22 July 2020
Press Release

Don’t let soot spoil the performance of your equipment

Techenomics has the expertise to find the reason and provide treatment.

First paper in Tribology of Soot Articles

Soot is harmful to engines and if left to accumulate can impact on productivity through poor performing components, which makes Techenomics' oil analysis and fluid management expertise an important tool in overcoming the problem and preventing costly equipment breakdown.

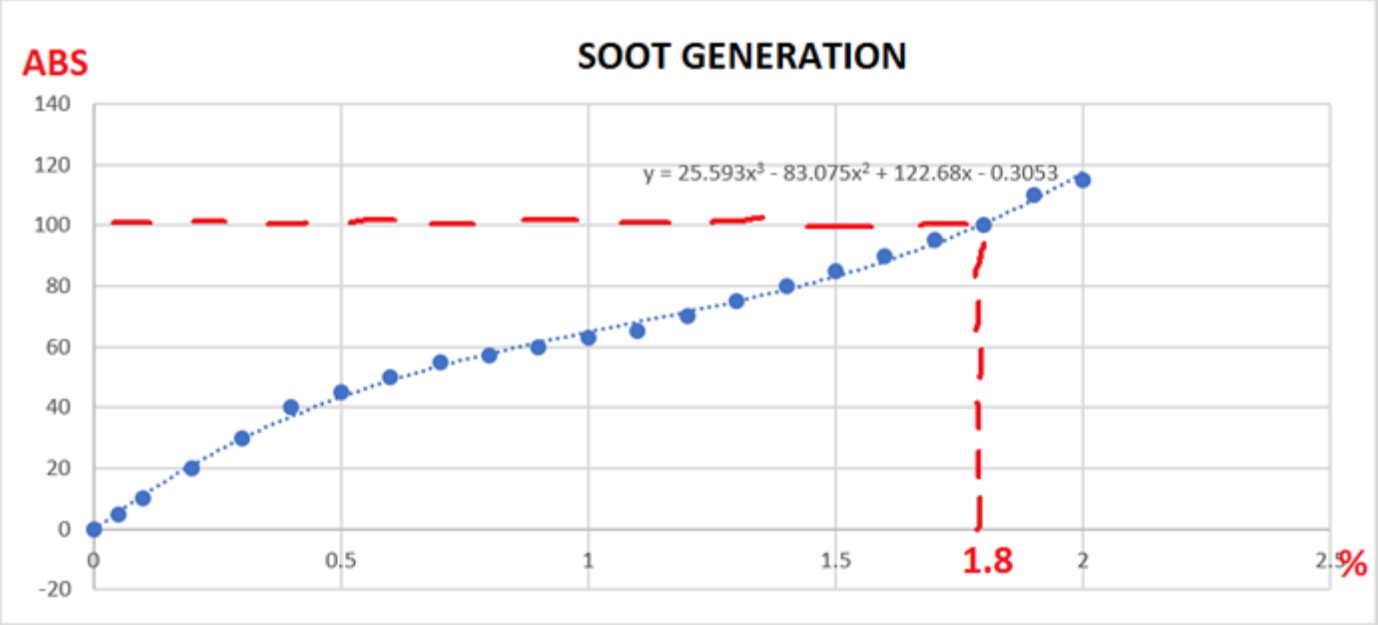
At excess levels, soot causes abrasion and high wear in engines and mechanical components, and if it forms clumps, can result in valve train, ring and liner wear. It can also thicken the oil and increase viscosity, which inhibits oil flow.

Soot is most commonly formed from incomplete combustion of a fuel and is a particular problem for diesel engines but can be a problem in any engine.

Techenomics CEO Chris Adsett says, "Soot can be attributed to improper air/fuel ratio, poor fuel quality and improper injector adjustment. The soot level is a good indicator of engine combustion efficiency and should be monitored on a regular basis.

"Excessive amounts of soot can indicate timing issues, over-fuelling or dribbling injectors as well as worn compression rings, among other reasons."

A customer recently made inquiries about soot content, asking if a level of 4.1% is too high and stating that the level has increased from 2.8% to 4.1% in a two-month period.



The above chart provides the comparison between soot measured in ABS and percentage.

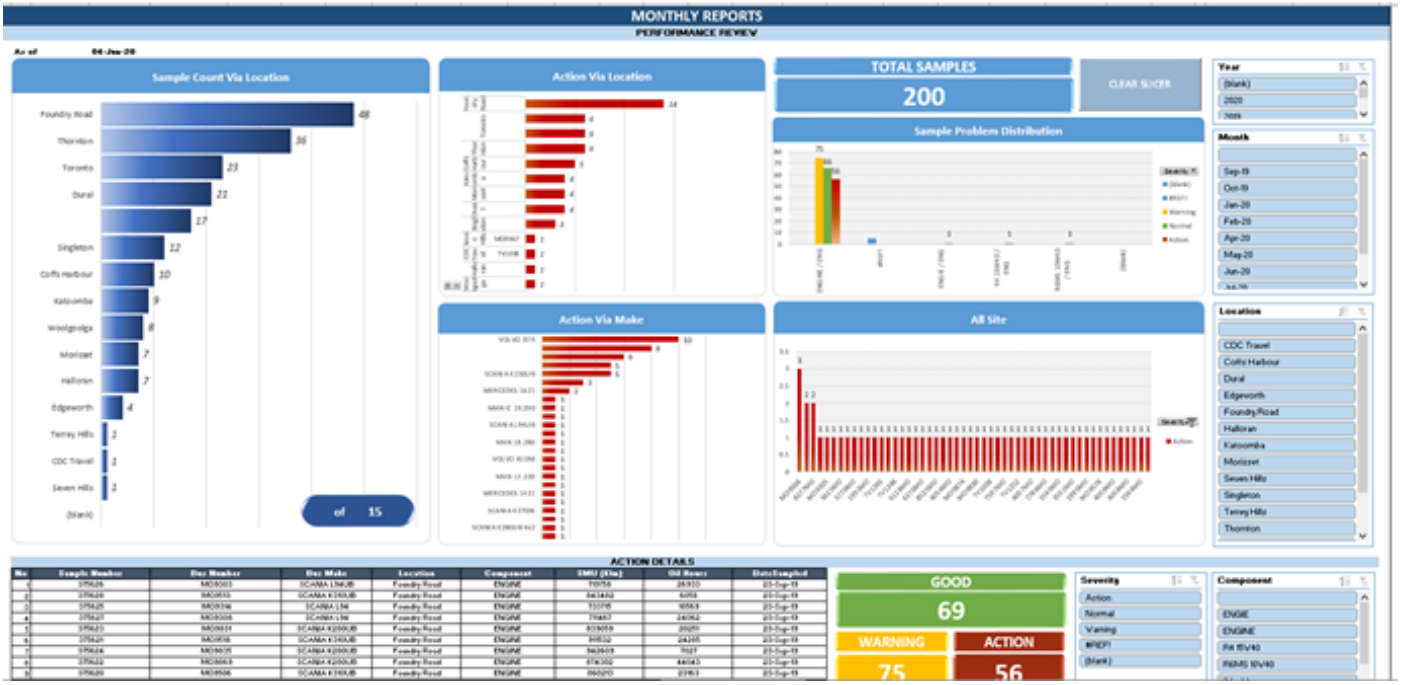
Techenomics measure soot in ABS as it is more accurate.

There can be a number of reasons that individually or in aggregate can result in soot build up. Before treating the issue, the cause must be determined and Techenomics' analysis procedures in conjunction with trending results can assist with this.

Among the questions that also need to be addressed to help determine the cause are:

1. Is it abrasive? This does usually not occur until soot builds-up around the intake with exhaust valves and pistons becoming hardened.
2. Does the engine have a DPF filter or any other recirculating device?
3. Are the lubricants being used low ash or low sulphur?
4. Is the equipment using oil or increased fuel?
5. Have idling times changed? Are they excessive?
6. Is the engine running hotter or does it have a noticeably incorrect idle?

Along with these answers, analysis results and trends are purveyed to equipment users in comprehensive reports generated from Techenomics Blue Oceans platform with an example below:



Pictured above is the monthly soot analysis prepared in our Blue Oceans software platform (click on the picture for a larger view). Further charts will be provided in the next soot articles.

For more information about Techenomics International visit www.techenomics.net or contact Chris Adsett, c.adsett@techenomics.com; in Indonesia Freddy, freddy@techenomics.com; in South East Asia Siti, siti@techenomics.com, in Mongolia Tumee, tumee@techenomics.com, in Australia Jason Davis, jason.davis@techenomics.com, or in Africa Chris Adsett, c.adsett@techenomics.com.