

SHINITE® ENGINEERING PLASTICS

新光工程塑膠

25/11/2016 for FEP



Agenda

- SHINKONG Group
- SHINKONG Synthetic Fibers Corporation
- SHINKONG Engineering Plastics Dpt.
- SHINITE® Products
 - Introduction*
 - Bio Polymers*
 - Quality Assurance*
 - Customer Complaint*



FINANCIAL SERVICES

 ShinKong Financial Holding

 ShinKong Life Insurance
ShinKong Synthetic Fibers

 ShinKong Bank
ShinKong Investment Trust

 ShinKong Investment Trust
Financial Holding

 TaShin International Bank

SECURITY SERVICES

 ShinKong Life Real Estate Services Company


 ShinKong Security

ShinKong Life Insurance

ShinKong Life Real Estate Services Company

ShinKong WU HO-SU Memorial Hospital

MANUFACTURING

 ShinKong Textile

 ShinKong Synthetic Fibers Co., Ltd.

ShinKong Wu Foundation

CONSUMER SERVICES

 The Great Taipei Gas

 新光三越
SHIN KONG MITSUKOSHI
ShinKong Textile

ShinKong Mitsukoshi

ShinKong Life Foundation

 ShinKong Security

Taishin International Bank

MEDICAL, PHILANTHROPIC & PUBLIC SERVICES

 ShinKong WU HO-SU MEMORIAL HOSPITAL

 ShinKong Life Foundation

The Great Taipei Gas

ShinKong Mitsukoshi

Engineering Plastics Dpt.

Medical & Security Services

光

ShinKong Synthetic Fibers

ShinKong

ShinKong Life Insurance

ShinKong Life Estate Services

ShinKong WU HO-SU Memorial Hospital

ShinKong Security

ShinKong Wu Foundation

ShinKong Life Foundation

ShinKong Textil

台新銀行

新光醫院

新光保全 SKS

新光

Consumer & Financial Services



新光三越
SHIN KONG MITSUKOSHI

新光金控 | 新光人壽
SHIN KONG FINANCIAL GROUP | SHIN KONG LIFE INSURANCE

ShinKong Life Real Estate Services Company

ShinKong WU HO-SU Memorial Hospital

ShinKong Textil

ShinKong Wu Foundation

ShinKong Life Foundation

ShinKong Security



SHINKONG Synthetic Fibers Corp.

Shinkong Synthetic Fibers Corp.

- Established in **1967**
- **1.4** billion USD turnover in 2015
- **4** billion USD as total asset
- About **2,000** Employees (TAIWAN)
- **2** main Business Units
 - Fibers
 - Plastics

Shinkong Synthetic Fibers Corp.

FIBERS

Filament Yarn



Staple Fibers



Industrial Yarn



Engineering
Plastics



PET Bottle



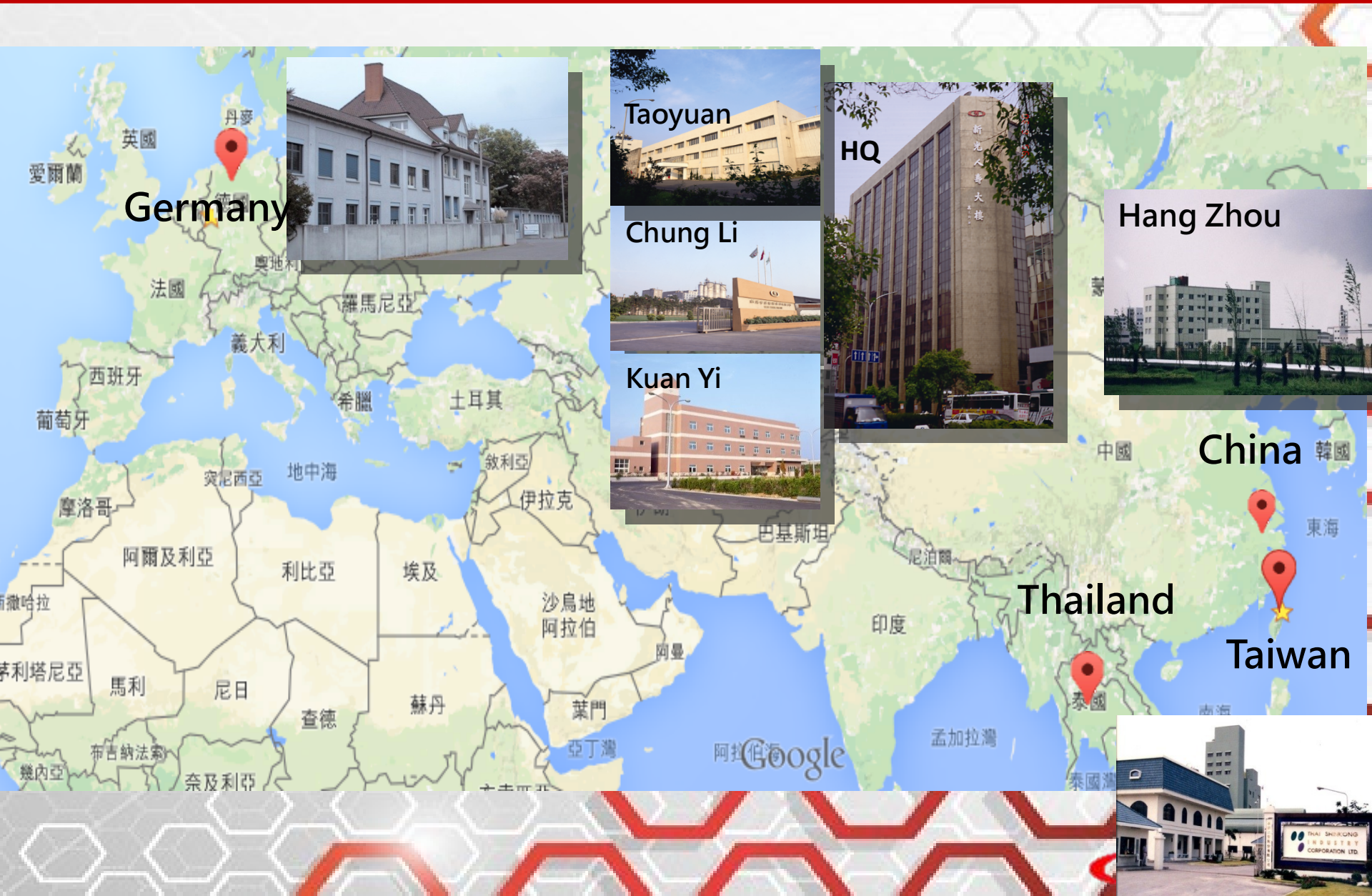
A-PET Sheet



PET Resin



Global Layout



Germany

Taoyuan

HQ

Chung Li

Kuan Yi

Hang Zhou

China

Thailand

Taiwan



Shinkong Engineering Plastics Dpt. (ENPLA)

Shinkong Engineering Plastics

- Sales value : 150 million USD (2015)
- Sales volume : 80,050 MT (2015)
- 125 employees
- Quality Certificates



ENPLA Plants

Compounding Line

2 Extrusion Lines

Hang Zhou



Compounding Line

5 Extrusion Lines

Chung Li



Polymerization Line

1 Continuing Line
1 Planned CP Line

Kuan Yi

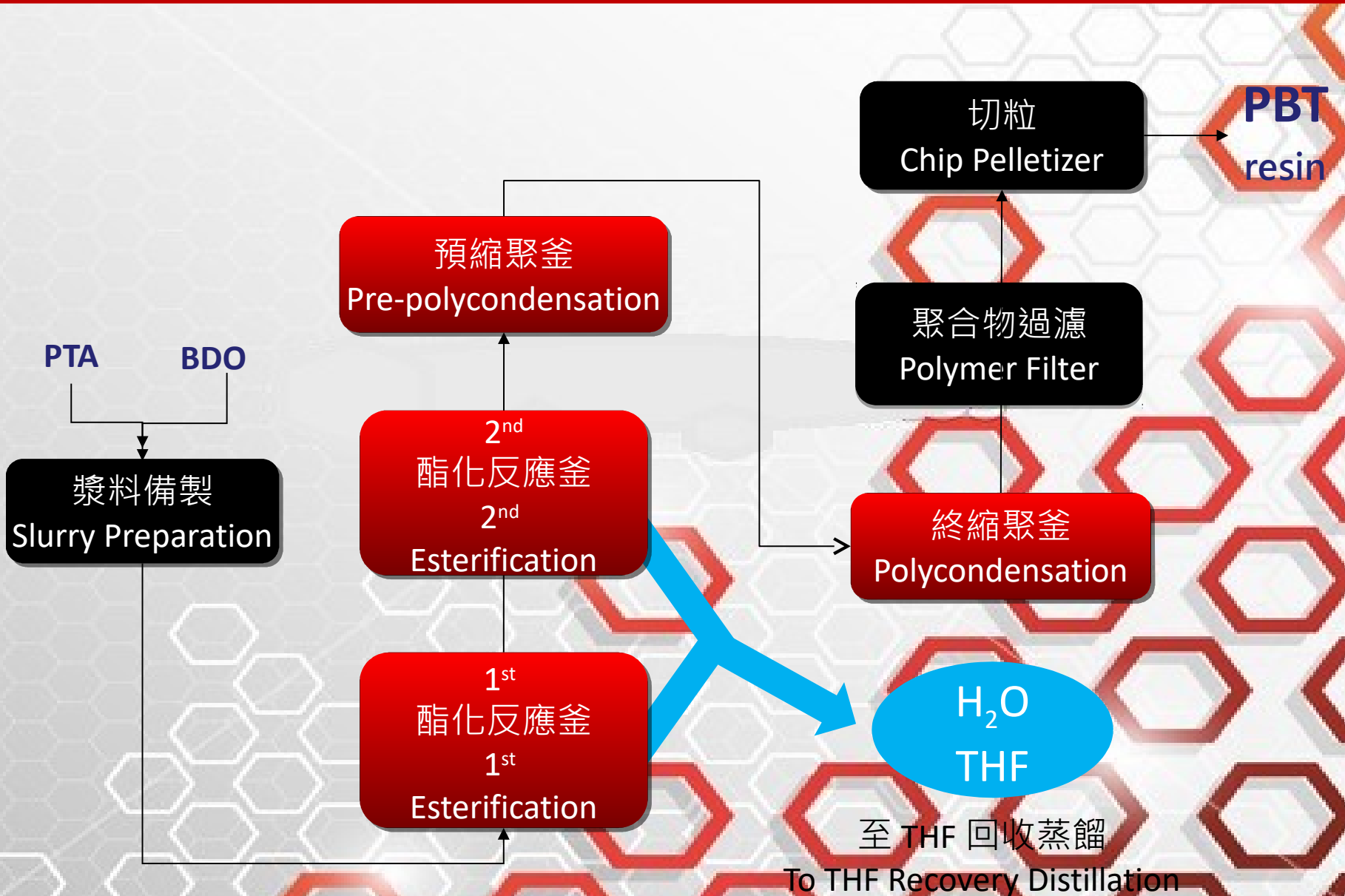


CP 9



TAIWAN

PBT Process

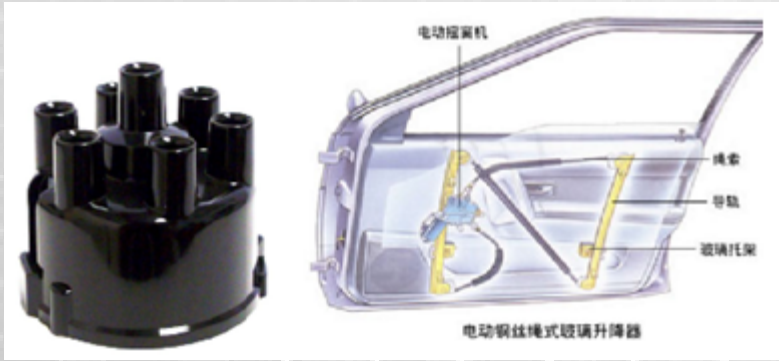


SHINITE® Products

-Introduction

PBT + GF 0~30%

- **Application** : Auto connectors , Switch/PBT plug, Distributor Cap, Glass-lifter tray, Battery cap, Solenoid valve housing, Lamp ring, Electronic control unit, Auto air-conditioning circuit board



Distributor cap

Glass lifter tray



Auto Connectors



Switch



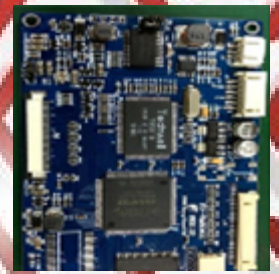
Battery cap



Solenoid valve housing



Electronic control unit



Automotive air-conditioning circuit board

PBT + FR + GF15~30%

- **Appplication** : (Sizes electronic/Auto) Fan, Electric fan cases, Terminal block, (Electronic/Auto) Connectors



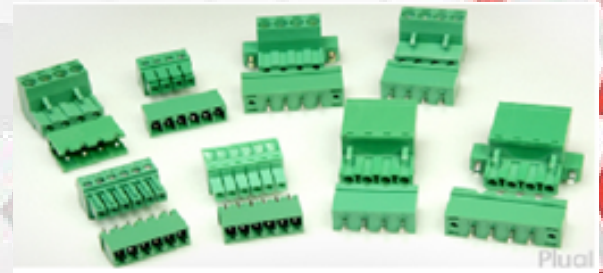
Electric fan



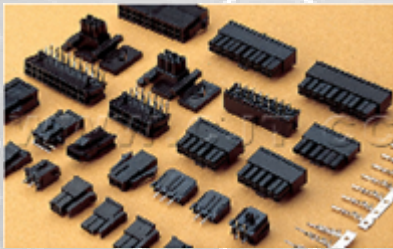
Fan cases



PBT plug



Terminal block



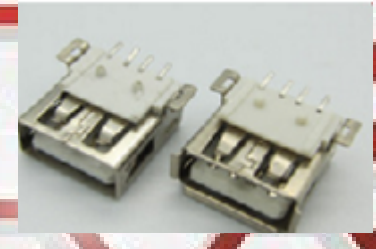
Electronic connectors



Mobile connectors



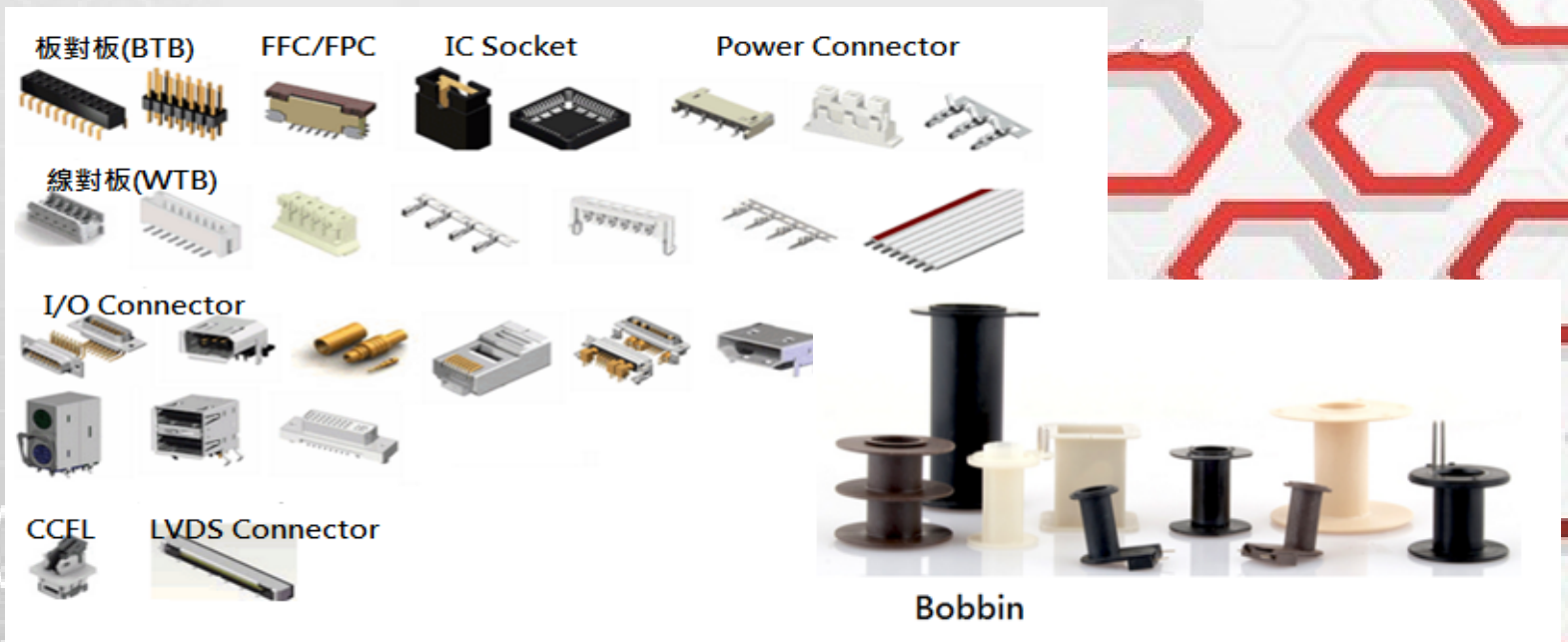
D-sub connectors



USB 3.0 connectors

Halogen Free PBT + FR + GF15~30%

- Fulfill customer's eco-friendly request (ex. Apple, HP etc.)
- **Application** : (Sizes electronic/Auto) Fan, Relay, Bobbin, Switch, PBT plug, (Electronic/Optical fiber) Connectors



PET + FR + GF 0~30%

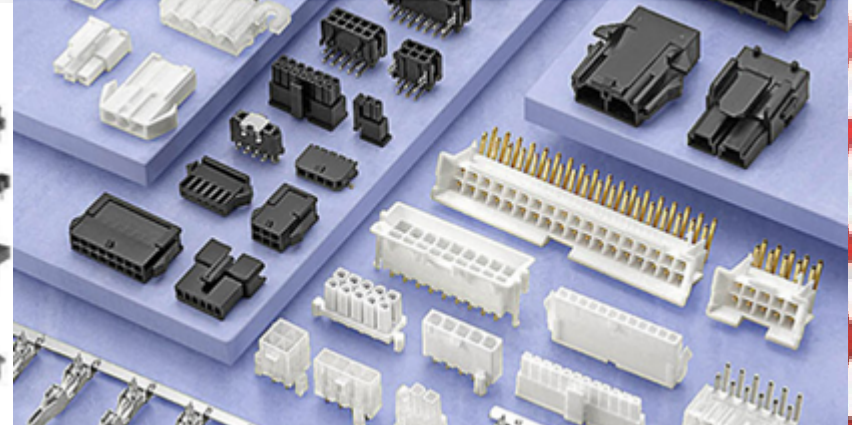
- **Application** : (Electronic/Auto) Connectors, Bobbin, Relay



Electronic housing



Bobbin



Connectors

TPEE Shore D40~72

- **Application** : CVJ, 3D printing filament, Glasses frame/nosepads, Wireless mast, Medical appliances, Railway gasket, Pipe, Seal, Gear



Pipe



CVJ



Railway gasket



Gear



3D printing filament



Sports equipment belts



Medical appliances



Seal



Wireless mast



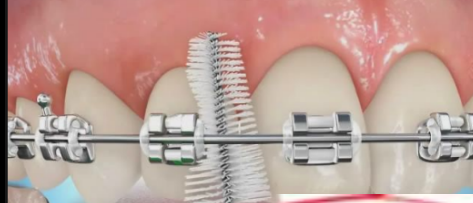
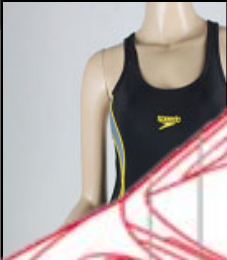
Glasses frame/nosepads



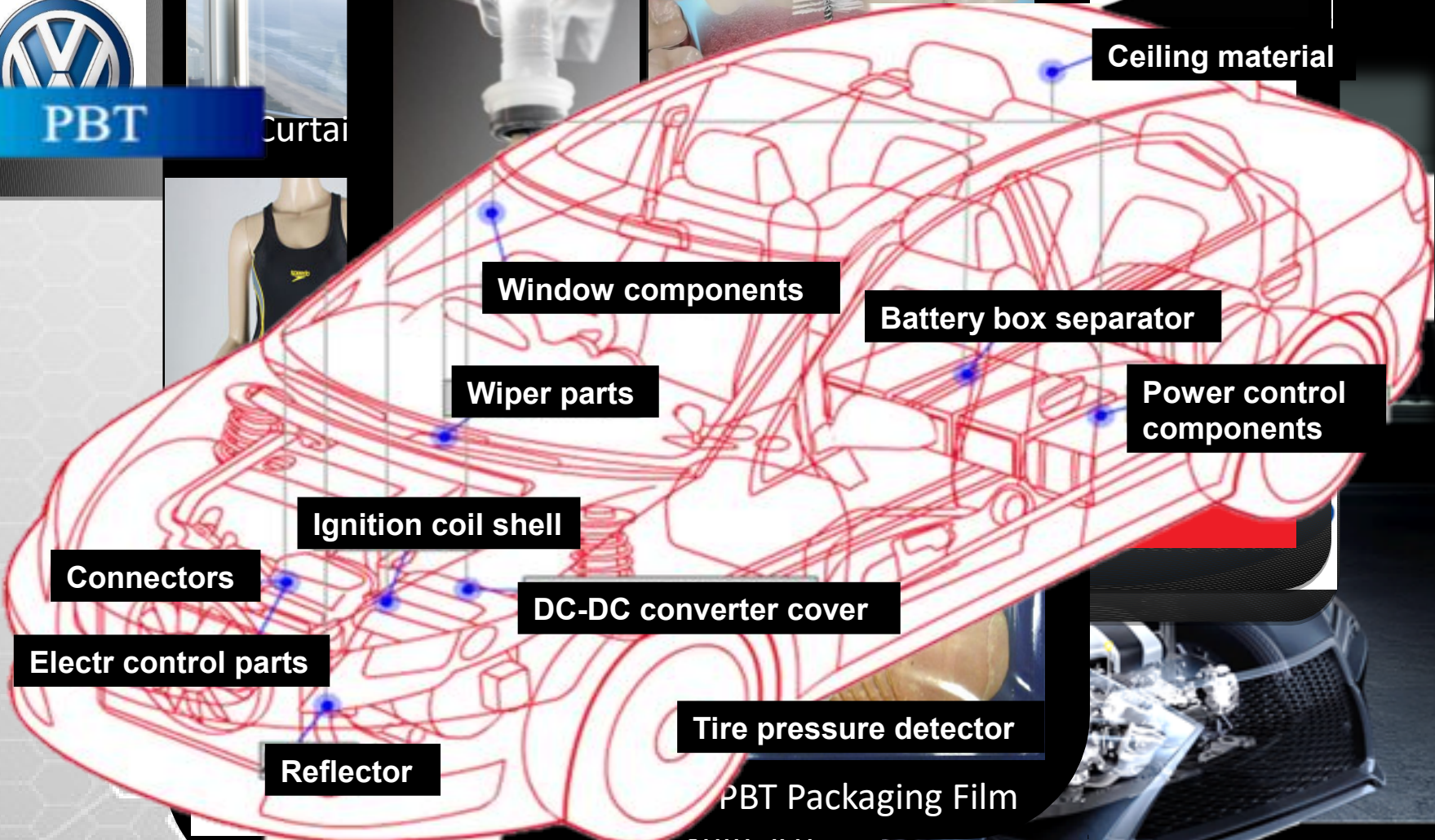
PBT



Curtain



Ceiling material



Window components

Battery box separator

Wiper parts

Power control components

Ignition coil shell

Connectors

DC-DC converter cover

Electr control parts

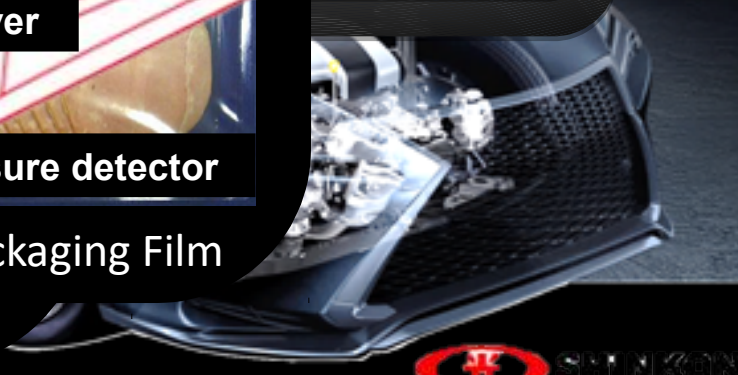
Tire pressure detector

Reflector

PBT Packaging Film

Hook & Loop Fastener

Suitcase

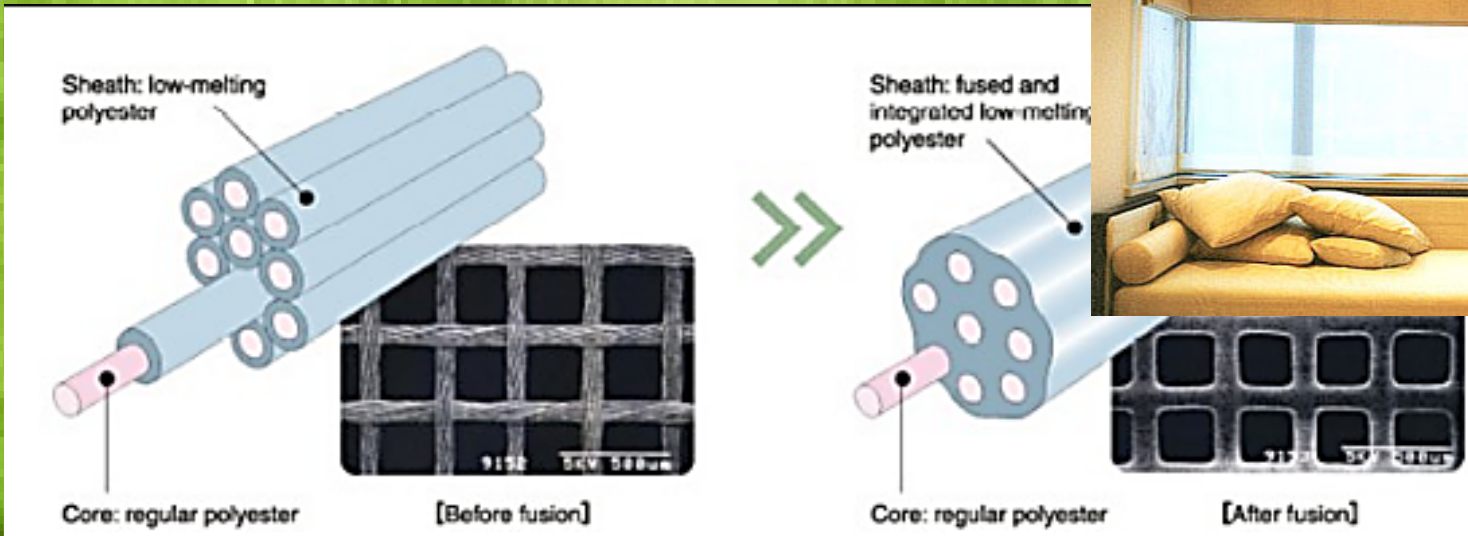


Bio PBT

➤ Elastic Fibers



➤ Low-melt PBT





Biobased and Biogenic Carbon Testing Laboratory

ISO/IEC 17025:2005 Accredited

Beta Analytic, Inc.
4985 SW 74 Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

Summary of Results - % Biobased Carbon Content: ASTM D6866-16 Method B (AMS)

Submitter	Mr. Oliver Hsieh
Company	Shinkong Synthetic Fibers Corporation
Date Received	July 21, 2016
Date Reported	July 29, 2016
Submitter Label	D201000NA/DHKS02

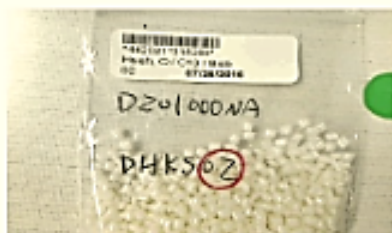
Percent Biobased Carbon 35 %

Laboratory Number Beta 112021

Test Method D6866-16 Method B(AMS)

Percent modern carbon (pMC) 35.2 +/- 0.2 pMC

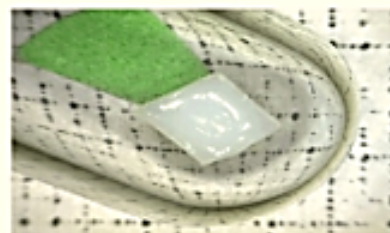
Atmospheric adjustment factor (REF) REF=101.5, divide pMC by 1.015



Package received - labeling COC



View of content (1mm x 1mm scale)



16.7mg analyzed (1mm x 1mm scale)

Required Disclosures:

1. All work was done at Beta Analytic in its own chemistry lab and AMS. No subcontractors were used.
2. Beta's chemistry laboratory and AMS do not react or measure artificial C14 used in biomedical and environmental AMS studies. Beta is a C14 tracer-free facility.
3. Validating quality assurance is verified with a Quality Assurance report posted separately to the web library containing the PDF downloadable copy of this report.

Bio Elastic PBT (TPEE)

- 3D Printing
- Monofilament
- Elastic Fibers
- Waterproof membrane



Bio PBS Cycle



100% Bio-Degradable





Biobased and Biogenic Carbon Testing Laboratory

ISO/IEC 17025:2005 Accredited

Beta Analytic, Inc.
4985 SW 74 Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

Summary of Results - % Biobased Carbon Content: ASTM D6866-16 Method B (AMS)

Submitter	Ms. Susan Wu
Company	Shinkong Synthetic Fibers Corporation
Date Received	August 31 2016
Date Reported	September 06 2016
Submitter Label	ZA01000NA

Percent Biobased Carbon 91 %

Laboratory Number	Beta 444588
Test Method	D6866-16 Method B(AMS)
Percent modern carbon (pMC)	92.5 +/- 0.3 pMC
Atmospheric adjustment factor (REF)	101.5; =pMC/1.015



Package received - labeling COC



View of content (1mm x 1mm scale)



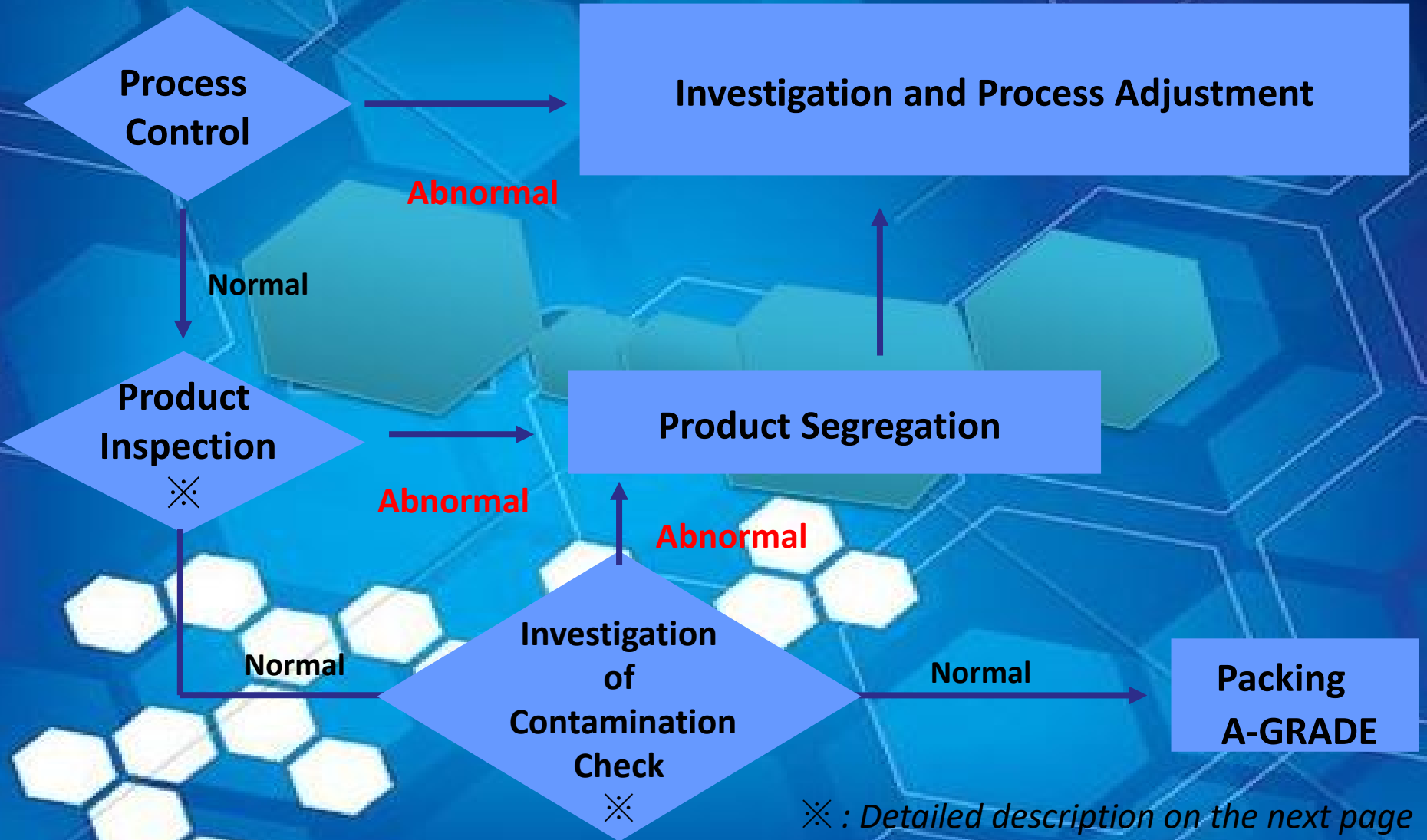
18.4mg analyzed (1mm x 1mm scale)

Required Disclosures: All work was done at Beta Analytic in its own chemistry lab and AMS. No subcontractors were used. Beta's chemistry laboratory and AMS do not react or measure artificial C14 used in biomedical and environmental AMS studies. Beta is a C14 tracer-free facility. Validating quality assurance is verified with a Quality Assurance report posted separately to the web library containing the PDF downloadable copy of this report.

 **SHINITE[®] Products**

-Quality Assurance (QA)

QA(Quality Assurance)-PBT Base



※ : Detailed description on the next page
表詳細說明在下一頁

QA Testing Conditions-PBT Base

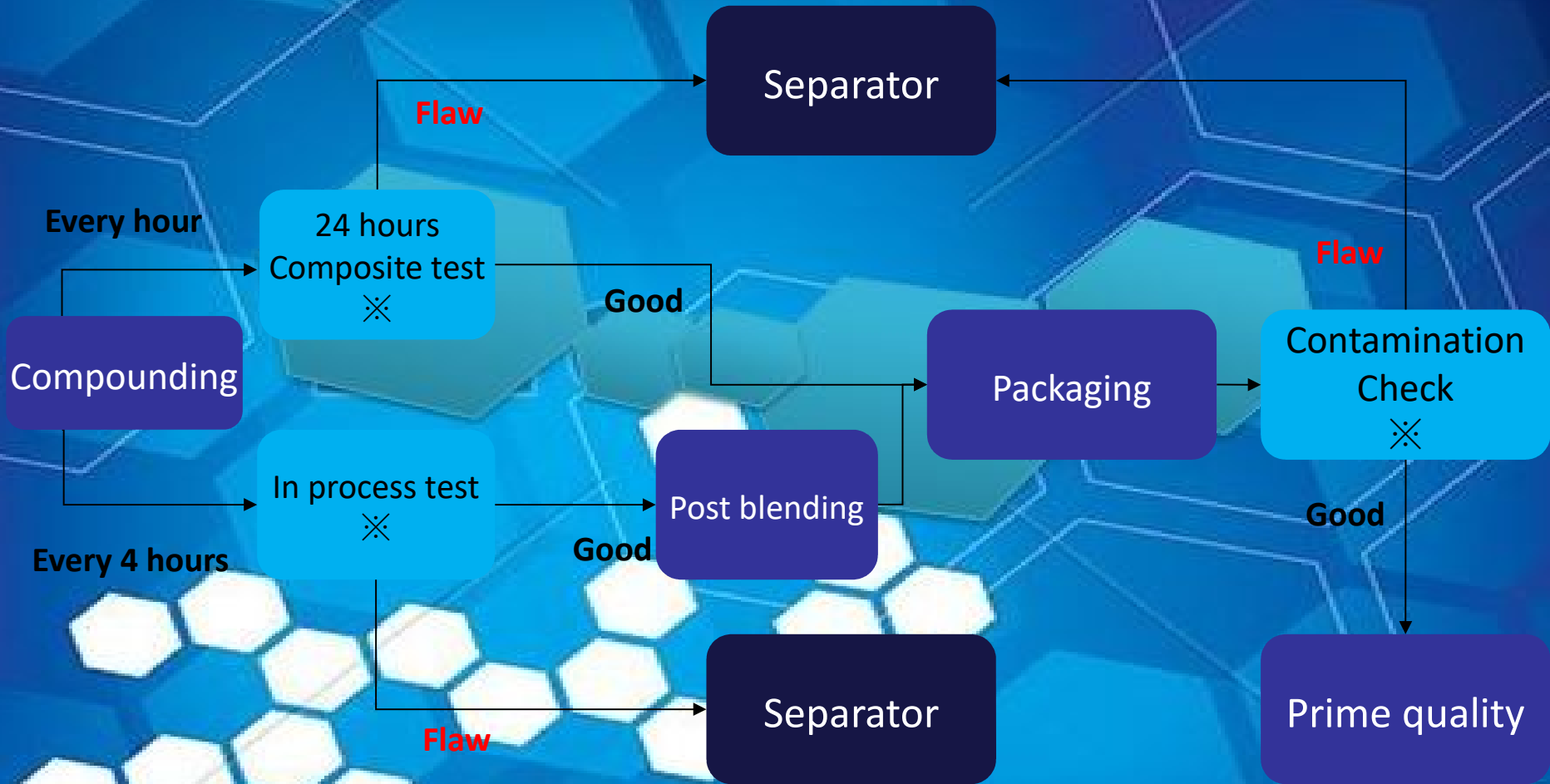
PRODUCT INSPECTION

TYPE	FREQUENCY	DESCRIPTION
Melt Index	every batch	ASTM D1238 / ISO 1133
Intrinsic Viscosity	5 times/day	ASTM D2584
Pellet Cut	every batch	per customer request
Acid Value (COOH)	4 times/day	ASTM D7409
Color(b Value)	5 times/day	JIS Z8722
Melting Point	every batch	ASTM D3418
THF Content	1 times/day	Gas Chromatography

CONTAMINATION CHECK

TYPE	DESCRIPTION
Color Contamination	Visual inspection
Pellet Size	Visual inspection

QA(Quality Assurance)-Compound



※ : Detailed description on the next page
表詳細說明在下一頁

QA Testing Conditions-Compound

IN-PROCESS TEST

TYPE	FREQUENCY	DESCRIPTION
Melt Index	every 4 hours	ASTM D1238 / ISO 1133
Pellet Cut	every 4 hours	per customer request
Start-up Tests	0.5 hour after start-up	Mechanical properties

CONTAMINATION CHECK

TYPE	DESCRIPTION
Color Contamination	Visual inspection
Pellet Size	Visual inspection
Metal Contamination	Metal detector

QA Testing Conditions-Compound

COMPOSITE TEST (every day)

TYPE	DESCRIPTION
Main Physical/Mechanical Properties	
Tensile Strength	ASTM D638 / ISO 527
Flexural Strength	ASTM D790 / ISO 178
Flexural Modulus	ASTM D790 / ISO 178
Izod Impact	ASTM D256 / ISO 180
Specific Gravity	ASTM D792
Other Physical/Mechanical Properties	
Elongation	ASTM D638 / ISO 527
Flammability	UL 94
HDT	ASTM D648 / ISO 75
Color	JIS Z8722

Thank you for your attention!

