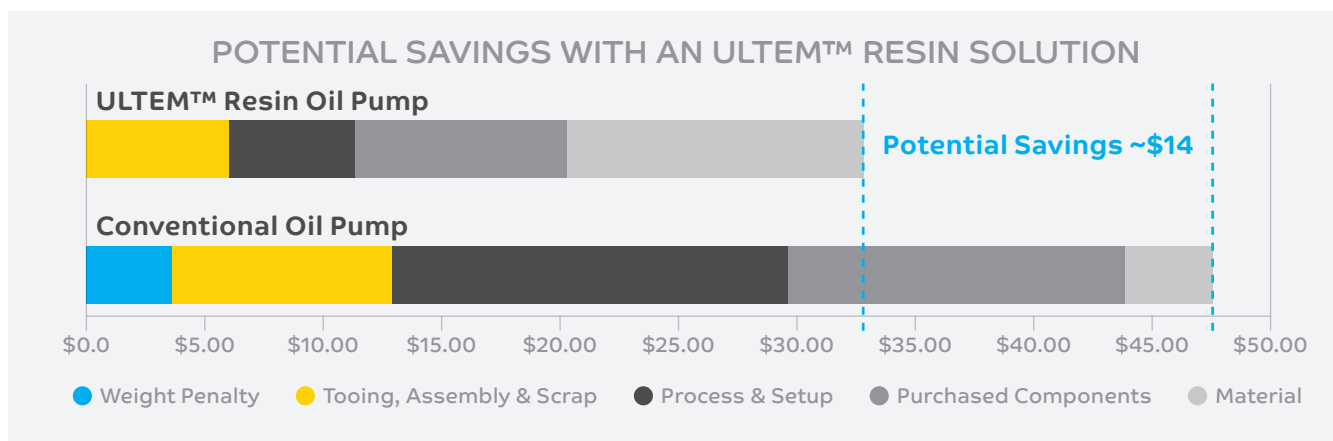
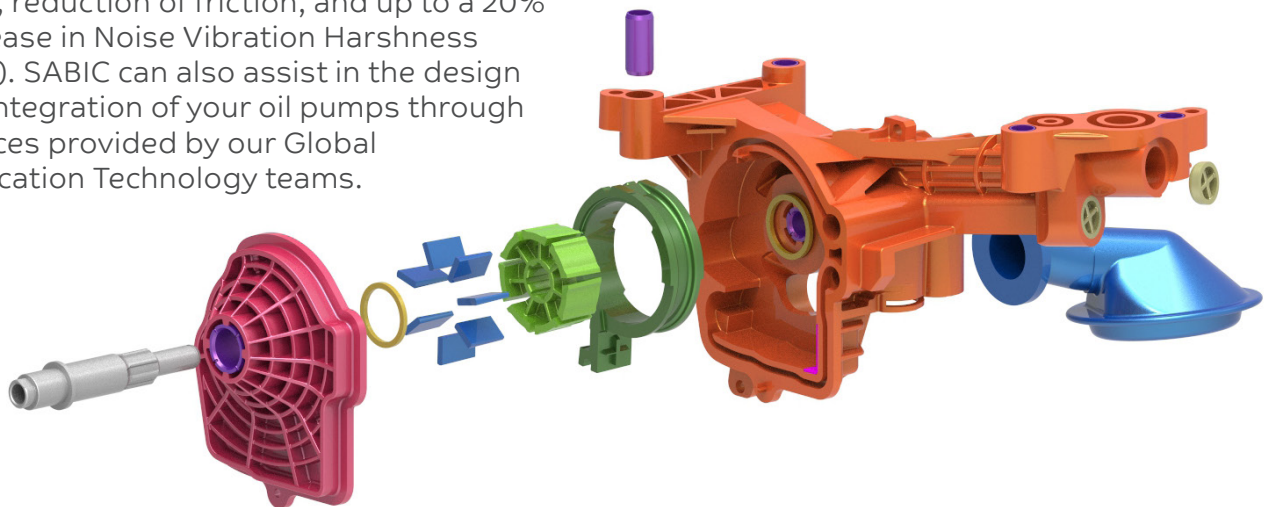


# THERMOPLASTIC SOLUTIONS FOR AUTOMOTIVE OIL PUMPS

On March 31st, 2020, NHTSA and the EPA finalized CAFE and carbon dioxide emissions standards for model years 2021 – 2026, with stringency increasing 1.5% each year (<https://www.nhtsa.gov/>). Converting from conventional metal to engineered plastic for under-the-hood (UTH) applications – such as oil pumps – provides a lighter weight component, making way for potentially improved fuel economy. Furthermore, an all plastic solution allows for part consolidation up to 16% and can eliminate secondary operations, providing the possibility for a potential 30% system cost reduction and up to a 40% weight savings when compared to a full-metal solution.

ULTEM™ resin, from SABIC’s Specialties business, is a lighter weight alternative to metal that offers robust mechanical strength, thermal resistance, and excellent dimensional stability. ULTEM resin also has demonstrated micron level tolerancing (>700 million cycles) in harsh applications such as cylinder deactivation valves. Additionally, when ULTEM resin is used in combination with LNP™ LUBRICOMP™ compounds, SABIC’s unique wear-resistant lubrication technology, further value can be realized through higher production rates, reduction of friction, and up to a 20% decrease in Noise Vibration Harshness (NVH). SABIC can also assist in the design and integration of your oil pumps through services provided by our Global Application Technology teams.



## BENEFITS

FEATURE	BENEFIT
Ultra thin wall capable	<ul style="list-style-type: none"> <li>Up to 15% diameter reduction / 45% area reduction versus ISO thin-wall coating</li> <li>Column strength integrity in ultra small wire sizes</li> </ul>
Mass savings vs. traditional products	<ul style="list-style-type: none"> <li>Up to 50% insulation weight reduction vs. PVC thin-wall coating</li> <li>Up to 30% mass reduction vs. PVC ultra thin-wall coating</li> </ul>
Single-step extrusion	<ul style="list-style-type: none"> <li>Potential cost savings through faster production rates</li> <li>No cross-linking required</li> </ul>
Improved scrape abrasion	<ul style="list-style-type: none"> <li>Improved performance vs. PVC &amp; XLPE</li> <li>Elimination of secondary protection</li> <li>Potential for lower manufacturer warranty cost</li> </ul>
Improved pinch abrasion	<ul style="list-style-type: none"> <li>Potential for lower manufacturer warranty cost via:</li> <li>Improved performance</li> <li>Elimination of secondary protection</li> </ul>
Non-halogenated FR	<ul style="list-style-type: none"> <li>Non-halogenated FR properties, Potential for Recyclability</li> </ul>
Use of existing equipment	<ul style="list-style-type: none"> <li>Same extrusion lines</li> <li>Similar processing parameters as PVC</li> </ul>
Material Classes	<ul style="list-style-type: none"> <li>Simplification &amp; single supply</li> </ul>

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