

Case Study: Importance of Quality in Biodiesel Startups

Overview

Gaurav Shah has an in-depth understanding of the particular set of technology challenges facing biodiesel facilities. Shah, who holds Master's degrees in both Chemical Engineering and Industrial Design and Management, is an expert in the building and design of biodiesel plants. He uses his chemistry and technology insight and vision to help build a sustainable future for the fledgling biodiesel industry. As Senior Process Engineer at SRS Engineering, which has offices in California and India, Shah is pioneering the refining of B100 and Design of Biodiesel Plants using waterless technologies and designing the next generation heterogeneous catalysts. His career consulting with biodiesel start-up firms has given him a unique insight into the challenges facing this new industry.

Challenge

Biodiesel, as an "industry in its infancy" lacking the "sophisticated and costly" tools available to petroleum companies, needs to utilize new technology solutions in order to avoid high expenses, Shah notes.

"The traditional and ASTM lab techniques called for GC, flash point (Pensky Martin), Karl Fischer, Cetane Tests, ICP etc equipments for measuring the in-process & final B100 qualities. Using these equipments not only add to the capital costs but also the operating costs."

These older technologies also require skilled labor and longer measuring times, which do not fit the biodiesel production patterns, Shah observes. "Biodiesel plants are usually operating on 24*7 basis and the time it takes to measure the fuel for ASTM D6751 compliance can result in off-spec fuel if it does not meet the standards." Another difficulty, as Shah points out, is that GC and Karl Fischer techniques require constant calibration in order to get accurate readings. Since biodiesel producers use multi feed stocks, the process becomes, "even trickier and more time consuming."



The Solution: Quality Trait Analysis

During the course of his career using his expertise to consult with biodiesel start-up companies, Shah has found QTA to offer the answer to this new industry's needs. In addition to QTA's easy user-interface, Shah praises Quality Trait Analysis' "gamut of options – from measuring the feed stocks & raw materials, in process fuel, glycerin purity & finished B100 for ASTM D6751 & EN14214."

The QTA System's Benefits to Biodiesel Startups

Lower Start-Up Costs

Shah sees QTA as a wise choice for biodiesel companies starting out without a huge amount of capital.

"Using QTA reduces the immediate capital costs involved in buying and/or leasing various equipment like GC, flash point, moisture tests, etc. "

Reduced Operating Costs

In addition to eliminating the start-up investment involved in purchasing testing equipment, QTA offers a further savings to biodiesel firms in reducing operating costs. Shah points out that "the average cost for testing B100 (critical spec) at an ASTM certified lab is approximately \$600-800, with full length testing running about \$1,400." QTA, he notes, he notes provides testing at a fraction of that cost, enabling biodiesel companies to meet ASTM standards without unnecessary spending.

Streamlining Production Schedule

Biodiesel companies save time as well as funds by using QTA, says Shah. "The lead time is typically 24-48 hours" for using an outside laboratory compared to "a minute with QTA." In addition to quick testing turnaround time, Shah also point to another benefit QTA provides its customers: the ability to perform testing around the clock, backed by "very good customer support available 24 hours" as an added bonus to biodiesel firms' seeking to optimize production time

ASTM Certification

“Now that QTA has been certified by the ASTM committee,” Shah notes, “you not only get the other benefits, but you can use this for Certificate of Analysis as well.”

Conclusion

Shah finds that QTA offers a unique combination of “a better bottom line” plus “results in a less than a minute” making it a sound business choice for biodiesel start-up companies. “I have been using it for five years and I recommend QTA” Shah states, based on its “savings in time, labor and cost helping maintain better quality control. Better quality fuel from reliable testing results in satisfied customers.”

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