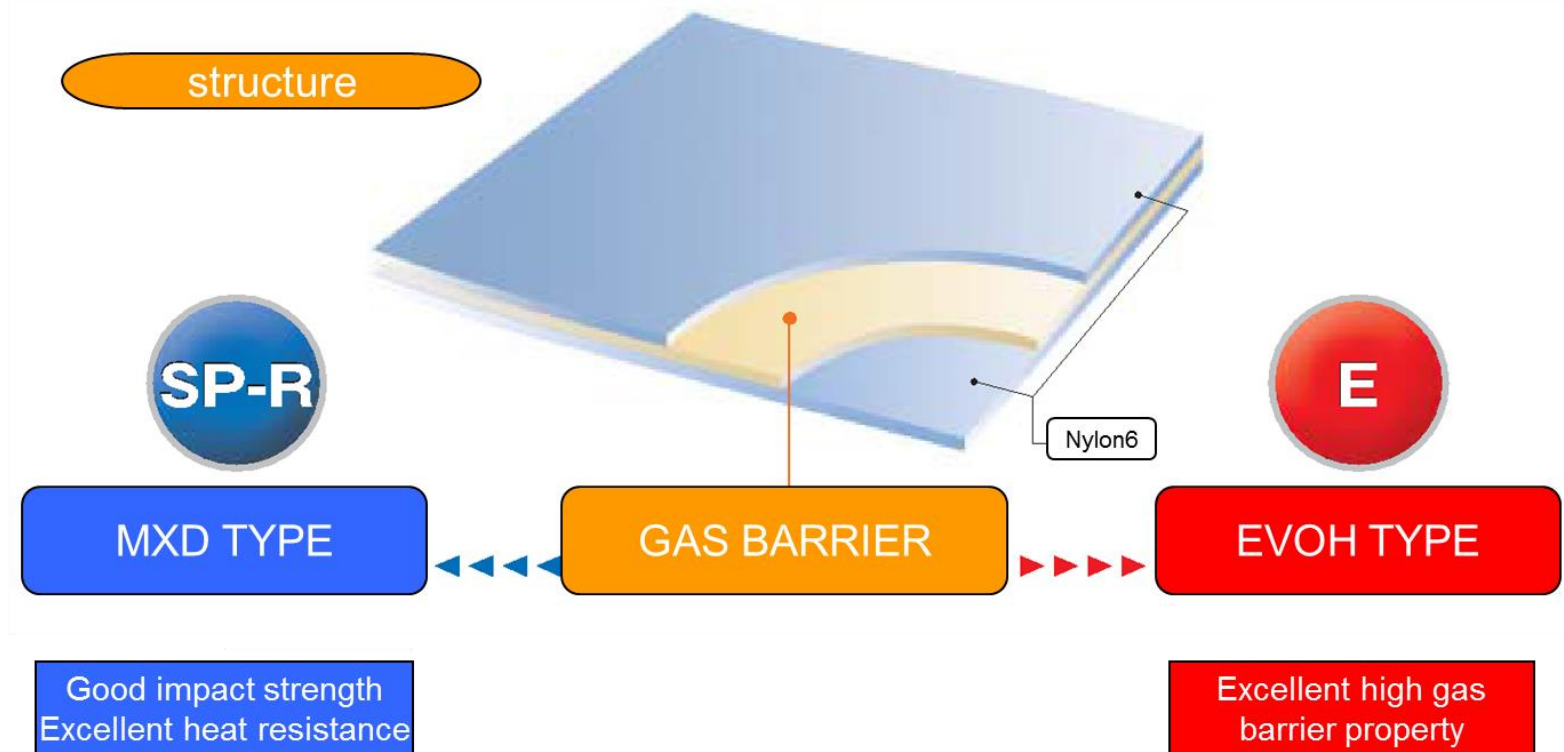


SUPERNYL™

Co-ex bi-axially Oriented gas barrier Polyamide Film

structure of SUPERNYL

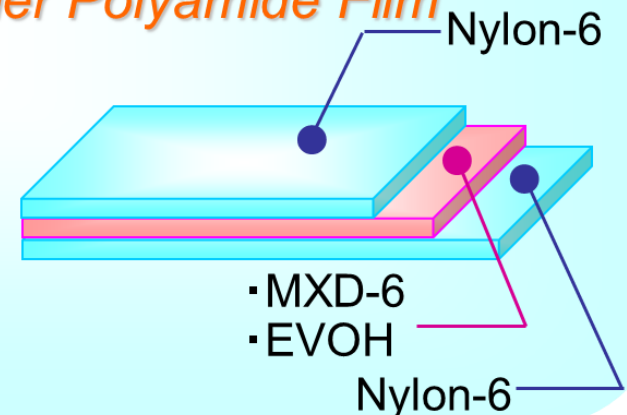


Co-ex Bi-axially Oriented Gas Barrier Polyamide Film

SUPERNYL[®]

Development of base resin and co-ex bi-axially oriented technology improved pinhole resistance, high gas barrier property and heat resistance.

Co-ex Bi-axially Oriented Gas Barrier Polyamide Film



Confidential

Co-ex bi-axially Oriented gas barrier Polyamide Film

SUPERNYL Characteristic and performance

1 Good pinhole resistance

Good impact strength, good flexibility.

2 High gas barrier property

High gas barrier makes shelf life longer compared with general gas barrier film.

3 Excellent heat resistance

Durability in high temperatures enables boil or retort process.

4 Environmental consideration

When burned as waste, chlorine gas is not emitted like with PVDC coating film.

5 Fine printing quality

Equal printability as general BOPA film.

6 Dose n't yellow

High transparency with no yellowish color like PVDC coating film.

Co-ex bi-axially Oriented gas barrier Polyamide Film

Example of preservation function of Supernyl

Calculation Example of SHELF LIFE

Package size : 10 cm × 10 cm (200 cm²)

Using Oxygen Absorber

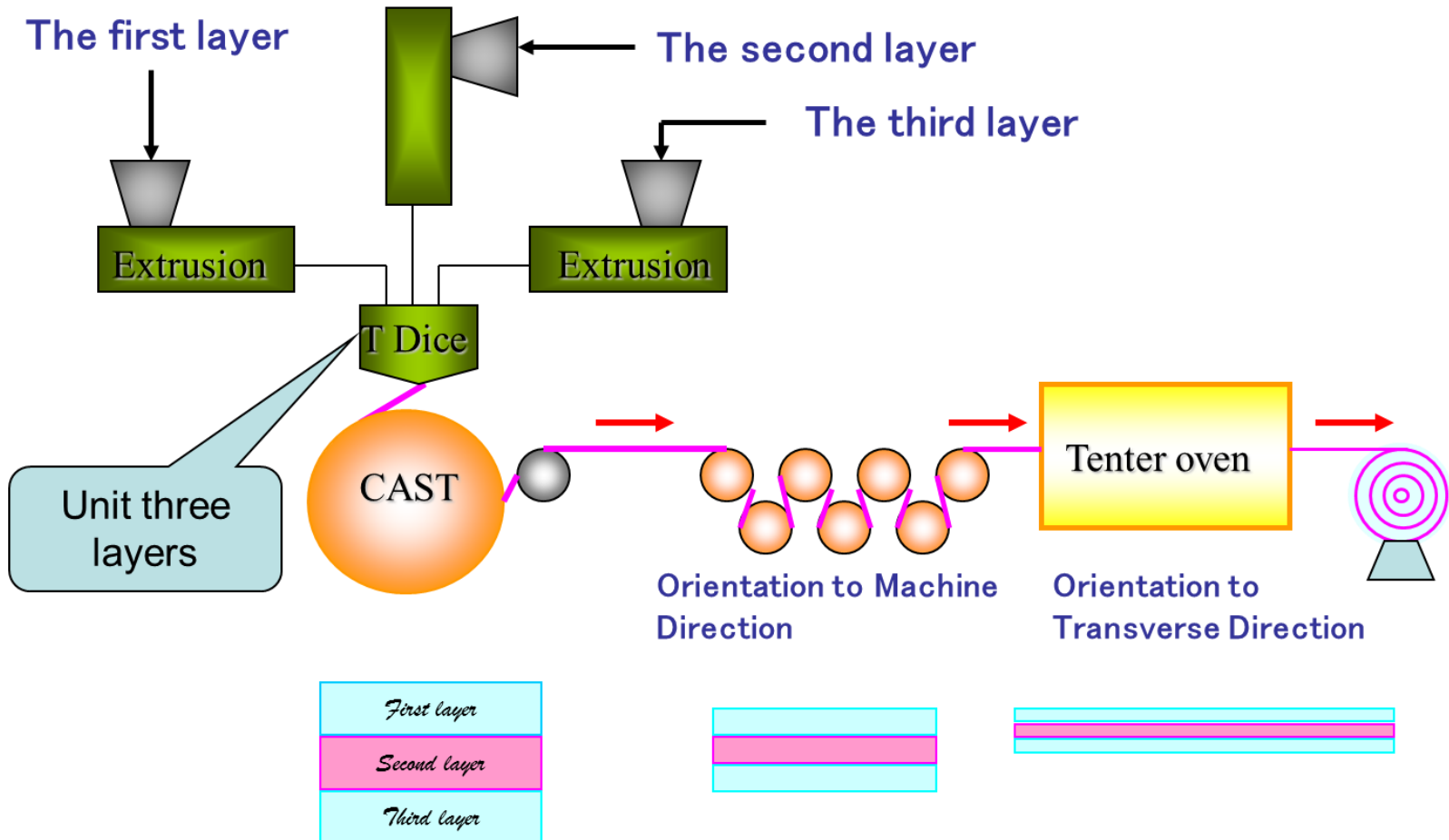
Capacity of Oxygen absorber : 20 cc

Initial Oxygen Volume of Package Inside : 10 cc

STRUCTURE	Oxygen Transmissin Rate (CC/m ² ·day·atm)	Oxygen Transmissin Volume into package (CC/day)	The number of days maintaining zero Oxygen (inside of) (day)
General Type ONY15 μ // LL50 μ	30	0.12	83
Barrier Type Supernyl15 μ // LL50 μ	8	0.032	312

Method of Manufacture

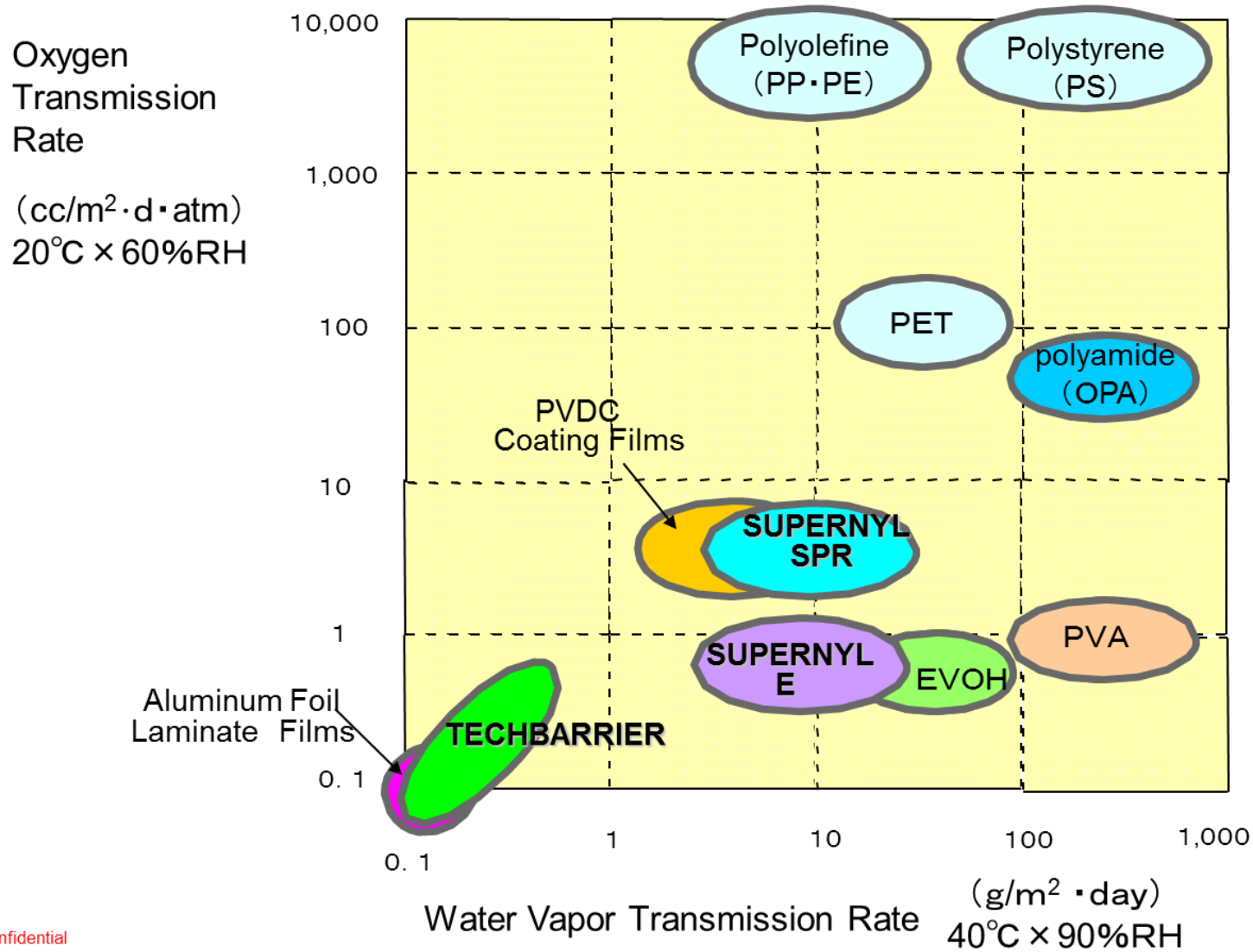
Tenter Frame Process



Grades of SUPERNYL

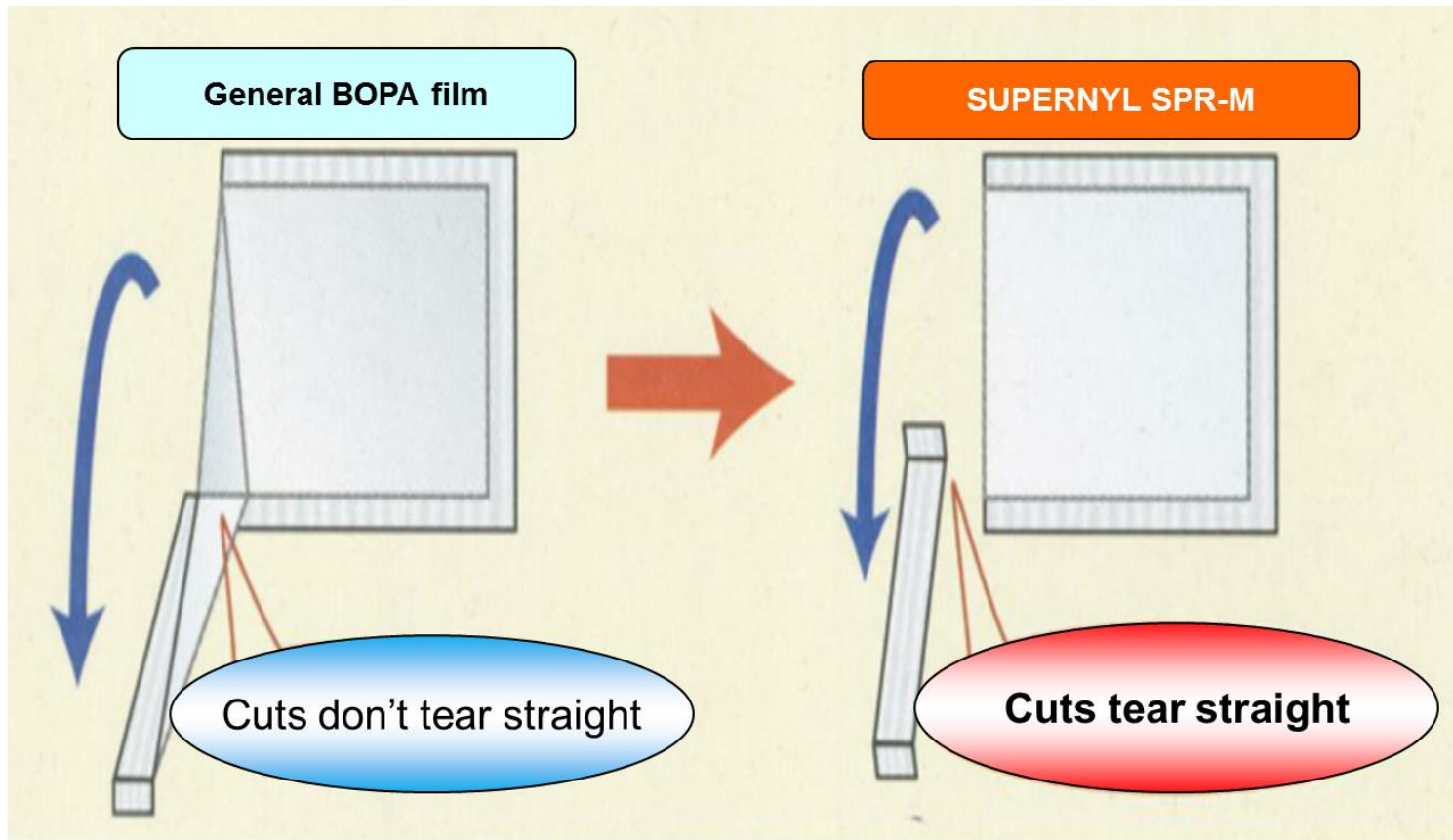
		μ	ml/(m ² ·24hr·MPa) [CC/(m ² ·d·atm)]	
MXD Type	SPR	15, 18, 25	80 ml {8.0 cc}	General Purpose
	SPR-P	15, 18		Anti-pinhole
	SPR-M	15, 18		tears straight
	SPR-XT	15		Retort
	SPR-L	15, 18		Small Liquid Pouch
	SPR-SH	15		Shrinks 19% (90°C)
EVOH Type	EH	15, 25	2 ml {0.2 cc}	Excellent High Barrier
	E	15, 18, 25	10ml {1.0 cc}	High Barrier
	EP	15, 18	35 ml {3.5 cc}	Anti-pinhole

Gas Barrier MAP



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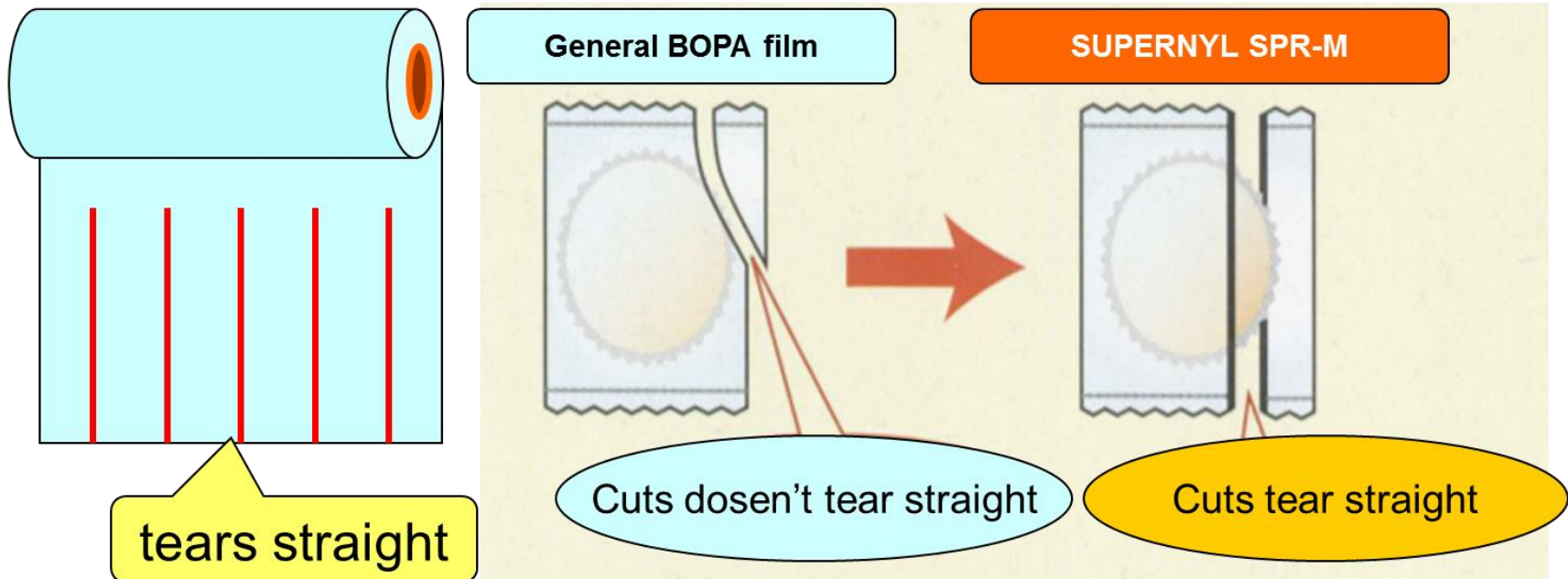
SUPERNYL SPR-M



Co-ex bi-axially Oriented gas barrier Polyamide Film

SUPERNYL SPR-M

CASE of PILLOW package



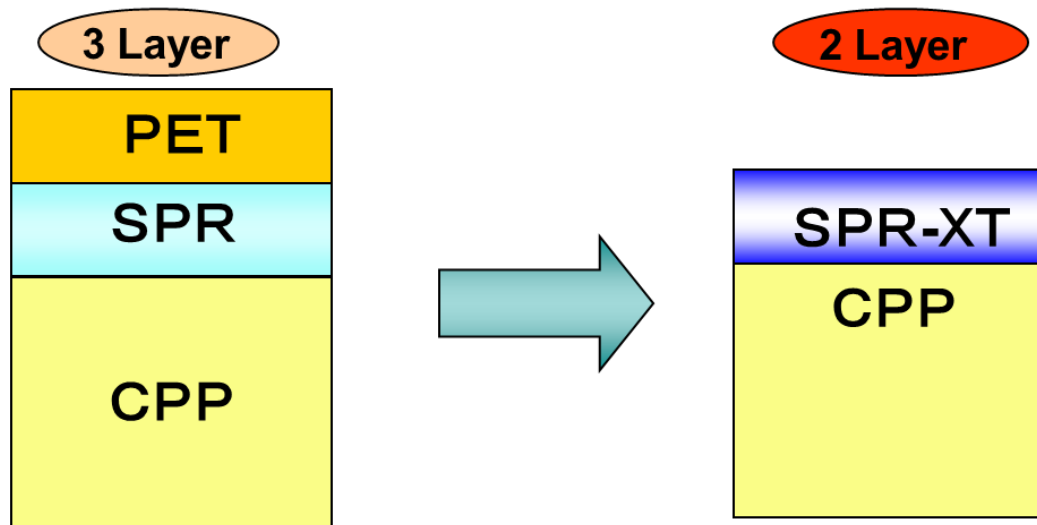
Cuts tear straight



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SUPERNYL SPR-XT

Good RETORT Performance
Enables decrease of one layer



SUPERNYL-SH

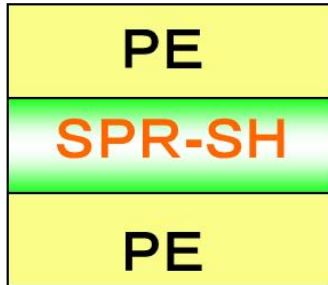
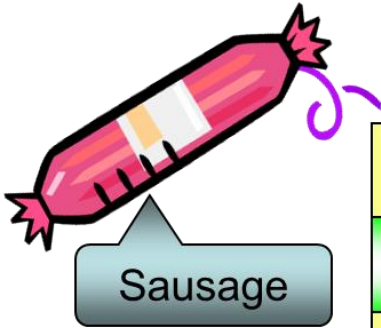
Characteristics

It shrinks 19% under 90°C hot water
 After laminating PE or CPP, it shrinks about 10%
 under 90°C hot water

Tofu



Example of structure



Supernyl Museum



Thank you!