



SRNO PN 1064

Source Rock Analyzer™ (SRA)

The Source Rock Analyzer™ (SRA) was designed to help identify and characterize source rock and reservoir rock by heating geologic samples (i.e. outcrops, cuttings, conventional cores and sidewall cores) to a programmed temperature in an inert atmosphere. The SRA quantitatively determines the amount of free hydrocarbons (\$1) and the amount of hydrocarbons generated through thermal cracking of nonvolatile organic matter (\$2) using a Flame Ionization Detector (FID). The amount of CO₂ produced during pyrolysis of kerogen (\$3) is determined using an IR detector. The SRA also determines the temperature at which the maximum release of hydrocarbons from cracking of kerogen occurs during pyrolysis (T_{max}) and Total Organic Carbon (TOC).

Four Primary Applications

- 1. Source Rock Characterization**
 - Organic carbon content
 - Oil content
 - Remaining hydrocarbon generation potential
 - Thermal maturity
- 2. Reservoir Rock Characterization**
 - Oil yields
 - Viscosity and API prediction Tar, bitumen, pyrobitumen content Pay zone identification
- 3. Site Remediation Studies**
 - Total petroleum hydrocarbons
 - (TPH) Total organic Carbon (TOC)
- 4. Bulk Kinetic Parameters**
 - Single run screening kinetics
 - Multiple heating rate kinetics
 - Isothermal kinetics

SRA-TPH/TOC

The SR Analyzer TPH/TOCTM performs automated analysis of source rocks and reservoir rocks to evaluate organic richness, kerogen type, thermal maturity, generative potential of a zone, organic facies, and identify oil or gas producing zones. The SRA can help to answer questions like:

- Does a rock in a particular zone contain sufficient organic matter to generate hydrocarbons?
- Will the rock in this zone generate oil, gas, or both?
- Have the rocks already generated oil and/or gas? Where are the source rock kitchens in relation to plays?
- What is the oil saturation index within a conventional reservoir?
- What are the trends in the reservoir for oil/water or gas/oil contacts?

ITEM	SPECIFICATION
Dimensions	17" X 20" X 21" - 43.2cm X 50.8cm X 53.3cm
Weight	TPH or POPI Unit: 40 lbs - 18.1 kg TOC Unit: 50lbs - 22.6 kg
Power	120 VAC @ 15 amps - 60 Hertz
Helium	GC analytical grade, 99.9995% purity
Hydrogen	GC analytical grade, 99.9995% purity
Air	GC analytical grade, Zero-grade free or better purity

Accuracy & Reproducibility

Historically pyrolysis instruments have used a pedestal to lift the sample into a heating oven and then purge the sample before the sample is adequately sealed. The result can be the loss of light hydrocarbons that negatively affect both accuracy and reproducibility of light hydrocarbon measurements. The SRA design utilizes a double-seal technology to tightly seal the sample. Purging of the sample does not begin until the sample is securely sealed in the oven. Thus, there is minimal loss of volatile components.

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