

HIPS Cool

High-Impact Polystyrene · Refrigerator & Cold-Storage Grade

ESCR RATING**PASS**

R11 · HCFC 141b · Cyclopentane

CHARACTERISTICS

- Excellent ESCR — resists refrigerant blowing agents
- FDA 21 CFR 177:1640 — food-contact compliant
- Good low-temperature impact toughness
- Excellent thermoformability and deep-draw
- Matte, easily decorated finish

APPLICATIONS

- Refrigerator door & cabinet liners
- Freezer liners · picnic cooler interiors
- Dairy & frozen food packaging
- Ice cream cups, plates, lids & bowls
- Disposable food containers & medical kits

COMPLIANCE FDA 21 CFR 177:1640 · UL 94 HB · UL File E185934 · ESCR Pass · RoHS · REACH SVHC · ISO 9001:2015**TYPICAL PROPERTIES** *All values are typical · ASTM test methods · injection-moulded specimens unless noted*

PROPERTY	TEST METHOD	VALUE	UNIT
MECHANICAL			
Tensile Strength	ASTM D638	19.6	MPa
Elongation @ Break	ASTM D638	50	%
Flexural Strength	ASTM D790	33.8	MPa
Flexural Modulus	ASTM D790	1799	MPa
IMPACT			
Notched Izod @ 23 °C	ASTM D256	110	J/m
Izod @ low temp	ASTM D256	On request	
PHYSICAL			
Specific Gravity	ASTM D792	1.03	g/cm³
Melt Flow Index	ASTM D1238	4	g/10 min
Mould Shrinkage	ASTM D955	On request	
Residual Styrene	SPL/QCA	< 1000	ppm
ESCR			
ESCR Test Result	ASTM D638	Pass	

NOTES

Tests on injection-moulded specimens at 23 °C, 50% RH per ASTM standards. Tensile/Elongation @ 50 mm/min on 3.2 mm specimens. Flexural and Izod on 3.2 mm. MFI @ 200 °C / 5 kg. Vicat @ 120 °C/hr, 1 kg. ESCR Pass per ASTM D638 with verified test certificates available. FDA 21 CFR 177:1640 base resin compliance. UL file E185934. Resin sourced primarily from Supreme Petrochem (SH 2157 grade family). RoHS verified by SGS (EU 2015/863). Values are typical, intended as guide only. Final product suitability must be validated under actual application conditions.

PROPERTY	TEST METHOD	VALUE	UNIT
THERMAL			
HDT @ 1.86 MPa	ASTM D648	76	°C
Vicat Softening Point	ASTM D1525	98	°C
Low-Temp Service	—	−40 to +70	°C
FLAMMABILITY			
UL 94 @ 1.6 mm	UL 94	HB	
UL File Reference	UL	E185934	
PROCESSING			
Pre-drying Temperature	—	50 - 80	°C
Pre-drying Time	—	2	hours
Forming Temperature	—	165 - 185	°C
Mould Temperature	—	On request	
Maximum Melt Temp.	—	180 - 260	°C

PERFORMANCE PROFILE**ESCR** Pass

R11 / HCFC 141b / Cyclopentane

FDA 21 CFR 177

Food contact compliant

HB UL 94

Burn rating @ 1.6 mm

110 J/m Izod

High notched-impact toughness

ESCR + FDA combination — engineered for refrigerator and cold-storage applications.

APPLICATIONS

Where HIPS Cool gets specified — FDA-compliant, ESCR-resistant sheet for refrigeration and food packaging.

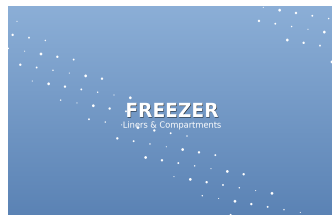


REFRIGERATOR

Cabinet & Door Liners

Refrigerator Liners

Door and cabinet liners — FDA-compliant, ESCR-rated against blowing agents.



FREEZER

Liners & Compartments

Freezer Compartments

Drawer trays, shelves and inner liners — retains toughness at low temperatures.



PICNIC COOLER

Insulated Containers

Picnic Coolers

Insulated cooler liners and lids. Lightweight, food-safe, easily decorated.



DAIRY / FROZEN

Food Packaging

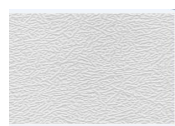
Dairy & Frozen Food Packaging

Ice cream cups, lids, dairy tubs, frozen food trays. Direct food contact.

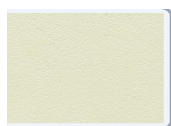
PRODUCTION SPECIFICATIONS

Sheet Thickness	0.5 - 10 mm	Standard refrigerator liner: 1.5 - 4.0 mm
Sheet Width	up to 2500 mm	XL line capacity
Sheet Length	up to 6 m	Custom cut-to-size on request
Thickness Tolerance	± 5 %	Multi-point validated
Layer Structure	Mono / ABA	Co-extrusion option for skin-core differentiation
Colour Matching	Pantone & RAL	Spectrophotometer ΔE validation, batch-traced

SURFACE TEXTURES



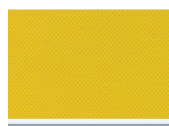
T01
Regular



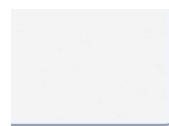
T02
Fine



T03
Diamond



T04
Fine Diamond



T05
Plain Smooth



T06
FM06

HOW TO READ THESE NUMBERS

Quick reference for what each test actually tells you about how the sheet behaves.

• Tensile Strength

Pulling force before sheet starts to permanently stretch.

• Elongation

How far it stretches before snapping. Higher = more forgiving.

• Flexural Strength

Bending force before fracture. Higher = stronger when flexed.

• Flexural Modulus

Bending stiffness. Higher = more rigid feel when flexed.

• Notched Izod

Impact resistance with stress notch. Survives drops and hits.

• Specific Gravity

Density vs water. 1.03 means just heavier than water.

• MFI

Melt flow index — how easily molten plastic flows. Affects formability.

• HDT / Vicat

Heat at which it sags (HDT) or softens (Vicat). Short-term limits.

• ESCR

Resistance to cracking when in contact with stress-cracking chemicals like blowing agents.

• FDA 21 CFR 177

Food contact safety — base resin meets US FDA regulation for food contact applications.

• UL 94 HB

Horizontal burn rating — slow, controlled burn rate. Standard for non-FR HIPS.

• Residual Styrene

Unreacted styrene monomer in the resin. Lower = lower migration into food.

STELLAR-EX

Sheet Extrusion Excellence

INDU THERMOFORMERS PVT. LTD. / FORMPACK

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DOC: TDS-HIPSC-2026-01 · Rev 01 · Issue date: May 2026 · Page 2 of 2 · Stellar-Ex™ — a brand of Indu Thermoformers
 Values are typical and intended as a guide only. Validate for application. Resin: Supreme Petrochem (SH 2157) and other globally certified suppliers.

ISO 9001 : 2015

Quality Management Certified

GSTIN 27AADCM9861D1ZA

Established 1985