

APPLICATION NOTE

Color in LNG (liquefied natural gas) with a ClearView® db Photometer

Given the large volumes of LNG under transport, ROI on real-time measurement systems such as our GUIDED WAVE™ ClearView® db photometer can be measured in days. LNG is natural gas cooled to a liquid state. Natural Gas is composed primarily of methane, but may also contain propane, ethane, and other heavier hydrocarbons as well as small residual quantities of N₂, O₂, CO₂, H₂O, and some sulfur containing compounds. Prior to liquefaction these residual materials are removed with only clean hydrocarbons remaining. The composition of natural gas can vary slightly from different producing locations. Typically LNG is a colorless material, but during distillation the carryover of larger hydrocarbons (C6+) can affect the color of the LNG (typical specification for C6+ in LNG is 0 to 0.05%).

Measuring the Saybolt or ASTM color online is a key parameter in many light hydrocarbon mixes for quality control to detect this carryover. Monitoring the color allows the refiner to verify that the product is within specification. Any "out of spec" product can be reprocessed before being sold.

The flowchart in Figure 1 shows a typical natural gas to LNG process with target measuring points for online analysis.

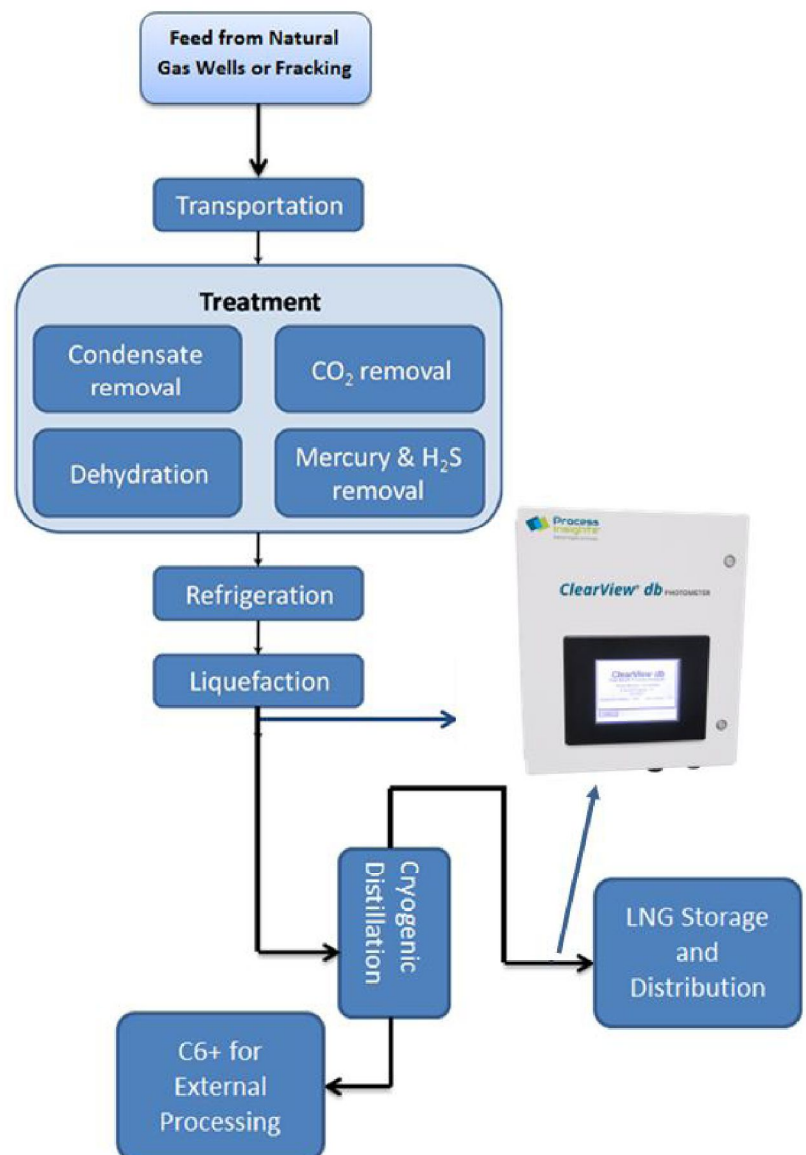


Figure 1: Natural Gas Processing

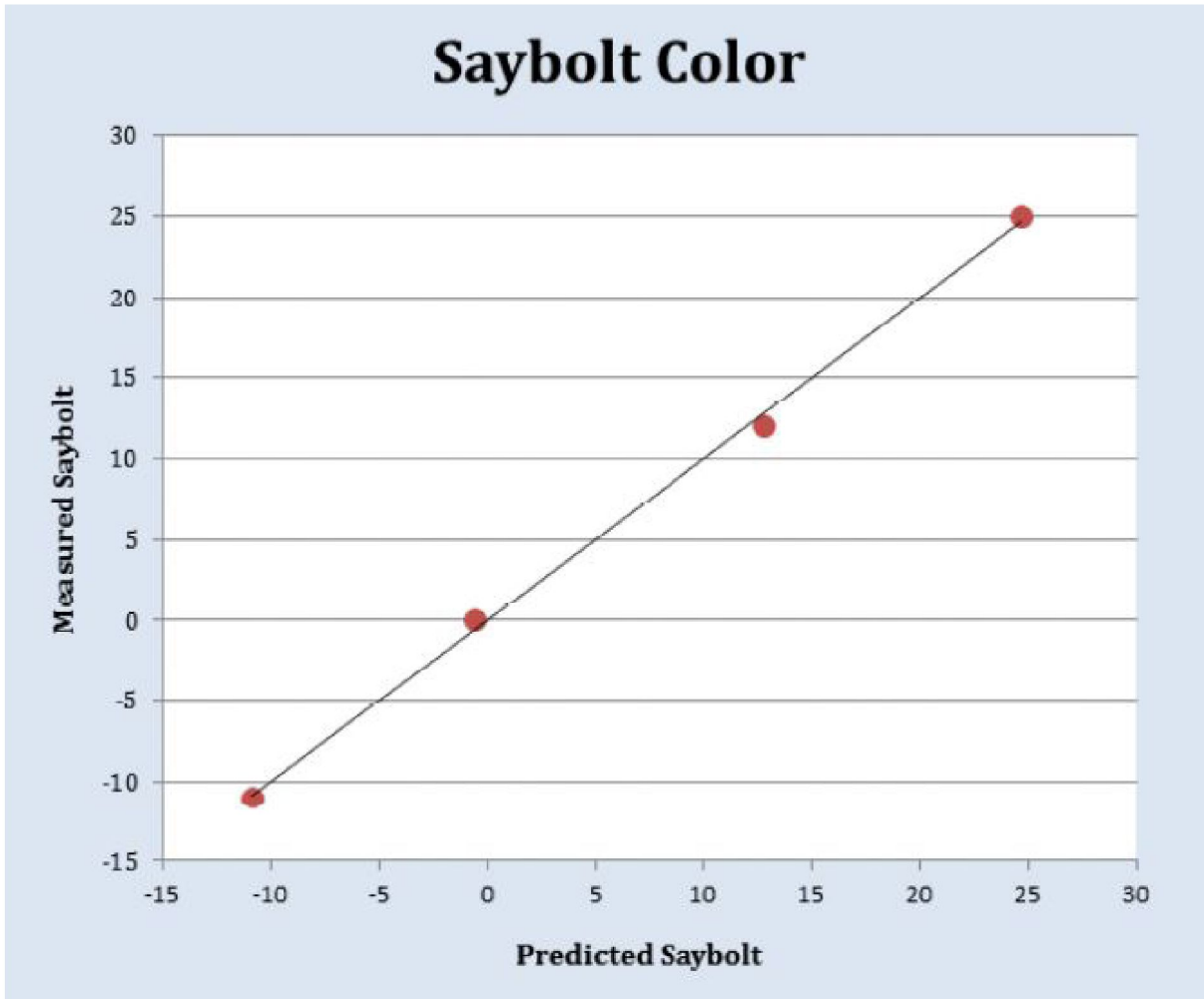


Figure 2: Saybolt Color as Measured by a ClearView db Photometer

Saybolt Color (ASTM D156) has a scale that ranges from -16 (darkest) to +30 (lightest). Figure 2 shows the Saybolt measurement scale on a ClearView db photometer equipped with a standard 50mm pathlength cell. Any material darker than -16 can be measured using the ASTM Color scale (ASTM D1500). Both Saybolt and ASTM color can be measured online in realtime using a ClearView db dual-beam photometer.

The ClearView db can be configured to measure either one or two sample points. Each unit can have 4-20 mA analog outputs (6 outputs max on a single channel system, and 4 outputs per channel on a dual channel system) along with corresponding contact closure outputs to alert error states. The ClearView db is also capable of Modbus TCP communication via Ethernet. For more detailed information regarding system specifications and the ClearView db process analyzer please contact a Process Insights™ sales or technical specialist.

GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights manufactures and delivers premium sensors, monitors, detectors, analyzers, instrumentation, and software that are mission-critical to keep your operations, personnel, and the environment safe – every day across the globe.

Get the most reliable, precision analytical technologies available on the market today. We will work to match your needs and budget, and provide the optimal, and most stable process analysis solution for your application.

CENTERS OF EXCELLENCE | PROVIDING PROVEN SOLUTIONS

Process Insights is committed to solving our customers' most complex analytical, process, and measurement challenges everyday.

Process Insights – The Americas

4140 World Houston Parkway Suite 180, Houston, TX 77032, USA +1 713 947 9591

Process Insights – EMEA

ATRICOM, Lyoner Strasse 15, 60528 Frankfurt, Germany +49 69 20436910

Process Insights – APAC

Wujiang Economic and Technology, Development Zone, No. 258 Yi He Road, 215200 Suzhou, Jiangsu Province, China +86 400 086 0106

For a complete range of products, applications, systems, and service options, please contact us at: info@process-insights.com

For a complete list of sales & manufacturing sites, please visit: <https://www.process-insights.com/about-us/locations/>

COSA Xentaur, Tiger Optics, Extrel, Alpha Omega Instruments, ATOM Instrument, MBW Calibration, MGA, Guided Wave, ANALECT and LAR TOC Leader are trademarks of Process Insights, Inc.



REVOLUTIONIZING MEASUREMENT

EVERYWHERE