

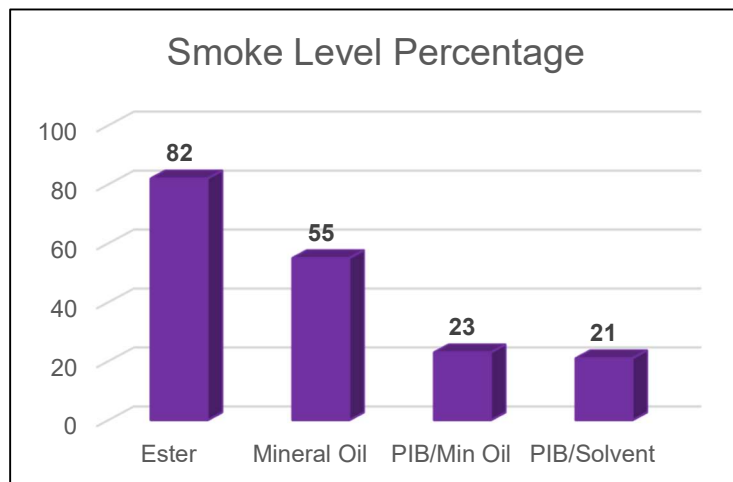


Maximizing Two Stroke Engine Oil Performance with Indopol Polybutene

Indopol polybutenes are fully synthetic hydrocarbon polymers produced by polymerization of C4 olefins. Based upon the unique properties of Indopol polybutenes they are considered a key ingredient in many lubricant applications including two stroke motor oils. The addition of Indopol polybutene to two stroke motor oil formulations exploits the product's versatility while offering low smoke performance as well as other significant benefits including clean burning, reduced corrosion and scouring, and the elimination of engine deposits. INEOS offers a wide range of polybutene viscosities which allows two stroke oil formulators the ability to adjust key lubricant properties.

Wear and corrosion protection

Lubricants are the first line of defence against internal engine damage. The selection of premium two stroke oil base fluid provides additional protection and reduces the effects of corrosive impurities. Indopol polybutene's superior shear stability creates a protective barrier between metal surfaces while also reducing friction to extend equipment lifespan and maximize efficiency. By minimizing wear, PIBs ensure smooth operation even under the most extreme conditions, enhancing reliability and reducing maintenance costs.



Smoke free burn-off

The smoke free burn-off advantage of choosing Indopol polybutene as the base oil is advantageous for both environmental compliance and operational efficiency.

Significant reductions in smoke and particulate (unburnt lubricant) emissions were observed when using the polybutene based lubricant without any adverse effects on the composition of the gaseous emissions. The clean burn-off of the PIB is directly related to improved fuel efficiency and better heat management within the engine.

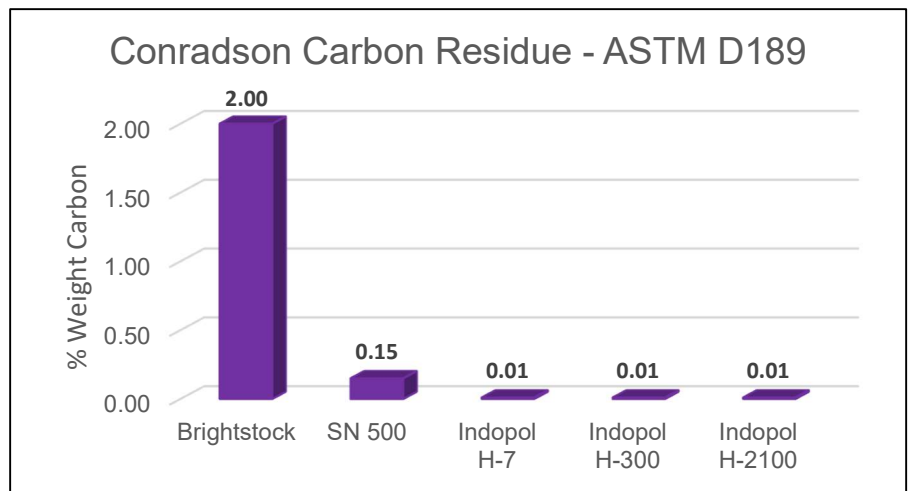


Typical Indopol® PIB Properties

Property	Method	H-7	H-25	H-50	H-100	H-300
Kinematic Viscosity @ 100°C (mm ² /s)	ASTM D445	12	30	110	220	630
Kinematic Viscosity @ 40°C (mm ² /s)	ASTM D445	125	800	2,600	6,500	20,000
Molecular Weight	ASTM D3536	440	635	800	910	1,300
Flash Point (°C)	ASTM D92	115	125	136	155	160

Lower combustion chamber deposits

Deposits in the combustion chamber are reduced upwards of 80% when using polybutene. Lowering the deposits within the engine is crucial to the longevity of an engine.



EXCLUSION OF LIABILITY

Information contained in this publication is accurate to the best of the knowledge of INEOS. However, INEOS makes no representations or warranties (express or implied), regarding the completeness, quality or accuracy of this information and any decisions you make based on the information contained herein are your sole responsibility. It remains at all times your responsibility to ensure that any materials manufactured or supplied by INEOS are suitable for the particular purpose intended. To the fullest extent permitted by applicable law, INEOS accepts no liability whatsoever arising out of the use of information supplied herein or the use of other materials in lieu of or in conjunction with any materials manufactured or supplied by INEOS. The name INEOS and the INEOS logo are trademarks of INEOS or its affiliated companies. © 2018 INEOS