

# Kenics® KM Static Mixer

The ideal solution for homogenisation of bottom sediment and water prior to sampling in custody transfer pipelines

## Application

Chemineer is a global manufacturer of static mixers for the oil and gas industry. Solutions and designs are offered to accurately determine the water content in crude oil and hydrocarbon streams.

Determining the amount of BS&W in hydrocarbon streams is an important aspect in custody transfer. Inaccuracies can result in significant financial loss throughout the process in upstream oil production, and also downstream refining, distribution, and transmission.

At US\$ 100/bbl an error of only 0.1% in water content assessment at total flow of 500 bbl/hr (80 m<sup>3</sup>/h) results in a discrepancy of approximately 500 bbl/hr x 0.001 x \$100/bbl x 24 hr/day x 365 days/year = US\$ 438,000 / year.

Mixing of an oil stream is critical if operators want to obtain the highest possible accuracy and repeatability, whether it is in watercut measurement or online sampling of hydrocarbons, spot sampling, or automatic grab sampling.



Gas into Liquid Dispersion

## Design

Chemineer manufactures static mixers that are highly effective at creating homogeneous liquid/liquid or gas/liquid dispersions. Engineers have extensive knowledge and experience to correctly design and specify mixers for fiscal mixing purposes.

Chemineer static mixers are available with integral sampling ports for improved accuracy. This results in the elimination of a separate spool piece to incorporate at your sampling point.

Our approach is to engineer our custody transfer solutions to meet the stringent requirements of the ISO 3171, ASTM D4177, and API 8.2 standards. All too often the focus in providing a solution is the manufacturer's performance measure, as opposed to the more objective approach which requires compliance to methods and standards.

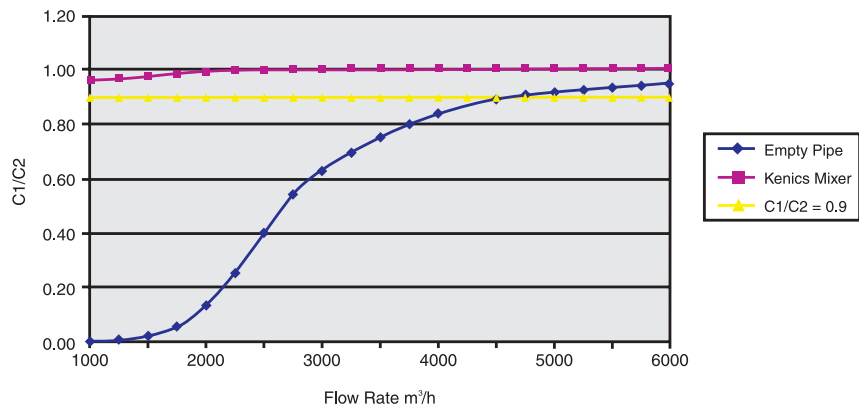


Oil into Water Dispersion

## Customer Benefits

- Predictable and accurate performance for measurement of crude oil water content
- Low cost to install, operate, and maintain as compared to Jet mixing
- Designs comply with industry standards
  - ISO 3171
  - ASTM D4177
  - API 8.2
- Simple and effective operation with no maintenance

## ISO 3171 – Pipeline Mixing Quality



ISO 3171 – C1/C2 Analysis



## Comparison Between Kenics Static Mixer and Jet Mixer in Fiscal Mixing Applications

	<b>Kenics Static Mixer</b>	<b>Jet Mixer</b>
ISO 3171 Compliance	Complies	Complies
Capital Cost	Low	High
Lifetime Energy Cost	Low	High
Installation Cost	Low	High
Installation	As Pipe Spool	Multiple Equipment Install
Ancillary Equipment	N/A	Necessary
Performance Range	Fixed	Flexible
Failure/Spares Requirement	N/A	Necessary
Maintenance	None	Regular Requirement
Ease of Operation	Simple and Effective	Specific Monitoring Regime



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