MEGA MASTER

A leader in the manufacturing of physically crosslinked polyolefin foam


泉碩科技
MEGA MASTER

The professional physically crosslinked polyolefin foam manufacturer.

As partners with nature, we are committed to the production of environmentally friendly materials. This includes the use of a clean production process.

We will continue our R&D efforts and production innovation to meet our customers' highest expectations for safer, greener products. We will always abide by the motto: Manufacturing a green product is beneficial to ourselves, our customers and our society.

The Company - Mega Master Technology since 1997

With more than 20 years experience in the manufacture of high performance and environmentally friendly polyolefin foam, Mega Master has become a leader in the industry.

Our leading-edge production process guarantees a high quality material while our experience allows us to be a total solution provider, giving professional service to all of our customers.

Mega Master Technology Co., Ltd. was formerly Liang Haw Fiber. In 1997, Liang Haw Fiber introduced its Electron-Beam (EB) Irradiation Technology, beginning its journey in the production of environmentally friendly high-polymer foam. In 2010 we were renamed as Mega Master Technology Co., Ltd.

The Company is also the exclusive sales representative of nylon fiber purchased through the Formosa Chemical & Fibre Corporation. With our aim to maintain high quality material, the Company introduced its internationally known high-polymer foam material, eFoam, and this is now manufactured for the global market.

Our Strength includes

A Green Process

All of Mega Master Technology's clean production technologies follow the Kyoto Protocol in spirit and meet in practice the European RoHS and REACH requirements. The company has obtained ISO 9001 certification. In response to the government's goal of net zero emissions, greenhouse gas inventory has been completed.

A. Irradiation Technology

The Electron Beam Irradiation Technology uses an accelerated electron beam to irradiate PE material, creating a crosslinked network structure which improves the overall performance of the foam.

B. Patented VCS (Vacuum Cylinder System) technology

This process minimizes the use of antioxidation agents.

C. Adhesive-free lamination technology

This process removes the need to use chemical substances and avoids solvent emissions.

D. Recycling and Reuse Technology

Our patented recycling and reuse technology recovers foam material trimmings for recycle or reuse.

Latest manufacturing equipment

More than two decades of manufacturing experience have enabled us to develop stable, high performance foam at competitive prices.

Expertise

Our Management includes personnel with more than 30 years in the foam industry. They are professionals who are always looking for ways to produce a better product.

Technology

With a fully staffed and professional R&D team, we maintain a leading edge in technology.

Our Strength includes

Continuous research and development

The integrated R&D team develops patented green products by working with universities as well as other public & private institutions. This includes the Industrial Technology Research Institute (ITRI), Chung-Shan Institute of Science and Technology (CSIST), Institute of Nuclear Energy Research, Tamkang University, Plastic Industry Development Technology Research Institute and the Taiwan Textile Research Institute.

Employee-Oriented Management

It is the Company's view that good quality control is the key factor for a successful operation. Training is provided with in-house training and seminars. Worker participation is encouraged with employee suggestions, Occupational Health and Safety measures and a welcoming environment.

Partner for a Green Earth

Since its inception, Mega Master Technology has dedicated itself to developing green products and has aggressively established Life Cycle Evaluation Management systems to promote the motto 'Manufacturing a green product is beneficial to ourselves, our customers and our society.

Contributions

The Company actively participates in charitable organizations, particularly local schools.

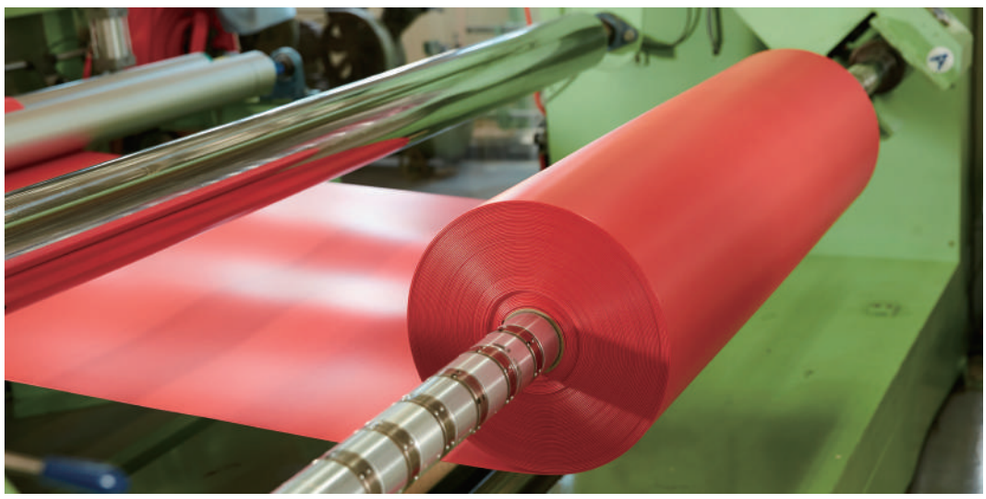
The Mega Master facility is located in Sanxia, Taiwan, and is a home to a diversity of bonsais and giant trees, many over six hundred years old. Care was taken, during redevelopment, to work around these trees, saving them for prosperity.

Advantages of eFoam

Even distribution of air holes

With its composite construction of innumerable closed cells, air holes are evenly distributed with approximately the same shape and size.
eFoam is highly stable, fire retardant, weather-resistant, solvent resistant, soft to handle and gives effective performance within the temperature range of -80℃~110℃.

The finish is smooth and can be produced in various colors. It is extremely durable.



Special features include

◎ Physically crosslinked closed cell polyolefin foam

◎ Density available: 25 - 300kg/M^3

◎ UL file Classification HF-1

◎ In compliance with REACH regulation

◎ In compliance with RoHS

◎ Thermal conductivity:
Maximum 0.0341W/mK@23℃ (ASTM C518)

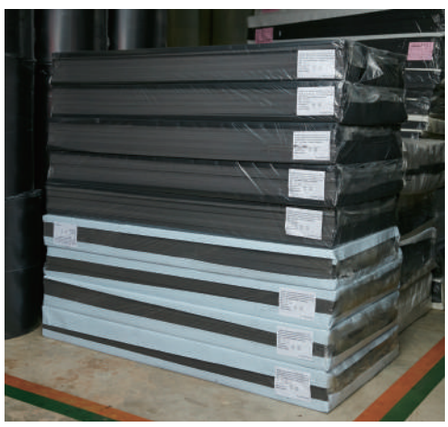
◎ Water absorption rate: 0.0003% (JISK 6767)

◎ Water vapor transmission: 0.158g/m^2.hr (ASTM E96)

◎ Effective operating temperature: -80 to +110℃

◎ Excellent Weather Resistance

◎ Excellent Compression Resistance



Roll supply

Our continuous production technique ensures consistent quality. Being in roll form makes it easier for shipment as well as for fabrication and installation. eFoam is light and its high elasticity allows multiple types of processing which allows customers to extend their products and meet new challenges.

Applications

1. Sealing

USE: Our PE foam can be used as a washer, ensuring a tight seal for food containers, cosmetics containers and bottles. It's suitable for protective packing material, including precision instruments and can be used as a shock absorbent for furniture doors and drawers.

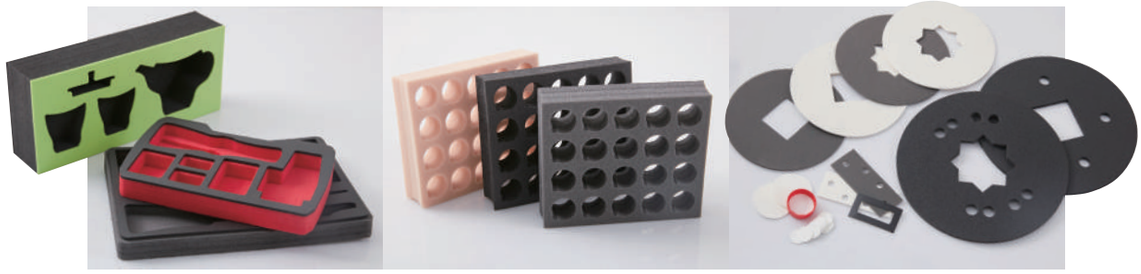
CHARACTERISTICS:

◎ Soft smooth surface with uniform cell structure

◎ Lightweight

◎ Weather resistant

◎ Low water absorption rate



2. Shoe Material

USE: Our PE foam can be used in shoe lining, insoles, stuffing and uppers.

CHARACTERISTICS:

◎ Lightweight

◎ Hydrolysis-resistant

◎ Shock-absorbant

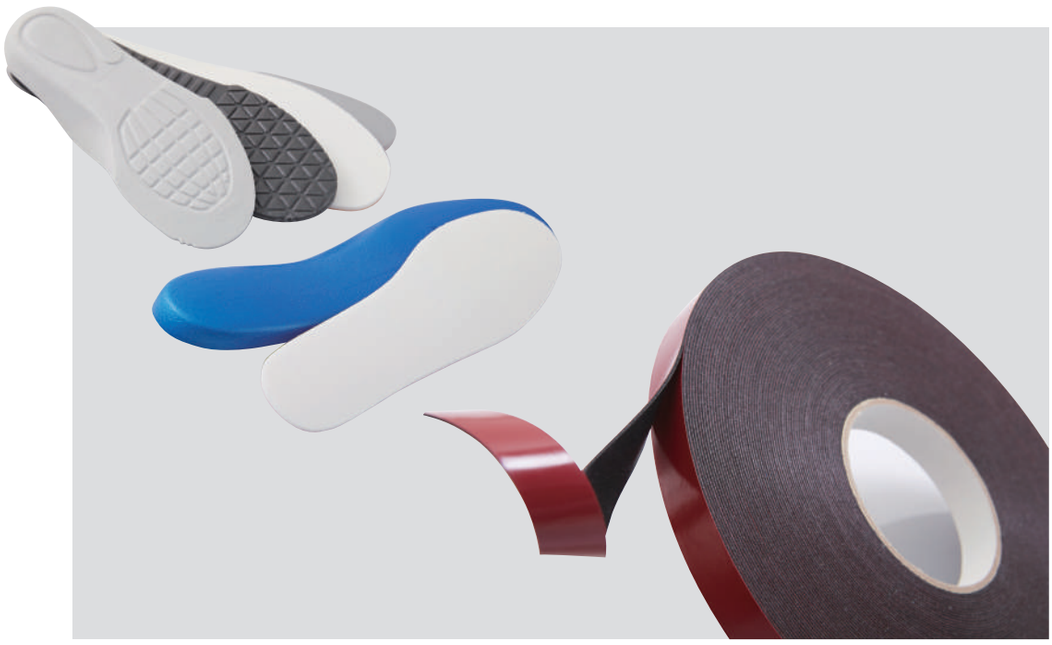
◎ Suitable for thermal press forming or die cut

◎ Suitable for glue sticking or hot sticking

◎ Can accept the drilling of holes to increase the ventilation

◎ Can be skived

◎ Resistant to cold temperatures without becoming brittle (low Tg)



3. Adhesive Tape

USE: Our PE foam can be used as an adhesive tape and is suitable for applications such as vehicle tape, medical foam pads, a washer for inclusion in electronic products, industrial double-side foam tape, building insulation tape and wallpaper.

CHARACTERISTICS:

◎ Extremely low water absorption

◎ Chemical resistant

◎ Long durability

◎ Excellent heat insulation and cold resistant without becoming brittle, making it suitable for use in an extensive temperature range

◎ The foam can be as thin as 0.2mm with 300%~500% elongation

◎ The evenness can be controlled within +/_5%

4. Green building and heat insulating material

USE: Our PE foam can be used for insulation in the roof or walls, a covering for air conditioner pipes, cold or hot water pipes, heat insulating for steel coils, a protective cushioning pad in parking lots, a protective cushion for children's play areas, a wooden floor pad, carpet liner and window sealing material.

CHARACTERISTICS:

◎ With its closed cell structure, our PE foam has extremely low water absorption

◎ Good thermal and acoustic insulation leading to effective energy saving

◎ It is resistant to cold temperatures without becoming brittle (low Tg)

◎ Hydrolysis-resistant, ensuring its effectiveness over an extensive temperature range

◎ Chemical resistant

◎ Lightweight

◎ Shock absorbent

The product meets RoHS standards as a fire retarding material (UL94 HF-1) and is suitable for working temperatures up to 110℃.

5. Vehicle industry

USE: Our PE foam can be used in vehicle instrument panels, door panels, watershield/acoustic shields, head liners, acoustic/insulation covers, water undershield, air duct, pillar seals, driving mirror gaskets, sun visors, trunk and wheelhouse covers and armrests.

CHARACTERISTICS:

◎ Extremely low water absorption

◎ Good thermal and acoustic insulation leading to effective energy saving

◎ Resistant to cold temperatures without becoming brittle (low Tg)

◎ Hydrolysis-resistant, ensuring its effectiveness over an extensive temperature range

◎ Chemical resistant

◎ Lightweight

◎ Shock absorbent

The product meets RoHS standards as a fire retarding material (UL94 HF-1, FMVSS 302) and is suitable for working temperatures up to 110℃.

6. Sports goods, floating materials

USE: Our PE foam can be used as a cushioning material for sporting gloves and protective equipment, gymnastics flooring, yoga pads, game cushions, skiing equipment, water skiing board. Flotation properties allow the product to be used for life vests and similar items.

CHARACTERISTICS:

◎ Extremely low water absorption

◎ Good thermal and acoustic insulation leading to effective energy saving

◎ Resistant to cold temperatures without becoming brittle (low Tg)

◎ Hydrolysis-resistant, ensuring its effectiveness over an extensive temperature range

◎ Chemical resistant

◎ Lightweight

◎ Shock absorbent

The double fine surface foam is shock absorbent and the non-glue process ensures strong adhesion to various synthetic fibers.

7. Knapsack leather goods, toys, jigsaws and other items used for leisure activities

USE: Our PE foam can be used for lining knapsacks, suitcases and various other leather goods. It is suitable for female underwear and swimsuits, and safe for children's toys.

CHARACTERISTICS:

◎ Low water absorption rate

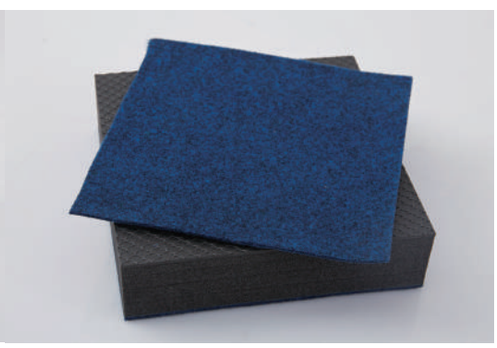
◎ Soft cushioning

◎ Suitable for use over an extensive temperature range

◎ Can be skived, creating thinner layers

◎ Suitable for glue sticking or hot sticking

◎ Available in many colors



Comparison between eFoam and the traditional foam material

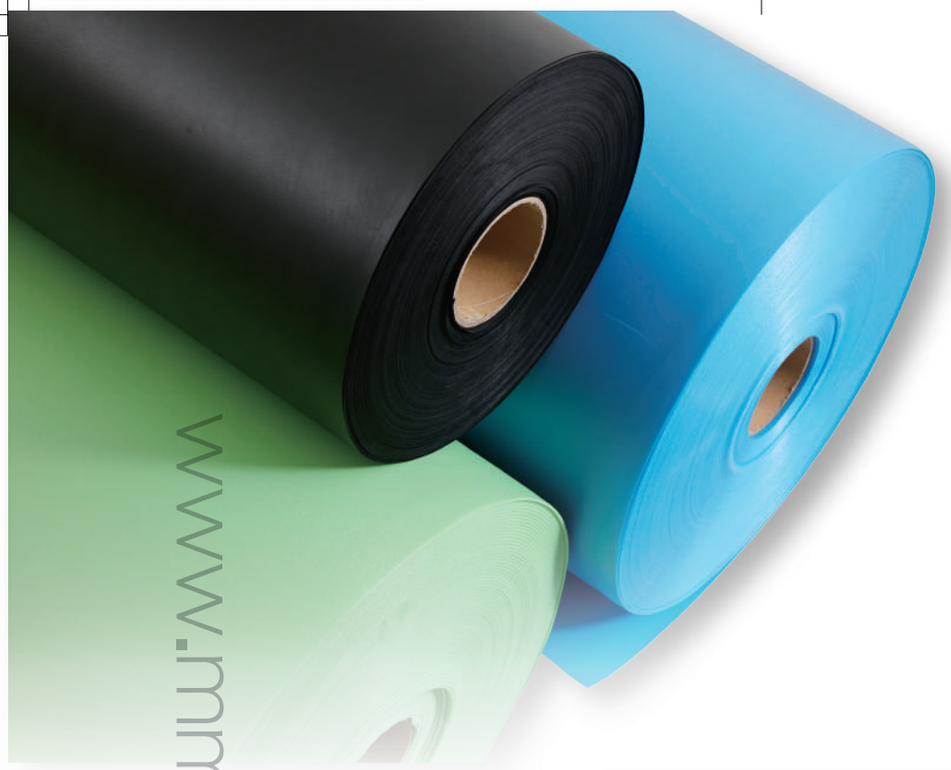
Unit	eFoam (Crosslinked PE Foam material)	PU Foam Material	PVC Foam Material	PS Foam Material
Foam Structure	Closed	Open	Closed	Closed
Crosslink Reaction	Irradiation	Chemical	None	None
Density g/cm3	0.03~0.034	0.017	0.14	0.032
Tensile strength kgf/cm² (Vertical) (Horizontal)	2.2 1.3	0.94 1.04	10.0	None
Elongation% (Vertical) (Horizontal)	150 130	179 212	111.5	None
Compression Strength kgf/cm² (25%) (50%) (75%)	0.35	0.026 0.033 0.058	0.65 1.48	2.46 3.13 5.53
Compression Set %	6.5	1.5	3.0	21.5
Ageing Resistance	A	D	B	C
Chemical Resistance	A	C	B	D
Water Resistance	A	D	B	B
Sound Absorption	C	A	C	D
Heat Resistance (℃)	80	100	60	70
High-frequency Processing	D	B	A	D
Heat Processing	A	D	B	B
Mold releasing agent	No	No	Yes	No
Floatability	A	D	B	A

A：Excellent ； B：Good ； C：General ； D：Poor

eFoam Properties

Expansion Ratio		3	4	5	8	10	12
Density (kg/m^3)		283.7~333.0	212.8~249.8	170.2~199.8	107.0~125.6	86.5~101.5	72.0~84.6
Tensile Strength (kgf/cm^2)	L	≧15.0	≧13.5	≧12.0	≧8.0	≧7.0	≧6.0
	W	≧12.0	≧10.5	≧9.0	≧6.5	≧5.0	≧4.0
Elongation (%)	L	≧270	≧250	≧230	≧210	≧200	≧190
	W	≧250	≧220	≧210	≧195	≧180	≧170
Tearing Strength (kgf/cm)	L	≧12.0	≧10.0	≧9.0	≧6.0	≧5.0	≧4.0
	W	≧9.0	≧8.0	≧7.0	≧5.0	≧4.0	≧3.0
25%Compression Strength (kgf/cm^2)		≧2.50	≧2.00	≧1.50	≧1.00	≧0.80	≧0.60
Dimensional Change on Heating (%)	L	≦+/-5	≦+/-5	≦+/-5	≦+/-5	≦+/-5	≦+/-5
	W	≦+/-5	≦+/-5	≦+/-5	≦+/-5	≦+/-5	≦+/-5
Water Absorption (g/cm^3)		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hardness		77+/-4	71+/-4	65+/-3	51+/-3	44+/-3	40+/-3

	15	18	20	25	30	35	40	Test Method
	58.2~ 68.4	48.6~ 57	44.2~ 51.8	35.7~ 41.9	30.1~ 35.3	26.3~ 30.9	20.0~ 27.0	JIS K 6767
	≧4.8	≧4.0	≧3.2	≧2.8	≧2.2	≧1.8	≧1.5	JIS K 6767
	≧3.0	≧2.7	≧2.0	≧1.8	≧1.3	≧1.0	≧0.9	
	≧180	≧175	≧170	≧160	≧150	≧140	≧130	JIS K 6767
	≧160	≧155	≧150	≧140	≧130	≧120	≧110	
	≧3.5	≧3.0	≧2.5	≧1.8	≧1.5	≧1.0	≧0.9	JIS K 6767
	≧2.5	≧2.2	≧2.0	≧1.5	≧1.1	≧0.8	≧0.7	
	≧0.50	≧0.450	≧0.400	≧0.35	≧0.30	≧0.25	≧0.20	JIS K 6767
	≦+/-5	≦+/-5	≦+/-5	≦+/-5	≦+/-5	≦+/-5	≦+/-5	JIS K 6767
	≦+/-5	≦+/-5	≦+/-5	≦+/-5	≦+/-5	≦+/-5	≦+/-5	
	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	JIS K 6767
	34+/-3	31+/-3	28+/-2	24+/-2	22+/-2	20+/-2	18+/-2	JIS S 6050 SRIS 0101 (GS-701N)



www.mmefoam.com

Mega Master Technology Co., Ltd. add No 7, Tianfu, Sanxia Dist., New Taipei City 23742, Taiwan, R.O.C.