Objective: Our objective is to test the compression and affects of the SMP Polymer without the reinforcements of glass-micro balloons and carbon nanotubes.

BRIEF SUMMARY
• Was introduced in 1984 in Japan.
• The polynorbornene, trans-isopolyprene, and styrenebutadine were the first polymers discovered with the shape memory effect.
• Most SMPs can be strained up to 100-300% at elevated temperatures.
• Cooling the material at low temp. with restraints fixes the induced strain of the polymer.
• The original shape can be recovered heated back to critical temperature, without constraints.

POLYMER MOLECULE

FABRICATION
The Mixture
Resin: 800 grams
Hardener: 33 grams

RESULTS

<table>
<thead>
<tr>
<th>POLYMER MOLECULE</th>
<th>7.5% Strain</th>
<th>15% Strain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Confined (Metal)</td>
<td>160°F</td>
<td>175°F</td>
</tr>
<tr>
<td>Partially Confined (Nylon)</td>
<td>160°F</td>
<td>175°F</td>
</tr>
<tr>
<td>Partially Confined (Rubber)</td>
<td>160°F</td>
<td>175°F</td>
</tr>
</tbody>
</table>

MTS(Compression)