

Pycnometer Flash Skid

(GOR Apparatus)



Picture Courtesy of the Petroleum Engineering Department
at the Colorado School of Mines, Golden, CO USA



PVT Instrumentation

The Pycnometer Flash Skid (GOR Apparatus) is designed to measure gas/oil ratio by flashing pressurized liquids at equilibrium conditions.

Description

The Pycnometer Flash Skid (GOR Apparatus) is designed to measure gas/oil ratio by flashing pressurized liquids at equilibrium conditions. The system consists of a panel holding a Sample Flash Pycnometer, a liquid trap, a Gas Sampling Cylinder, a circulation pump and a flow meter in line. It also provides inlet and outlet connections to a gasometer to ensure accurate measurement of liberated gas.

To determine the GOR a Sample Flash Pycnometer is evacuated and weighted. It is then connected to a hydrocarbon sampling cylinder like the One Phase™ Sampling Cylinder or Piston Type Sample Cylinder. A portion of the oil sample is transferred from the cylinder into the pycnometer using the Positive Displacement Pump. The pycnometer is removed from the sampling cylinder and installed on the GOR apparatus.

The Sample Flash Pycnometer is slowly opened so that the sample flows through the liquid trap at a rate that allows the vapor portion to enter the gasometer only. When the system is depressurized the vapor collected within gasometer is re-circulated through the liquid in order to reach equilibrium. The unique U-shape of the pycnometer prevents liquid from leaking into the system. Once the re-circulation is completed, the vapor volume is recorded from the gasometer and the liquid mass is determined by weighting the pycnometer and the liquid trap. The measurements are converted to standard conditions (1 bar and 15.5°C) and the GOR is calculated.

A portion of the liberated gas may be filled into a Gas Sampling Cylinder. The sampled gas may feed a gas chromatograph for composition analysis.

Technical Specification

Flow rate	: 100 cm ³ /min
Operating temperature	: Ambient
Operating pressure	: Atmospheric
Wetted parts	: Stainless steel
Fluid	: Hydrocarbon G1

