

BASE

1. Material used and their recommended values

Select Material

Commonly used materials:

Generic PP: Generic Default

Sarlink 5735: Teknor Apex Company

Estar Copolyester MN210: Eastman Chemical Products

SABIC PP 575P: SABIC Europe B.V.

Ultradur B 4030 G6: BASF

Remove

Specific material:

Customize Material List...

Reset Material List

Manufacturer

Generic Default

Import...

Trade name

Generic PP


Search...

Selected material


Details...

Report...

Resin identification code:



Energy usage indicator:



☒

Add material to commonly used list after selecting

OK

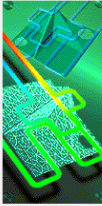
Cancel

Help

2. Good mesh(NO ERRORS)

3. Changes made

Process Settings Wizard - Cool Settings - Page 1 of 3



Melt temperature C

Mold-open time s (0.600]

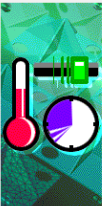
Injection + packing + cooling time

Specified s [0.6000]

Cool solver parameters...

< Back Next > Cancel Help

Process Settings Wizard - Fill+Pack Settings - Page 2 of 3



Filling control

Injection time of s [0.]

Velocity/pressure switch-over

Automatic

Pack/holding control

%Filling pressure vs time

Advanced options...

Fiber Solver Parameters...

☒ Fiber orientation analysis if fiber material

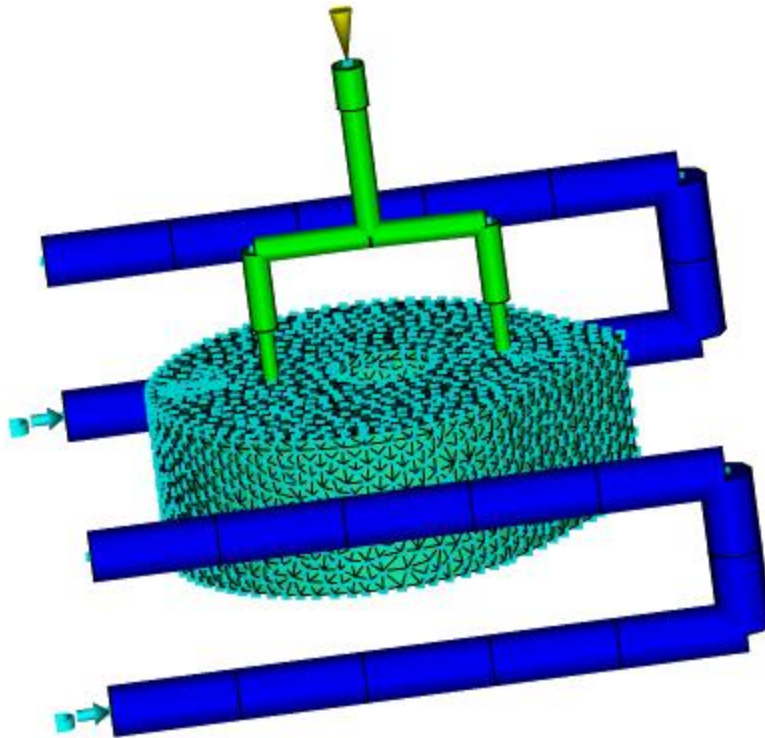
☐ Crystallization analysis (requires material data)

< Back Next > Cancel Help

Thermoplastics material

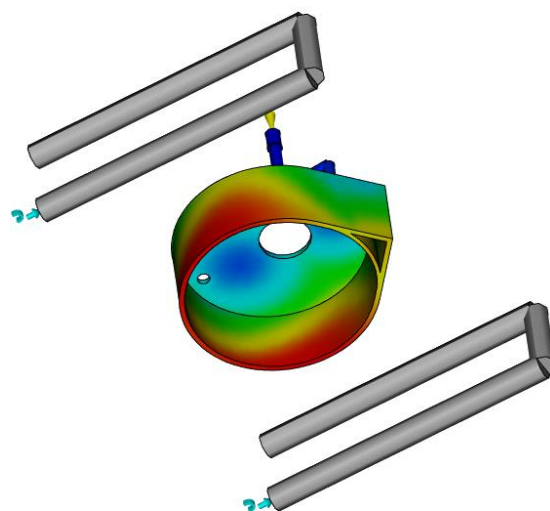
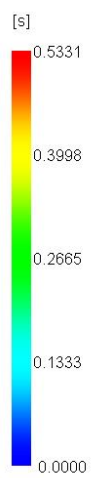
MuCell® Material Properties	Optical Properties	Environmental Impact	Quality Indicators	Crystallization Morphology	Stress - Strain	Mechanical Models	
Description	Recommended Processing	Rheological Properties	Thermal Properties	pVT Properties	Mechanical Properties	Shrinkage Properties	Filler Properties
Mold surface temperature	<input type="text" value="50"/>	C					
Melt temperature	<input type="text" value="220"/>	C					
Mold temperature range (recommended)							
Minimum	<input type="text" value="20"/>	C					
Maximum	<input type="text" value="80"/>	C					
Melt temperature range (recommended)							
Minimum	<input type="text" value="180"/>	C					
Maximum	<input type="text" value="260"/>	C					
Absolute maximum melt temperature	<input type="text" value="300"/>	C					
Ejection temperature	<input type="text" value="124"/>	C					
			<input type="text" value="View test information for ejection temperature..."/>				
Maximum shear stress	<input type="text" value="0.25"/>	MPa					
Maximum shear rate	<input type="text" value="100000"/>	1/s					

4. Cooling channels and Cold runner: because it is cheap



5. Fill time

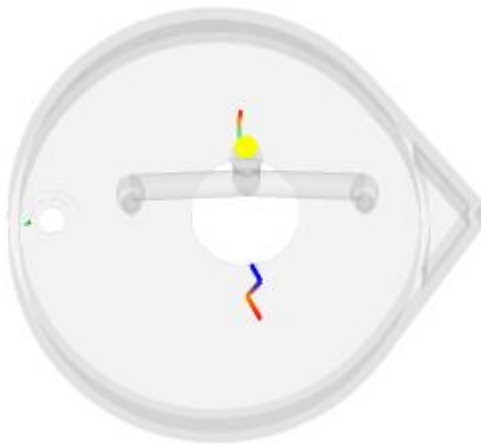
Fill time
= 0.5331[s]



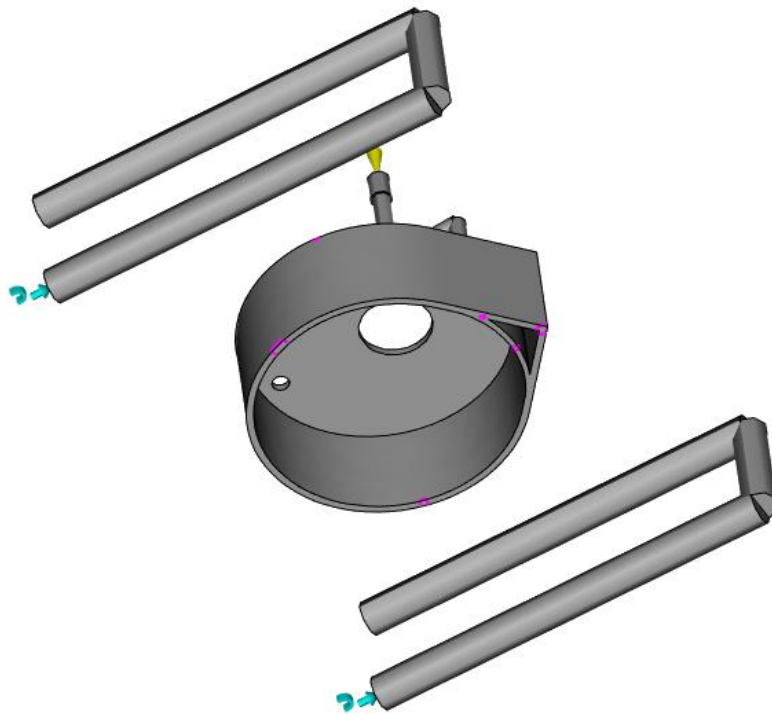
AUTODESK®
SIMULATION MOLDFLOW®
INSIGHT

Scale (300 mm)

6. Weld lines



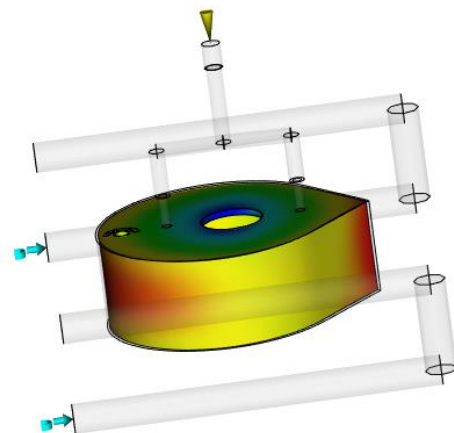
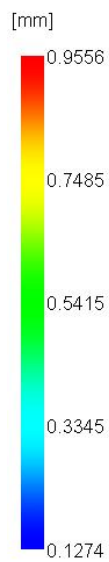
7. Air traps(you cant see all of it)



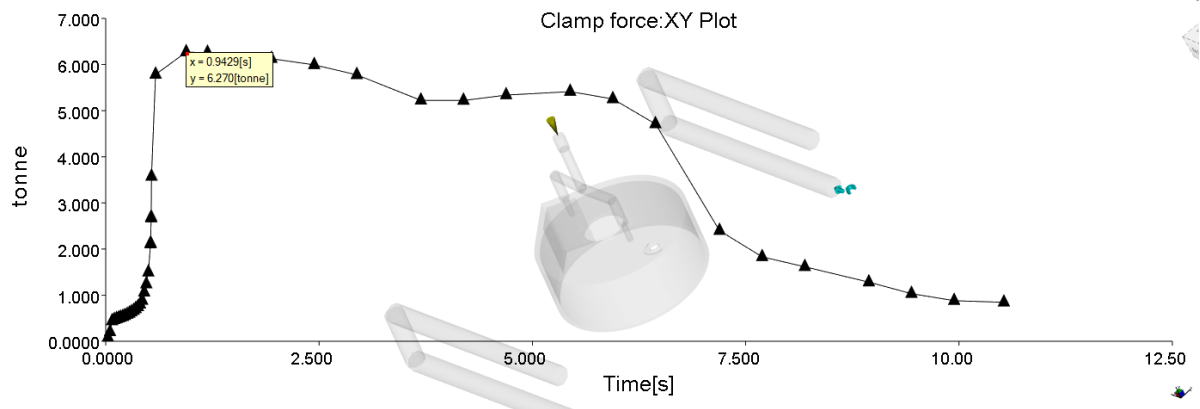
8. Deflection

Deflection, all effects:Deflection

Scale Factor = 1.000



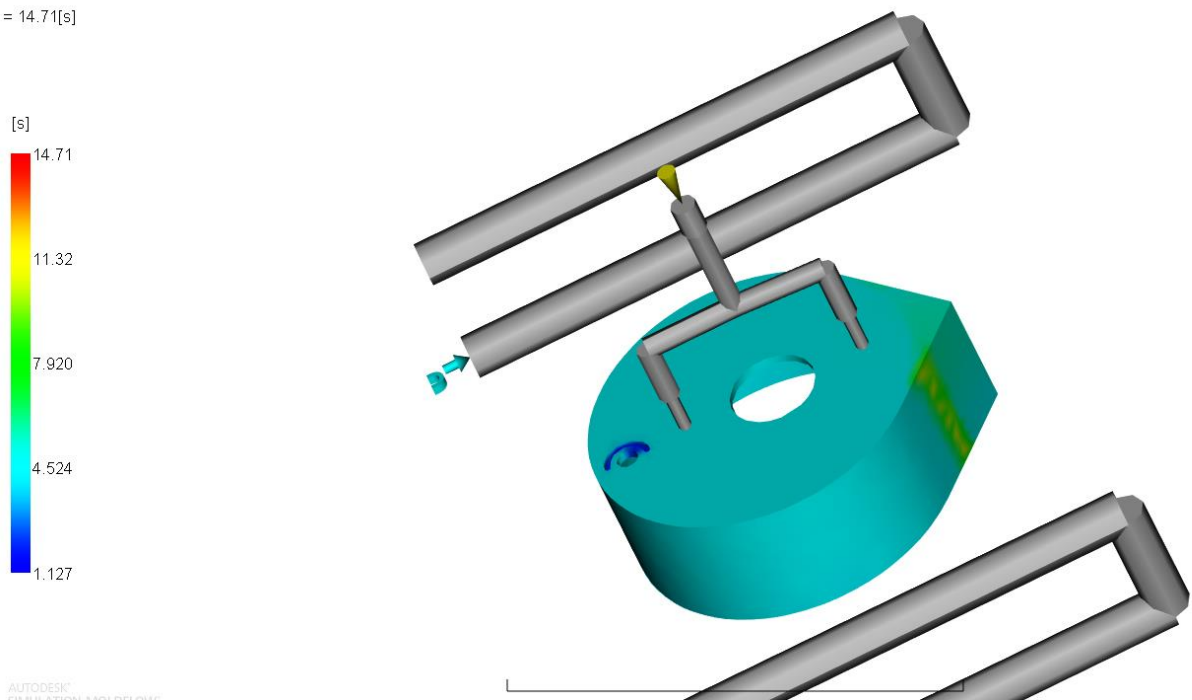
10. Clamp force



For a clamping force requirement of 6 tons, an all-electric injection molding machine is recommended for this operation. This type of machine offers high precision, low energy consumption, clean operation, and excellent repeatability, making it well suited for molding small polypropylene (PP) components such as cups or bottle parts.

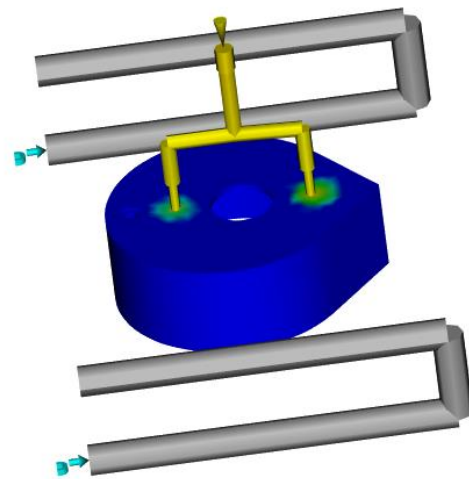
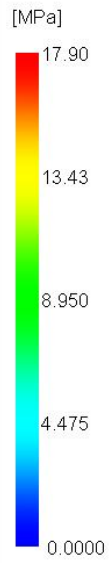
11. Time to reach injection temperature (cool)

Time to reach ejection temperature, part
= 14.71[s]



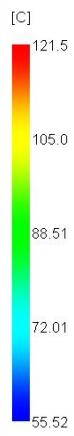
12. Pressure

Pressure
Time = 10.53[s]

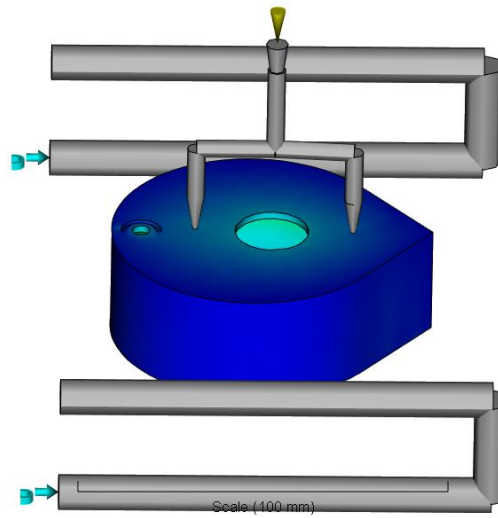


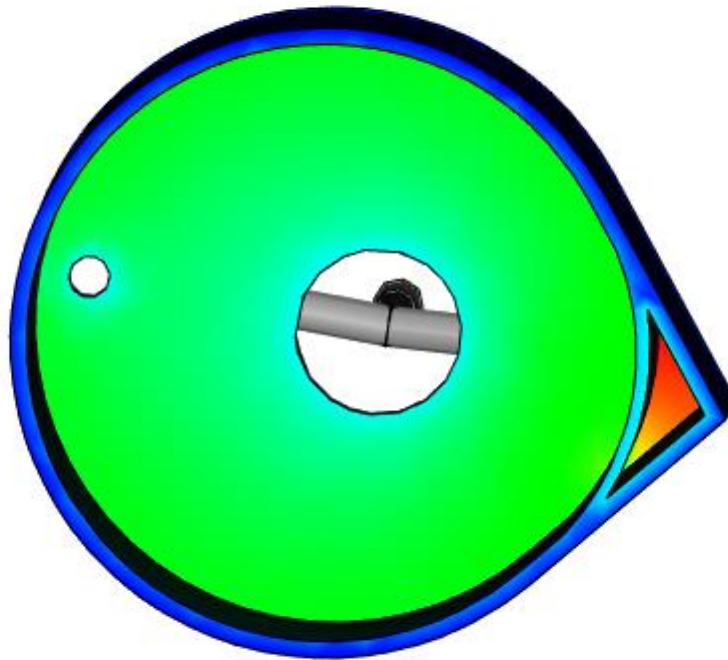
13. Temperature part

Temperature, part
= 121.5[C]



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INSIGHT





LID

14. Material used and their recommended values

Select Material

☒ Commonly used materials:

Generic PP: Generic Default
Sarlink 5735: Teknor Apex Company
Easter Copolyester MN210: Eastman Chemical Products
SABIC PP 575P: SABIC Europe B.V.
Ultradur B 4030 G6: BASF

Remove

☐ Specific material:

Customize Material List... Reset Material List

Manufacturer
Generic Default Import...

Trade name
Generic PP Search...

Selected material

Details... Report... Resin identification code: Energy usage indicator:

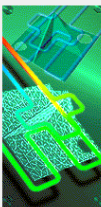
☒ Add material to commonly used list after selecting

OK Cancel Help

15. Good mesh

16. Changes made

Process Settings Wizard - Cool Settings - Page 1 of 3



Melt temperature 180 C

Mold-open time 5 s [0:600]

Injection + packing + cooling time
Specified Injection + packing + cooling time 10 s [0:6000]

Cool solver parameters...

< Back Next > Cancel Help


Thermoplastics material

Optical Properties	Recommended Processing	Environmental Impact	Quality Indicators	Crystallization Morphology	Stress - Strain	Mechanical Models
Description			Thermal Properties	pVT Properties	Mechanical Properties	Shrinkage Properties
Mold surface temperature	50		C			
Melt temperature	220		C			
Mold temperature range (recommended)						
Minimum	20		C (-120:500)			
Maximum	80		C (-120:500)			
Melt temperature range (recommended)						
Minimum	180		C (0:1000)			
Maximum	260		C (0:1000)			
Absolute maximum melt temperature	300		C (0:1000)			
Ejection temperature	124		C (-100:500)			
				Edit test information for ejection temperature...		
Maximum shear stress	0.25		MPa (0:200)			
Maximum shear rate	100000		1/s (0.1e+010)			

Name: Generic PP : Generic Default

OK Cancel Help

Process Settings Wizard - Fill+Pack Settings - Page 2 of 3



Filling control

Injection time of s [0:]

Velocity/pressure switch-over

Automatic

Pack/holding control

%Filling pressure vs time Edit profile...

Advanced options...

Fiber Solver Parameters...

☒ Fiber orientation analysis if fiber material

☐ Crystallization analysis (requires material data)

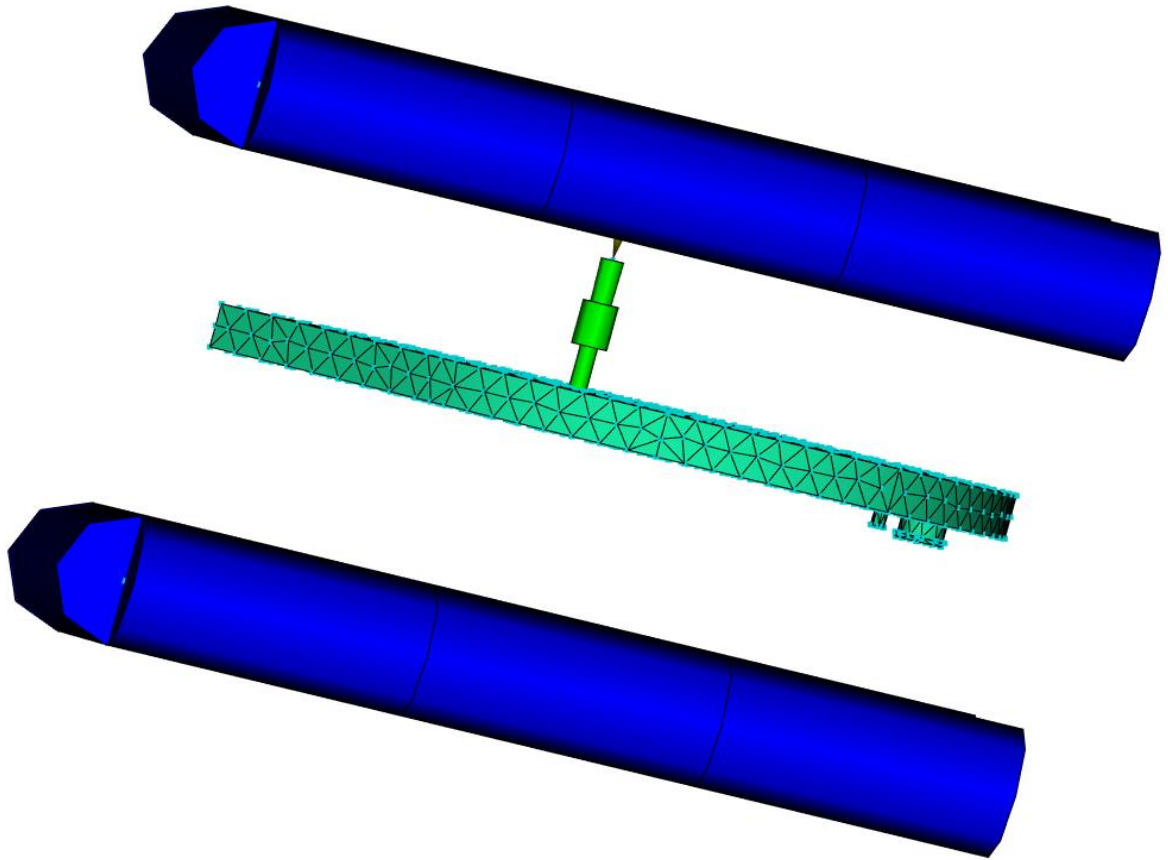
< Back Next > Cancel Help

The changes are presented in 1st and 3rd photo, whereas the 2nd photo represents the recommended values.

17. Injection gates

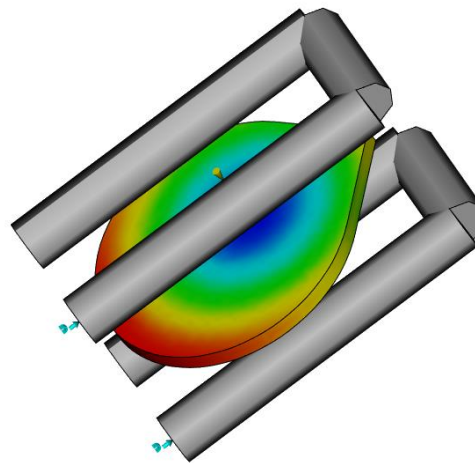
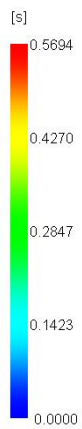
One injection gate is used in this part:

18. Cold runner: because it is cheap



19. Fill time

Fill time
= 0.5694[s]



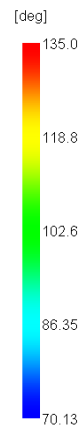
Scale (100 mm)



20. Weld lines

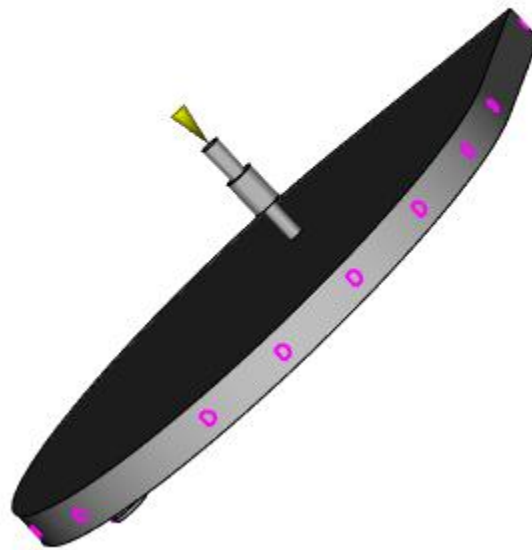
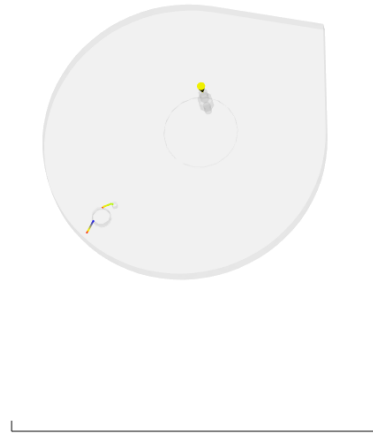
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WAVECRAFT

Weld lines
= 135.0[deg]



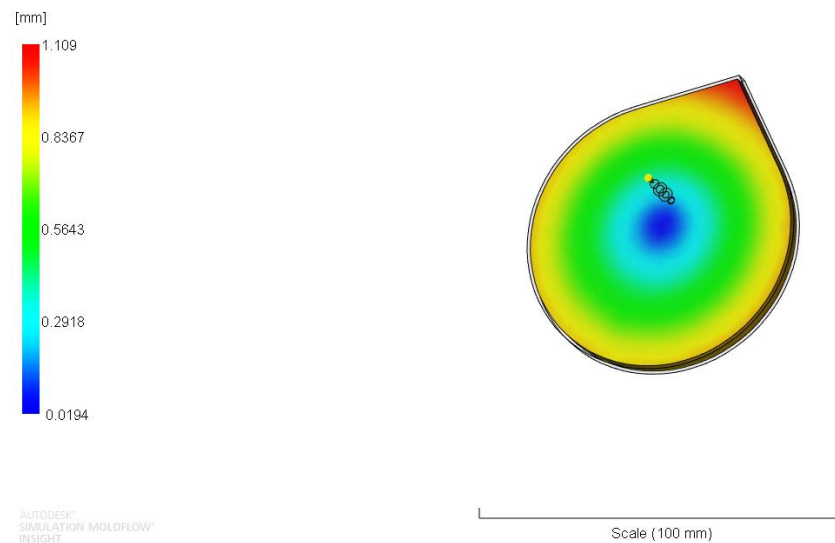
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21. Air traps

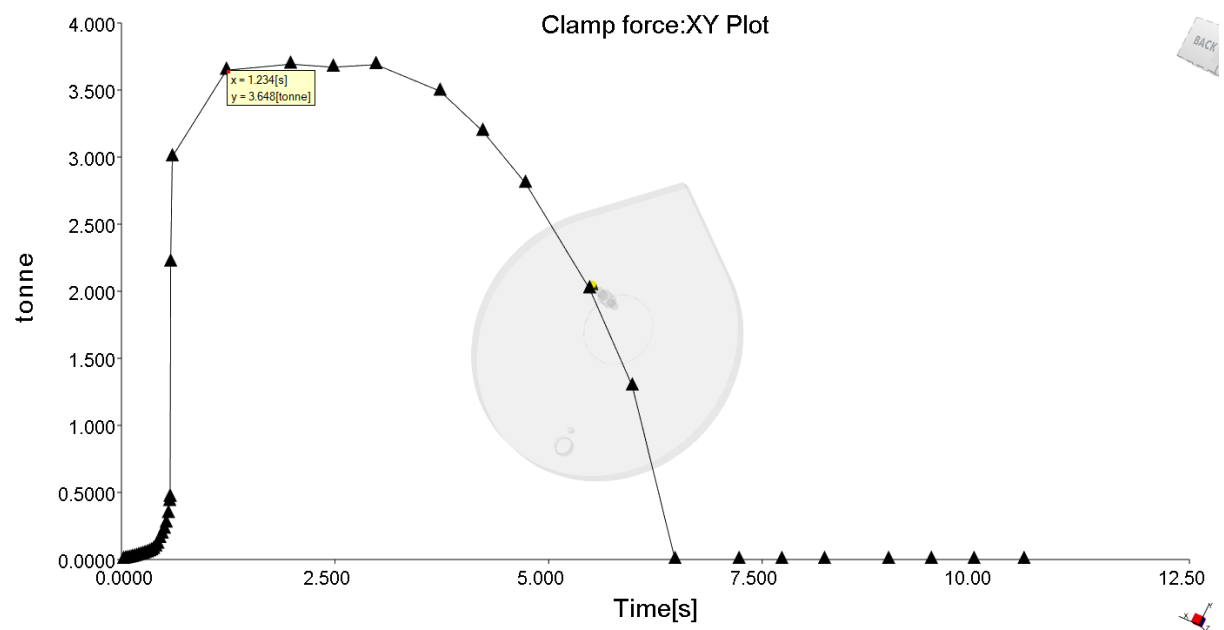


22. Deflection

Deflection, all effects:Deflection
Scale Factor = 1,000

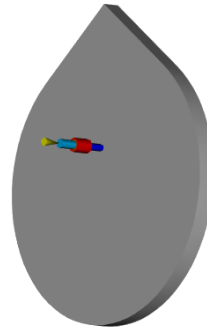
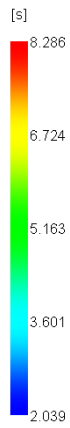


23. Clamp force (can use same machine as the base)



24. Time to reach injection temperature (cool)

Time to reach ejection temperature, cold runner
= 8.286[s]

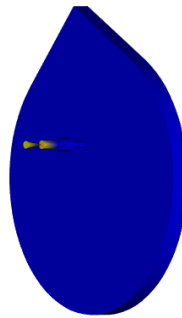
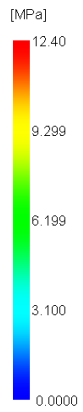


Scale (100 mm)



25. Pressure

Pressure
Time = 10.56[s]



Scale (100 mm)

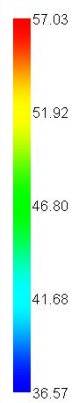


12
126
15

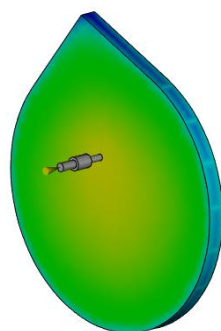
26. Temperature part

Temperature, part
= 57.03[C]

[C]



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Scale (100 mm)

