strives to provide tailored solutions that exceed the expectations of our customers.

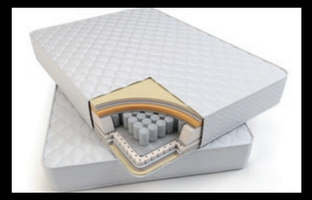

Seat of the car


Diaper


Agricultural sheet


Drape & Gown


Mask


Bed

Oil adsorbent

Meltblown non-woven fabric (100% Polypropylene)

SYNTEX MB™

SYNTEX is a long fiber non-woven fabric made from 100% Polypropylene.

Application

- Medical and Sanitary material
- Packing material
- Clothing, Sleeping bags, Bedding material
- Filter material
- Base fabrics, Industrial and Agriculture material

Features and Strengths

1. Long fiber non-woven fabric

①Composed of extra-fine long fibers.
②No fraying from cutting side.

2. Made from 100% polypropylene

①Can be used for various thermal processes (heat sealing, heat fusion, thermoforming etc)
②Does not absorb water due to a high lipophilicity.
③Excellent chemical resistance (acid resistance, alkali resistance etc)
④It has a slightly higher volume in comparison with nylon or polyester because of the specific gravity of polypropylene is 0.91.

3. Fiber diameter

①The fiber diameter can be made as small as 200nm.
②The most suitable fiber diameter can be provided based on customer usage and needs.

4. Caledering

①Pore size control is possible by calendaring (second processing).
②To provide a non-woven of the most suitable pore size for its usage.
② The most suitable pore size can be provided based on customer usage and needs.

5. Control of fiber diameter & pore size

①New uses of material is possible through fiber diameter control and pore size control.

Spec

Properties of meltblown nonwoven fabric

Name	Constitution[1]	Fiber diameter [average] (μm)	Weight (g/m^2)	Thickness (mm)	Ventilation rate ($cc/cm^2/s$)	Maximum pore (μm)	Average pore (μm)	Collecting efficiency[2] (5.3cm/s)	Pressure loss (5.3cm/s)
M02100 [nano2]	M	0.6	10	0.10	5	3	2	–	–
M03150 [nano3]	M	0.8	15	0.16	5	5	3	99.97	150
M06150 [nano6]	M	1.1	15	0.16	10	11	5.5	99.8	90
M09150 [nano9]	M	1.5	15	0.16	12	14	7	99.5	70
MPEU08	M	2	40	0.37	12	16	10	99.7	70
MPER04	M	2.3	20	0.21	31	16	14	91	24
MPEA04	M	3.5	20	0.24	58	37	21	81	24
MPEC04S	M	4.5	20	0.26	145	79	39	40	3
MPNC08	M	4.5	40	0.42	64	62	–	–	–
VE3040N2E[3]	M	3.5	40	0.35	20	–	–	–	–
FA0401N1	S/M	3.5	40(20/20)	0.34	33	27	–	–	–
FB0652N1	S/M/S	3.5	65(23/20/23)	0.48	28	–	–	–	–

1)M: Meltblown non-woven fabric, S: Spunbond non-woven fabric 2)Measurement particle: NaCl, Mass average diameter, Meltblown non-woven fabric 3)Embossing type
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Hollow spunbond non-woven fabric (100% Polypropylene)

AIRYFA™

AIRYFA is a long fiber non-woven fabric made from 100% Polypropylene.

Application

- Medical and Sanitary material
- Packing material
- Clothing, Sleeping bags, Bedding material
- Filter material
- Base fabrics, Industrial and Agriculture material

Features and Strengths

1. Fiber structure

①Stronger compared to conventional Spam Bond of the same weight.
②Contributes to reduction of CO2 emissions because it requires less resin through the use of hollow fiber.
③The hollow rate of the fiber is 20%. 30%, 40% hollow rate fibers are currently under development.

2. Long fiber non-woven fabric

①High pulling and tear strength.
②Strength from all directions because of random fiber dispersions.
③No fraying from cutting side.
④Little lint is generated.

3. Made from 100% polypropylene

①Can be used for various thermal processes (heat sealing, heat fusion, thermoforming etc)
②Does not absorb water due to a high lipophilicity.
③Excellent chemical resistance (acid resistance, alkali resistance etc)
④It has a slightly higher volume in comparison with nylon or polyester because of the specific gravity of polypropylene is 0.91.

4. Fiber diameter

①The most suitable fiber diameter can be provided based on customer usage and needs.

5. Bonding

①Bonding through heat emboss.
②Either soft or hard nonwoven fabrics can be provided by changing the emboss pattern.

Spec

Name		Non-woven type	Weight (g/m^2)	Maximum strength (N/25mm)			Flexibility	Water pressure resistance (mAqua)	Fastness to rubbing
				MD	CD	5%MD	Tactile	—	
AIRYFA™	Hollow-SMS	SMS	12	14.0	5.5	3.8	○	139	○
	Type of low basis weight (Development item)	SMS	9	11.0	5.6	4.1	○	142	○
			8	8.7	4.7	3.8	○	106	○
	Type of flexibility (Development item)	Soft type SSS	12	10.5	6.7	2.1	◎	90	○
			10	11.5	6.6	3.3	◎	—	○


Generally SB


Hollow SB

Polypropylene 100%, Spunbond non-woven fabric

SYNTEX™

SYNTEX is non-woven fabric which was a made only from Polypropylene.

Application

- Medical and Sanitary material
- Packing material
- Clothing, Sleeping bags, Bedding material
- Filter material
- Base fabrics, Industrial and Agriculture material
- Sound absorbing material

Features and Strengths

1. Long fiber non-woven fabric

①High pulling and tear strength.
②Strength from all directions because of random fiber dispersions.
③No fraying from cutting side.
④Little lint is generated.

2. Made from 100% polypropylene

①Can be used for various thermal processes (heat sealing, heat fusion, thermoforming etc)
②Does not absorb water due to a high lipophilicity.
③Excellent chemical resistance (acid resistance, alkali resistance etc)
④It has a slightly higher volume in comparison with nylon or polyester because of the specific gravity of polypropylene is 0.91.

3. Fiber diameter

①The fiber diameter can be set between 1d~15d.
②The most suitable fiber diameter can be provided based on customer usage and needs.

4. Bonding

①Bonding through heat emboss.
②Either soft or hard nonwoven fabrics can be provided by changing the emboss pattern.

Spec

Standard properties of SYNTEX™

Type	Item	Weight (g/m^2)	Thickness (mm)	Tensile strength (N/5cm)		Tensil elongation (%)		Ventilation rate ($cc/cm^2/sec$)
				Length	Breadth	Length	Breadth	
Series of PS (General purpose type superior in flexibility, strength)	PS-103	16	0.22	35	12	40	40	—
	PS-104	20	0.25	40	25	40	40	360
	PS-105	25	0.29	55	35	40	45	300
	PS-106	30	0.33	70	40	40	50	270
	PS-108	40	0.38	100	45	40	50	200
	PS-110	50	0.43	120	50	40	50	170
	PS-112	60	0.48	135	60	35	50	140
	PS-114	70	0.51	150	62	35	45	110
	PS-116	80	0.55	160	65	35	45	80
	PS-120	100	0.60	185	70	30	40	50
Series of PB (High-stiffness type superior in surface smoothness, dimension stability)	PB-0216	16	0.19	35	12	25	30	400
	PB-0220	20	0.22	50	15	25	30	340
Series of PK (The special granulated sugar type that was comprised of large-diameter fiber)	PK-102	13	0.19	20	12	80	90	—
	PK-103	15	0.20	25	13	60	70	—
	PK-108	40	0.38	90	35	40	60	330

Selectable width and length. (Maximum width: 2.4m)
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Needle punched non-woven fabric (100% Polypropylene)

TAFNEL™

TAFNEL is a needle punched non-woven fabric which is made from Polypropylene.

Application

- Clothing, Bedding material
- Filter material
- Automotive material
- Construction and building material
- Oil absorption materials
- Other Agricultural and Construction materials

Features and Strengths

1. Long fiber non-woven fabric

①High pulling and tear strength.
②Strength from all directions because of random fiber dispersions.
③No fraying from cutting side.

2. Made from 100% polypropylene

①Can be used for various thermal processes (heat sealing, heat fusion, thermoforming etc)
②Does not absorb water due to a high lipophilicity.
③Excellent chemical resistance (acid resistance, alkali resistance etc)
④It has a slightly higher volume in comparison with nylon or polyester because of the specific gravity of polypropylene is 0.91.

3. Fiber diameter

①The fiber diameter can be set between 6d~15d.
②The most suitable fiber diameter can be provided based on customer usage and needs.

4. Bonding

①Bonding through needle punch.
②Because bonding is with interlaced filament, it is possible to provide non-woven fabric with thickness and bulkiness.
③Composite non-woven fabric which was laminated and needle punched is available.

Spec

Standard properties of TAFNEL™

Type	Item	Weight (g/m^2)	Thickness (mm)	Tensile strength (N/5cm)		Tensile elongation (%)		Ventilation rate ($cc/cm^2/sec$)
				Length	Breadth	Length	Breadth	
PP Spunbond Type of needle punch (Single-layer)	PA-4021	100	1.6	200	120	100	140	300
	PA-4041	200	2.5	450	220	90	120	200
	PA-8082	400	4.5	800	500	80	120	100
PP Spunbond Type of needle punch (Three-layer)	TST-545	140	1.8	130	100	70	120	150
PP Spunbond base Type of special composite	ECE-545	140	1.9	120	200	80	100	155

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Ventilation film

ESPOIR™

ESPOIR is water resistant film which has air and moisture permeability.

Application

- Medical and Sanitary material

Features and Strengths

Designed to he high water pressure-resistant while maintaining breathability and moisture permeability

Spec

gsm	Tensile strength @peak (N/25mm)		Tensile strength @5% elongation (N/25mm)		Tensile elongation (%)		Tear (N) *1	Moisture-vapor transmission ($g/m2/24h$) *2	Thermal shrinkage (%)
	MD	CD	MD	CD	MD	CD			
18	12.8	2.3	3.3	1.3	153	385	0.021	2933	7.8
15	11.5	2.2	2.9	1.3	141	393	0.017	2904	8.0

Shape retaining material

TEKNOROTE™

TEKNOROTE is a wire rod made of plastic. It can be bent easily like wire yet retains its shape.

Application

- Medical and Sanitary material
- Clothing, Sleeping bags, Bedding material
- Packing material
- Decorations and Decorative items

Features and Strengths

Shape can easily be changed and manipulated by one's hand, but once changed it retains its shape excellently.

Spec

Type	Denier (d)	Diameter or Towel and Thickness (mm)	Return angle (∠°)	Tensile strength (kg/mm^2)	Tensile elongation (%)
W1000	1000	0.38	12	63.0	16
W3000	3000	0.67	9	47.8	6.9
W8000	8000	1.1	8	42.4	8.2
W13000	13000	1.4	10	40.9	13
H20000	20000	4.0 X 0.64	8	38.3	6.8