

THE NEW STANDARD AND
CLEAR CHOICE FOR HEALTHCARE

Innovative Medical & Healthcare Copolyester Solutions

PET | PETG | PCTG | Recycled PETG | Bio-based Copolyester



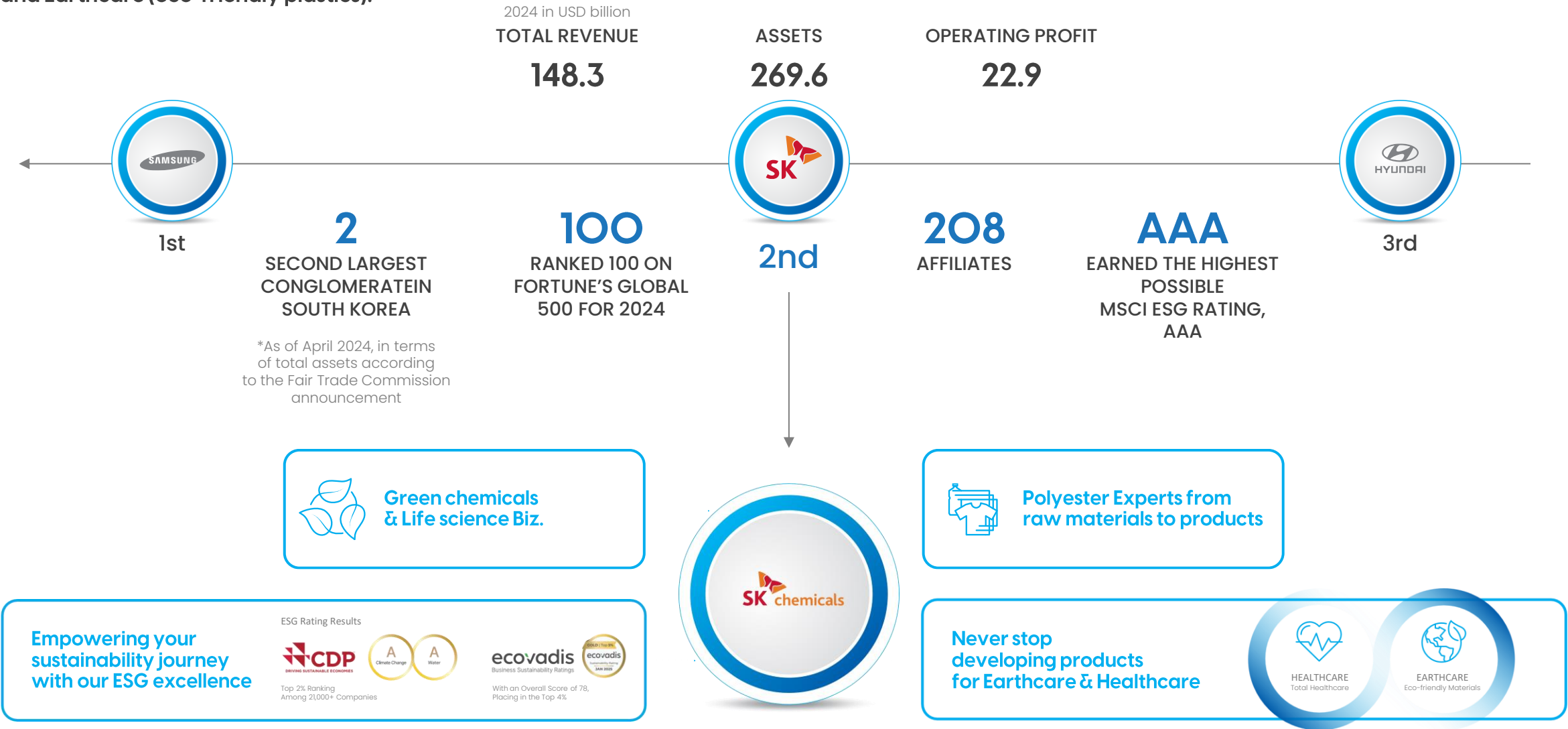
Jan 1st 2026
Copolyester global medical team



Introducing SK Group & SK chemicals

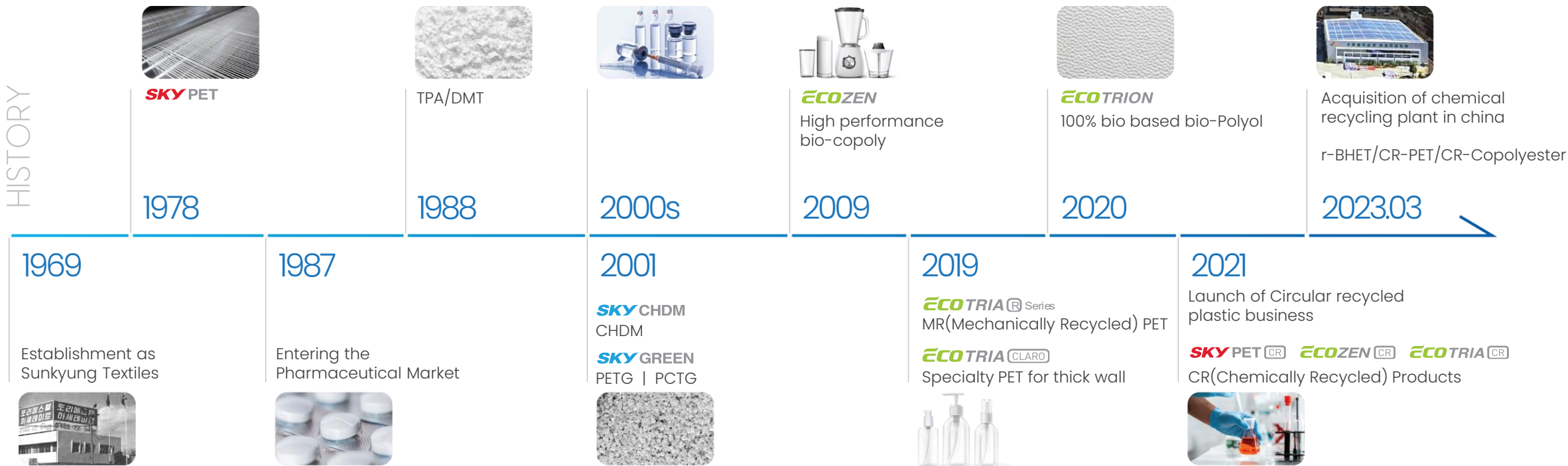
Who we are

SK Group is Korea’s second-largest conglomerate, and its affiliate SK Chemicals operates businesses in Healthcare (Pharmaceuticals) and Earthcare (eco-friendly plastics).



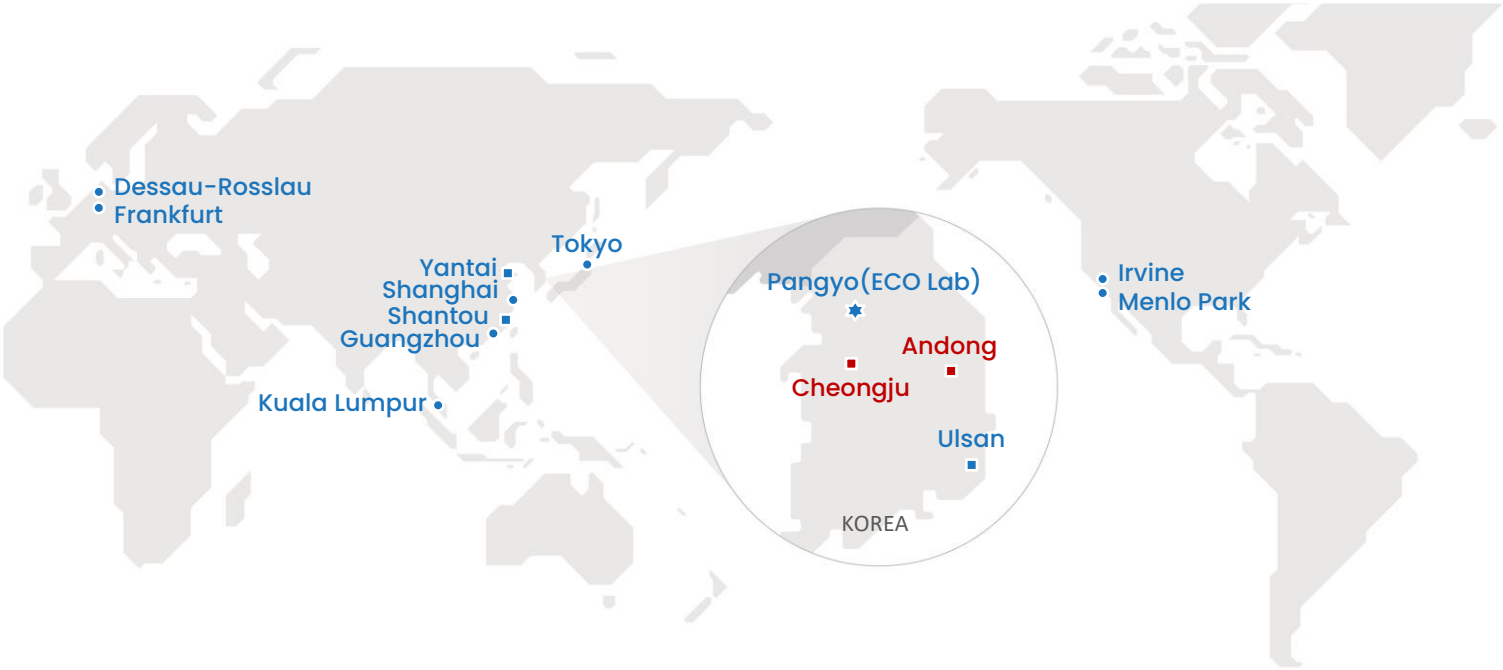
Our history

Leveraging nearly 60 years of expertise in polyester-based businesses, we have developed a wide range of BPA-free copolyester variations, while strengthening our pharmaceutical capabilities through our own manufacturing facilities.



SK chemicals Global Network

We operate global sales subsidiaries, polyester production lines across China and Korea, and high-quality vaccine and blood product manufacturing facilities in Korea, enabling us to meet diverse customer needs worldwide.



Headquater

KOREA	Pangyo	R&D, Global Marketing Strategy
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Production Site

KOREA	Ulsan Cheongju Andong	DMT-CHDM-Copolyester vertical integration Blood products Vaccine
CHINA	Shantou Yantai	Chemical recycling (r-BHET, CR-PET) Polyester and TPEE for coating and adhesive

Global Offices

U.S.	Irvine, CA Menlo Park, CA	MALAYSIA	Kuala Lumpur
		JAPAN	Tokyo
CHINA	Shanghai Guangzhou	GERMANY	Dessau-Rosslau Frankfurt

What We Make – Green chemicals biz.

Safe & Versatile **COPOLYESTER**

With vertically integrated production
(From DMT-CHDM to Copolyester)
Ensuring quality, cost competitiveness,
And product diversity

SKY GREEN

SKY BON

SKY PEL

Renewable **BIO-BASED**

'Green' and outstanding performance combined

ECOZEN

ECOTRION

Sustainable **CIRCULAR RECYCLE®**

Recyclable & Recycled polyester portfolio

ECOTRIA

SKY PET

Innovative **SPECIALTY MONOMER**

Tailored molecular design
for enhanced functionality and performance

SKY DMT

SKY CHDM

SKY DMCD

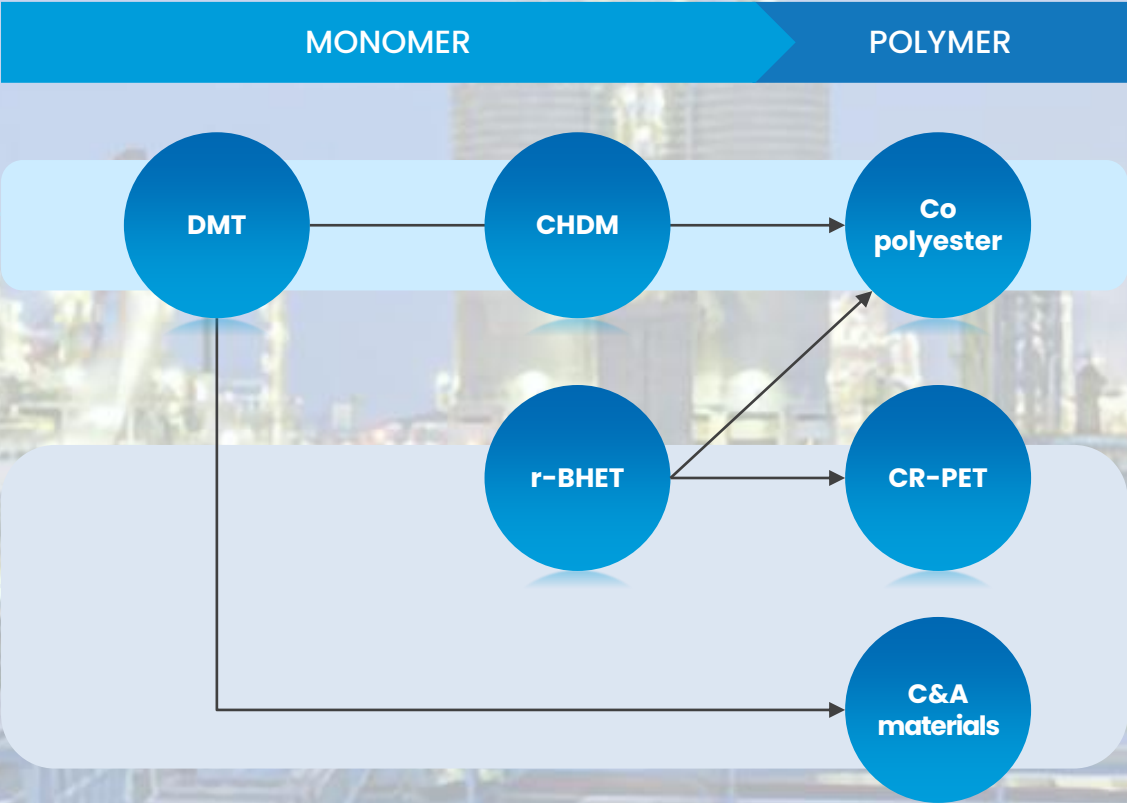
Our Quality Control System

By vertically integrating our entire process—from raw material production to final products—we guarantee superior quality.

In South Korea



In China



Our Medical Team

We offer comprehensive support through our headquarters team of medical project managers, technical experts, and regulatory specialists, while regional medical marketing managers ensure close collaboration with customers.

HQ

Medical Project Manager

Medical Specialists for
Application Development and Technical Support

Product Safety & Regulatory Affairs

GLOBALLY

Medical Marketing
Representatives by Region

America

Europe

KOREA

JAPAN

China

South
East Asia



Medical Portfolio Highlights

What We Make – Copolyester business



SKY GREEN

SKYGREEN is a copolyester(PETG/PCTG) which provides high processability and can be used in a wide variety of applications.

ECO TRIA

ECOTRIA offers a Recycled and Recyclable solution that maintains the same physical properties as the virgin product.

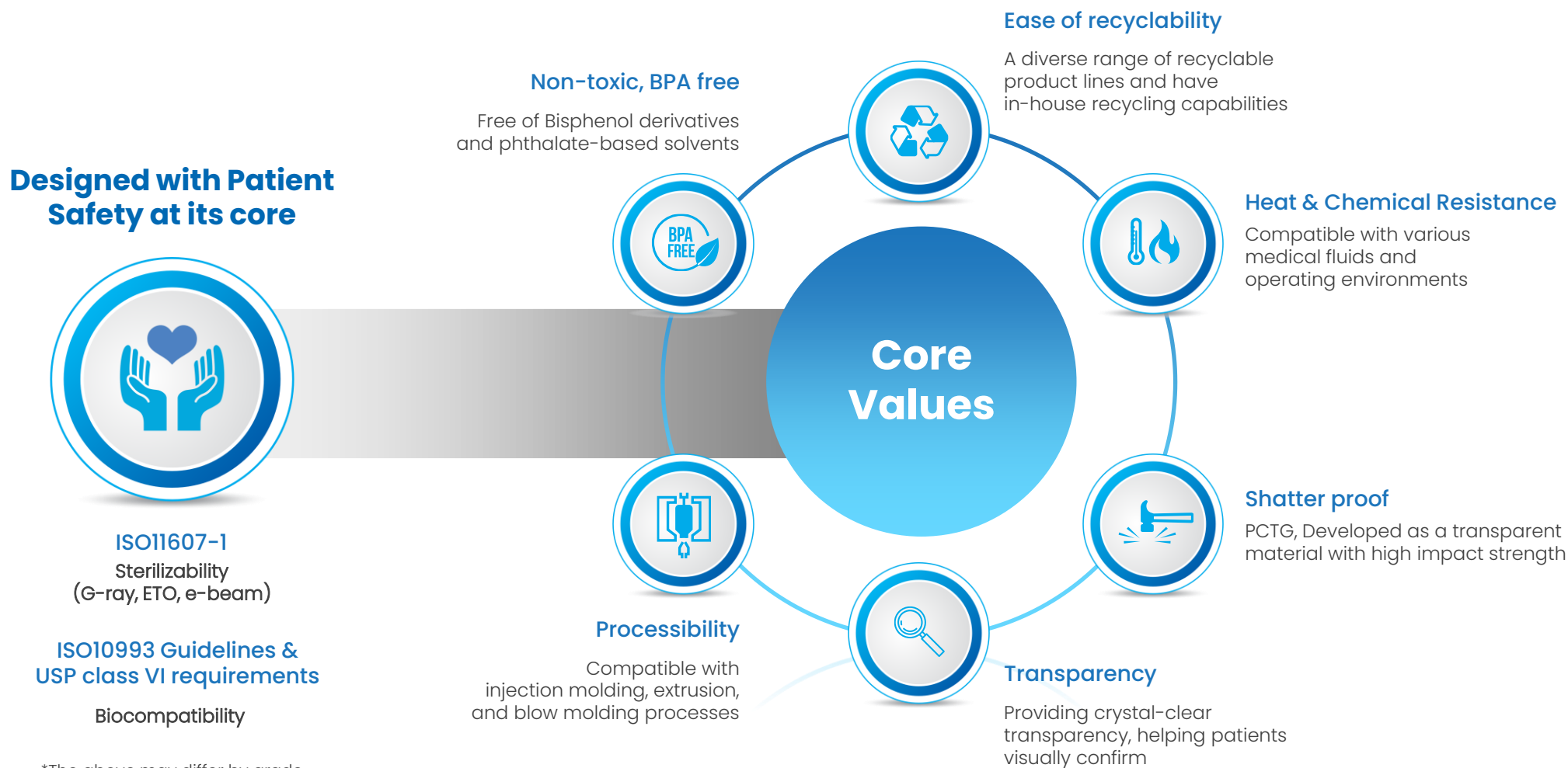
ECO ZEN

ECOZEN is a High Performance Bio-based Copolyester that provides high impact strength and a high heat distortion temperature.

SKY PET

SKYPET provides crystalline copolyester and chemically recycled PET which has the same physical properties as the virgin PET.

Why Our Copolyester Is Ideal for Medical Applications



SK chemicals' Medical Grade Portfolio

SKY GREEN S2008

- CHDM modified PETG

ECO TRIA S2008-CR50

- Chemically recycled

High flowability

SKY GREEN MF200

- PETG for high flowability

Impact strength
/chemical resistance improved

SKY GREEN MJ200

- PCTG for impact strength improved

Medical Packaging Standard PETG

High-performance with Bio-based Copolyester



Property Enhanced PETG/PCTG

Recyclable & Circular recycle™

RIC #1 : APR, EPBP available

ECOZEN MT05 Pro

- For clear color needed part

MT10 Pro MT20 Pro

- High heat sheet grade

MT10G Pro MT20G Pro

- High performance device part

ECO TRIA MC100 MC200 MC300

- Recyclable modified PET

ECO TRIA MC200-CR50

- Bright clarity with 50% PCR input

SKY PET BR

- Developed for clear blood collection tubes

SKY PET CR-BL (Med)

- 99% CR-PET

SK chemicals' Medical Grade Portfolio

Medical Packaging **Standard PETG**

SKY GREEN S2008 + PCR →

- CHDM modified PETG
- Medical packaging standard
- Fully certified
: ISO11607-1, ISO10993, USP class VI,
US Drug Master File(DMF)
- Available for all medical applications
(Injection/Extrusion)

ECO TRIA S2008-CR50

- Chemically recycled PETG
- ISCC plus mass balance
& PCR 50% input option
both available



Property Enhanced **PETG/PCTG**

High flowability

SKY GREEN MF200

- PETG for high flowability
- Suitable for syringe & thin-wall part

Impact strength

/chemical resistance improved

SKY GREEN MJ200

- PCTG for impact strength improved
- Suitable for housing/connection part

High-performance with Bio-based **Copolyester**

ECOZEN

MT05 Pro

MT10 Pro

MT20 Pro

Suitable for Sheet application

→

T_g/HDT↑

Additives For Injection

MT10G Pro

MT20G Pro

- Housing, heat-resistant
sheet, PC replacement

Recyclable & Circular recycle™

RIC #1 : APR, EPBP available

ECO TRIA MC Serie

- Recyclable modified PET
- MC100 base resin without additives
- MC200 for injection
- MC300 for EBM
- MC200-CR50 Bright clarity with 50% PCR input

SKY PET BR

- BR8040 and BR-V available
- Developed for clear blood
collection tubes

SKY PET CR-BL (Med)

- 99% CR-PET
- For medical packaging

Medical Compliance Status

Most of the test results labeled as 'In-progress' are expected to be available within the first half of the year

No.	Medical grade	ISO11607-1	ISO10993	USP class VI	Others
1	S2008	O	O (-3,4,5,6,10,11)	O	US Drug Master Filer(DMF), Type III (#16525)
2	S2008-CR50 (PCR 50%)	O	O (-5)	O	
3	MF200	-	In-progress (-4,5,11,17,18,23)	O	
4	MJ200		In-progress (-4,5,11,17,18,23)	O	
5	MT5G		In-progress (-4,5,11,17,18,23)	O	
6	MT05 pro (Tg 105°C)		In-progress (-4,5,11,17,18,23)	In-progress	
7	MT10		In-progress (-4,5,11,17,18,23)	O	
8	MT10G		In-progress (-4,5,11,17,18,23)	O	
9	MT10 pro		In-progress (-4,5,11,17,18,23)	In-progress	-
10	MT10G pro		In-progress (-4,5,11,17,18,23)	In-progress	
11	MT20 pro		In-progress (-4,5,11,17,18,23)	In-progress	
12	MT20G pro		In-progress (-4,5,11,17,18,23)	In-progress	
13	MC100		In-progress (-4,5,11,17,18,23)	O	
14	MC200		In-progress (-4,5,11,17,18,23)	In-progress	
15	MC300		In-progress (-4,5,11,17,18,23)	In-progress	
16	MC200-CR50		O (-5), In-progress (-4,11,17,18,23)	In-progress	
17	BR8040		-	O	European Pharmacopeia (Ch.3.1.15)
18	BR-V		-	O	European Pharmacopeia (Ch.3.1.15)
19	CR-BL (Med)		O (-4,5,17,18)	O	European Pharmacopeia (Ch.3.1.15)

O : We have - : We don't have plan



Explore Applicable Uses

Innovative Medical & Healthcare Solution - Applicable Uses



Packaging for Surgical Device

- ISO 11607-1, ISO 10993, USP class VI
- Sterilizability (G-ray, E-beam, EO)
- Transparency
- Dimensional stability
- Impact resistance or Flexibility
- Replacing PET (fragile) or PVC (VOCs issue)



Protective Solutions

- Transparency
- Chemical stability
- Impact strength
- Easy processing



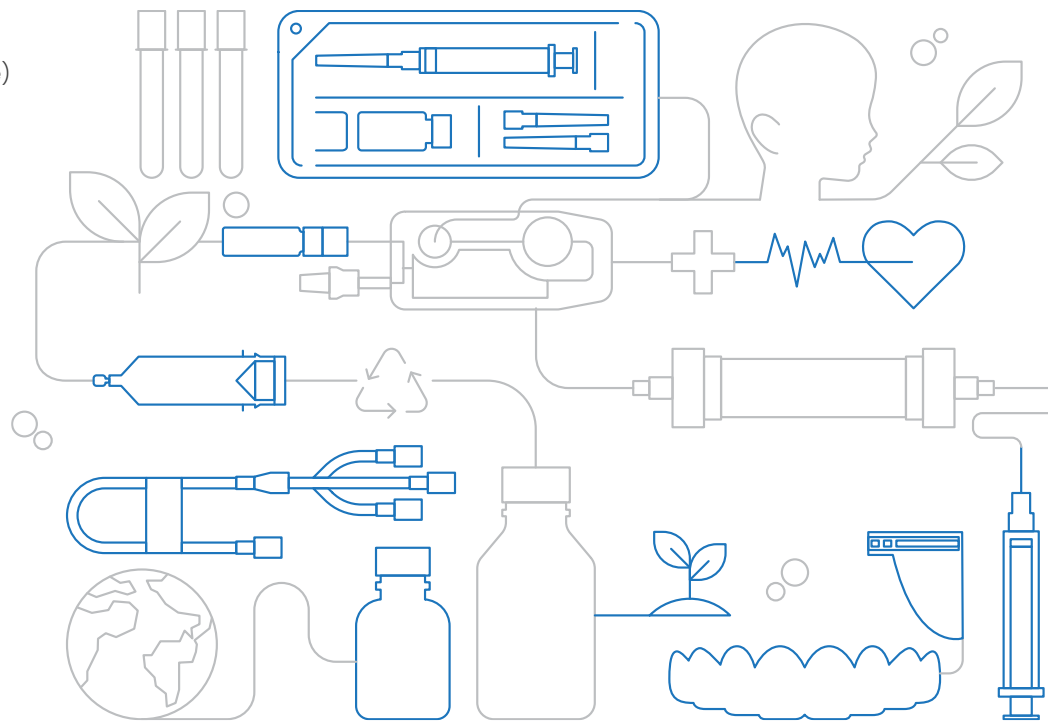
Syringe

- Biocompatibility
- Recyclable : suitable for single-use
- Chemical stability & Sterilisability
- Transparency
- Impact strength



Laboratory/Drainage Bottle

- Impact & Chemical resistance
- Available in various sizes/shape in molding
 - ISBM/EBM available with thicker wall design
- Recyclable : suitable for single-use



Dental Care Solution

- Biocompatibility
- Low tensile decay rate
- Chemical resistance
- Heat resistance
- Toughness



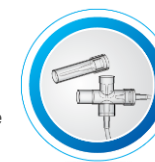
Blood Contact & Fluid Delivery

- Biocompatibility
- Chemical & Impact resistance
- Transparency



Medical Device Hardware Components

- ABS/PC replacement BPA & Styrene free
- Chemical & Impact resistance



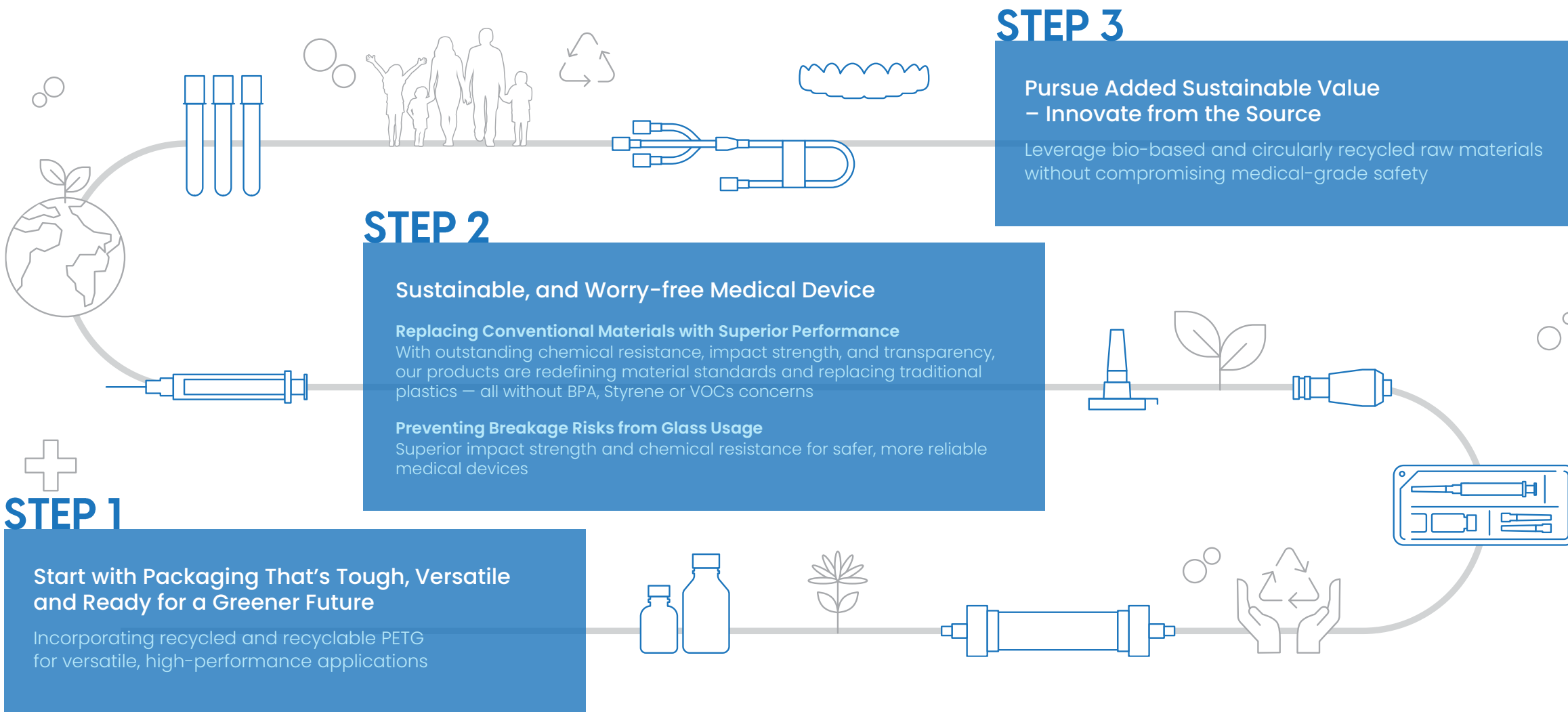
Wellness Packaging

- Shatter proof for glass replacement
- Hot fill available (container sterilization)
- Chemicals resistance



Your Roadmap to Sustainable Medical Devices – Powered by Our Technology

Our Commitment to Safer, Smarter, And More Sustainable Materials for Medical Devices



SKY GREEN S2008 For Medical Packaging

SKYGREEN™ S2008 is a PETG grade specifically designed for medical applications and rigorously tested for safety. SKYGREEN PETG offers superior clarity, impact resistance, and easy thermoforming—unlike PVC, which poses safety concerns due to chlorine content, and PET, which suffers from brittleness. Engineered for reliable sterilization, SKYGREEN PETG ensures both high performance and patient safety.

Certified Quality

Manufactured under ISO 9001
and ISO 14001 standards for reliability and sustainability.

Compliance & Safety

Intended to meet ISO 11607-1 and ISO 10993 / USP
Class VI biocompatibility requirements for medical use

Trusted Medical Packaging Standard

Already adopted by numerous healthcare providers worldwide,
ensuring reliability and compliance for critical medical applications

High Performance for Sterile Packaging

Ideal for forming trays and packaging
that maintain sterility during transit and storage

Accelerated Aging Evaluation of SKYGREEN S2OO8 Packaging : Proven Chemical Stability

Validated under USP <661> conditions, SKYGREEN S2OO8 retains its chemical stability after EO, Gamma, and E-Beam sterilization, with accelerated five-year aging showing no compositional impact.

Why SKYGREEN S2OO8

Multi-Sterilization Compatibility

Validated under EO, Gamma (15/55 kGy), and E-beam (55 kGy) with no significant change in chemical composition



Standards-Based Validation

Testing conducted in accordance with USP <661>; accelerated aging follows ASTM F1980 07(2011) methodology for medical device packaging.

Long-Term Stability

Arrhenius-based accelerated aging (Q10=9.8) confirms five-year equivalent stability—supporting lifecycle consistency and reliability.

Sterilization Conditions

- Gamma irradiation: 15 kGy and 55 kGy
- Ethylene Oxide (EO) sterilization
- Electron Beam (E-beam): 55 kGy
- Evaluation at T=0 (post-sterilization) and T=5 years (accelerated aging equivalent)

Accelerated Aging Methodology

Accelerated aging followed the guidelines defined in ASTM F1980-07(2011) for medical device packaging. The methodology is based on the Arrhenius equation, which correlates aging temperature and reaction rate:

Accelerated Aging Factor (AAF)

$$AAF = Q10^{\frac{T_{AA}-T_{RT}}{10}}$$

Where:

AAF: Accelerated Aging Factor

TAA: Accelerated aging temperature (°C)

TRT: Room temperature (25°C)

Q10 = 9.8 for copolyester materials

Accelerated Aging Time (AAT)

$$AAT = \frac{\text{Desired Real Time}}{AAF}$$

Using this method, accelerated aging equivalent to 5 years of real time was applied to all sterilized and non-sterilized samples.

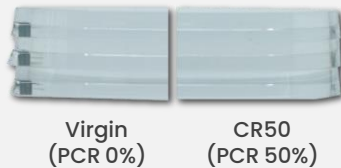
ECOTRIA S2008-CR50 For Medical Packaging

We offer diverse solutions to deliver recycled value tailored to customer needs. ECOTRIA is a sustainable product containing recycled monomers produced with our proprietary technology. With the same quality as conventional products, ECOTRIA helps enhance your value and support your sustainability goals

Targeted production By mass balance

Targeted production allows customers to claim the percentage of PCR content in the products. SK Chemicals controls the input of recycled raw materials (r-BHET) to produce each ECOTRIA CR products.

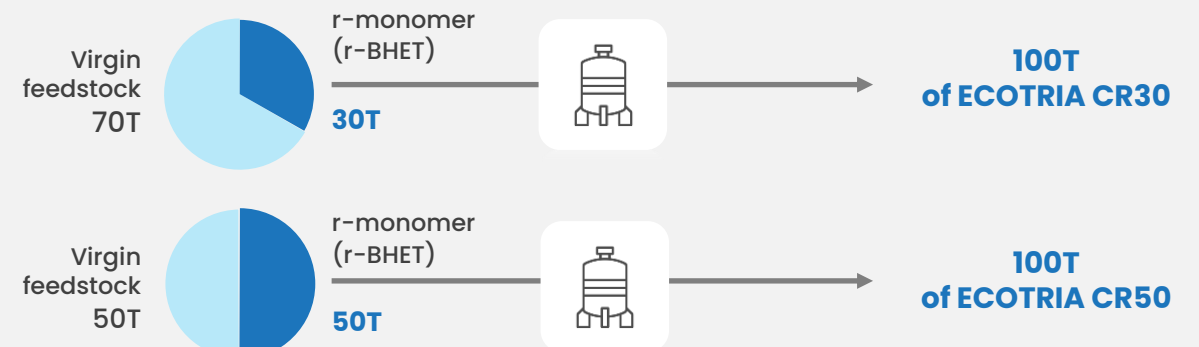
Color comparison of Circular Recycling™ Product



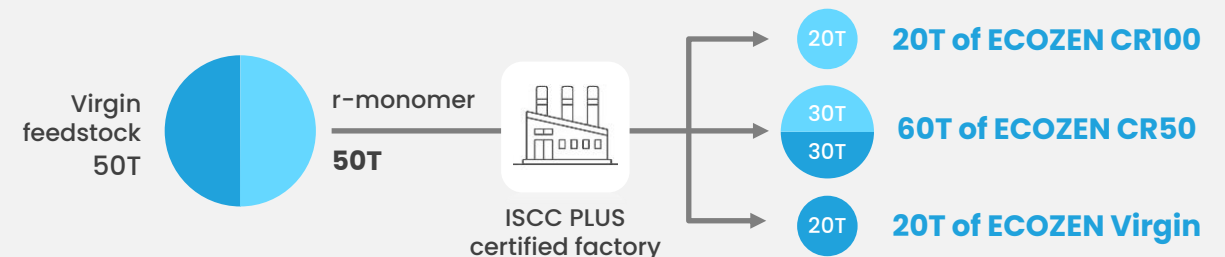
Free attribution By mass balance

In the case of **free attribution**, recycled raw materials are used in a broader range within certified factories. While we cannot specify the PCR content for each product, we can incorporate the desired amount in any related process, maintaining the significant commitment to environmental responsibility.

Recycled monomer input (by each production line)



Recycled monomer input (within the entire factory scope)



Compliance Status for Medical Suitability

Medical standard and support	SKY GREEN S2008	ECOTRIA S2008-CR50	
		Targeted Production	Free Attribution
ISO11607-1 Packaging for terminally sterilized medical device	⊙	○	⊙
ISO10993 Biological evaluation of medical device	⊙ Part 3, 4, 5, 6, 10, 11	⊙ Part 5 ○ Part 3, 4, 6, 10, 11	⊙
USP (U.S. Pharmacopeia) Class VI	⊙	○	⊙
US Drug Master Files, Type III	⊙ #16525	-	⊙
U.S. FDA No Objection Letter (NOL)	Not applicable	⊙	Not applicable

⊙ Yes, we have.

○ The actual tests has not been performed, instead the review has been completed through a third-party gap analysis.

SKY GREEN S2008 for Media Bottle / Drainage Bottle

- Cell culture media bottle
- Sterile reagent bottle
- Cell culture dish
- Various drainage bottles for collecting bodily fluids

SKY GREEN S2008

- Specially designed for medical applications, meeting comprehensive testing requirements (ISO1607-1, ISO10993, USP class VI)
- Excellent chemical resistance and superior clarity, making it a strong glass alternative
- Suitable for various sterilization processes
- Widely used in media bottle applications for enhanced safety and reliability



ECO TRIA MC200

- Offers excellent recyclability for a more sustainable solution
- Widely used for petri dishes and flasks where harsh sterilization is not required
- Combines clarity and durability for dependable performance
- Ensures reliable functionality for everyday laboratory applications



ECO TRIA MC300

- Specialty PET designed for large, durable handleware with excellent recyclability
- High intrinsic viscosity (IV) enables thick-wall molding, unlike conventional PET
- Provides superior toughness, clarity, and chemical resistance
- Ideal for big-size handleware and drainage bottle applications requiring durability and sustainability



SKY GREEN S2008 for Media Bottle / Drainage Bottle

SK Co-polyester Sterilization

Typical sterilization process and applicability

Applicable



Ethylene
Oxide Gas
(EtO)



Electron
Beam



Gamma
Radiation

Difficult



Autoclave



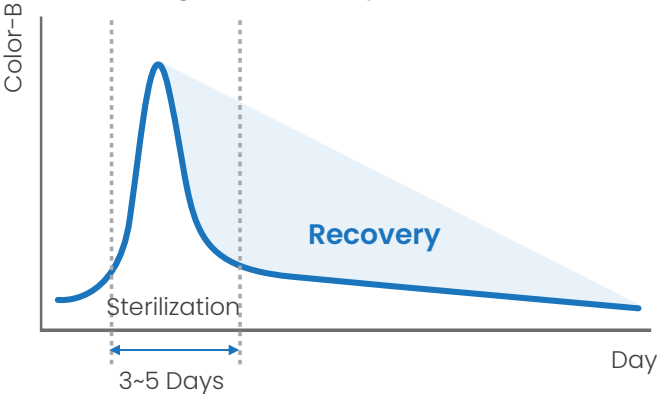
Dry Heat



Color Recovery

It is well known that the color of plastic changes due to strong sterile light. SK's medical grade was sterilized at 50kGy which is the strongest strength of Electron beam and Gamma radiation. The color change occurred immediately, temporarily, after sterilization, but the color is recovered to the level before sterilization within three to five days. At 50kGy, which is a strong light intensity, the change is the largest, and the color changes is low at 15kGy, but the speed of recovery is also fast. There is little change in color by Ethylene Oxide gas.

Color Change and Recovery of SK Medical Grade



Sterilization conditions

Sterilization Process	Radiation Strength	Processing Temperature	Sterilization Time	Sample Color	Remark
Electron beam (E-beam)	15~50 kGy	Room Temp.	24 hour	Recovered in few days	Max : 50kGy
Gamma Radiation (γ-ray)	15~50 kGy	Room Temp.	30 minute	Recovered in few days	Max : 50kGy
Ethylene Oxide gas (EtO gas)	-	50°C, 50% humidity	5 hour	Doesn't change	40°C is recommended

Sterilization Guide



Gamma and e-beam are the gentlest methods for sterilizing polyesters. However, all three methods gamma, e-beam and ethylene oxide, when executed properly, can be used successfully with SYGREEN S2008 without negative effects.

1. EO Sterilization

- EO gas penetrates packaging to sterilize.
- S2008 is not gas-permeable; used as rigid support.
- Tested at 555.5 mg/L for 8 hours ($\leq 51.2^{\circ}\text{C}$, $\leq 51\% \text{ RH}$).
- No significant physical or chemical property loss.

2. Gamma Sterilization

- Gamma rays sterilize by DNA ionization; high penetration and no heat.
- Compatible up to 56 kGy with stable properties.

3. E-beam Sterilization

- Electron beam sterilizes similarly to gamma; lower penetration, higher dose rate.
- Compatible up to 55 kGy without major property changes.

Dental Care Solution

SK chemicals delivers versatile material solutions for the dental care industry.



Clear aligner

ECOZEN MT05 Pro
ECOZEN MT10 Pro

ECOZEN® MT05 Pro / MT10 Pro —
High-performance clear aligner materials offering superior clarity, durability, and customizable stiffness for optimal orthodontic results.



Mouth wash bottle

SKYPET CR

Replacing PET with CR-PET in mouthwash containers delivers exceptional clarity while meeting sustainability demands.



Toothbrush

ECOTRIA JN-CR30

JN-CR30, a PCR version of PCTG, delivers excellent chemical resistance and impact strength while supporting sustainability with its PCR content.

The material is already well-established in the toothbrush-handle market, where it has been widely adopted by leading brands.



Water flosser

ECOTRIA JN-CR30

Dental Care Solution : clear aligner

ECOZEN® MTO5 Pro / MT10 Pro – High-performance clear aligner materials offering superior clarity, durability, and customizable stiffness for optimal orthodontic results.



Material property comparison for clear aligner applications

Key Properties	ECOZEN MTO5 Pro / MT10 Pro	TPU	PET	PC
Transparency	⊙	○	⊙	⊙
Stain resistance	⊙	△	○	○
Chemical resistance	⊙	○	⊙	△
Tensile durability	○	⊙	○	○

⊙ Excellent ○ Moderate △ Low

By adjusting the thickness of the **single-layer copolyester** or designing **a multi-layer structure with TPU**, we can fine-tune both correction strength and wearing comfort.

Protective Solutions

With outstanding chemical resistance and excellent processability, our materials can be used for various protective solutions such as protection walls and face shields. Ensuring clear visibility and superior durability, they help safeguard your health with confidence.



Face shield



Protective wall

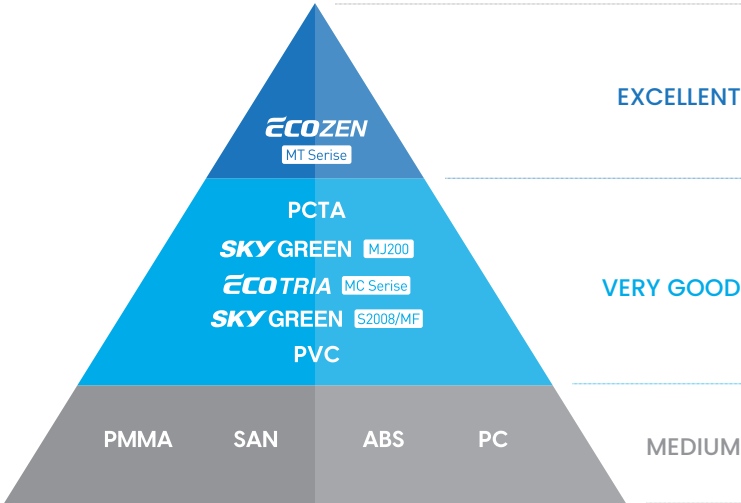


Machine & Equipment Guards

Chemical Resistance

Comparative chemical resistance

Chemical resistance matters most in everyday life.
The simplest things are often the most extraordinary.



Evaluation of chemical resistance across multiple materials and chemicals

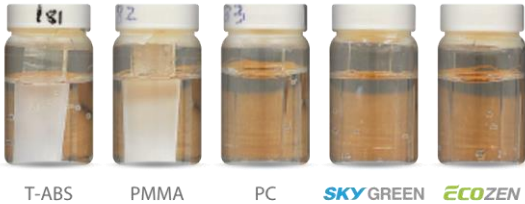
Polident

Immersion Test
40°C, 24hrs



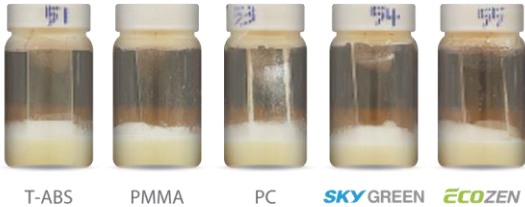
Hand Sanitizer

60°C, 20hrs



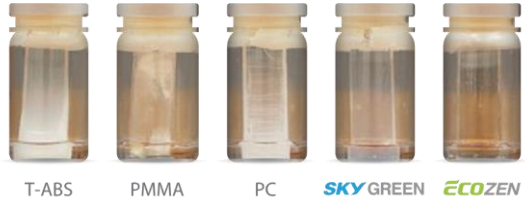
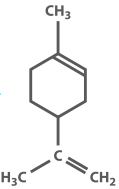
Sun block cream

60°C, 20hrs



Limonene

60°C, 20hrs



Syringe

- Prefilled syringe
- Insulin pen
- Safety needle guard
- Disposable syringe

Excellent flowability for easy processing

SKY GREEN MF200

- SKYGREEN MF200 provides **excellent flowability** due to its **low intrinsic viscosity (IV)**.
- Suitable for molding **various syringe wall thicknesses and complex shapes**.
- For **higher impact strength**, PCTG grades (MJ / FN-CR) are recommended.

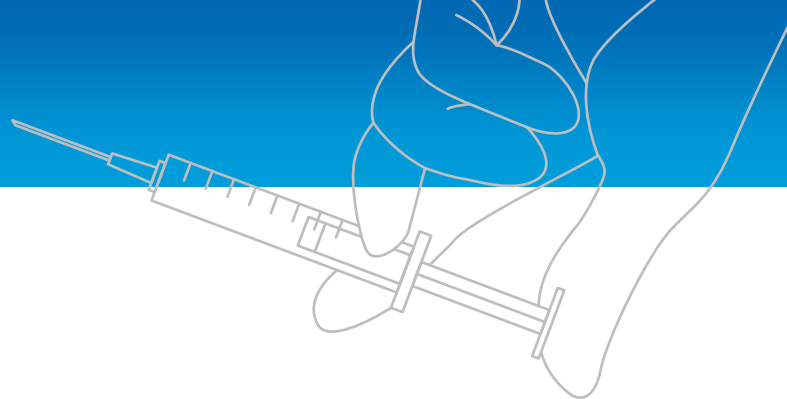
Recyclable, glass-like clarity for syringe applications

ECOTRIA MC200

- ECOTRIA MC200 offers **excellent transparency**.
- It is also **highly recyclable**, making it suitable for **disposable syringe applications**.
- Its **superior chemical resistance** helps maintain the **stability of injected medications**.

ECOTRIA MC200-CR50

- ECOTRIA MC200-CR50 delivers the **same exceptional performance** as MC200.
- It contains **50% PCR content**, offering a higher level of **sustainability**.
- Despite the use of recycled material, it **maintains color consistency, physical properties, and stability** equivalent to virgin resin.
- This allows manufacturers to pursue both **environmental responsibility** and **healthcare performance** without compromise.

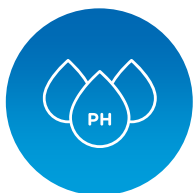


Medical Device Hardware Components

SK chemicals' Copolyester delivers safe, BPA-free performance with superior clarity and chemical resistance—perfectly engineered to replace PC and T-ABS in medical applications.



ABS/PC
replacement
(BPA & Styrene free)



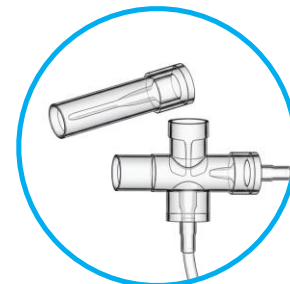
Chemical
resistance



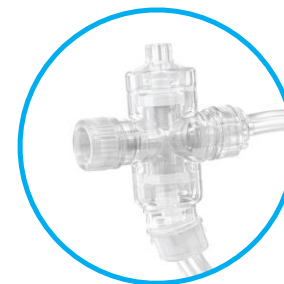
Impact
strength



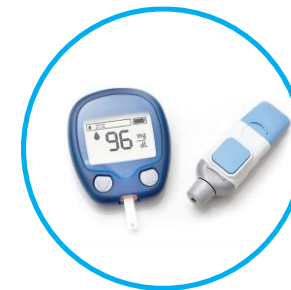
High
transparency



IV Connectors
SKY GREEN MF/MJ



Male-female connectors
SKY GREEN MF/MJ



Diabetes diagnostic
device housing
SKY GREEN MF/MJ
ECOZEN MT



Surgical lighting covers
ECOZEN MT10G Pro



Beauty device housing
SKY GREEN MJ
ECOZEN MT



Sterilization trays
SKY GREEN MJ
ECOZEN MT

- BPA-free with excellent clarity, chemical resistance, and durability
- Designed to replace PC and T-ABS restricted by BPA and Styrene concerns
- Ensures compliance without sacrificing performance
- Technical support enables smooth, cost-efficient material transition
- Applicable across a wide range of medical devices

Blood Contact & Fluid Delivery

Our copolyesters deliver both blood-contact compatibility and biocompatibility, making them ideal for critical medical applications. They combine excellent gas barrier performance, high transparency, and shatter resistance—ensuring both functional safety and visual assurance for patients where safety is paramount. By incorporating bio-based or recycled content, you can offer even greater value and sustainability to your customers.



Contrast injector
SKY GREEN S2008



Blood collection tube
SKY PET BR



Peritoneal dialysis
transfusion set
SKY GREEN MJ200
ECOZEN MT10G Pro



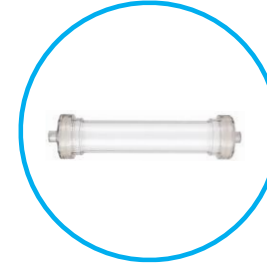
Blood gas tube
SKY GREEN S2008



Auto blood
feeding system
SKY GREEN MJ200
ECOZEN MT10G Pro



Blood pump cassette
SKY GREEN S2008



Renal dialyzer
SKY GREEN S2008

Wellness Packaging

Glass Replacement

Provides strong durability without breakage.
Reduces overall weight throughout the distribution process.

Recyclability

RIC #1 | EPBP | APR

A harmonious balance of recyclability
and premium thickness.

Recycled

Pursuing sustainability through the use of PCR content.

Tablet (or capsule) bottles

Design premium, sustainable nutrition bottles with ECOTRIA MC — a glass-like yet shatter-proof alternative to glass or low-grade PET, meeting both recyclable and recycled standards.



Hot-fill supplement bottles

ECOZEN MT, our heat-resistant copolyester, supports hot-fill applications while offering premium performance with bio-based content.



Cosmeceutical packaging

SK chemicals' Copolyester is already used globally across various cosmetic applications and can also be widely applied in the cosmeceutical field.



Material Selection Guide

ISO Standard

Brand	Grade	Main applications	Specific Gravity	Rockwell Hardness	Tensile Strength @Yield	Tensile Strength @Break	Elongation @Yield	Elongation @Break	Flexural Strength	Flexural Modulus	Izod Impact Notched @23°C	Heat distortion temperature		Transmittance
												@0.455 Mpa	@1.820Mpa	
			-	R-scale	Kgf/cm²	Kgf/cm²	%	%	Kgf/cm²	Kgf/cm²	J/m	°C		%
SKY GREEN	S2008	Medical device packaging Fluid/Blood management	1.27	110	49	30	4.1	240	67	1,920	8.8	73	64	90
	MF200	Syringe, IV connector	1.27	105	49	23	4.1	40	67	1,890	7	72	62	90
	MJ200	Diagnostic housing IV connector	1.23	105	44	46	4.4	220	60	1,600	93	76	64	90
ECOZEN	MT05 pro	Dental aligner	1.22	>115	46	48	6.3	200	69	1,800	93	93	78	89
	MT10 Pro	Dental aligner Medical packaging (High°C)	1.23	>115	47	48	6.5	238	66	1,670	93	97	82	88
	MT10G Pro	Renal treatment Device housing	1.23	>115	47	48	6.5	238	66	1,670	93	97	82	88
	MT20 Pro	Medical packaging (High°C)	1.26	>115	54	47	7	155	77	1,800	80	111	94	80
	MT20G Pro	Sleep Apnea Relief Device	1.26	>115	54	47	7	155	77	1,800	80	111	94	80
ECOTRIA	S2008-CR50	Medical device packaging (Recycled, PCR 50%)	1.27	110	49	30	4.1	240	67	1,920	8.8	73	64	90
	MC100	Syringe, Flask/Bottle	1.32	>115	52	N/A	N/A	>150	71	2,200	7	73	64	89
	MC200	Syringe, Insulin pen	1.32	>115	52	N/A	N/A	>150	71	2,200	7	73	64	89
	MC200-CR50	Syringe, Insulin pen	1.32	>115	56	N/A	N/A	>150	71	2,200	7	73	64	89
SKY PET	BR8040	Medical device packaging (Recyclable)	1.33	116	55	26	4.1	240	71	2,100	5.4	72	63	89
	BR-V	Blood collection tube	1.33	116	54	22	4	42	72	2,100	5	70	62	89

*Haze is less than 1.0 and mold shrinkage is about 0.2-0.5% for all grades

Material Selection Guide

ASTM Standard

Brand	Grade	Main applications	Specific Gravity	Rockwell Hardness	Tensile Strength @Yield	Tensile Strength @Break	Elongation @Yield	Elongation @Break	Flexural Strength	Flexural Modulus	Izod Impact Notched @23°C	Heat distortion temperature		Transmittance
												@0.455 Mpa	@1.820Mpa	
			-	R-scale	Kgf/cm²	Kgf/cm²	%	%	Kgf/cm²	Kgf/cm²	J/m	°C		%
SKY GREEN	S2008	Medical device packaging Fluid/Blood management	1.27	110	455	410	5	250	705	21,500	100	70	62	90
	MF200	Syringe, IV connector	1.27	105	470	470	4.5	120	720	19,300	105	70	62	90
	MJ200	Diagnostic housing IV connector	1.23	105	460	540	5	340	680	18,300	860	74	64	90
ECOZEN	MT05 pro	Dental aligner	1.22	>115	470	590	6.4	245	740	17,800	860	91	77	89
	MT10 Pro	Dental aligner Medical packaging (High°C)	1.23	>115	490	550	6.6	285	720	16,900	860	99	85	88
	MT10G Pro	Renal treatment Device housing	1.23	>115	490	550	6.6	285	720	16,900	860	99	85	88
	MT20 Pro	Medical packaging (High°C)	1.26	>115	540	550	7.1	160	900	18,700	860	111	98	80
	MT20G Pro	Sleep Apnea Relief Device	1.26	>115	54	47	7	155	77	1,800	80	111	94	80
ECOTRIA	S2008-CR50	Medical device packaging (Recycled, PCR 50%)	1.27	110	455	410	5	250	705	21,500	100	70	62	90
	MC100	Syringe, Flask/Bottle	1.32	>115	540	N/A	N/A	>150	810	23,000	80	71	62	89
	MC200	Syringe, Insulin pen	1.32	>115	540	N/A	N/A	>150	810	23,000	80	71	62	89
	MC200-CR50	Syringe, Insulin pen	1.32	>115	540	N/A	N/A	>150	810	23,000	80	71	62	89
SKY PET	BR8040	Medical device packaging (Recyclable)	1.33	116	520	340	4.5	340	780	22,770	66	69	-	89
	BR-V	Blood collection tube	1.33	116	520	220	4.5	250	770	22,600	51	69	-	89

*Haze is less than 1.0 and mold shrinkage is about 0.2-0.5% for all grades



Comprehensive Test Results Report

An abstract graphic consisting of several thick, light blue lines that curve and intersect, creating a sense of movement and flow. The lines are positioned in the upper right quadrant of the slide.

S2008 vs. OCR*

*Other Copolyester Resin

Technical Data Sheet Comparison

Similar Mechanical Properties, no loss in Impact Strength

Tested with Injected Dog bone Sample

Mechanical Properties				
Properties	Test Method	Unit	S2008	OCR
Specific Gravity	ASTM D792	-	1.27	1.27
Rockwell Hardness	ASTM D785	R-scale	117	117
Tensile Strength @ Yield	ASTM D638	kgf/cm2	491	486
Tensile Strength @ Break	ASTM D638	kgf/cm2	539	510
Elongation @ Yield	ASTM D638	%	4.5	4.4
Elongation @ Break	ASTM D638	%	347	318
Flexural Strength	ASTM D790	kgf/cm2	723	729
Flexural Modulus	ASTM D790	kgf/cm2	21100	21333
IZOD Impact Strength Notched @ 23°C (No Break #/10EA)	ASTM D256	EA	10	8
IZOD Impact Strength Notched @ 23°C (for broken sample)	ASTM D256	J/m	No Break	80
IZOD Impact Strength Notched @ 23°C (for no broken sample)	ASTM D256	J/m	860	860

Technical Data Sheet Comparison

Tested with Injected Dog bone Sample

Optical Properties				
Properties	Test Method	Unit	S2008	OCR
Haze	ASTM D1003	%	< 1.0	< 1.0
Transmittance	ASTM D1003	%	90	90
Thermal Properties				
Properties	Test Method	Unit	S2008	OCR
Heat Distortion Temperature @ 0.455MPa / @1.820MPa	ASTM D648	°C	70/62	72/62
Glass Transition Temperature	DSC	°C	79	79
Flowability Properties				
Properties	Test Method	Unit	S2008	OCR
Intrinsic Viscosity	SK Method	dL/g	0.78	0.75

Technical Data Sheet Comparison

Better Tear Propagation Resistance and Tensile Strength

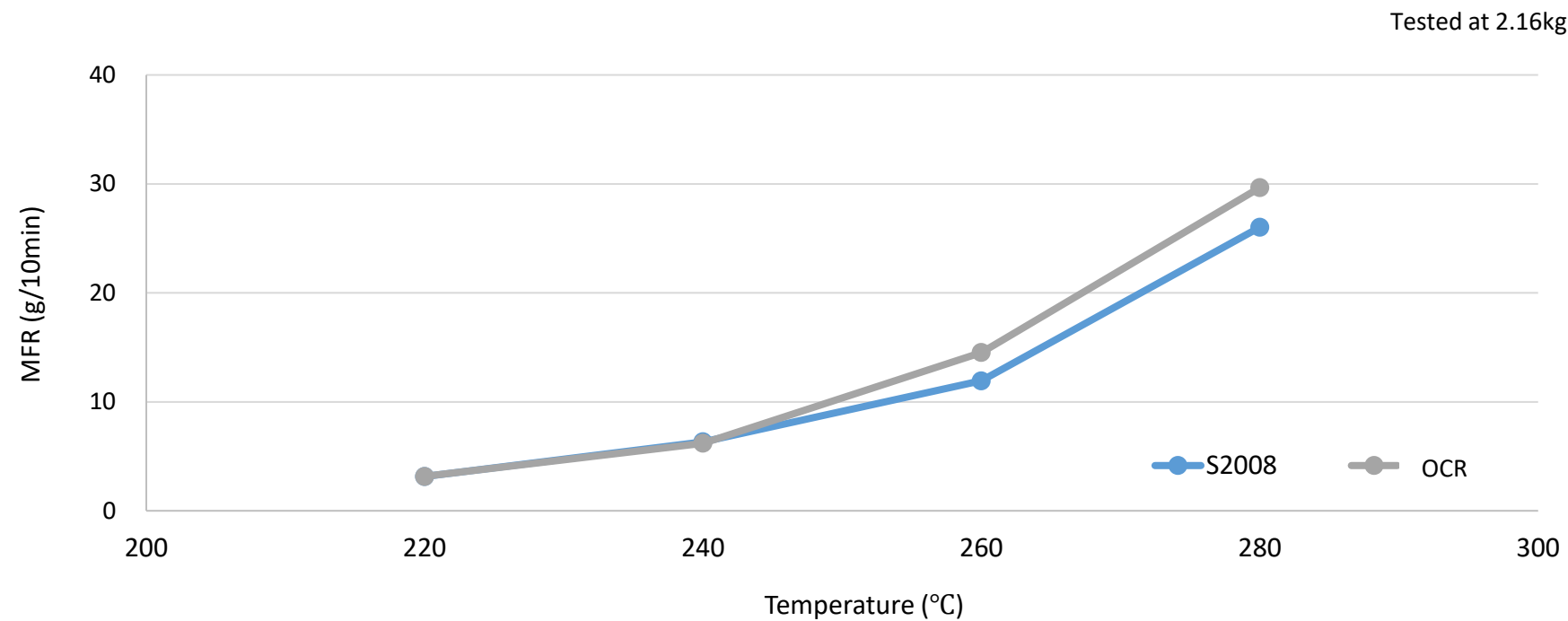
Better Protectability in long term storage

Tested with Film Sample

Film Properties*				
Properties	Test Method	Unit	S2008	OCR
Thickness of Film Tested	-	mm	0.25	0.25
Tear Propagation Resistance, Split Tear Method @250mm/min	ASTM D1938	N/mm (M.D./T.D.)	41/40	36/37
Tensile Strength @ Yield	ASTM D882	Mpa (M.D./T.D.)	50/45	41/42
Tensile Strength @ Break	ASTM D882	Mpa (M.D./T.D.)	42/46	42/39
Elongation @ Yield	ASTM D882	% (M.D./T.D.)	4/4	4/4
Elongation @ Break	ASTM D882	% (M.D./T.D.)	384/429	416/397

MI(Melt Index)

Similar Melt Index, no significant difference in processing



Grade	Temp.	220	240	260	280
S2008		3.1	6.3	11.9	26.0
OCR		3.2	6.2	14.5	29.7

Chemical Resistance Test : Exposing S2OO8 to various solutions for ESCR Test

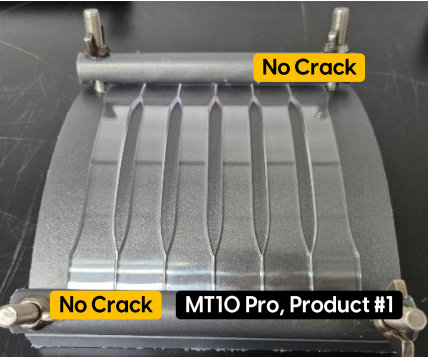
1. ESCR Test

- Specimen is exposed to chemical and stress simultaneously
- After 24 hours, the samples are checked for appearance changes (Cracks, Haze, etc)

Tested Products	Ingredients
1	Polident Sodium Bicarbonate, Citric Acid, Potassium Caroate (Potassium Monopersulfate), Sodium Carbonate, Sodium Carbonate Peroxide, TAED, Sodium Benzoate, PEG-180, Sodium Lauryl Sulfate, VP/VA Copolymer, Flavour, Cellulose Gum, CI42090 Aluminum Lake, CI 73015, CI 19140, CI 19140 Aluminum Lake, etc. (provided by POLIDENT manufacturer)
2	Odol-med3 Mouthwash, Triple Protection, Alcohol-Free Aqua , Glycerin, Propylene glycol, Sodium fluorid, Aroma, Potassium Acesulfame, Cetylpyridinium chloride, Zinc chloride
3	Colgate Max White Charcoal Toothpaste Aqua, Hydrated silica, Glycerin, Sorbitol, Sodium lauryl sulfate, Aroma, Cellulose gum, Sodium fluoride, Activated charcoal, Titanium dioxide
4	Elmex Opti-Schmelz Professional Toothpaste White Enamel Aqua, Hydrated silica , Glycerin, Aroma, Hydroxyethylcellulose, Sodium lauryl sulfate, Olaflur, Amin fluoride, Titanium dioxide
5	Gentle Teeth Whitening Strips PVP (Polyvinylpyrrolidone), Hydrogen peroxide, Glycerin, Aqua, Carbomer, Sodium hydroxide
6	Listerine Cool Mint Mild Antibacterial Alcohol-Free Mouthwash Aqua, Sorbitol, Propylene glycol ,Poloxamer 407, Benzoic acid, Sodium benzoate, Sucralose Eucalyptol, Menthol, Thymol, Sodium fluoride

After
24
Hours

S2OO8, Product #1



S2OO8, Product 2-6



MTIO Pro, Product 2-6



OCR, Product 2-6



Chemical Resistance Test

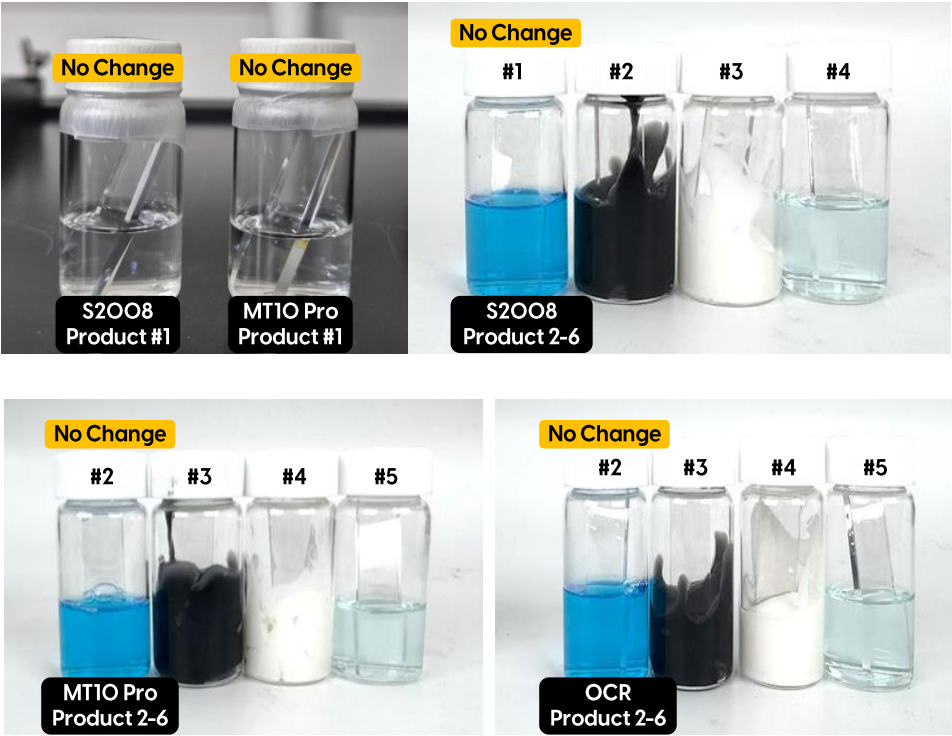
: Exposing S2OO8/MT1O Pro to various dental hygiene product for immersion test

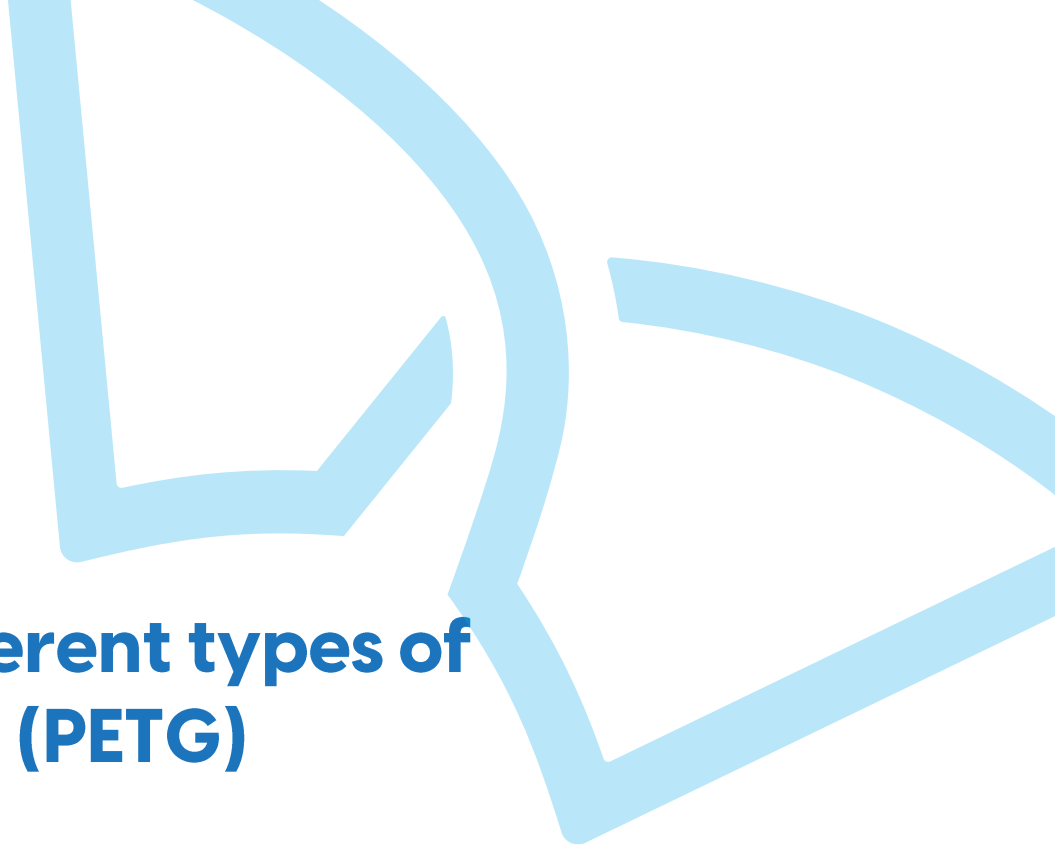
2. Immersion Test

- Specimen is exposed to chemical and heat simultaneously
- After 24 hours, te samples are checed for appearance changes(Cracks, Haze, etc)
- Specimen is placed in a chemical filled vial and put in a 4Oc oven for 24 hours

Tested Products	Ingredients
1	Polident Sodium Bicarbonate, Citric Acid, Potassium Caroate (Potassium Monopersulfate), Sodium Carbonate, Sodium Carbonate Peroxide, TAED, Sodium Benzoate, PEG-180, Sodium Lauryl Sulfate, VP/VA Copolymer, Flavour, Cellulose Gum, CI42090 Aluminum Lake, CI 73015, CI 19140, CI 19140 Aluminum Lake, etc. (provided by POLIDENT manufacturer)
2	Odol-med3 Mouthwash, Triple Protection, Alcohol-Free Aqua , Glycerin, Propylene glycol, Sodium fluorid, Aroma, Potassium Acesulfame, Cetylpyridinium chloride, Zinc chloride
3	Colgate Max White Charcoal Toothpaste Aqua, Hydrated silica, Glycerin, Sorbitol, Sodium lauryl sulfate, Aroma, Cellulose gum, Sodium fluoride, Activated charcoal, Titanium dioxide
4	Elmex Opti-Schmelz Professional Toothpaste White Enamel Aqua, Hydrated silica , Glycerin, Aroma, Hydroxyethylcellulose, Sodium lauryl sulfate, Olaflur, Amin fluoride, Titanium dioxide
5	Gentle Teeth Whitening Strips PVP (Polyvinylpyrrolidone), Hydrogen peroxide, Glycerin, Aqua, Carbomer, Sodium hydroxide
6	Listerine Cool Mint Mild Antibacterial Alcohol-Free Mouthwash Aqua, Sorbitol, Propylene glycol ,Poloxamer 407, Benzoic acid, Sodium benzoate, Sucralose Eucalyptol, Menthol, Thymol, Sodium fluoride

After
24
Hours



An abstract graphic consisting of several thick, light blue lines that curve and intersect, forming a stylized, geometric shape that resembles a large, open letter 'D' or a partial circle. The lines are smooth and have a consistent thickness.

Comparison between different types of glycol-modified PET (PETG)

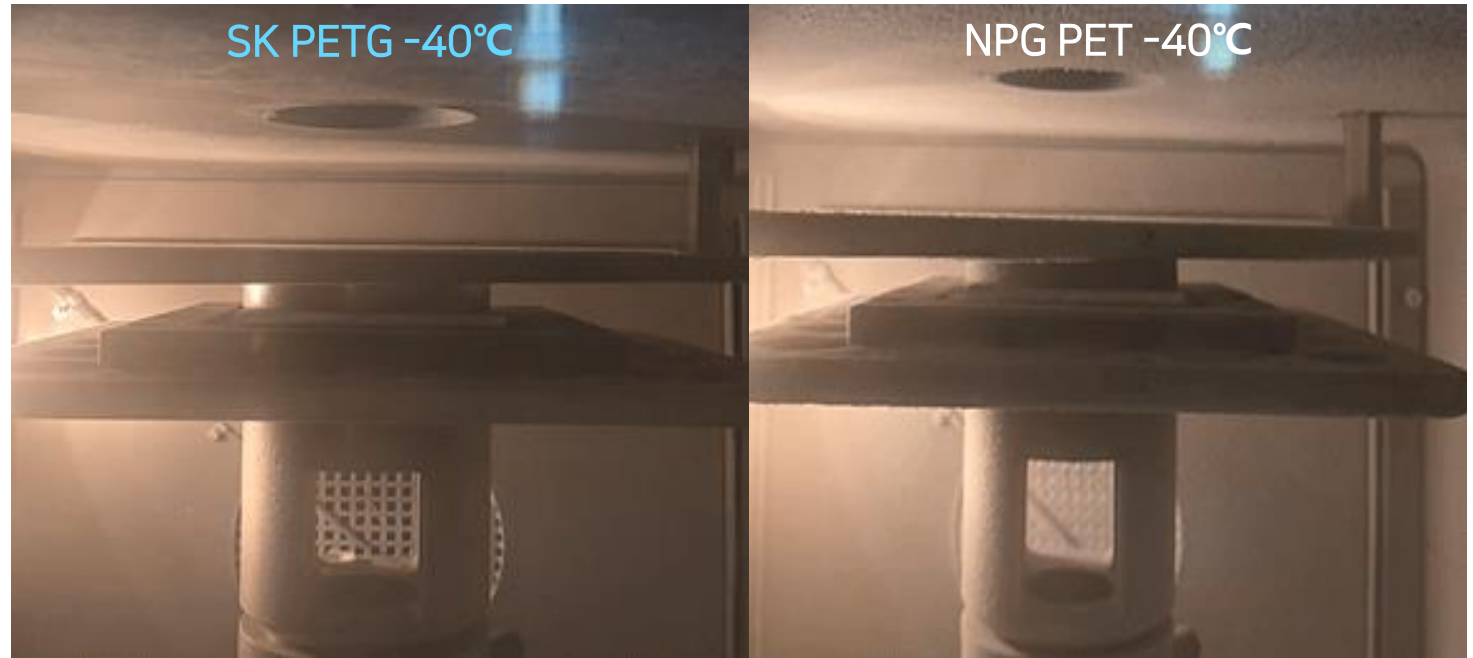
Summary of Comparative Analysis

- ✓ **Mechanical Properties** : In terms of low-temperature impact strength and toughness, SKYGREEN PETG is relatively superior.
- ✓ **Post Processing(Cold Bending)** : SKYGREEN PETG is superior in dimensional and appearance quality.



Basic Properties – Drop Impact Strength (Injection-Molded Flat Specimen, 3T)

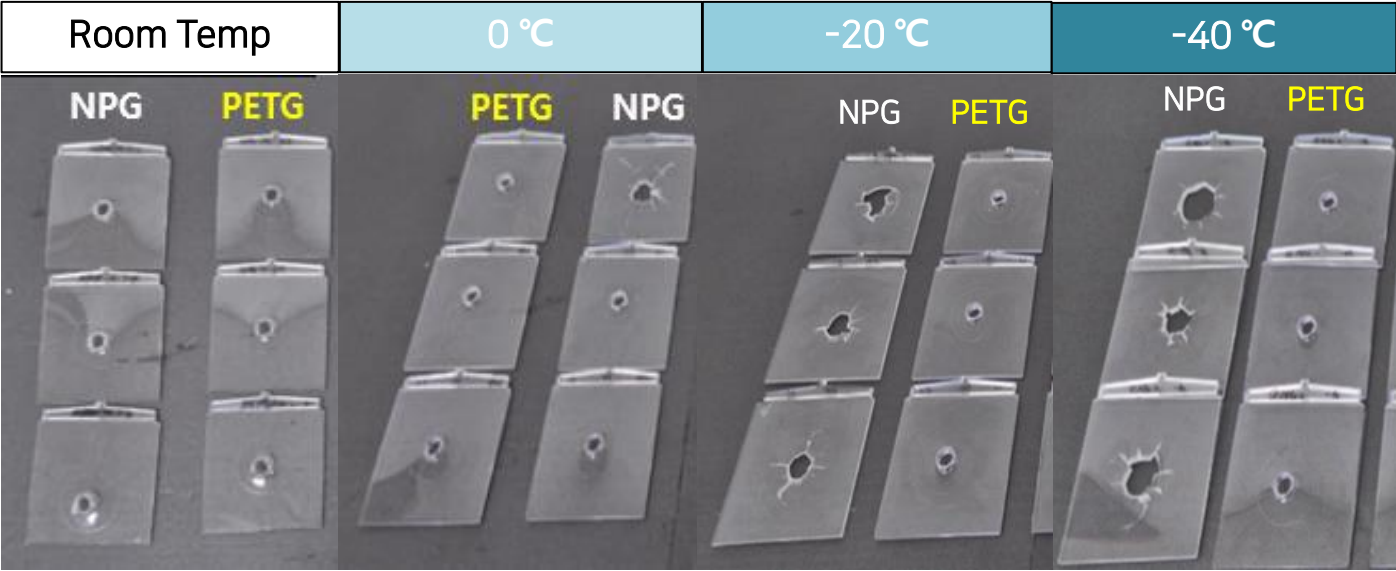
- ✓ The comparison of drop impact strength between NPG-PET and SKYGREEN PETG shows that at room temperature, both are at an equivalent level, while at low temperatures, PETG is relatively superior.



※ Evaluation Method: ASTM D3763
Specimen: 3T 10×10 injection-molded specimen,
thermoformed container

Basic Properties – Drop Impact Strength (Room Temperature to -40°C)

- ✓ The comparison of drop impact strength between NPG-PET and SKYGREEN PETG shows that at room temperature, both are at an equivalent level, while at low temperatures, SKYGREEN PETG is relatively superior.



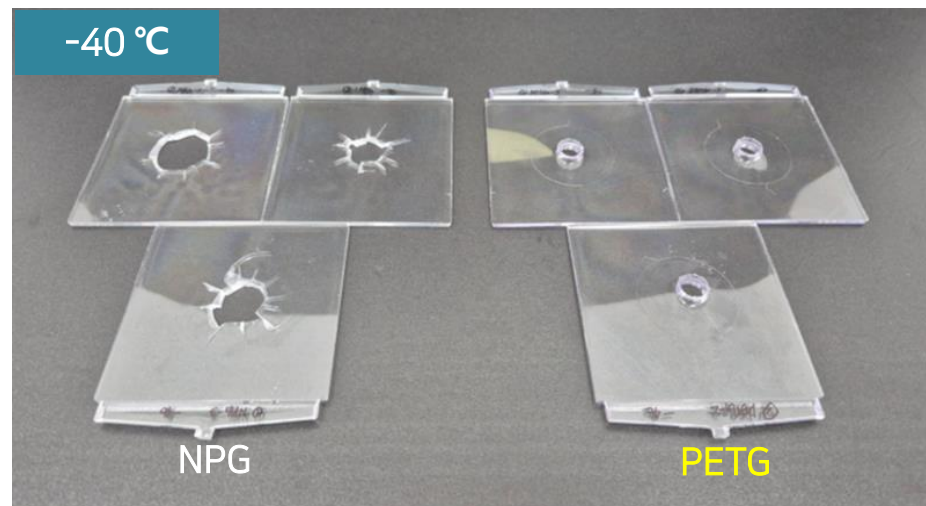
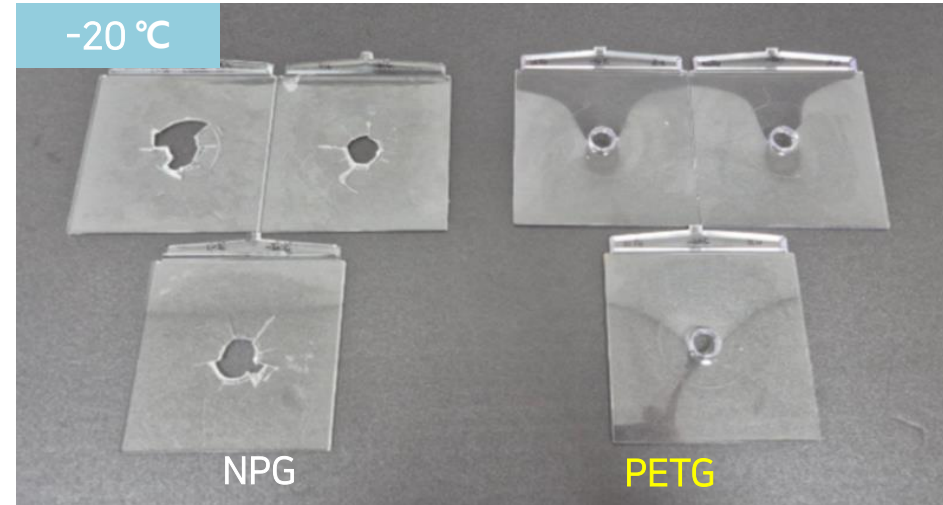
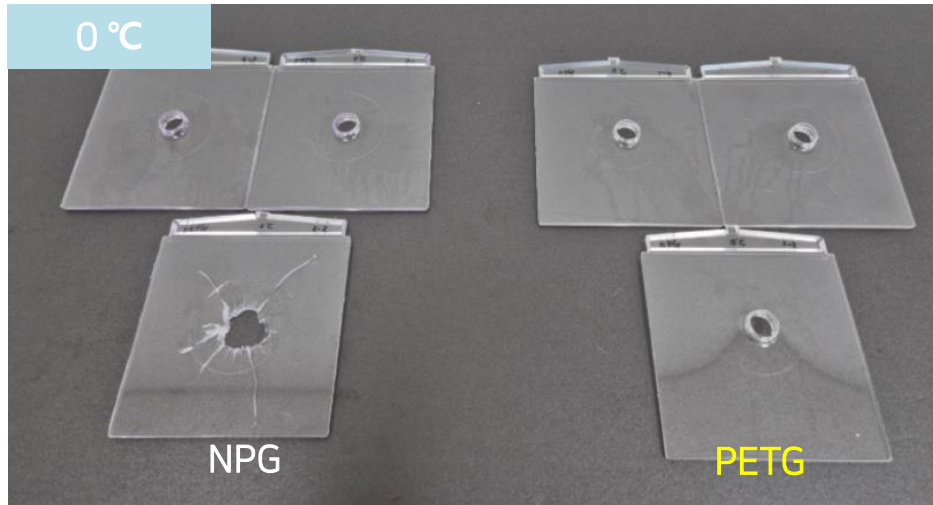
Temperature	No. of Specimen	PETG	NPG
Room Temperature	1	O	O
	2	O	O
	3	O	O
0°C	1	O	X
	2	O	O
	3	O	O
-20°C	1	O	X
	2	O	X
	3	O	X
-40°C	1	O	X
	2	O	X
	3	O	X

O : Simple Penetration

X : Fracture

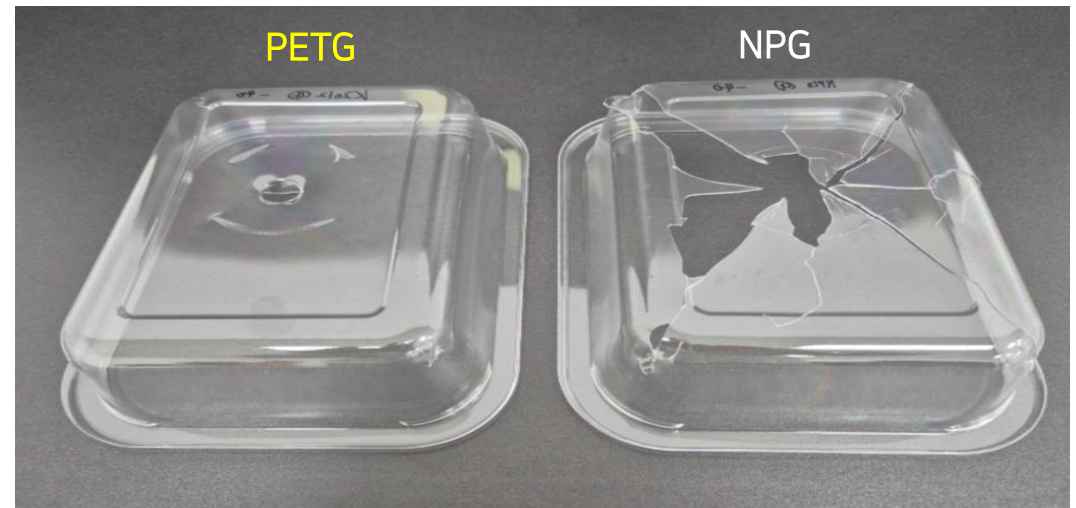
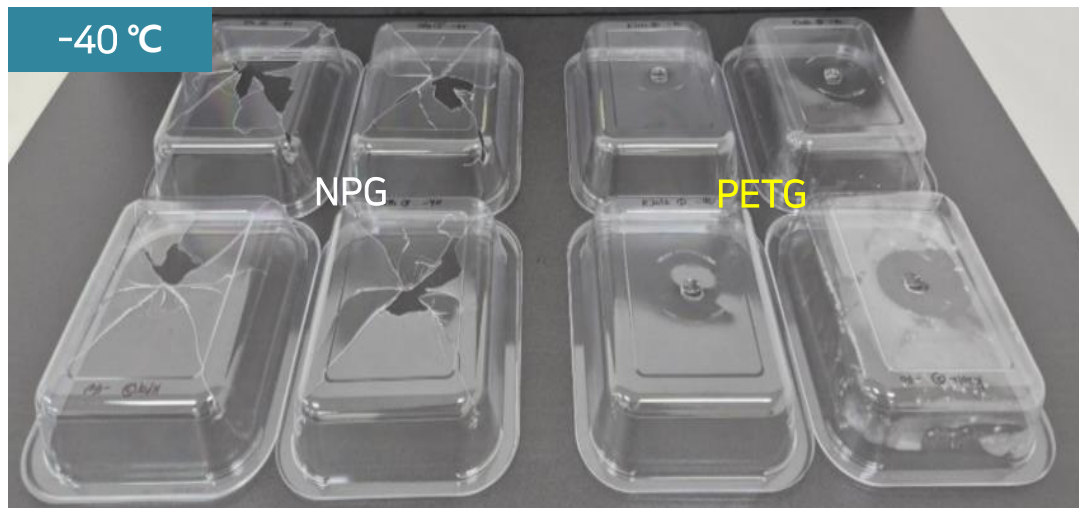
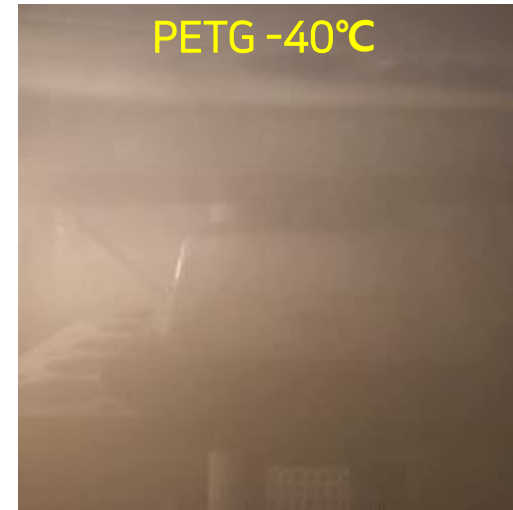
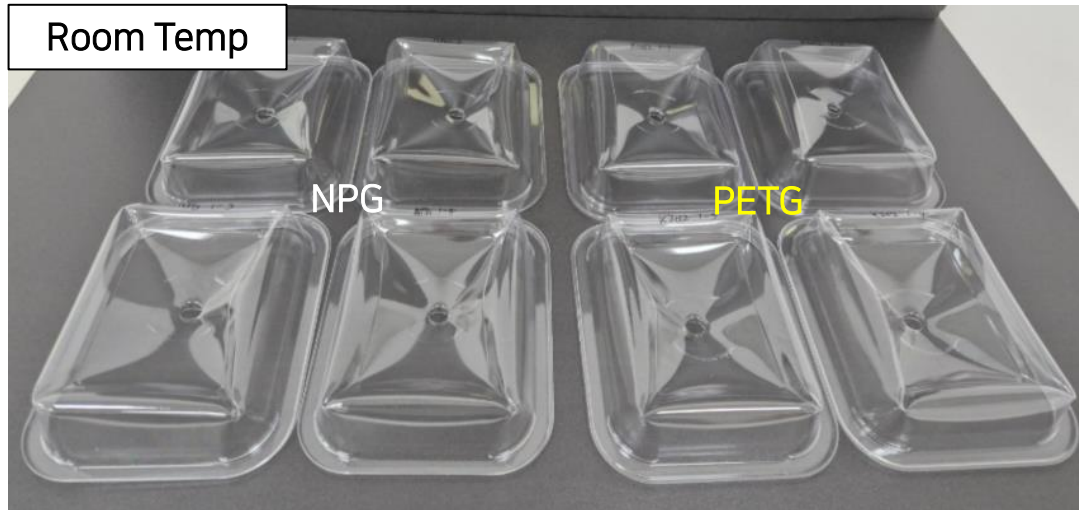
Basic Properties – Drop Impact Strength (Room Temperature to -40°C)

- ✓ The comparison of drop impact strength between NPG-PET and SKYGREEN PETG shows that at room temperature, both are at an equivalent level, while at low temperatures, SKYGREEN PETG is relatively superior.



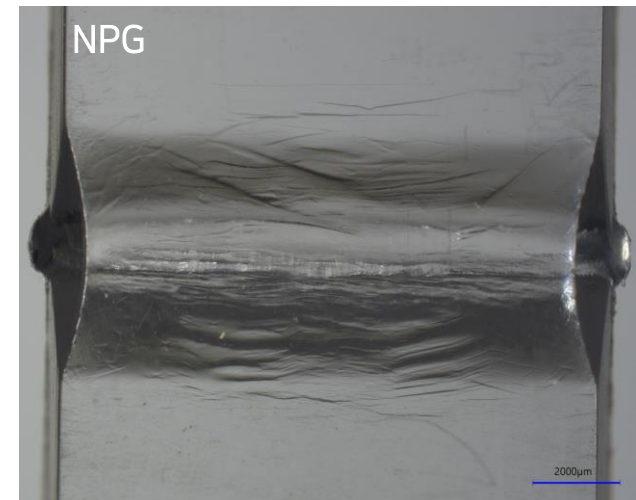
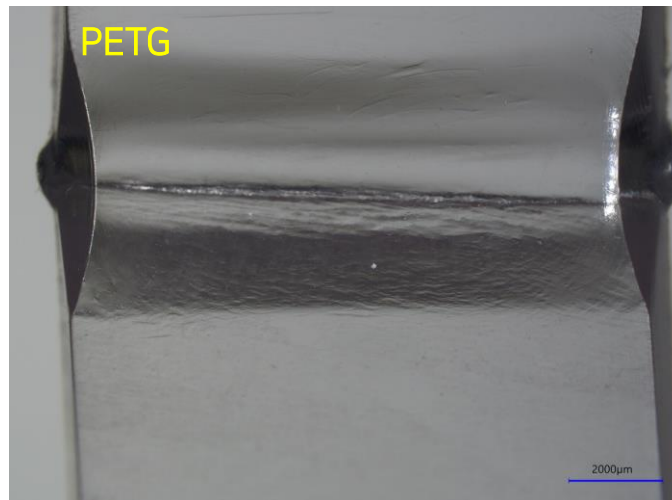
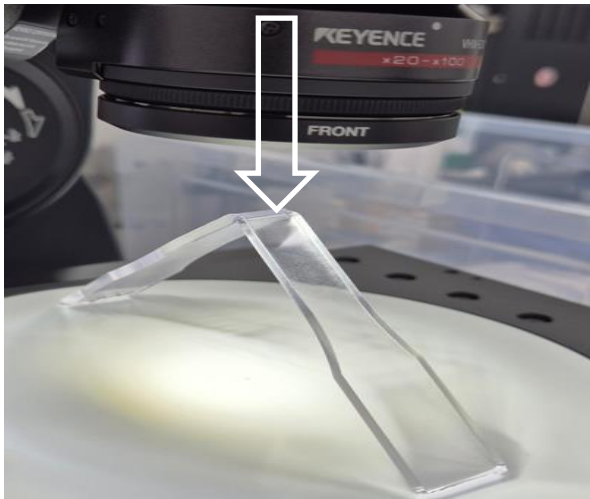
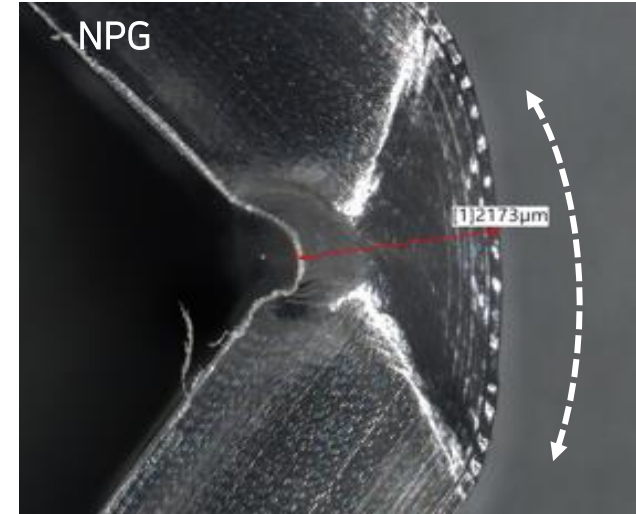
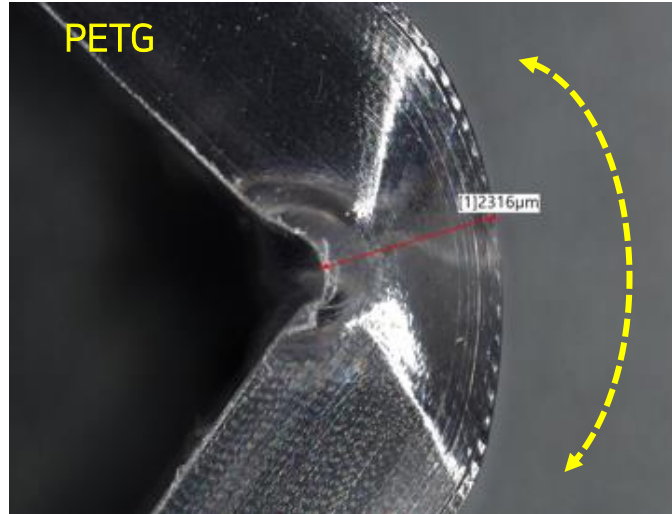
Basic Properties – Drop Impact Strength (Thermoformed Container)

- ✓ The comparison of drop impact strength between NPG-PET and SKYGREEN PETG shows that at room temperature, both are at an equivalent level, while at low temperatures, SKYGREEN PETG is relatively superior.



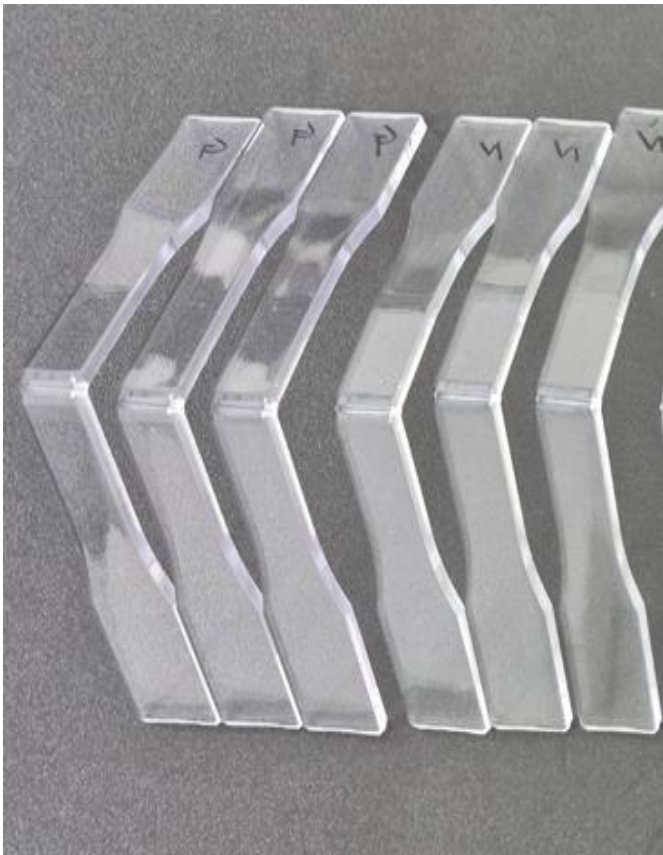
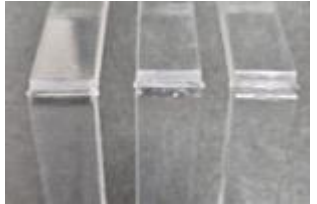
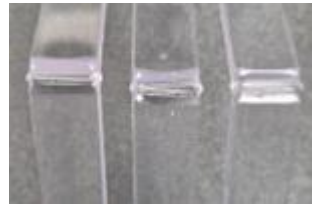
Post Processing(Cold Bending)

- ✓ The comparison of cold bending processability between NPG-PET and SKYGREEN PETG shows that SKYGREEN PETG is superior in terms of dimensional and appearance quality. (Slight whitening was observed at the bending area of NPG-PET.)



Post Processing(Cold Bending)

✓ The comparison of cold bending processability between NPG-PET and SKYGREEN PETG shows that SKYGREEN PETG is superior in terms of dimensional and appearance quality. (Slight whitening was observed at the bending area of NPG-PET.)

	Sample	NPG	PETG
	Bending Portion diameter	 2,167	 2,247
	Bending section		
	Bending surface		
Whitening		Weak	None



Thank you



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