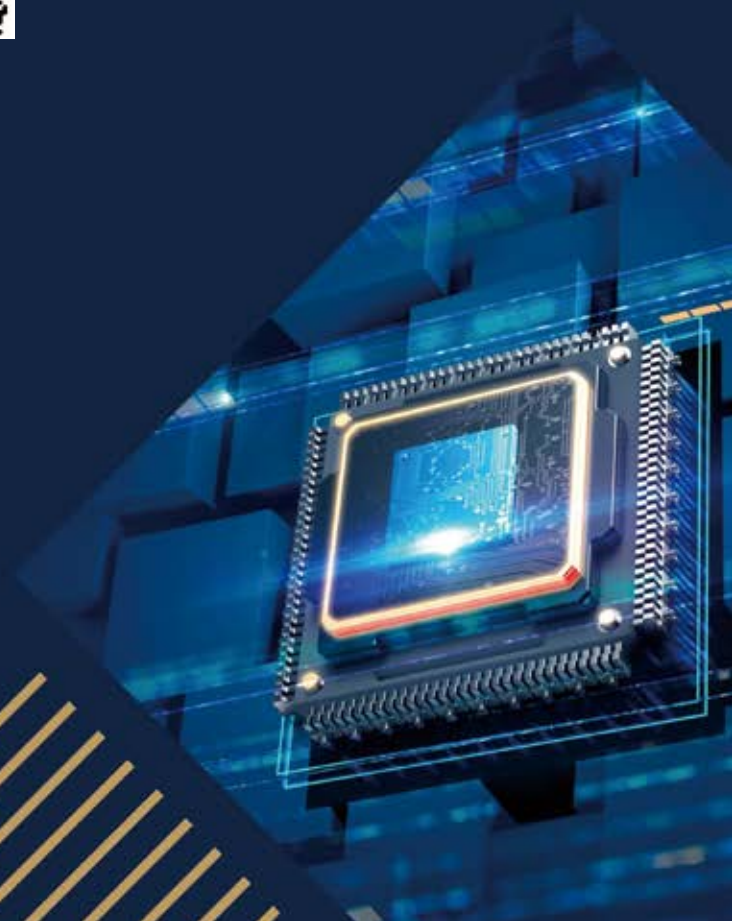
The Best Value
Certified by Gyeonggi Province
경기도유망중소기업

Global Leader in High-performance · Advanced Composite Materials

Coating-Foaming-Patterning and beyond

ICH CO., LTD.

INFINITE CHANGE
through INFINITE CHALLENGE



ICH Core Competence

We maximize cost efficiency and shorten lead times through vertical integration of upstream processes—PU foaming and electroplating/electroless plating.

· New composite–material synergies by integrating adhesive core materials with PU foam.
· Development of high–value–added solutions, from raw materials to finished products

ICH Process Capabilities

Flexible response to customer needs-from raw materials and semi-finished products to finished products

Raw materials → In–house capabilities for all processes (coating, plating, foaming, and converting) → Finished products

Adhesive Coating Line (Vietnam / India)



- Composite materials for automotive electronics and OLED
- Core materials for noise–prevention gaskets

Press Line (Vietnam)



- MFA and new film patterning products
- Film antenna patterning for new customers

PU Foam Line (Korea)



- Composite materials for automotive electronics and OLED
- Core materials for noise–prevention gaskets

Plating Line (Korea)



- In–house solution of plating issues in film antennas(MFA)
- Plating technology for new heat–dissipation materials

· In–house core materials across products and processes: PU foam for gaskets, Ni plating for MFA, embossed tapes for OLED composite materials, etc.
· Commercialization of high–value–added products through customer–tailored solutions: integrated PU foam–embossed products, integrated PU foam–embossed–aluminum foil products, etc.

We drive cash generation via cost innovation and process improvements while expanding into high-value thermal-management materials.

Core Technologies

Basic Materials Business

- Electro and electroless surface treatment
- Optimized formulation for pressure–sensitive adhesives
- Optimized formulation for ultra–thin polyurethane foam

In-house production of plating materials, pressure-sensitive adhesive materials, and polyurethane foam materials enhances the cost competitiveness of finished products.

Composite Materials Business

- Multilayer structuring technology
- Ni–Cu thin–film wrapping technology for grounding
- Core material technologies for thermal control, including heat dissipation and insulation

Plating, Coating and foaming processes enable multilayer, multifuctional structures for high quality products.

Electronic Components Business

- Pressure–sensitive adhesive–based room–temperature press patterning technology
- Compound hybrid patterning technology
- Laser hybrid patterning technology

Patterning technology drives the expansion into flexible circuit products and advanced material applications.

Products and Business Portfolio

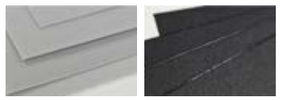
PSA Tape Materials

- Acrylic adhesive tapes
- Embossed tapes, thermal dissipation tapes
- Conductive tapes for IT devices



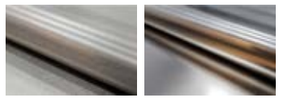
Elastomeric Materials

- Mi–Cell (PU foam, flame–retardant PU foam, conductive EMI foam)
- Hi–Cell(Hybrid foam)
- Silicon(Silicone foam)



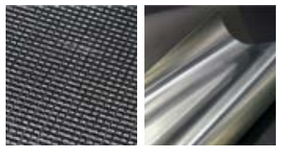
Plated Fabrics & Tapes

- Ni+Cu Plated Fabric
- Ni Plated Cu Foil



Composite Materials

- Embossed composite PU foam for OLED thermal dissipation, Embossed–aluminum composite PU foam
- Polyurethane skin (protective film)
- Embossed tape for OLED



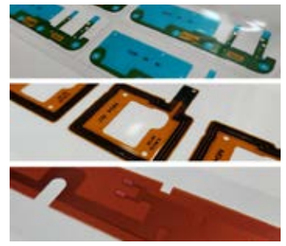
Thermal Control Materials

- Flame–retardant ultra–thin polyurethane foam
- Thermal interface materials (TIM/PCM)
- Insulation materials (aerogel)
- Materials for vapor chamber assembly



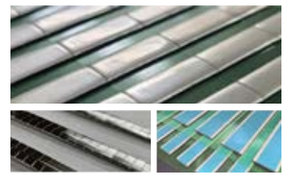
MFA (Metal Foil Antenna)

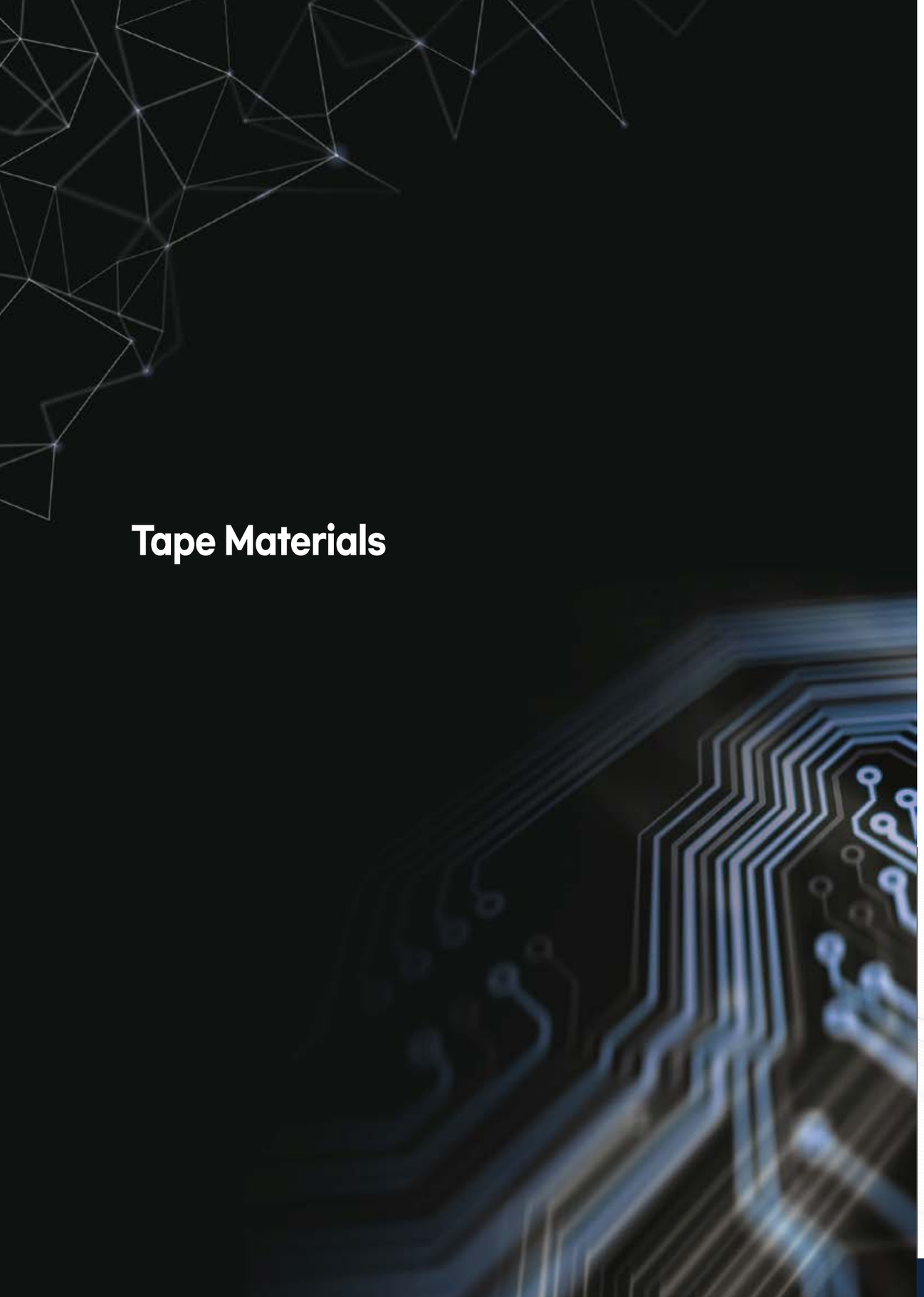
- Film antennas for smartphones (e.g., LTE, 5G, GPS, Wi–Fi, and NFC)
- Smart antenna circuits for automotive electronics



EMC Gaskets

- Conductive foam gaskets
- EMI shielding gaskets
- Low–resilience gaskets





Tape Materials

Acrylic Adhesive Tapes





■ Product Overview and Features

- Use of acid-free adhesive without oxides to prevent corrosion on substrates
- Development and customization of adhesive and carriers (base material) for each application and usage

■ Applications

- Mobile phones, laptops, tablets, monitors, wearable devices, and other IT devices
- OLED panels for IT devices and automotive electronics, as well as injection-molded interior parts
- Protective films to maintain the surface quality of semi-finished and finished products during assembly

■ Key Physical Properties

Grade	Type	Thickness (㎛)	Peel Stength(gf/25mm)		Color
			Inside	Outside	
ICH-2T10	Non-Carrier	10±3	over 800		Clear
ICH-613D	Double Side	13±3	over 900	over 900	Clear
ICH-621D	Double Side	21±3	over 900	over 900	Clear
ICH-2040H	Double Side	40±5	over 1600	over 1600	Clear
ICH-2060H	Double Side	60±5	over 1900	over 1900	Clear
ICH-250	Double Side	52±2	over 1500	over 1300	Clear
ICH-643	Double Side	63±4	over 1000	over 2700	White
ICH-PES100D	Double Side	100±5	over 2400	over 800	Clear

Silicone Protective Film



■ Product Overview and Features

- Film with surface hardness to prevent scratches during assembly and transport
- Use of acid-free adhesive without oxides to prevent corrosion on substrates
- Development and customization of adhesive and carriers (base material) for each application and usage
- Minimal film deformation and discoloration under high/low temperature and humidity changes

Silicone Protective Film – Application Example



■ Applications

- Mobile phones, laptops, tablets, monitors, wearable devices, and other IT devices
- OLED panels for IT devices and automotive electronics, as well as injection-molded interior parts
- Protective films to maintain the surface quality of semi-finished and finished products during assembly

■ Key Physical Properties

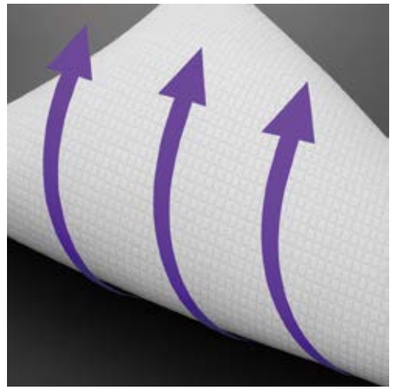
Grade	Carrier film	Thickness (㎛)	Peel Stength (gf/25mm)	Anti-Static (Ω)	Color
ICH-5050	PET	53±3	5±2	–	Clear
ICH-75010N	PET	53±3	10±3	–	Clear
ICH-75015N	PET	53±3	15±3	–	Clear
ICH-75005(AS)	PET	54±3	5±2	$1.0\times10^{5}\sim 9.9\times10^{9}$	Clear
ICH-37503	PET	78±3	3±1	–	Clear
ICH-7575	PET	78±3	5±2	–	Clear
ICH-77505(AS)	PET	80±3	5±2	$1.0\times10^{5}\sim 9.9\times10^{9}$	Clear

Embo Acrylic Adhesive Tapes



■ Product Overview and Features

- Embossing patterning in the adhesive layer, optimized and customized for each application and substrate
- Air-release adhesive material specialized for lamination of films and OLED panels, allowing bubbles to escape on large flat surfaces
- Control of surface contact area in the adhesive layer to finely adjust initial tack, ensuring bonding performance and re-workability
- Development and customization of adhesive and carriers (base material) for each application and usage



Bubble Free

■ Applications

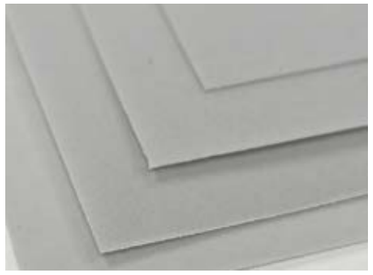
- Electronics and display: lamination of smartphone, tablet, and laptop panels
- Industrial protective films: bubble removal during large-area film lamination
- IT materials: improving assembly in doublesided tapes

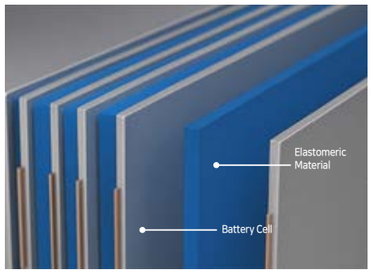
■ Key Physical Properties

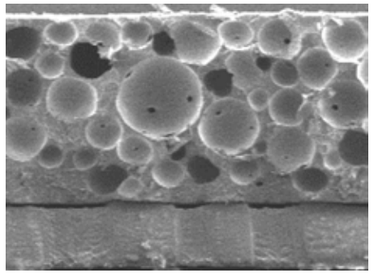
Grade	Thickness (㎛)	Peel Stength(gf/25mm)		Holding Power	Color	Remarks
		Embo Side	Non-Embo Side			
ICH-EB30D-P	30±6	over 700	over 700	Max. 1mm	Black	Normal Embo
ICH-EB40D-P	40±6	over 800	over 700	Max. 1mm	Black	Normal Embo
ICH-2043MEB	40±6	over 1600	over 1000	Max. 1mm	Black	Micro Embo

Elastomeric Materials

Polyurethane Foam



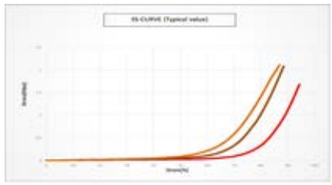




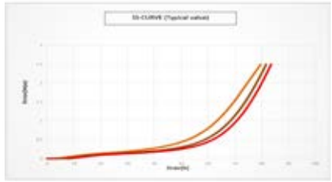
■ Product Overview and Features

- Capable of selectively foaming open cell, closed-cell, and semi-open cell pore structures
- Thin-film form available from 50㎛ to 3,000㎛
- Advanced Fuctionality: hardness, flame-retardancy, waterproofing, conductivity, shock absorption, sound absorption, and breathability
- Applicable to various materials: polyurethane, acrylic, silicone, hybrid, etc.

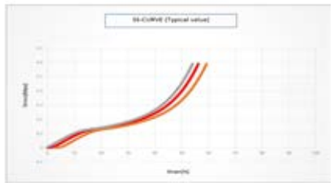
Soft type



Standard type



Hard type



■ Applications

- Communication IT devices: smartphones, tablets, and other wearable devices
- Automotive information display devices (e.g., CID, CDD, and IVI) for vehicle information display and control
- EV battery modules for cushioning between cells

■ Key Physical Properties

Polyurethane Foam

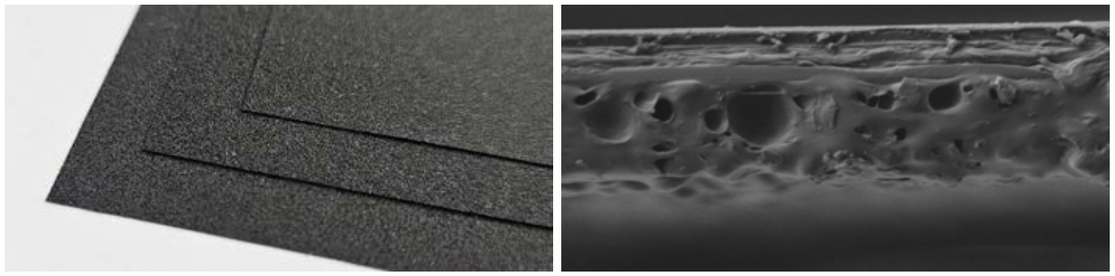
Structure	Product Name	Thickness (㎛)	Color	CFD(MPa) @25%	Density (g/㎤)	Foam's cohesion failure strength (gf/inch)
PU Foam Release Liner	Microcellular PU Foam	50 ~ 3,000	Black/Gray	0.01~0.60	0.25~0.9	MIN. 800
PU Foam PET	Foam with PET Film	50 ~ 3,000	Black/Gray	0.01~0.60	0.25~0.9	MIN. 800

Polyurethane Foam Tapes

Structure	Grade	Type	Thickness (㎛)	Peel Strength (gf/25mm)	Color	Remarks
PU Foam Backing Adhesive Release Liner	ICH-PES25S	Single Side	75±5	over 10	Clear	Silicone PSA
	ICH-PEA50	Single Side	75±5	over 2400	Clear	Acryl PSA

Elastomeric Materials

Acrylic Foam



■ Product Overview and Features

· Closed-cell pore structure
· Thin-film form available from 50 to 150 ㎛
· Advanced functionalities: waterproofing and shock absorption through various densities

■ Applications

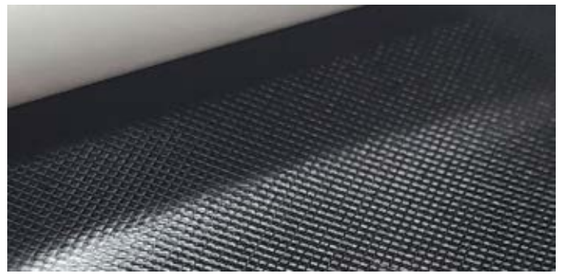
· Communication IT devices: smartphones, tablets, and other wearable devices
· Automotive information display devices (e.g., CID, CDD, and IVI) for vehicle information display and control

■ Key Physical Properties

Grade	Thickness (㎛)	Density (g/㎤)	CFD		Color
			25%	50%	
ICH-2010AFS	100	0.4 ± 15%	0.15 ± 20%	0.4 ± 20%	Black
ICH-2013AFS	130	0.4 ± 15%	0.15 ± 20%	0.4 ± 20%	Black
ICH-2015AFS	150	0.4 ± 15%	0.15 ± 20%	0.4 ± 20%	Black

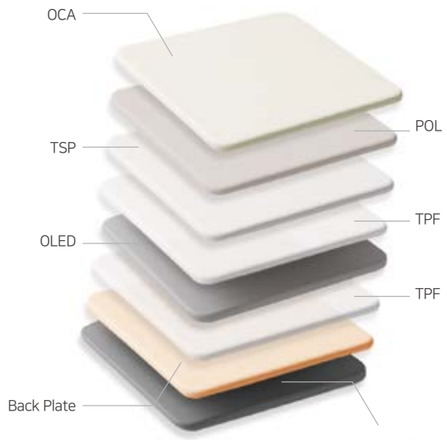
Composite Functional Material for OLED Panels (Cushioning and heat-dissipating dual-capability material)





■ Product Overview and Features

- Protection of OLED panels by absorbing and dissipating external shocks through PU foam
- Efficient heat dissipation from OLED panels
- Application of embossed tape prevents air bubbles and improves adhesion to substrates
- Cost effective aluminum-based composite material with fully in-house manufacturing capability



Composite functional material for OLED panels

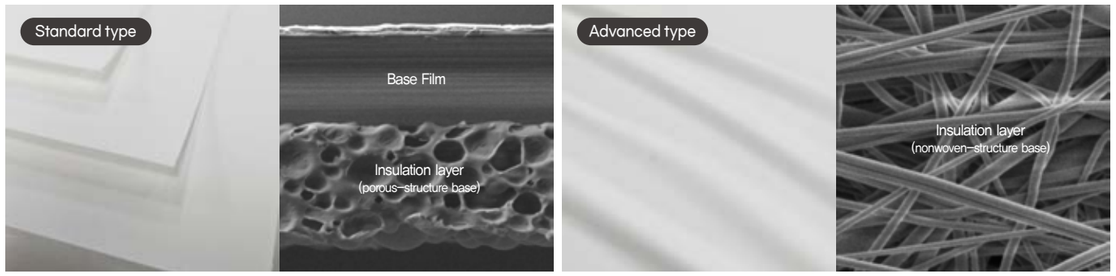
■ Applications

- Communication IT devices: smartphones, tablets, and other wearable devices
- Automotive information display devices (e.g., CID, CDD, and IVI) for vehicle information display and control
- EV battery modules for cushioning between cells

■ Key Physical Properties

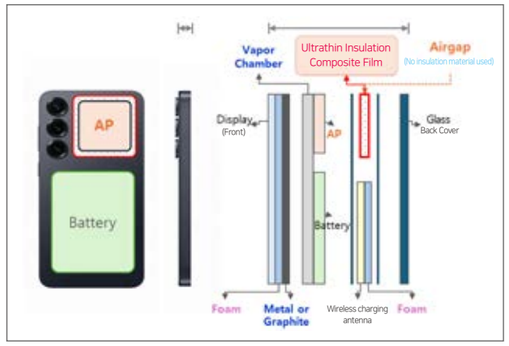
Grade	Thickness (㎛)	Density (g/㎤)	Peel Stength (gf/25mm)	CFD (Mpa)			Product structure
				10%	17%	33%	
ICH-125AF38(EC)	205±10%	1.05±20%	1600±850	0.024±30%	0.024±25%	0.156±25%	Metal foil / PU Foam / Non-Embo PSA / Black PET / Embo PSA
ICH-FE04-280-HN	280±10%	0.60±16%	over 325	0.12±20%	Max. 1mm	Black	PU Foam / Black PET / Embo PSA

Thermal Insulating Dual-Capability Materials



■ Product Overview and Features

- Core without thermally conductive molecules to minimize heat transfer (conduction/convection)
- Ultrathin design using polyurethane foaming and thin-film coating technologies
- Composite material based on flexible substrates instead of mechanically weak silica-based materials



■ Applications

- Electronics and semiconductor industry (e.g., AI semiconductors and autonomous driving automotive semiconductors)
- Battery and energy storage devices (e.g., EV batteries, ESS, solar energy systems)
- Medical and healthcare containers for pharmaceuticals, surgical equipment, and device temperature control

■ Key Physical Properties

Standard Type

Grade	Thickness (㎛)	Density (g/㎤)	Thermal Conductivity (W/m·K)	permittivity (@10 GHz)	Peel Stength (gf/25mm)	Color
ICH-2050WTI	50±10%	0.63±20%	0.029	2	800	White
ICH-2100WTI	100±10%	0.35±20%	0.027	1.7	900	White

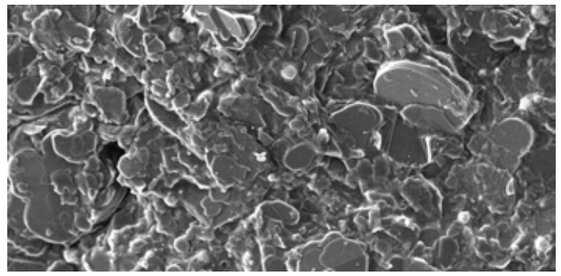
Advanced Type

Grade	Thickness (㎛)	Density (g/㎤)	Thermal Conductivity (W/m·K)	permittivity (@10 GHz)	Peel Stength (gf/25mm)	Color
ICH-2100WTI	20 ~ 40	0.3 ~ 0.47	0.008 ~ 0.01	1.28~1.32	900	White

Thermal Control Materials

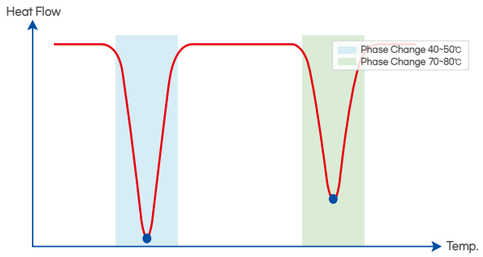
PCM (Phase Change Materials)

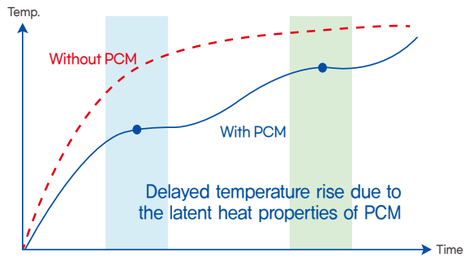




■ Product Overview and Features

- Advanced material with phase-change properties for absorbing and releasing heat (energy) in response to specific temperatures
- Temperature regulation, thermal shock mitigation, and energy storage for substrates
- Passive solution requiring no power consumption
- Sheets form with controlled melt & flow behavior under high-temperature conditions





■ Applications

- Electronics and semiconductor (e.g., AI semiconductors and autonomous driving automotive semiconductors)
- Battery and energy storage devices (EV batteries, ESS, solar energy systems)
- Medical and healthcare containers for pharmaceuticals, surgical equipment, and device temperature control

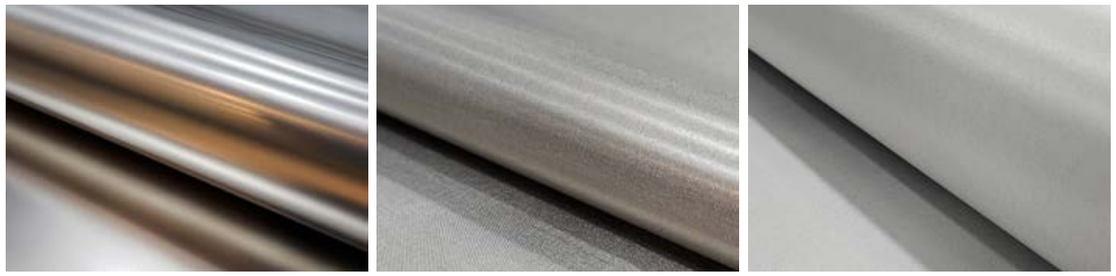
■ Key Physical Properties

Properties	Unit	Value Range
Thermal Conductivity	W/m · K	1.0~3.0
Latent Heat	J/g	90~200
Phase Change Temperature	℃	30~100
Operating Temp	℃	−40~150
Thermal Resistance	Ω·cm	Application-dependent
Thickness	mm	0.1~1
Density	g/cm³	<2.0
Viscosity	cps @ 45~80℃	1,000~10,000
	Pa·s @ 45~80℃	1~10
Peel Strength	gf/inch	50~150

EMC※ Materials

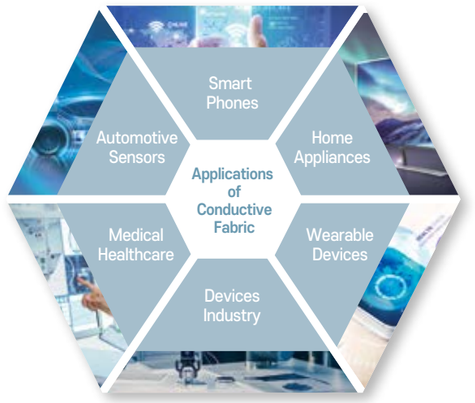
※ Electro Magnetic Compatibility

Conductive Fabric & Tapes



■ Product Overview and Features

- Electroplated and electroless-plated conductive fabrics and tape products
- Improved corrosion resistance through nickel surface coating on fabric and foil
- Conductive and thermally conductive pressure-sensitive adhesives to suppress electrical and thermal resistance



■ Applications

- Internal heat dissipation for communication IT devices (e.g., smartphones, tablets, and wearable devices)
- Shielding for automotive electronic heating components and various sensors

■ Key Physical Properties

Conductive Fabrics

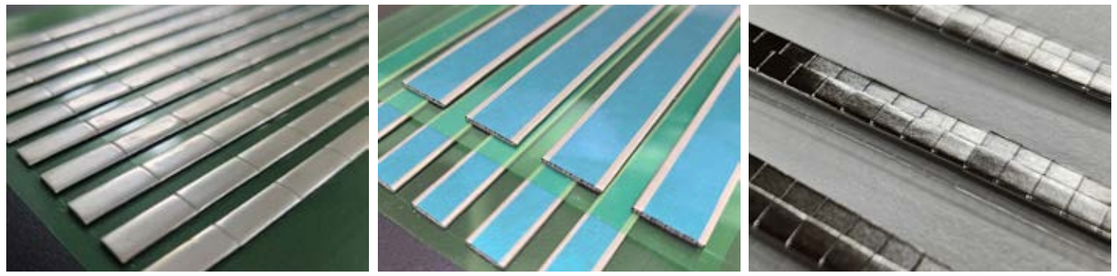
Products	Plating	Thickness (μm)	Conductivity		Target equipment and features	Remarks	Structure	SEM image	Application
			Surface Resistance	Contact Resistance					
Nickel plated copper foil	Electro	12 ~ 70	〈 0.1 Ω	〈 0.1 Ω	– High-speed roll-to-roll plating equipment (525 mm width: copper substrate) – Double-sided plating thickness control via shielding equipment – Accumulator system to minimize production loss	–Corrosion resistance via post-treatment ①85% 85℃ 120 hr test OK(IEC-60068) ②SaltSpray 24 hr test OK(KSD9502)	Ni Cu Ni		Shielding Heat dissipation Antenna terminals
Conductive Fabric & Non-woven Fabric	Electroless	18~180	〈 0.1 Ω	〈 0.1 Ω	– Roll-to-roll plating equipment (1,280 mm width: woven and non-woven substrates) – Accumulator system to minimize production loss	– Thickness compression through the roll press process – Tape processing for shielding and heat dissipation, including top coating and Elcoat adhesive – Shielding effect: minimum 60 dB (99.9% shielding performance)	Ni Cu Ni PET		Electromagnetic interference (EMI) filtering

Conductive Fabric Tapes

Grade	Type	Thickness (μm)	Peel Stength (gf/25mm)	Resistance (mΩ)		carrier film	Remarks
				Contact	Surface		
ICH-A12C	Non-Carrier	12 ± 3	over 900	Under 100	Under 30	Non-carrier	
ICH-2210BC	Single Side	25 ± 5	over 1000	Under 200	Under 200	Copper	Black Coated Copper
ICH-30FC	Single Side	30 ± 5	over 1000	Under 100	Under 100	Conductive Fabric	
ICH-55FCD	Double Side	55 ± 5	over 1000	Under 100	Under 100	Conductive Fabric	
ICH-110FCJS	Single Side	110 ± 10	over 1600	Under 100	Under 100	Conductive Fabric	

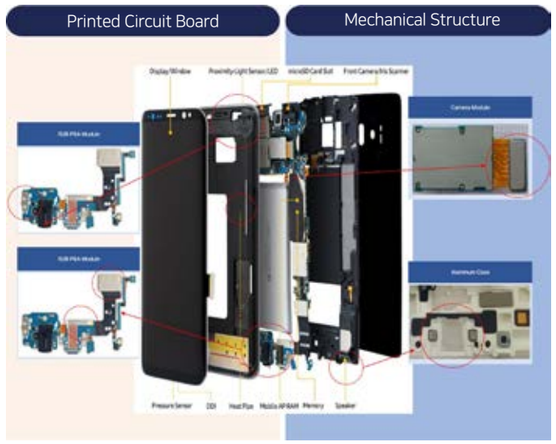
EMC Materials

Noise-Prevention Gaskets



■ Product Overview and Features

- Multiple functions, including noise prevention, cushioning, and heat resistance (multilayer structuring)
- Development and commercialization through core material technologies
- Customizable roll-type products for specific customers (e.g., injection molding automation equipment)



Examples of gasket application in smartphones

■ Applications

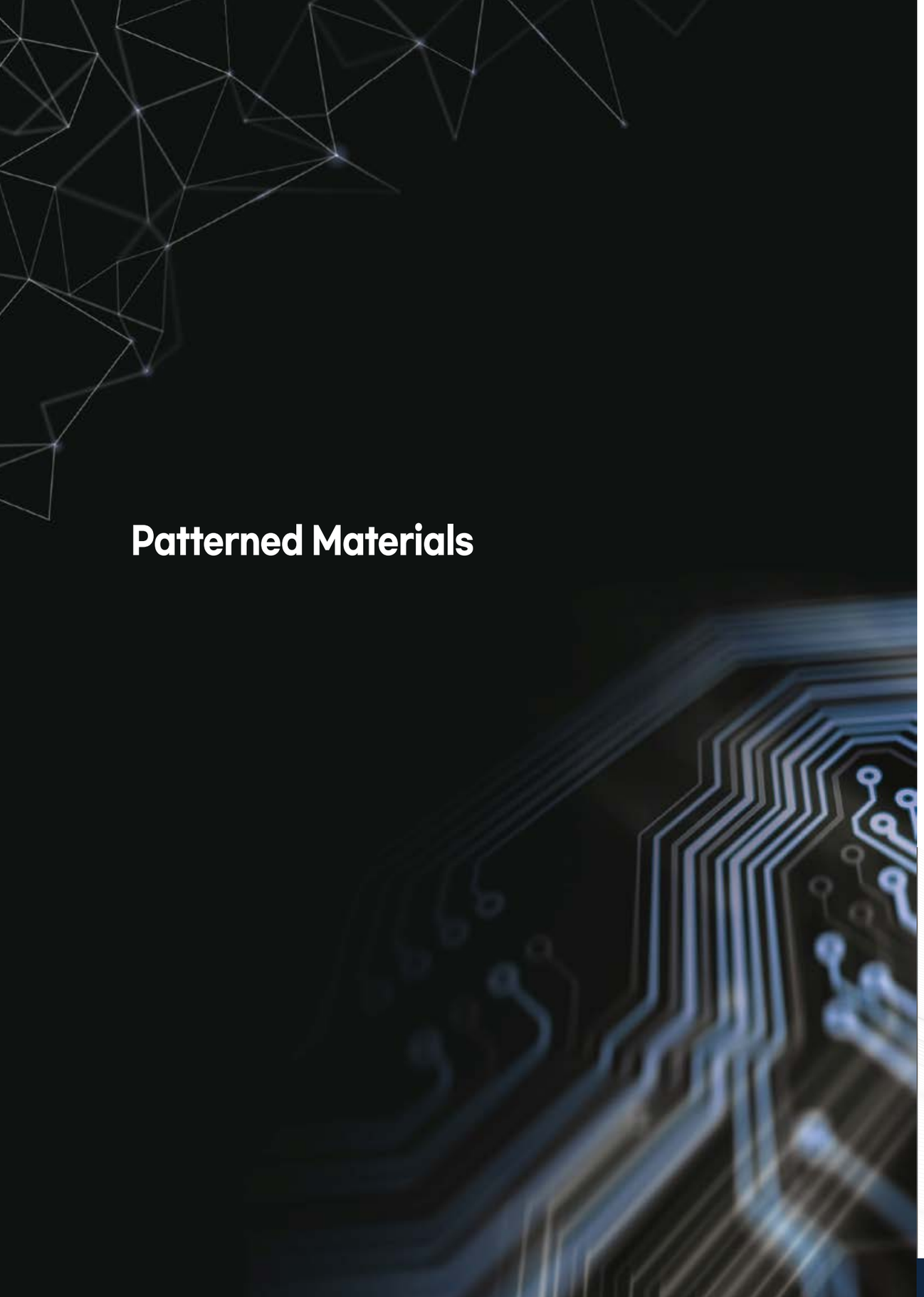
- Communication IT devices: smartphones, tablets, and other wearable devices
- Automotive electronic displays (e.g., CID, CDD, and IVI) for vehicle information display and control

■ Key Physical Properties

Properties	P TYPE	C TYPE	CF TYPE
Compression ratio	30~50%	30~50%	30~50%
Recovery rate	78%	78%	77%
Resilience	Medium	Medium	Medium
Processability	Manufacturable into all shapes	Sizes ≥ 3 mm × 3 mm Multiple thicknesses available	Sizes ≥ 2 mm × 2 mm Multiple thicknesses available
Room-temperature resistance	0.1Ω/□	0.09Ω/□	0.09Ω/□
Remark	Reduced conductivity for sizes below 3 mm	Excellent recovery Enhanced conductivity Heat-dissipation functionality	Excellent recovery Enhanced conductivity

– The sample properties are based on a 0.5 mm thickness

– The compression ratio, recovery rate, and resilience for C TYPE & CF TYPE are adjustable by changing the internal foam

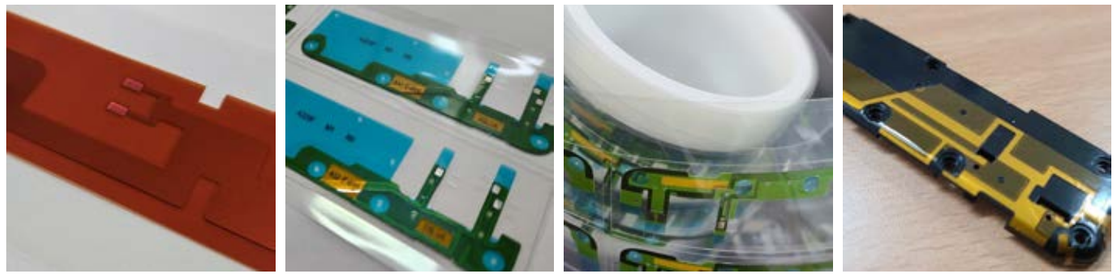


Patterned Materials

Patterned Materials

MFA (Metal Foil Antenna)

UL ECV2809-2 obtained using recycled materials



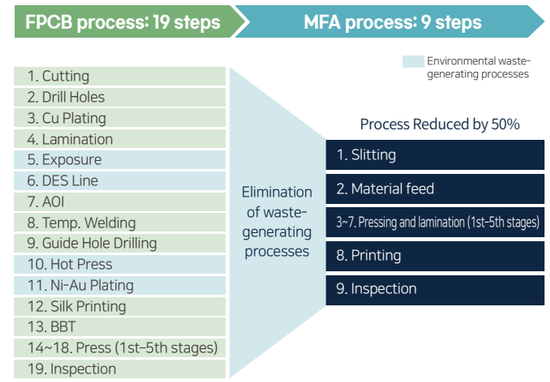
■ Product Overview and Features

- Ultrathin film technology for 5G thin-film antennas and patterned electronic components(product: MFA)
- Environmentally friendly room-temperature press patterning for the development of various communication antennas
- Narrow pitch (minimum 0.1 mm between circuits) enabling detailed and precise circuit shapes (products: NFC, Eco Flex)

■ Applications

- 3G/4G/LTE/5G communication IT devices (e.g., smartphones, tablets, and wearable devices)
- Automotive electronic antennas and various sensors (e.g., smart keys, GPS, wireless charging, Bluetooth, and tire pressure sensors)

Process Optimization and Environmentally Friendly Technology



■ Key Physical Properties

PI Single Side Tape ICH133P

Classification	Unit	Typical Values	Measurement	Remarks
Total thickness	㎛	35±15%	Thickness gage	ASTM D374
Width	mm	1,000	–	ICH TM
Appearance	–	Pass	–	ICH TM
Color	–	Amber	–	ICH TM
Adhesion	gf/inch	Over 1,500	UTM	ASTM D3330
Holding Power (24hr)	–	Pass	–	ICH TM
RoHs, Halogen	–	Pass	–	IEC 62321
Phthalates	–	Pass	–	IEC 62321

Ni Plated CopperFoil_ICH NB12

items	unit	typical value	Remarks
thickness	㎛	28 ± 3	thickness gauge
surface resistance	Ω	< 2.0	Hioki3244-60
color conductive side	appearance	silver	–
color non-conductive side	appearance	black	–

PET Double side Tape_ICH 643-10

items	unit	typical value	Remarks
Total tape thickness	㎛	71 ± 4	ASTM D3652
Adhesion to SUS ①	gf/in	≥ 1000	ASTM D3330, 30min @25℃, 180° peel with 300mm/m
Adhesion to SUS ②	gf/in	≥ 2700	ASTM D3330, 30min @25℃, 180° peel with 300mm/m
Color	–	White	Visual

ICH Global Network





GUNPO

Address	Gunpo, Gyeonggi-do, Korea
Technology	Foaming
Product	PU Foam
Tel	+82-70-4187-2061



VIETNAM ICH Cube

Address	Bac Ninh Province, Vietnam
Technology	Converting, Adhesive Coating
Product	MFA, MPA, Tape
Tel	+84-204-3875-368



HWASUNG

Address	Hwasung, Gyeonggi-do, Korea
Technology	Foaming
Product	PU, Acryl, Silicone Foam
Tel	+82-70-4187-2061



INDIA CH Component

Address	Greater Noida, India
Technology	Converting, Adhesive Coating
Product	Gasket, Tape
Tel	+91-98106-08213



ANSAN

Address	Ansan, Gyeonggi-do, Korea
Technology	Plating
Product	Electro / Electroless Plating
Tel	+82-70-4187-2061