



Borregaard

VANISPERSE HT-1

The efficient organic additive for lead batteries





VANISPERSE HT-1

Borregaard produces various grades of lignin-based products which are key sustainable additives for the lead battery industry. With a global presence and multi-plant locations, Borregaard can ensure reliable supply of consistent quality products to customers worldwide.

Vanisperse HT-1® provides improved high temperature performance as it functions as an organic expander for the lead battery negative electrode.

ADVANTAGES OF VANISPERSE HT-1

- Increases the life of the negative electrode under high temperature conditions for both shallow and deep cycles.
- Contributes to meet OEM requirements for high temperature environments.
- Yields longer life at both low and high dosages, and under deep discharge cycling.
- Achieves high temperature performance with less than 0.10% of the material cost of the typical lead battery.

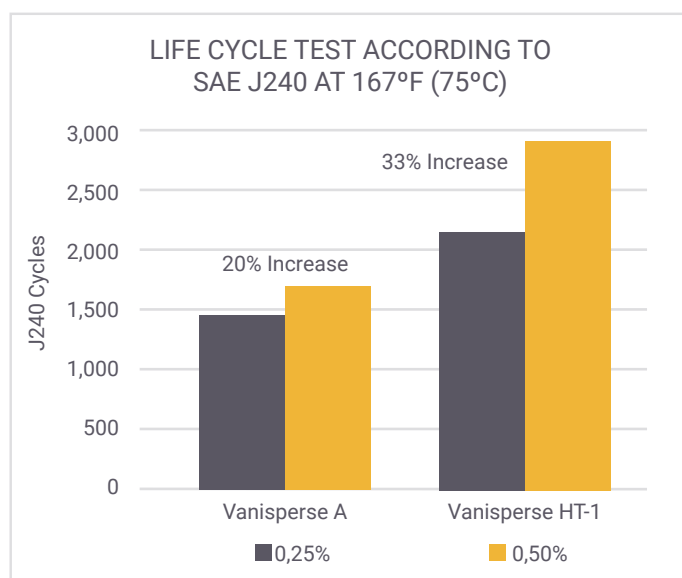


Figure 1 Average Life According to High temperature test SAE J240 at 75°C.

EXPERIMENTAL STUDY

- 12-volt flooded SLI batteries were designed to be negative limited by using a PAM to NAM ratio of 1.5 to 1.
- Batteries, Group 24 design, with a nominal rating of 500 CCA and 85 minutes of Reserve Capacity.
- Two dosages were employed, a low level of 0.25% and a high level of 0.50%.
- Other expander components, carbon black and barium sulfate, were used at typical levels.

The study clearly defines the benefits associated with using Vanisperse HT-1 and using the higher organic expander dosage. Vanisperse HT-1 effectively lengthened the life of the negative electrode for batteries in high temperature service for both shallow and deep cycle applications. This is an important finding for manufacturers who are experiencing difficulty meeting OEM requirements for high temperature environments.

The study also demonstrated the effectiveness of using the higher dosage to significantly improve

the useful life of the negative electrode. The higher dosage proved more beneficial for both Vanisperse A and Vanisperse HT-1. This benefit was recorded in each of the three life test protocols.

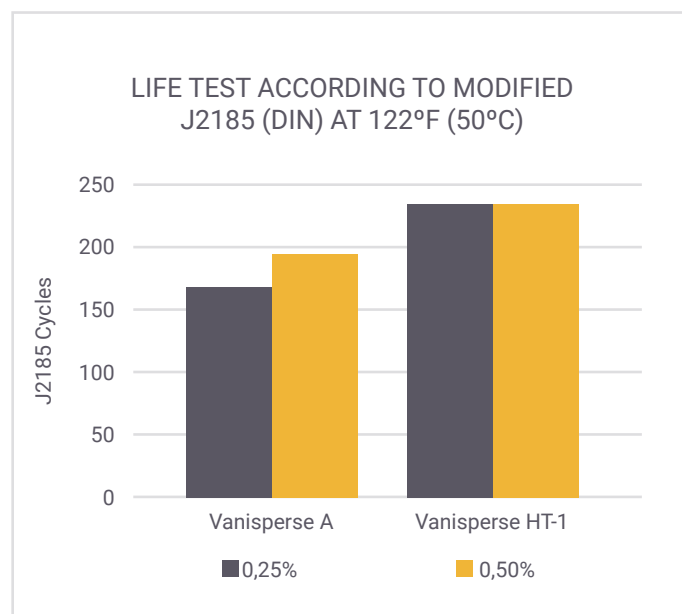


Figure 2: Average Life According to Heavy duty test SAE J2185 at 50°C.



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