

# MATERIAL SHEET

## VACUUM CASTING / POLYURETHANE CASTING Polyurethanes for RTV silicone/vacuum casting process

Material:	Comment	Pantone Color Matching	Tensile Strength MPa	Flexural Modulus MPa	Elongation before break	Shore Hardness	Density	Glass Transition Temperature	Original Colour	Shrinkage	Axon Code
STAR-PU Classic ABS	This is the classic and most popular ABS simulant	Fair**	81	2100	13%	81D	1.15	93°C	white, off-white, black	0.4%	UP 4280
STAR-PU Classic PP	PP Simulant - Living Hinges possible (typically 30 to 50 bends before break) - Auto/Bumpers	Fair**	25 - 35	600 - 1300	50 - 90%	75 to 83D	1.13	-	black and white	0.4%	UP 5690*
STAR-PU Acetal	Transparent mainly simulates filled ABS or POM	Excellent**	70	2600	13%	82D	1.15	90°C	transparent	-	PX 527
STAR-PU Crystal Clear	UV stable. Great for glossy clear parts. Can be tinted or coloured. This is the classic Acrylic and PC simulant	Best**	65 - 70	2000 - 2200	15 - 20%	83D	1.10	105°C	transparent	0.4-0.45%	PX 5210*
STAR-PU Rigid PA POM	Ultra rigid material	Poor/Fair**	85	4500	3%	85D	1.22	95°C	off-white	0.4%	PX 245*
STAR-PU Rubber 30/83	Rubber/TPE simulant. Variable hardness, 30 - 83 Shore A. Can be over moulded.	Fair**	-	-	4.3	30A to 83A	1.10	-	off-white	-	UPX 8400
STAR-PU High-Temp ABS 120C	High Temp: most popular ABS simulant in EU. Auto/Medical/Chemically stable - up to 40 parts per silicone tool	N/A**	60	2300	11%	80D	1.14	>120°C	black	0.8%	PX 223-HT*
STAR-PU High-Temp ABS 200C	Very High Temp: Auto Under the Bonnet	N/A**	59 - 69	2100 - 2200	15 - 16%	80-81D	1.20	>200°C	yellowish	0.7-0.9%	UP 6160-LS/L*

\*\*Notes about colouring:

STAR-PU Classic ABS	Due to the natural "off- white" colour of the base material, we cannot achieve bright or light colours, e.g. bright blue, bright purple, light blue and light purple. With STAR-PU Classic ABS, some Pantone matches are possible.
STAR-PU Classic PP	These materials are three component materials. The C component has a natural "pale- yellow" color so we cannot achieve bright and light colors, especially Blue and Purple. Also, as we change the hardness of the material by changing the ratio of the C component, so the color will change.
STAR-PU Acetal	These material colors are clear therefore we can easily match pantone references. For matching bright, vivid or pastel colors these materials are best suited.
STAR-PU Crystal Clear	UV STABILITY: This is the only casting material we have access to that is UV stable. All other materials will fade over time. A natural "off-white" part will become darker, therefore any colours will also change with exposure to UV light.
STAR-PU Rigid PA POM	The natural colour of this material is "off -white" the same rules apply for STAR-PU Classic ABS. Also, this material has a high viscosity making it even more difficult to mix colors. We can achieve white, black, red, yellow, green, dark blue – but none of these colors are 'vivid'.
STAR-PU Rubber 30/83	Color mixing is fair.
STAR-PU High-Temp ABS 120C	The material color is " black", can not mix colors. It is possible to create some grays.
STAR-PU High-Temp ABS 200C	HIGH THERMAL RESISTANCE material, the material and the color dies are immiscible, therefore cannot mix color.

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