

OPTIMIZE REFINING PROCESSES & REDUCE COSTS FROM DISTILLATION TO BLENDING

Discover the opportunities with world-leading **data analysis**

- Optimize your blending operations and increase the profitability of the refinery >

- Improve inventory management with more accurate analysis of crude feedstock >

- Reduce equipment malfunction and process failures with early event detection >



CAMO
Bring data to life

OPTIMIZE PRODUCTION AND REDUCE PROCESS COSTS

■ CAMO Software has worked with petrochemical refineries for many years. Our world-leading multivariate data analysis software can be used for process modelling, rapid analysis and early event detection.

We help our clients optimize their processes and manage product quality more efficiently through seamless integration of our powerful analytical models and process optimization tools into third party analysis equipment and control systems.

Our solutions help you address challenges such as optimizing blending operations and being able to detect potential issues in a process before they cause major problems. With your industry know-how and our world leading data analysis expertise, we'll help you achieve your business goals.



REAL BUSINESS BENEFITS

Our solutions can be used across all stages of the petrochemical refining process, from distillation of crude oil to blending.



Distillation of crude oil

- > Model process analyser data to predict the quality of fractions as they are being drawn off the column
- > Early detection of potential faults including impurity buildups and column flooding
- > Assess the quality of crude oils to better control the distillation process



Catalytic cracking & Reforming

- > Improve gasoline yields through better understanding of feedstock properties
- > Optimize feedstock production from FCC units for other processes
- > Monitor catalyst regeneration quality
- > Develop process models that are better able to handle potential shutdowns and failures



Alkylation & Isomerisation

- > Create high value blending stock through better process understanding
- > Develop process models for early event detection situations



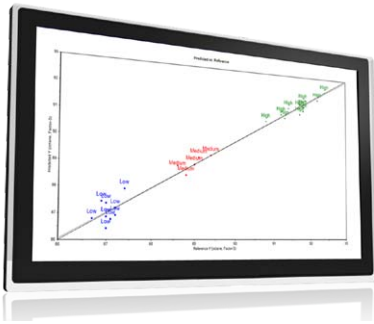
Blending

- > Produce gasoline of exact standards
- > Increase use of low cost components e.g. butane for improving RVP
- > Monitor and control the aromatic content of gasoline in order to meet environmental standards

EXAMPLE APPLICATIONS OF MULTIVARIATE ANALYSIS

Real-time process monitoring for early event detection

Working with one of the world's largest refineries, we were able to help identify impurity build up in a product stream and correct for it based on advanced graphical outputs and diagnostics. This was achieved by integrating our multivariate analysis and prediction tools into the clients existing hardware and software platforms, giving them the ability to detect events before they caused problems. This reduced the risk of serious process damage, minimized environmental emissions and saved the company millions of dollars in lost time and production.

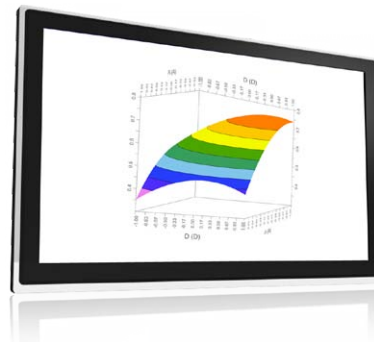


Rapid analysis of octane number

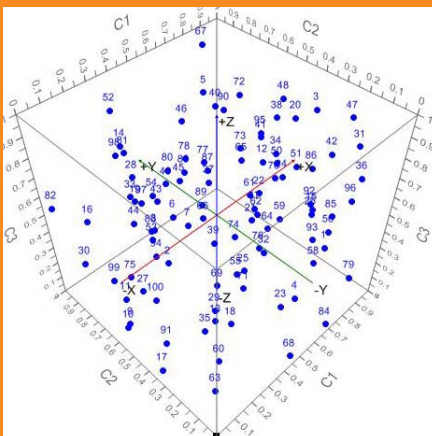
Integrating into our partners world-recognized spectroscopy platforms, multivariate models can be developed to predict octane number, RVP, aromatics, benzene and olefins with high accuracy and precision. This allows clients to reduce the expensive and time consuming use of test engines and hazardous testing procedures.

Designed experiments for blend optimisation

A client manufacturer had 3 different blend stocks: Type A, B and C respectively. Their objective was to blend the three components to obtain the desired octane number and RVP characteristics minimizing the aromatic content and the overall cost of the blend. The properties of the components were known in advance along with their respective costs, so a designed experiment was used to determine firstly any antagonistic/synergistic blend properties and to develop a model for looking at cost. This delivered significant cost savings for the client through the utilization of the minimal quantity of expensive blend components, while meeting exacting environmental specification for aromatics.



IS YOUR CURRENT ANALYSIS SOFTWARE SHOWING YOU THE FULL PICTURE?



Multivariate analysis techniques are often superior to traditional (univariate) statistical approaches as they help identify and explain the complex relationships and patterns that can lead to process faults, which are often undetected by univariate methods.

Multivariate methods point directly to the cause of a problem, providing deeper insights into how to adjust a process to bring it back into a normal state of operation, thus avoiding unnecessary "tweaking" and more importantly, forced shutdown.

Our solutions bring the data from several different control charts/measurement systems into a single view of the process that operators and engineers can easily interpret to make the right decisions in a timely manner. This gives you a powerful tool for better equipment usage and allows the implementation of well informed corrective and preventative action (CAPA) programs.

DOWNLOAD FREE GUIDE:

 [What is Multivariate Data Analysis ?](#) 

CAMO SOFTWARE PRODUCTS & SERVICES

Our range of powerful solutions are ideally suited for the petrochemical refining industry.

The Unscrambler® X

Leading multivariate analysis software used by thousands of data analysts around the world every day. Includes powerful regression, classification and exploratory data analysis tools.

 [TRIAL VERSION](#) | [READ MORE](#)

Unscrambler® X Prediction Engine & Classification Engine

Software integrated directly into analytical or scientific instruments for real-time predictions and classifications directly from the instruments using multivariate models from The Unscrambler® X.

 [TRIAL VERSION](#) | [READ MORE](#)

Unscrambler® X Process Pulse

Real-time process monitoring software that lets you predict, identify and correct deviations in a process before they become problems.

Affordable, easy to set up and use.

 [TRIAL VERSION](#) | [READ MORE](#)

Consultancy and Data Analysis Services

Do you have a lot of data and information but don't have resources in house or time to analyze it? Our consultants offer world-leading data analysis combined with hands-on industry expertise.

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Our partners

CAMO Software works with a wide range of instrument vendors and data formats used in the petrochemical refining industry. For more information please contact your regional CAMO Software office or visit

 www.camo.com/partners

Training

Our experienced, professional trainers can help your team use multivariate analysis to get more value from your data. Classroom, online or tailored in-house training courses from beginner to expert levels available.

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Find out more >

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