

## MEASURING WATER CONCENTRATIONS IN HYDROFLUORIC ACID THE KAM® KF KARL FISCHER MOISTURE ANALYZER

The simplest, safest, and the most precise means of measuring the moisture content of hydrofluoric acid is by scrubbing the water from the acid in methanol. It is important to follow all recommend safety procedures when handling HF acid (protective clothing, eye wear, properly ventilated area, etc.)

### RECOMMENDED EQUIPMENT

KAM KF Karl Fischer Moisture Analyzer  
100ml heavy plastic bottle with cap such as a Nalgene bottle with 3/4" opening  
Sample bomb

### STEPS:

1. Prepare the Kam Karl Fischer for test
2. Weigh heavy plastic bottle and tare the balance
3. Put bottle in ice bath and chill
4. Prepare HF sample bomb for scrubbing and scrub HF sample
5. Remove bottle cap and pour 5 g of HF sample in 100 ml plastic bottle
6. Replace cap and chill sample 1-2 minutes
7. Remove bottle with tongs and re-weigh bottle
8. Prepare 250 ml plastic beaker with approximately 1½" of water in beaker
9. Place 250 ml beaker under vent hood
10. Remove 100ml bottle with HF sample from balance with tongs and carefully remove bottle cap
11. Gently place 100 ml bottle with HF sample in 250 ml beaker containing 1½" water
12. Slowly heat 250 ml beaker (<104° F) for approximately 30 minutes (HF will react violently when overheated)
13. Remove sample with tongs from warm bath
14. Obtain 50 ml of methanol and measure water content with Kam Karl Fischer
15. Allow sample to cool and slowly add 50 ml of methanol to 100 ml bottle containing HF sample  
NOTE: The ratio of the HF Sample to the methanol is 1:10
16. After 50 ml of methanol have been added to HF sample put cap back on the 100 ml bottle
17. Gently swirl bottle to mix
18. Prepare KAM KF Karl Fischer for running .2 ml sample according to instructions in manual
19. Flush syringe 3-4 times with HF/Methanol Sample
20. Inject .2 ml sample and follow instructions in Karl Fischer manual for water measurement



# OIL/WATER MEASUREMENT IN LOW VELOCITY PIPELINES

## THE KAM® OWD® OIL WATER DETECTOR

### THE INFORMATION YOU NEED TO MAKE THE RIGHT DECISIONS

- Corrosion management
- GOSP optimization
- Flow rate optimization
- Increased scraping/pigging efficiency
- Tank farm management
- Custody transfer: allocation, production, refinery, pipeline, and marine

### KAM® OWD® OIL WATER DETECTOR

- Patented 3-antenna design
- 1% of full scale accuracy
- All requisite electronics housed within unit and included in unit price
- No salinity offset required
- Automatic temperature correction
- Backed by Free Lifetime Service and the KAM Performance Promise



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### **KAM® OWD™** OIL WATER DETECTOR Spool with ½" sample valve and ½" pitot probe

Additional models including, Insertable, FT Flow Through, and Portable Lab/Field also available.

