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Off the scale

Bellaso[®] S65 is an environmentally friendly technology designed to improve scale inhibition



BWA Water Additives' new Bellaso[®] S65 innovation is a scale inhibitor that meets stringent environmental standards without sacrificing performance.

Bellaso[®] S65 is a maleic polymer product that meets norms laid out by the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), achieving the 'Gold' standard in the UK and the Netherlands and 'Yellow' in Norway. The application also achieves a 70.2% biodegradability rating in the OECD 306B standard test.

Even at extreme conditions such as a pH of 12 at 180 degrees Celsius, Bellaso[®] S65 performs effectively as an antiscalant for barium sulphate and calcium carbonate.

The innovation performed well when compared with other products that are commonly used for treating scale.

Figure 1 illustrates the results of a dynamic tube block test for calcium carbonate between Bellaso[®] S65 and PASP dosed as solids. The dynamic tube block tests simulate oilfield conditions that are more extreme than a standard static jar test. The PASP failed in less than 50 minutes (failure occurred when the change in pressure exceeded 1 psi; zero psi baselines the pre-scale in this model, so failure was at 1 psi, represented by the dark line). Even though Bellaso[®] S65 was used at a lesser dosage, it performed well past two hours in preventing scaling from calcium carbonate.

Figure 2 examines a BaSO₄ dynamic tube block test that compared Bellaso[®] S65, DETAP and PASP all at 3.0 dosed as solids. PASP failed in about 70 minutes, while the DTPMP failed at the two-hour mark. Bellaso[®] S65 again continued to perform well beyond two hours (failure

Figure 1
Brent Water CaCO₃ Tube Blocking Test
Dosed as solids

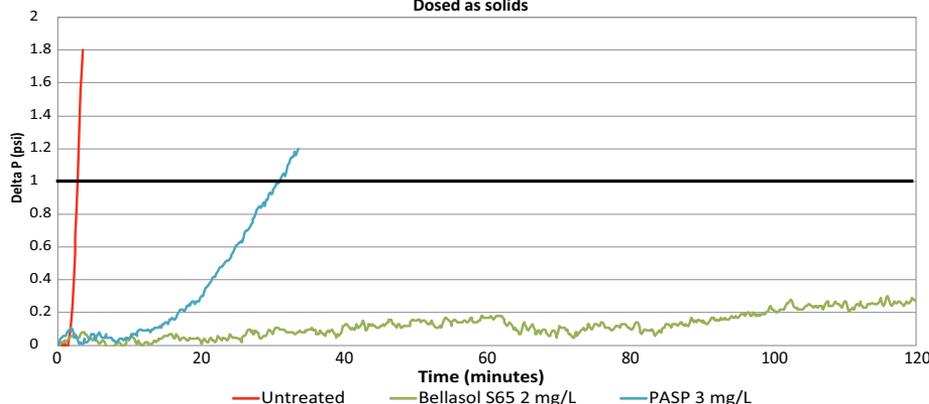
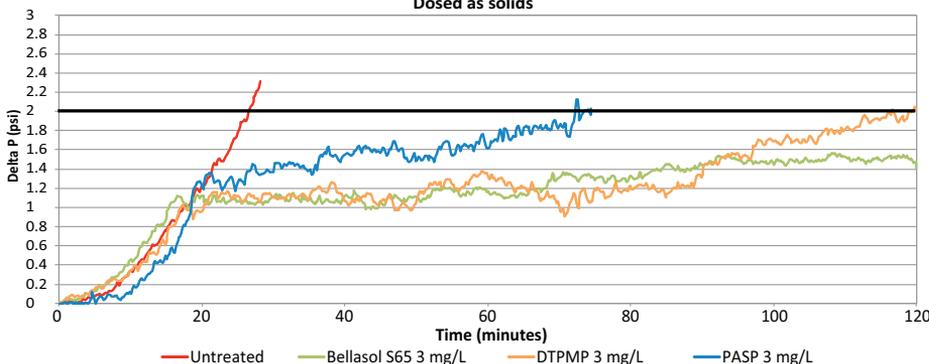


Figure 2
BaSO₄ TBT - Troll 80:20 Water 90°C
Dosed as solids



occurred when the change in pressure exceeded 1 psi; 1 psi baselines the pre-scale in this model, so failure was at 2 psi, represented by the dark line).

These experiments demonstrated Bellaso[®] S65's robustness when it was put up against phosphonates in dynamic testing. The success of the application stems from the fact it is a polymer. This means it is a crystal growth blocker and threshold inhibitor, which allow it to protect in ways that phosphonates cannot.

Furthermore, the polymer is better at withstanding extreme operating

environments, where high operating temperatures and pressures are typical. This benefit, combined with the application's favorable biodegradability, toxicity and bioaccumulation, make BWA Water Additives' Bellaso[®] S65 an obvious choice for companies looking to enhance their scale inhibition programs. ■

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