

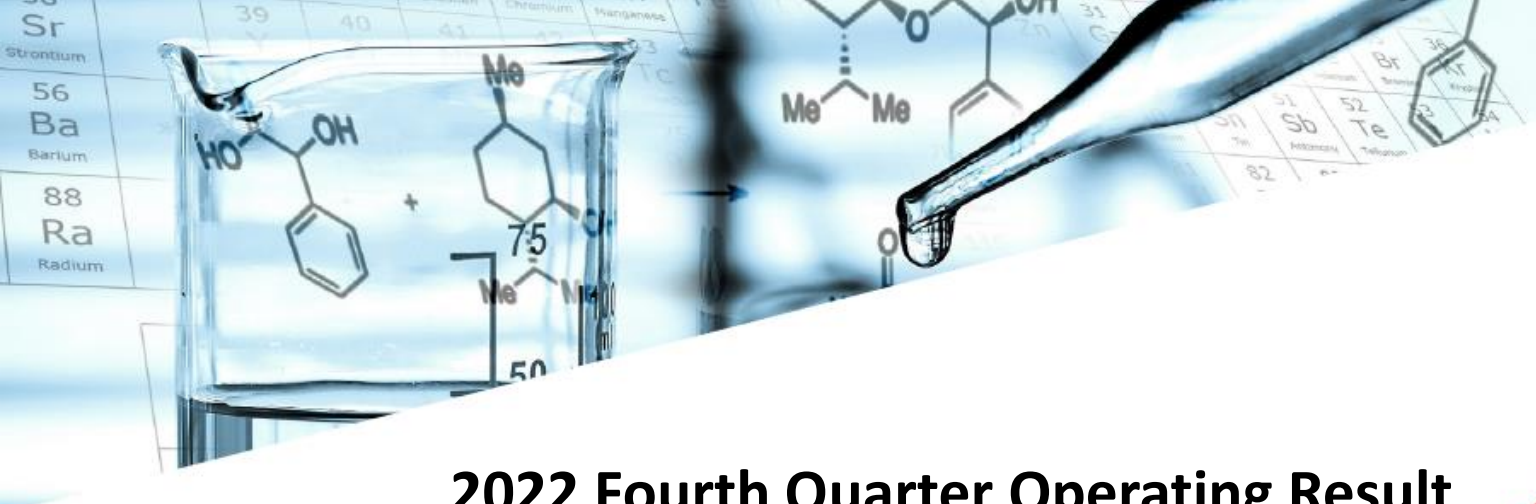


長興材料

ETERNAL MATERIALS

Elements of Infinite Possibilities





**2022 Fourth Quarter Operating Result
&
Synthetic Resin Division : New Opportunities Under
ESG Sustainability Trend**

Presenter : Director, Chen-yi Lin (Synthetic Resin Division)

B.C.Liu (spokesperson)

Date : 2023/03/17

Agenda



1. 2022 Fourth Quarter Operating Result
2. Synthetic Resin Division : New Opportunities Under ESG Sustainability Trend





2022 Fourth Quarter Operating Result



Financial Information-Balance Sheets & Key Indices



	2022		2021		2020		Unit : TWD Millions
	Amount	%	Amount	%	Amount	%	
Cash and cash equivalents and current financial assets	6,671	<u>11</u>	4,444	<u>7</u>	6,170	<u>11</u>	
Accounts receivable	17,132	<u>29</u>	20,071	<u>33</u>	17,523	<u>31</u>	
Inventories	9,716	<u>16</u>	10,678	<u>18</u>	7,493	<u>13</u>	
Financial assets	3,155	<u>5</u>	3,506	<u>6</u>	3,344	<u>6</u>	
Property, plant and equipment	17,473	<u>29</u>	16,369	<u>27</u>	16,623	<u>30</u>	
Total Assets	59,455	<u>100</u>	60,536	<u>100</u>	56,189	<u>100</u>	
Short-term borrowings	5,364	<u>9</u>	4,588	<u>8</u>	4,404	<u>8</u>	
Current portion of long-term borrowings	3,040	<u>5</u>	4,326	<u>7</u>	2,211	<u>4</u>	
Long-term borrowings	13,988	<u>24</u>	12,506	<u>21</u>	13,185	<u>23</u>	
Total Liabilities	34,384	<u>58</u>	35,869	<u>59</u>	32,950	<u>59</u>	
Total Equity	25,071	<u>42</u>	24,667	<u>41</u>	23,238	<u>41</u>	
Key Financial Ratios							
Average cash collection days	141		138		159		
Average days required for sale	98		85		93		
Current ratio (%)	206		190		210		

Financial Information-Statements of Comprehensive Income



	2022		2021		2020		Unit : TWD Millions
	Amount	%	Amount	%	Amount	%	
Operating Revenue	49,014	100	50,471	100	38,370	100	
Gross profit	10,163	21	10,694	21	8,886	23	
Operating expenses	(6,886)	(14)	(6,599)	(13)	(5,747)	(15)	
Operating Income	3,277	7	4,095	8	3,139	8	
Non-operating income and expenses	238	0	337	1	6	0	
Net profit attributable to owners of the company	2,618		3,549		2,543		
Key Financial Ratios							
Net profit margin (%)	5		7		6		
EPS	2.15		2.86		2.05		
ROE (%)	11		14		11		

Financial Information-Cash Flow Statements



	2022	2021	2020	Unit : TWD Millions
	Amount	Amount	Amount	
Cash and cash equivalents at the beginning of the year	4,289	6,108	6,010	
Cash flows from operating activities	6,581	750	4,148	
Acquisition of property, plant and equipment	(2,783)	(2,049)	(1,458)	
Increase (decrease) in borrowings	681	1,743	(997)	
Dividends paid	(1,860)	(1,860)	(1,736)	
Other items	(1,568)	(216)	134	
Effects of exchange rate changes on cash and cash equivalents	110	(187)	7	
Cash and cash equivalents at the end of the period	5,451	4,289	6,108	
Free cash flow	3,799	(1,299)	2,690	

Note: Free cash flow=

Cash flows from operating activities - Acquisition of property, plant and equipment



- Synthetic Resin Division
- New Opportunities Under ESG Sustainability Trend

Presenter : Director, Chen-yi Lin (Synthetic Resin Division)

Date : 2023/03/17



Agenda

1. Introduction of Synthetic Resins Division
2. Eternal Material pursuing sustainability
3. The way to pursuing sustainability
4. Adopt green energy
5. Technologies and products that meet sustainable development
6. Solar energy industry
7. Wind power energy industry
8. Lithium battery industry
9. Packaging industry
10. Thermoplastic composite industry



Business Lines and the Market

Coating

Alkyd resins, Oil-free polyester resins, Acrylic resins, High molecular weight polyester, Fluorocarbons resins, Amino resins, Phenolic resins, PUD.

Application

Architectural, Decorative, Wood coatings, Industrial coatings, Can coatings, Coil coatings, Automotive coatings, Marine and protective coatings,...etc

Adhesives

Acrylic resins for PSA, Polyester polyol, , High molecular weight polyester, PUD, PUR

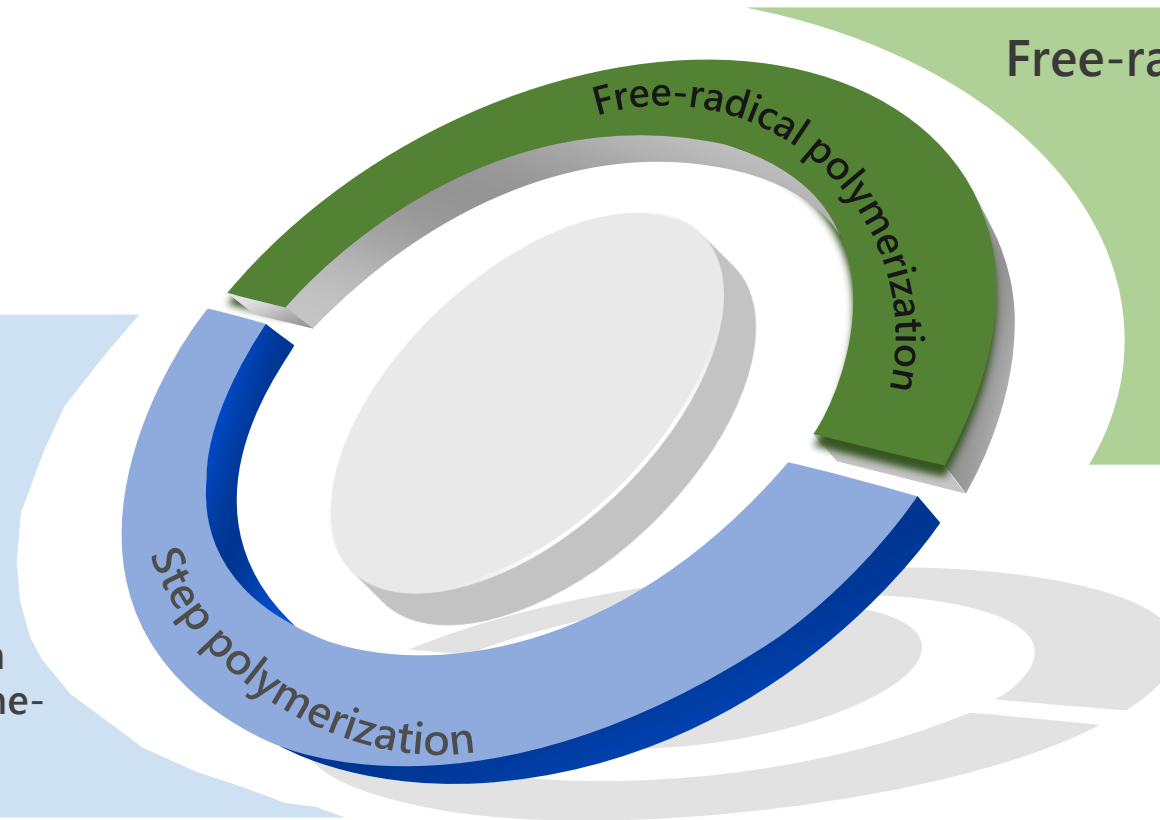
Application

Tapes, Graphic Arts, Labels, Protective Films,...etc.

Core Technology of SR BU

Step polymerization

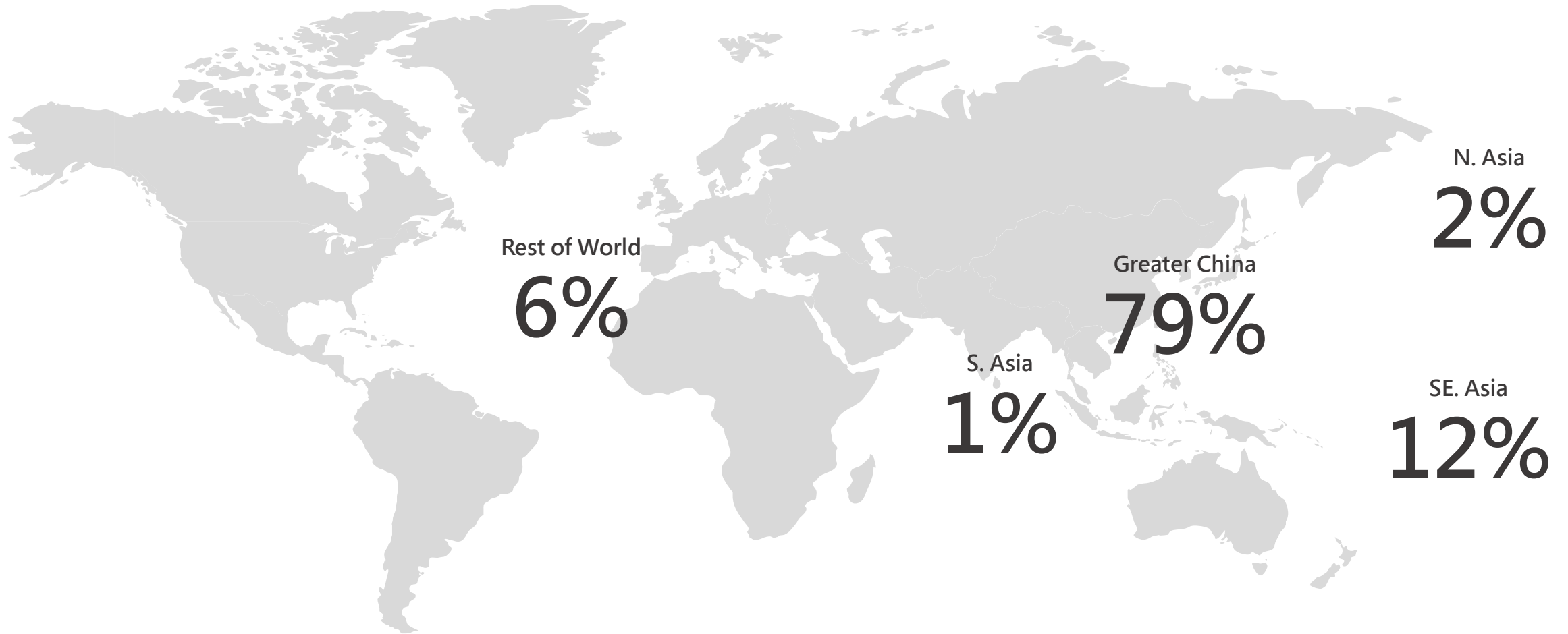
- Polyesterification
- Addition polymerization of isocyanate (Dispersion/solvent based/Solvent free)
- Co-condensation Polymerization (Phenol-formaldehyde/ Melamine-formaldehyde)



Free-radical polymerization

- Solution polymerization
- Emulsion polymerization
- Suspension polymerization
- Heterophase Polymerization

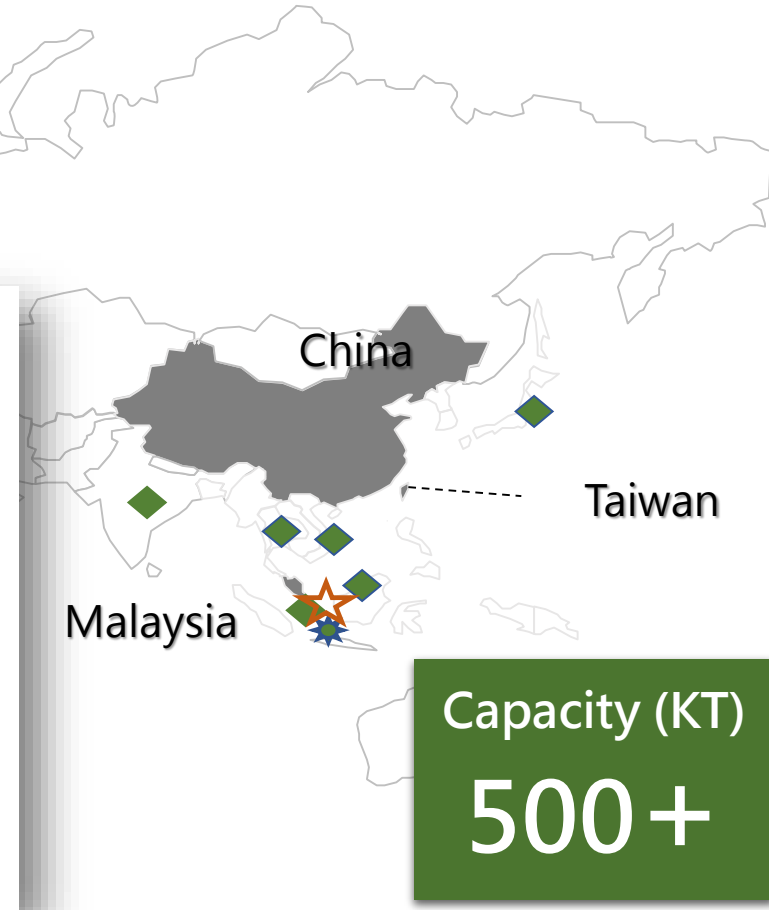
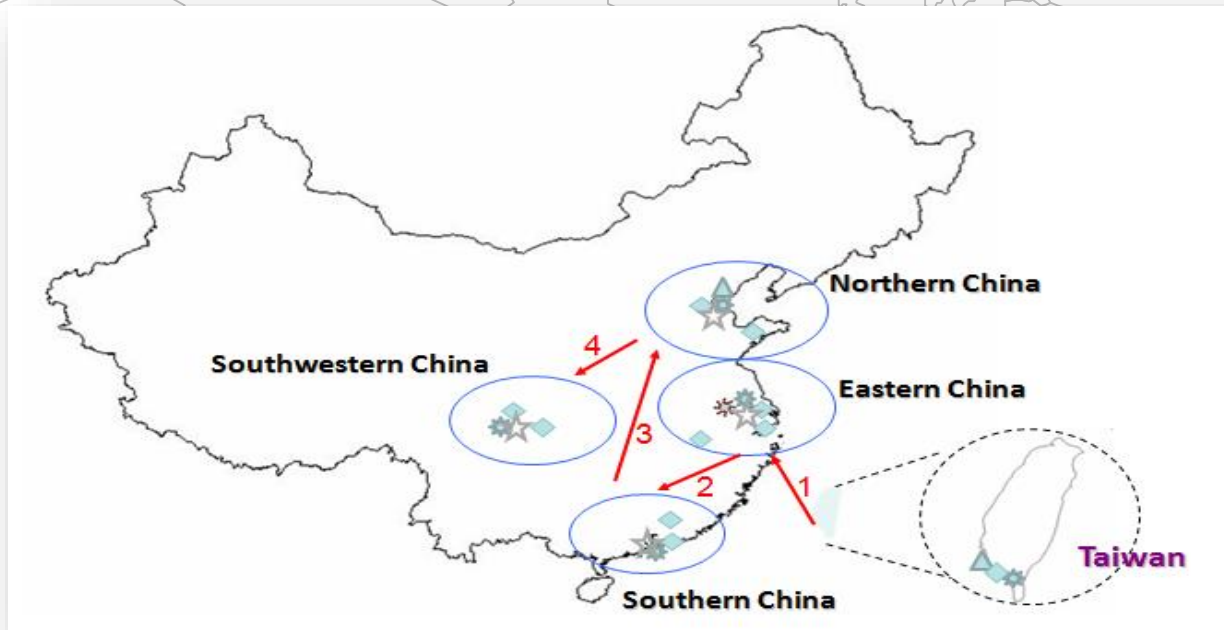
Sales by region as of 2020



Locations of SR

- Production Site (6) : Pingnan, Kunshan, Guangdong, Tianjin, Chengdu, Malaysia
- In construction (1) : TongLing
- Sales Office (16)
- R&D (1)
- TS (6)
-

Group and Region procurement.
Three procurement centers: Taiwan, Shanghai, Zuhai



* Map not to Scale

Eternal Materials pursuing sustainability



Environmental Awareness

Enhance environmental awareness and demonstrate Eternal's commitment to environmental protection.

Market Demand

The global awareness of environmental protection continues to rise, and consumer demand for green products is also increasing.

Government Support

The government actively supports the green industry by providing many incentive measures.



Drive Technological Innovation

Companies investing in the green industry can drive technological innovation and enhance product competitiveness.

Enhance Brand Image

Improve brand image, enhance consumer trust and support for the product.

Promote global collaboration

By collaborating globally to obtain technological innovation and market advantages, we can enhance competitiveness in the global market.

The Way to Pursuing Sustainability



Drive sustainable development to enhance competitiveness.

Planning to adopt green energy to reduce carbon emissions.



* Biomass fuel

Bio material
Non petro material



Replace petro material

Material from recycle plastic



* Replace petro material by recycle PET

Reduce energy consumption
High-weatherability insulation resin and coatings



* Adopting self-developed high-heat-resistant fluorocarbon resin

Technologies and products that meet sustainable development.

Materials related to the green industry.



Wind power energy industry
* Solar energy industry
Li-battery industry

High durability,
Extend product life cycle



fluorocarbon resin

High solid, water base,
Low VOC, Powder type



Water base resin
Powder type resin

Other sustainable concept product



* BPA
Thermoplastic composite

Adopt Green Energy to Reduce Carbon Emissions



Background

- Palm oil is the largest vegetable oil in terms of global production.
- Malaysia accounts for 25.8% of global palm oil production.
- Palm kernel shell has a high calorific value and can be used as a biomass fuel without further processing. It has been widely adopted by biomass power plants in Japan and South Korea.
- Due to Malaysia's geographical advantage, it is able to acquire biomass fuel locally and develop the palm oil chemical industry.



Palm Kernel



Dried Palm Kernel Shell

Palm Industry

- Access biofuel sources nearby
- Developing the palm oil chemical industry by combining with local agricultural characteristics in Malaysia.



Potential Benefit

- The installation of a single plant can reduce carbon emissions by 5,000 tons per year.
- Developing high-value chemicals using agricultural waste.

Material from Recycle Plastic- RCS Environmentally Friendly Button Resin



Background

- The plastic waste pollution is becoming increasingly serious.
- Global target of using recycled materials in plastic products continues to rise
- brands are making green procurement commitments to support the circular economy wave



Product Characteristics

Using PET recycled materials in button resin manufacturing process, providing downstream customers for button production.

Potential Benefit

- Developing green manufacturing processes to reduce the use of petrochemical raw materials.
- Reducing environmental waste.
- Providing a variety of green product choices

Recycled Claim Standard (RCS) Certification

TAIWAN IDFL LABORATORY AND INSTITUTE LIMITED
8F., No. 312, Sec. 2, New Taipei Blvd., Xinzhuang Dist., New Taipei City 242032 Taiwan

SCOPE CERTIFICATE
Scope Certificate Number: IDF-22-414673

IDFL certifies that
ETERNAL MATERIALS CO., LTD.
長興材料工業股份有限公司
LICENSE NUMBER 007484
No. 578, Jiagong Rd.,
Sanmin Dist.,
Kaohsiung City, 807578
Taiwan

has been audited and found to be in conformity with the
Recycled Claim Standard (RCS) (Version 2.0)

Products categories mentioned below (and further specified in the product appendix) conform with the standard(s):
Processed Post-Consumer Materials (PC0035)

Process categories carried out under responsibility of the above mentioned organization for the certified products cover:
Manufacturing (PR0016); Trading (PR0030)



This certificate is valid until: 2023-08-31
Audit criteria: Recycled Content Standard V2.0; Content Claim Standard V3.1; Textile Exchange Standards Claim Policy V1.1

Place and Date of Issue (YYYY-MM-DD): TAIWAN IDFL LABORATORY AND INSTITUTE LIMITED, 2022-11-03
Last Updated: 2022-11-03

Certification Body: IDFL License No: CB-IDF

Standard

Wilford Lieber, CEO

This scope certificate provides no proof that any goods delivered by its holder are Recycled Claim Standard (RCS) certified. Proof of Recycled Claim Standard (RCS) certification of goods delivered is provided by a valid transaction certificate (TC) or equivalent covering them. The issuing body may withdraw this certificate before it expires if the declared conformity is no longer guaranteed. To authenticate this certificate, please visit www.TextileExchange.org/Certificates

Reduce energy consumption High-weatherability insulation resin and coatings



Photo in Eternal Materials Pinnan plant

Before coating

Continuous watering is required to control the temperature of the raw materials in the tank and prevent them from spoiling.



After coating

Watering not necessary.
Decrease VOC emission

**High reflectivity ! Low thermal conductivity !
Achieve the best thermal insulation effect.**

- The only one manufacturer in for water-based fluorocarbon resin.
- High reflectivity, thermal insulation, weather resistance, acid and alkali resistance
- It does not require repainting for 10 to 15 years and maintains a fresh appearance.
- Effectively reduce temperature control and repainting costs.

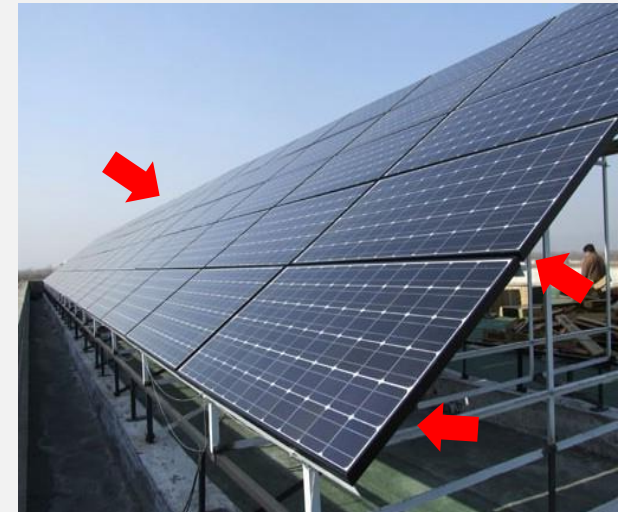
Market status

- The global new solar energy installed capacity is expected to reach 180GW in 2022, representing a year-on-year growth of 25%.
- In 2023, the global newly solar energy installed capacity is expected to exceed 200GW.
- The upstream raw material supply chain is almost concentrated in mainland China, and Eternal Materials has the advantage of geographic location.
- The US ban on Chinese solar panels will suppress market growth down to 9%.

Source: (IEA, 2022)

Opportunity

- How to extend solar panel life cycle? (page 10)
- How to decrease the cleaning frequency? (page 11)
- How to inhibit bracket corrosion and extend the life of solar energy systems.? (page 12)

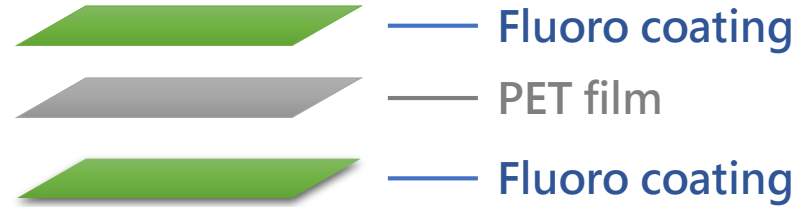


Coating and Adhesive in Solar-cell Back sheet



Coating type

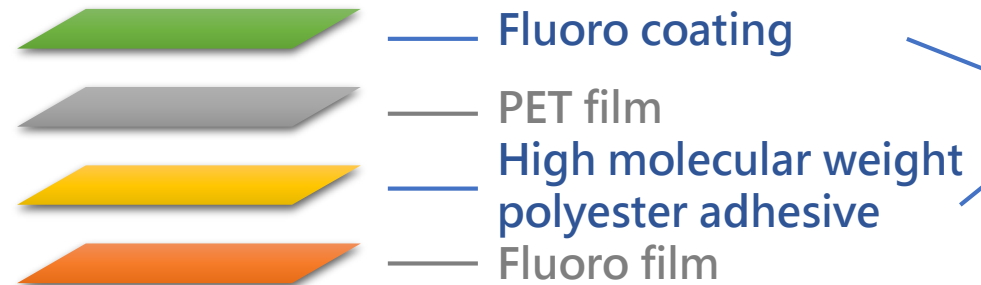
Protect PET film by fluoro polymer FEVE coating



CPC type back sheet structure

Laminated type

Protect PET film by laminating fluoro film



KPC type back sheet structure

Background

- Solar panels experience rapid decline in power generation efficiency due to the accumulation of pollutants such as wind-blown sand, salt mist, bird droppings, water stains, etc.
- Cleaning cost is also one of the important costs in the solar industry, but it is often overlooked by owners.

Product Characteristics

- Reduce dirt adhesion
- Improve self-cleaning properties
- Reduce cleaning frequency



Potential Benefit

- Increase power generation efficiency
- Reduce cleaning frequency



One actual case study is the Changhua Fangyuan Solar energy Site in Taiwan.

Anti corrosion coating resin for Solar cell mounting



The real case in Changbin Industrial area in Taiwan. The mounting serious corrosion just after four years.

Product Characteristics

- Ultra high durability
- Excellent anti corrosion property

Potential Benefit

Extend life cycle to more than 20 years under severe condition.
(remark)

(Remark) Under well and certified coating process

Eterflon Series Products

Eternal Materials is the only one FEVE manufacturer in Taiwan. FEVE already been used in heavy duty environment like bridge and harbor. Now we start to cooperate with coating company to promote galvanized with coating system. Aiming to provide a safe and effective solution.



The first case in Taiwan: FEVE coating on solar cell mounting for real exposing test.

Market Status

Source: (GWEC Market Intelligence, 2022)

- The annual increase in installed capacity is expected to be over 110GW in the next five years
- Newly increase in installed capacity compound annual growth rate of 6.6%
- Offshore wind power is expected to have a compound annual growth rate of 8.3% in terms of installed capacity

Upcoming problem

- Onshore wind power sites are becoming saturated, while offshore wind power environments are extremely harsh
- How to prolong the service life and reduce maintenance costs is an issue that cannot be ignored.

Eternal Products

- 2K acrylic polyol resin
- Polyaspartic Resin
- Fluoro carbon resin

(Remark) Under well and certified coating process

Potential Benefit

Extend wind power tower life cycle to more than 20 years under severe environment (Remark)



Changbin Industrial Park Wind Turbine Tower

Background

- The industry continues to grow rapidly
- Cabin and nose cones play an important role in protecting wind driven generator.
- Composite materials are the best choice for their high strength, lightweight, and corrosion resistance.
- The localization policy in the wind power industry has stimulated its development.

Eternal Products

- Nose cone resin
- Cabin resin

Potential Benefit

With high strength and corrosion resistance, they not only protect the electromechanical system of wind turbines but also ensure the continuity and stability of the products.



Market Status Source: (FCAB, 2021)

- Energy storage and electric vehicles will drive significant growth in the lithium battery industry.
- Global lithium battery production capacity will grow from 737 GWh in 2020 to 2,492 GWh in 2025.
- 73% of the global lithium battery production capacity is located in mainland China, 13% is located in Europe, and the United States accounts for only 13%. Which is geography benefit for Eternal Materials.

Aluminum-plastic film structure of lithium batteries



Significant increase in demand for related raw materials

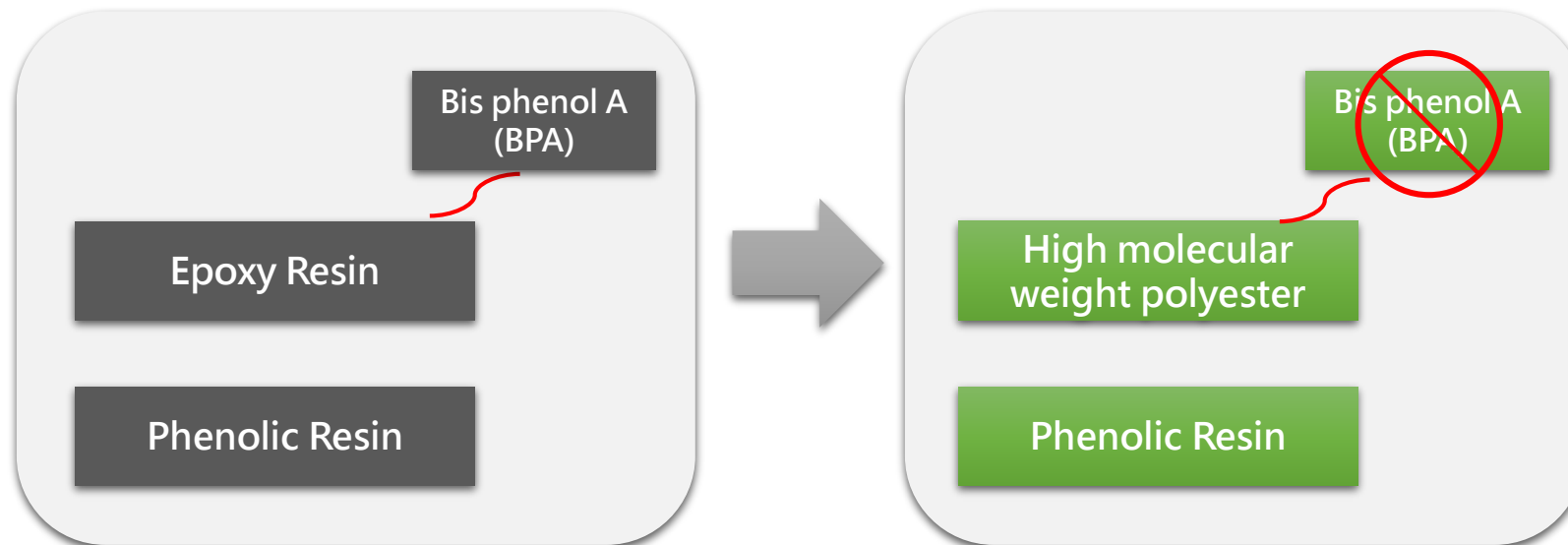
- Adhesive for aluminum-plastic film of lithium batteries.
- Pressure-sensitive adhesive for lithium battery blue film.



Deep drawing lab test of aluminum-plastic film of lithium batteries

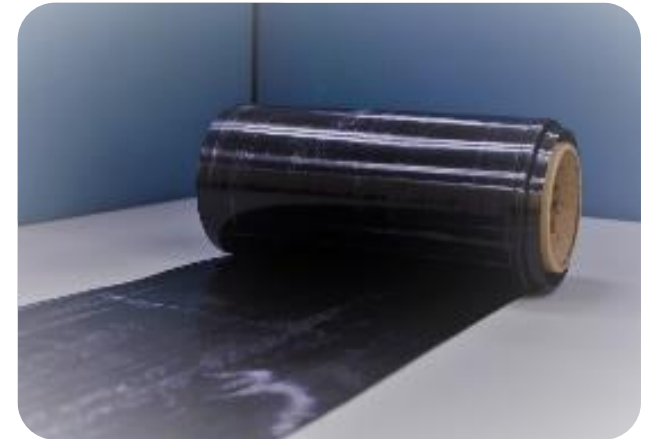
Market Status

- The global market for iron and aluminum cans coating is about 50 billion New Taiwan Dollars.
- The trend of replacing plastic packaging with eco-friendly packaging has driven an annual growth rate of 8% for iron and aluminum cans. (Source: Orr & Boss)
- High molecular polyester resin for inner can coating, material comply with FDA (21CFR175.300)
- Solving the BPA release issue.
- Eternal is one of the few global manufacturers of high molecular weight polyester.



Background

- Responding to the global trend of energy conservation and carbon reduction
- Advantages of lightweight and high strength
- Thermoplastic composites are recyclable and can be reused
- Reduce process energy consumption and have a fast production time



Product Characteristics

- Applied in injection molding process and combined with different material properties (bonding), high-performance LFT/SFT materials are produced
- High-strength continuous fiber thermoplastic prepreg material.

Potential Benefit

- Providing customized high-performance thermoplastic composite solutions.
- The materials are recyclable and in line with corporate ESG principles.





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Planting the seeds of sustainable development
through **Research and Innovation.**



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