

# IMCD Advanced Materials | Thermoplastics for Medical Devices and Pharmaceutical Packaging | 2020

RIGID MATERIALS		PROCESSING		PROPERTIES		STERILISATION PROCESS			SPECIAL FEATURES		APPLICATION IDEAS
Product Group	Trade Name	IM	Extrusion	Transpar ent	Impact Strength	EtO	Gamma	Steam			
<b>COC</b> (P)	<b>TOPAS®</b>	√	√	••••	•	√	√	√	Optical, purity, water barrier, superior UV transmission	Pre-filled syringes, vials, cuvettes, cartridges	
<b>COC MODIFIED</b>	<b>TOPASBLEND®</b>	√	√	No	•••	√	√	√	Multiple autoclave cycles for reusable devices	Trays, housings	
<b>E-TPU</b>	<b>ISOPLAST®</b>	√	√	•••	•••••	√	√ <sup>2</sup>	No	Flexibility, strength, chemical resistance	Dental, tubing, in-dwelling devices	
<b>HDPE</b> (P)	<b>REPSOL HEALTHCARE®</b>	No	√	••	•••	√	√ <sup>4</sup>	√ <sup>3</sup>	Stiffness, resistance to thermal deformation	Bags, pouches, BFS containers	
<b>LDPE</b> (P)	<b>REPSOL HEALTHCARE®</b>	√	√	••	••	√	√ <sup>4</sup>	No	Flexibility, impact resistance	Bags, pouches, BFS containers	
<b>PA LONG CHAIN</b>	<b>RILSAN® CLEAR MED</b>	√	(√)	••••	•••	√	√ <sup>2</sup>	√ <sup>3</sup>	Low density, flexibility, bio-sourced grades	Respiratory mask, implant packaging	
<b>PA11</b>	<b>RILSAN® MED</b>	√	√	•	•••	√	√	√ <sup>3</sup>	Bio-based, high burst strength	Balloons, catheters, connectors	
<b>PA12</b>	<b>RILSAMID® MED</b>	√	√	•	•••	√	√	√ <sup>3</sup>	Burst strength, dimensional stability	Balloons, catheters, connectors	
<b>PE MODIFIED</b>	<b>OREVAC® MED</b>	No	√	No	•••	√	√	No	Tie layer resin	Catheters	
<b>COPOLYESTERS</b>	<b>TRITAN®</b>	√	(√)	••••	•••••	√	√	No	Superior chemical resistance, impact strength, elevated temperature resistance, excellent clarity	Cannulae, capillary tubes, connectors	
<b>PCTA &amp; PCTG / PETG</b>	<b>DURASTAR™ &amp; EASTAR™</b>	√	(√)	••••	•••••	√	√	No	High clarity, chemical resistance, impact strength	Medical device packaging	
<b>PMMA - MODIFIED</b>	<b>CYROLITE®</b>	√	√	•••	••••	√	√	No	Chemical & impact resistance, excellent bonding	IV accessories, blood management	
<b>PMMA - STANDARD</b>	<b>CYROLITE® MD</b>	√	√	••••	•	(√)	No	No	Superior UV transmission optical clarity	Diagnostic cuvettes, test packs, trays	
<b>PP HOMO</b> (P)	<b>REPSOL HEALTHCARE®</b>	√	No	••	•	√	√	√ <sup>3</sup>	Durable, good & overall chemical resistance	Housings, packaging, vials	
<b>PP RANDOM</b> (P)	<b>REPSOL HEALTHCARE®</b>	√	√	•••	••	√	√	√ <sup>3</sup>	Durable, flexible, suitable for hinges	Syringes, packaging	
<b>PVC-U</b>	<b>APEX®</b>	√	√	••••	••••	√	√	No	Stress cracking resistance, gamma stabilised grades	Hospital devices	
<b>PVDF</b>	<b>KYNAR® MED</b>	√	√	•	•••	√	√	√	Chemical inertness, barrier properties, low COF	Bioprocessing container, barrier packaging	
<b>SBC</b>	<b>ASAFLEX™</b>	√	√	••••	••••	√	√	No	Combination of transparency & impact strength	Drip chambers, suction heads	

(P) EP and/or USP<661> compliant

( ) Theoretically possible but no data available

<sup>1</sup>Contact clear available on request

<sup>2</sup>Colour shift

<sup>3</sup>Limited no. of cycles

<sup>4</sup>Cross-linking may occur



FLEXIBLE MATERIALS		PROCESSING		PROPERTIES		STERILISATION PROCESS			SPECIAL FEATURES	APPLICATION IDEAS
Product Group	Trade Name	IM	Extrusion	Shore Hardness	Long term implants	EtO	Gamma	Steam		
COC-E	Ⓟ TOPAS® ELASTOMER	✓	✓	90A	No	✓	✓	No	High purity, water barrier, transparent	Soft vials, gaskets, flexible tubes, blends
EVA	Ⓟ REPSOL HEALTHCARE®	✓	✓	80A - 46D	√ <sup>5</sup>	✓	✓	No	Resistance to aging & minus temperatures	Bags, tubing, transdermal patches
PVC-P	FLEXALLOY®	✓	✓	40A - 80A	< 30 days	✓	✓	√ <sup>3</sup>	Color hold to gamma, alternative to silicone	Drip/sight chambers, tubings, valves
SBC	ASAFLEX™	✓	✓	••••	••••	✓	✓	No	Combination of transparency & impact strength	Drip chambers, suction heads
TPE-A	PEBAX® MED	✓	✓	25D - 75D	< 30 days	✓	✓	√ <sup>3</sup>	Low kink, high energy return, torque transference	Catheters, introducers, medical tubing
TPE-A	PEBAX® MV MED	✓	✓	40D	< 30 days	✓	✓	√ <sup>3</sup>	Hydrophilic, breathable, antistatic additive	Antistatic packaging, medical tubing
TPE-S	EVOPRENE®	✓	✓	12A - 85A	< 30 days	✓	✓	√ <sup>3</sup>	Best in class quality, oil-free grades available	Vial stoppers
TPU, ALIPHATIC	TECOFLEX™	✓	✓	72A - 80D	√*	✓	✓	No	Fully customisable, non-yellowing TPU	Catheters, medical devices
TPU, ALIPHATIC	TECOPHILIC™	✓	✓	80A - 60D	√*	✓	✓	No	Customisable, water absorbing TPU	Catheters, medical devices
TPU, ALIPHATIC	TECOBAX™	✓	✓	25D - 45D	< 30 days	✓	✓	No	Non softening, polyether TPU	Catheters, medical devices
TPU, AROMATIC	ESTANE U	✓	✓	80A - 50D	√*	✓	√ <sup>2</sup>	No	Polyester & Polyether INDUSTRIAL TPU	Low regulatory requirements
TPU, AROMATIC	PELLETHANE®	✓	✓	80A - 75D	√*	✓	√ <sup>2</sup>	No	Classic brand polyether TPU	Catheters, medical devices
TPU, AROMATIC	TECOTHANE™	✓	✓	75A - 75D	√*	✓	√ <sup>2</sup>	No	Fully customisable, polyether TPU	Catheters, medical devices
TPU, AROMATIC	TECOTHANE™ SOFT	✓	✓	62A - 97A	√*	✓	√ <sup>2</sup>	No	Hydrophobic, high resilience TPU	Catheters, medical devices
TPU, OTHER	CARBOTHANE™	✓	✓	75A - 72D	√*	✓	√ <sup>2</sup>	No	Best biostability TPU, aromatic & aliphatic	Catheters, medical devices

Ⓟ EP and/or USP<661> compliant

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<sup>5</sup>Subject to approval

\*Lubrizol disclaimer does not restrict the intended use of these products

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