



INDUSTRY
Personal Care
Chemicals



PROCESS TYPE
Batch
Processing



ANALYTICS TYPE
Asset
Analytics

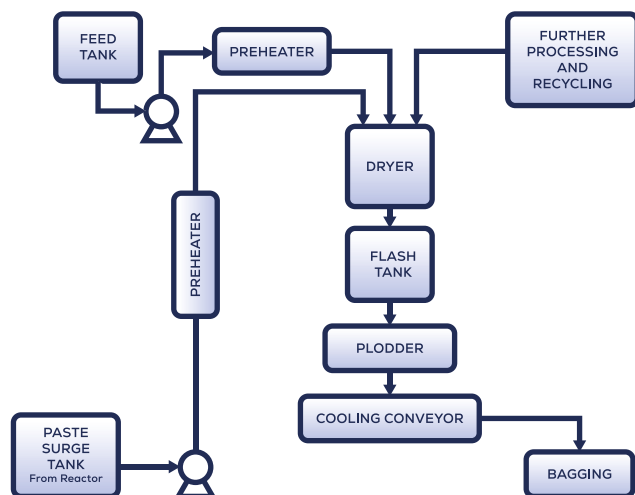


KEY OBJECTIVE
Increase Product
Quality

Batch Comparison and Live Monitoring

BACKGROUND

The plant has a turbo tube dryer where after the reaction the product paste is dried by steaming into a shell and tube heat exchanger with the help of vacuum. The plant has an annual product capacity of 7000MT. The plant was commissioned in 2015 and since then has frequently experienced operational difficulties and problems with product quality. The most important quality parameters which indicate a problem are pH, moisture and % unsulfated matter. A record of the batch runs without any quality issues is also available.



CHALLENGE

There were several batches that had issues with the product quality, the cause of which was unclear. For each of the quality indicators, several parameters needed to be investigated. These parameters included pH regulated by caustic flow, % unsulfated matter dependent on organic flow, moisture on dryer temperature and several other dependencies.

SOLUTION

Desired outcomes included the ability to compare a current run and batches with quality issues with the golden runs, and to configure a monitor to send an alert when the live batches showed a deviation from the golden batch behavior. This alert would notify process experts to proactively take action to avoid problems.

The previous system did not make it easy to compare trends since it was used mainly for visualization and not analysis. Additionally, quality information was stored in a separate system, making it quite time consuming to find and compare the right batches.

- Quality data from the lab recorded system was imported into TrendMiner via a CSV file to make finding and comparing batches easier and more efficient. The search functionality was used to retrieve all product runs from the historical data.
- A fingerprint of the good quality batches was created and was used against the bad quality batches for a comparison.
- A monitor was set up based on the fingerprint to look for deviations from the ideal behavior in real time while a batch was in production.

RESULT

- A framework was established for process experts to quickly gather relevant information from historical data.
- Monitoring was set up to check for deviations in current runs and send alerts notifying process experts proactively.
- Critical batch parameters were identified through the analysis of historical runs, providing experts with key metrics to keep an eye on.

TRENDMINER FEATURES USED



DATA IMPORT

TrendMiner is not an endpoint but a building block in any analytics landscape and provides data import and export facilities, APIs, and OPC tools that allow integration with various business applications. Our software allows filtered time series data to be imported and exported to other tools.



VALUE BASED SEARCH

TrendMiner allows for an easy click and search for tags, just like using Google. While typing, our software auto fills best matching terms to speed up the analysis search. Value Based Search is used to quickly find anomalies in the time series data by analyzing criteria, numerical values, and limits.



TAG BUILDER

TrendMiner's tag builder allows the creation of time series data through the use of formulas on and aggregations of the tags. The results of these tags can be visualized just like any other tag. The tag builder can also be used for importing time series data via a CSV file.



LAYER COMPARE

Using pattern recognition technology, TrendMiner uses a similarity search feature to find similar past patterns. The most important part of the pattern can be emphasized with a graphical weighing factor to improve accuracy of the search results.



FINGERPRINTING

The search capabilities of TrendMiner can be used to find and overlay the optimal dynamic behavior, such as the best batches, transitions, and startups, etc. With a click of a button, multiple periods of the best performance can be combined into an envelope or fingerprint which can then be used for process monitoring purposes.



MONITORS

TrendMiner is like a watchdog; it continuously monitors processes and sends notifications when deviations from predefined fingerprints, process conditions, or operating zones occur. These early warnings improve plant output by allowing the plant to run at optimal energy consumption and waste reduction and at the same time, to comply with safety, health and environmental regulations.

Join our webinars to enroll in
the \$15K free POC Award



Click below to learn more



[REQUEST LIVE DEMO](#)



[WATCH VIDEO DEMO](#)



[REQUEST PRICING](#)



[REQUEST FREE TRIAL](#)

[MORE USE CASES YOU MAY LIKE](#)

[CUSTOMER SUCCESS STORIES](#)

[KEY CAPABILITIES WHITEPAPER](#)

[TRENDMINER VIDEO TIMELINE](#)

[INDUSTRIES SERVED](#)

[RESOURCES](#)

STAY UP TO DATE: SUBSCRIBE TO OUR NEWSLETTER

At Trendminer, we are dedicated to helping companies leverage the power of data to drive transformation and growth. We hope this document has given you new insights and ideas for how you can achieve your goals. If you have any questions or would like to learn more about our solutions, please don't hesitate to reach out. We look forward to working with you on your journey to success.