

A well-balanced solution for better performance

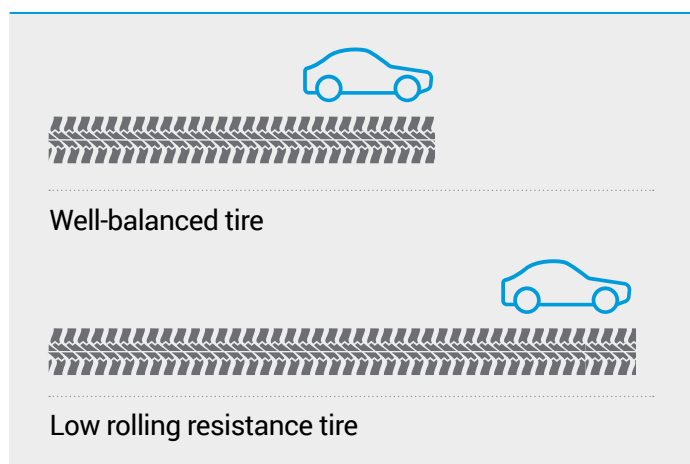


The drive for safer tires

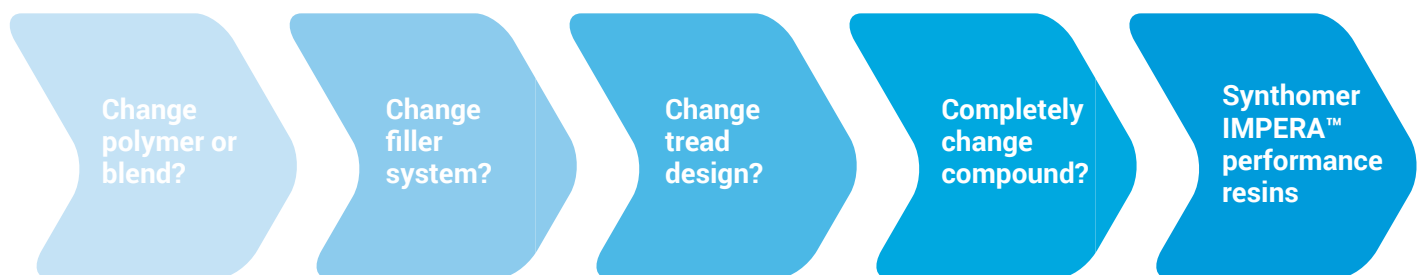
For tire manufacturers and formulators alike, balancing performance and safety is a constant challenge in both original equipment and replacement tires. Regulations, tire labeling requirements, and third-party ratings all increasingly place emphasis on performance attributes such as wet grip, that are key to safety performance.

Wet grip performance translates into a crucial safety benefit, enabling drivers to have an extra car length or more when faced with critical situations on a wet road.

Grip For illustrative purposes only



Tire makers have a variety of ways to improve wet grip, typically, leveraging polymers, additives, and fillers to address and minimize performance trade-offs. Additives are vital for fine-tuning tread performance at relatively low loading levels. As demand for differentiated tire performance increases, tire manufacturers are searching for compounding strategies that enhance safety performance without significant trade-offs in other key tire properties, avoiding the need to completely reformulate.



To meet new demands, tools that allow fine-tuning of properties without large-scale negative impacts are desired.

A well-balanced solution for better performance

Synthomer IMPERA™ performance resins empower tread compounders to create balanced performance by significantly improving wet grip without sacrificing rolling resistance and wear.



Performance

IMPERA™ enables differentiation that translates to improved overall performance. As a result, manufacturers have the option to call out differentiation downstream.



Value

Tires with better ratings from third parties can command a better price and possibly achieve greater market share through higher probability of OE fitment. During formulation, IMPERA™ allows greater choice and flexibility in design of the rubber compound.



Compliance

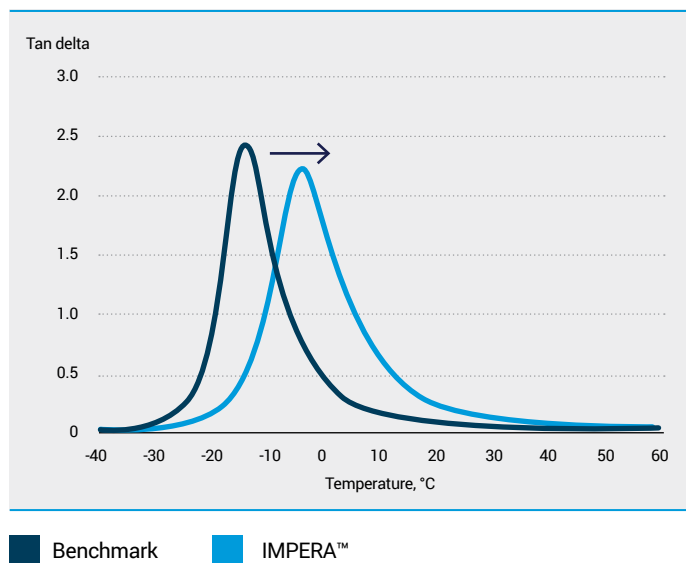
Whether tire manufacturers want to meet their own high standards or achieve better third-party ratings, IMPERA™ can help. With the ability to enhance wet grip and allow for fine-tuning of performance attributes, IMPERA™ is a valuable tool for formulators who need to take tire performance to the next level.

The IMPERA™ portfolio

Synthomer IMPERA™ performance resins, when used as part of the plasticizer package, result in a significant shift of T_g to higher temperatures, allowing tire makers to make novel elastomer choices.

For example, IMPERA™ enables the use of lower- T_g polymers or different polymer ratios at wet grip levels that were previously unattainable. As a result, tire makers can achieve a better balance of wet grip and rolling resistance while keeping other properties unchanged.

Tan delta vs. Temperature



The IMPERA™ portfolio

IMPERA performance resins enable compound designers to achieve better performance with more polymer options.

With a broad, versatile portfolio, Synthomer offers tire manufacturers many types of performance resins to help balance wet grip, rolling resistance, and wear in tires marketed as ultra-high performance, high performance, winter, summer, racing, and all-season for passenger cars, two-wheelers, trucks/buses, and off-road vehicles.

Thanks to the breadth of the IMPERA product line, tire manufacturers have access to performance resins that are compatible across a wide range of polymers.

Synthomer is committed to sustainable innovation and will continue to add new and increasingly sustainable products to its portfolio.



IMPERA™ performance resins—Typical properties

IMPERA™ Resin Type & Grade	Softening Point, Ring & Ball (°C)	Glass transition temperature, Tg (°C)
Hydrogenated C5		
E1501	101	51
E1780	130	77
Hydrogenated C9		
E1602	100	47
E1840	92	43
E1740	87	36
E1750	100	50
E1775	123	70
E1790	139	84
E1850	102	49
E1875	123	73
Pure Monomer		
P1503	100	54
P1504	85	40
P1505	141	91
C5		
R1507	101	47
R1607	101	48
R1508	97	45
R1608	96	45
C5/C9		
D1506	90	40
D1606	91	41

Properties reported here are typical values. Synthomer makes no representation that the material in any particular shipment will conform exactly to the values given.

When seeking market differentiation, formulators and manufacturers can rely on Synthomer rubber compounding, chemistry, and tire technology expertise for help.

To discuss which IMPERA™ performance resin is right for your formulation, ask your Synthomer sales representative about collaborating with the Synthomer tire additives team.

More information

Want to know more?

For product information and support, please contact a Synthomer representative through the e-mail below.

Contact for more information:

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