

# VANISPERSE DCA

## The new organic additive for lead-acid batteries

Developed to improve static and dynamic charge acceptance, enhance capacity, and increase cold crank performance for EFB and AGM Batteries; improves a battery’s performance to meet rigorous micro-hybrid requirements; functions synergistically with advanced carbon blacks.

**Vanisperse® DCA** is a highly refined lignin based bio-product derived from Norway spruce.

Application: **Vanisperse® DCA** is an organic battery additive designed to significantly increase charge acceptance, cold high rate discharge, reserve capacity and cycle life with decreased water loss.

Incorporating **Vanisperse® DCA** and optimising dosage increase a battery’s capability to meet the demands of micro-hybrid applications. The ability of **Vanisperse® DCA** to improve charge acceptance and PSOC life was seen in 12V enhanced flooded

SLI batteries manufactured by Superior Batteries where **Vanisperse® A** was replaced by **Vanisperse® DCA** at dosages of 0.25% and 0.30%.

### CHARGE ACCEPTANCE TEST RESULTS

Compared to the Vanisperse® A control, SAE charge acceptance was improved by 7% and 8%, and SAE capacity improved 7% and again by 7% at dosages of 0.3% and 0.25%, respectively. At 0.3% dosage, 2<sup>nd</sup> cold crank improved by 19% and 5% for the Time and Voltage tests, respectively. Results below in Figure 1.

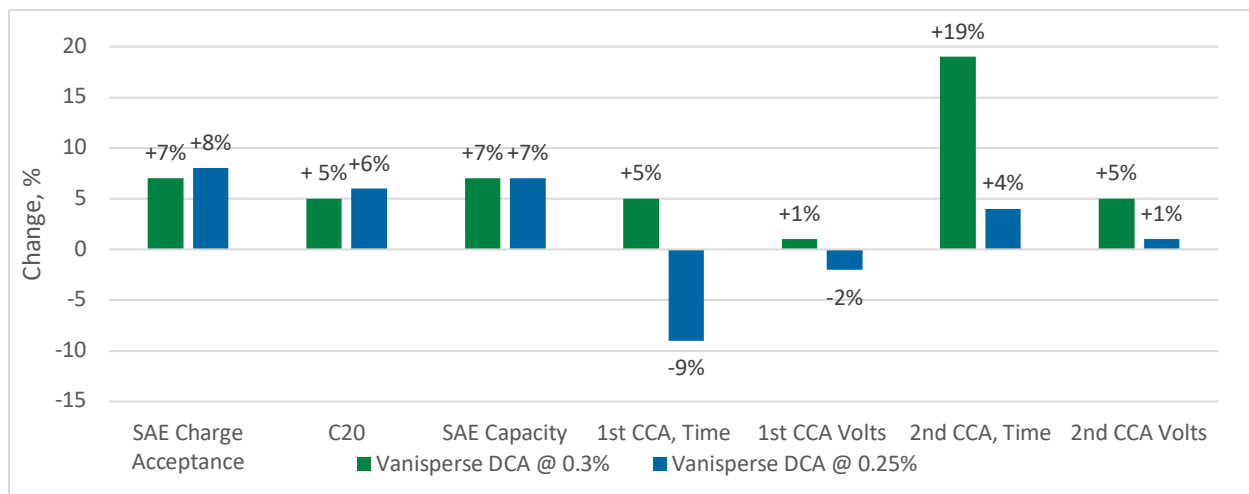


Figure 1: Vanisperse DCA performance versus Industry Standard Vanisperse® A



LIFE TEST RESULTS

Figure 3. and Figure 4. indicate significant improvement was achieved in both PSOC life tests. Batteries containing **Vanisperse® DCA** posted a 30% improvement in the VW 17.5% DoD test (Figure 1.). In the difficult VW Start/Stop test **Vanisperse® DCA** batteries posted substantial 11% and 16% improvements. The improved charge acceptance noted earlier translated to improved PSOC life performance.

SAE J2801 (75°C) results presented in Figure 3. show **Vanisperse® DCA** batteries posted 8% and 2% improvements at dosages of 0.3% and 0.25% respectively. This is significant since some EFB's can exhibit shortened life in this high temperature test. Results showed quite favorable reduction in water consumption. In the VW 17.5% DoD test, weight change from water loss was reduced by 1% and 4% at 0.3% and 0.25%, respectively. In the VW Start/Stop test water consumption was reduced by 12% and 16% and in the high temperature SAE 2801 life test, water loss reductions of 3% and 6% occurred at dosages of 0.3% and 0.25%, respectively.

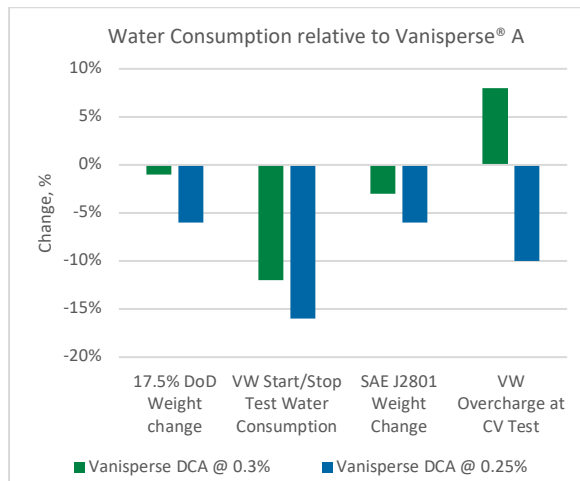


Figure 2: Water consumption relative to industry standard Vanisperse® A

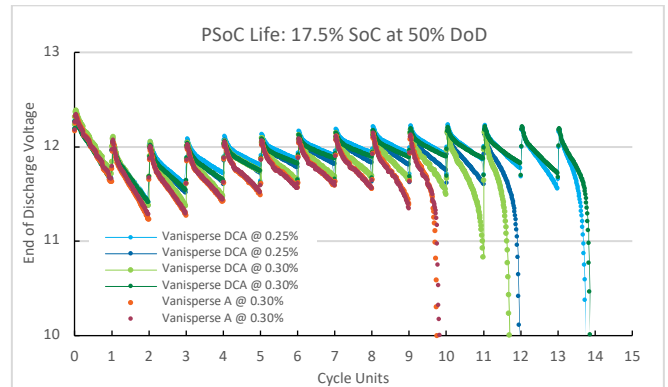


Figure 3: PSOC life improved from 9.8 units for Vanisperse® A @ 0.3% dosage to 12.8 units for Vanisperse® DCS @ 0.3% (+31%) and 12.9 units for Vanisperse® DCA @0.25% (+32%)

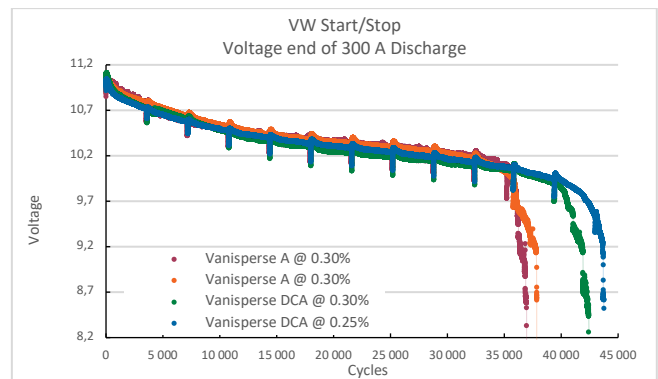


Figure 4: PSOC life improved from 10.5 units for Vanisperse® A @ 0.3% dosage to 11.7 units for Vanisperse® DCA @ 0.3% (+11%) and 12.2 units for Vanisperse® DCA @0.25% (+16%)

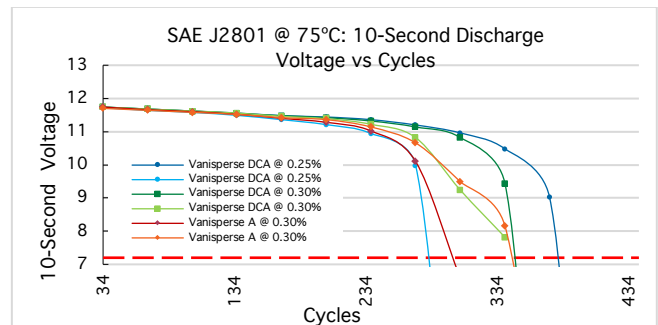


Figure 5: High temperature life improved from 10.0 units for Vanisperse® A @ 0.3% to 10.8 units for Vanisperse® DCA @ 0.3% (+8%) and 10.8 units for Vanisperse® DCA @ 0.25% (+2%)

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