

## Moldflow Engineers

Imtech Design Offers True 3D Injection Moulding Simulation Service using Moldflow Software and our Injection Moulding / Problem Solving Expertise

### Injection Moulding Simulation

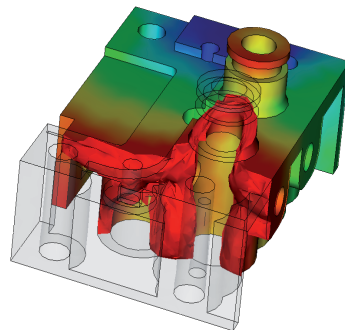
### Results & Output Information

- |                  |                                                                        |
|------------------|------------------------------------------------------------------------|
| • Cavity Filling | Fill Patterns, Gate Positions, Weld Lines, Gas Traps, Residual Stress. |
| • Holding Phase  | Clamp Force, Sink Marks, Part Weight, Volumetric Shrinkage.            |
| • Mould Cooling  | Optimise Cycle Time, Cooling Layout, Surface Temperature, Freeze Time. |
| • Part Warpage   | Shrinkage Calculation, Distortion, Critical Dimensions, Compensation.  |

Fibre Orientation, Gas Injection, Over Moulding, Multi-Shot, Sequential Injection & Core Shift

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*Injection Moulding Technology for Plastics Design*



MATERIAL		THERMAL PROPERTIES				PHYSICAL PROPERTIES					
Grade	Description	Mould Temp	Melt Point	Melt Temp	Max Temp	HDT 0.46MPa	Service Temp	Density Ave	Shrinkage Ave	Physical Structure	Characteristics
	Generic Unfilled Polymers	C°	C°	C°	C°	C°	C°	g/cm <sup>3</sup>	%		www.imtechdesign.com
ABS	Acrylonitrile Butadiene Styrene	40 - 80	110	220 - 260	280	99 - 107	86	1.04	0.4 - 0.8	AMORP	Clear - Opaque, Tough
ABS	Plating	40 - 80	110	250 - 275	275	99 - 107	88	1.04	0.4 - 0.8	AMORP	Translucent - Opaque, Tough
ABS	High Heat	40 - 80	120	240 - 280	275	110 - 119	93	1.07	0.4 - 0.8	AMORP	Opaque, Tough, Heat Resistant
GPS	Polystyrene	20 - 70	100	180 - 260	280	69 - 103	80	1.00	0.4 - 0.6	AMORP	Transparent, high Clarity, Brittle.
HIPS	High Impact Polystyrene	20 - 60	100	200 - 260	280	75	82	1.05	0.4 - 0.7	AMORP	Translucent, Tough.
SAN	Styrene Acrylonitrile	40 - 80	115	220 - 260	280	104 - 107	92	1.08	0.4 - 0.7	AMORP	Transparent, Brittle
ASA	Acrylate Styrene Acrylonitrile	50 - 80	105	210 - 240	280	95 - 100	100	1.08	0.4 - 0.6	AMORP	Opaque, UV Resistant
SBS	Styrene Butadiene	40 - 80	85	190 - 210	250	70 - 78	67	1.02	0.6 - 0.7	AMORP	Transparent, high Clarity, Tough
PC	Polycarbonate	80 - 120	220	280 - 320	320	100 - 138	120	1.21	0.2 - 0.8	AMORP	Transparent, very Tough.
PMMA	Polymethyl Methacrylate Acrylic	40 - 90	100	240 - 280	280	77 - 110	85	1.18	0.4 - 0.7	AMORP	Transparent, high Clarity, Brittle
PES	Polyethersulfone	140 - 180	230	310 - 400	400	204 - 214	190	1.37	0.67 - 0.75	AMORP	Transparent, Tough, Chemical & Heat Resistant
PSU	Polysulfone	120 - 160	200	330 - 400	420	176 - 182	170	1.24	0.46 - 0.7	AMORP	Transparent, Tough, Rigid, Heat Resistant
PUR	Polyurethane	10 - 80	160	190 - 220	260	n/a	60	1.1	0.7 - 1.6	AMORP	Flexible, Tough
FPVC	Flexible Polyvinyl Chloride	30 - 60	85	165 - 185	210	n/a	60	1.3	0.4 - 1.0	AMORP	Transparent - Opaque, Flexible
RPVC	Rigid polyvinyl Chloride	30 - 60	85	140 - 200	210	66 - 89	67	1.45	0.4 - 1.0	AMORP	Transparent - Opaque, Rigid
PP	Polypropylene	10 - 60	100	180 - 240	300	71 - 115	85	0.90	1.2 - 1.7	SEMI	Tough, Rigid
PPO	Polyphenylene Oxide	60 - 100	120	220 - 300	300	110 - 150	110	1.15	0.6 - 1.4	SEMI	Tough, Stable, Good Insulator
HDPE	High Density Polyethylene	20 - 60	100	180 - 250	280	60 - 90	84	0.97	1.0 - 2.0	CRYST	Tough, Stiff, Waxy surface
LDPE	Low Density Polyethylene	20 - 60	100	180 - 220	280	40 - 67	46	0.92	2.0 - 3.0	CRYST	Tough, Flexible, Waxy surface
PA6	Nylon 6	80 - 90	220	230 - 280	320	185 - 191	100	1.12	0.08 - 1.5	CRYST	Opaque - Translucent, Rigid, very Tough
PA66	Nylon 66	60 - 80	255	260 - 300	360	245	100	1.15	1.0 - 2.0	CRYST	Opaque - Translucent, Rigid, Tough
PA11	Nylon 11	60 - 80	175	230 - 300	310	150	110	1.04	1.2	CRYST	Opaque - Translucent, Rigid, Tough
PA12	Nylon 12	40 - 100	175	230 - 300	310	145 - 150	78	1.02	0.03 - 1.5	CRYST	Opaque - Translucent, Rigid, Tough
PBT	Polybutylene Terephthalate	40 - 80	225	240 - 260	290	116 - 191	70	1.36	1.5 - 2.0	CRYST	Opaque, Rigid, Stable
PET	Polyethylene Terephthalate	80 - 120	250	280 - 310	340	68 - 80	74	1.34	2.1 - 2.5	CRSYT-AMORP	Transparent, Rigid, Stable
POM	Polyoxymethylene Homo	50 - 110	180	190 - 210	240	166	120	1.43	2.0 - 3.5	CRYST	Opaque, very Tough, Chemical Resistant
POM	Polyoxymethylene Copolymer	50 - 110	180	190 - 230	240	110 - 138	110	1.41	2.0 - 3.5	CRYST	Opaque, very Tough, Chemical Resistant
PPS	Polyphenylene Sulphide	80 - 120	290	310 - 340	365	204 - 240	160	1.5	0.85 - 1.1	CRYST	Opaque, Heat Resistant

Disclaimer: Polymer data shown is for mid-range generic un-filled materials and is provided as a guide only. Ask your material supplier for grade specific data before designing, moulding or cutting metal.



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