

QUANTUM® SAMPLE TEMPERATURE PROBE

Part # 200038



THE PRODUCT

Includes Temperature Console, Reaction Lid, Reaction Cover, Temperature Probe with O-Rings, and Connection Cables.

PURPOSE

For measuring exothermic reactions during the oxidation test and calibrating temperature in the Quantum apparatus.

FEATURES

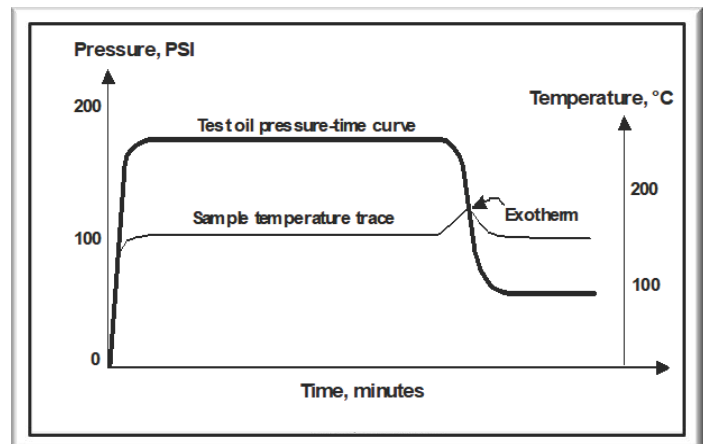
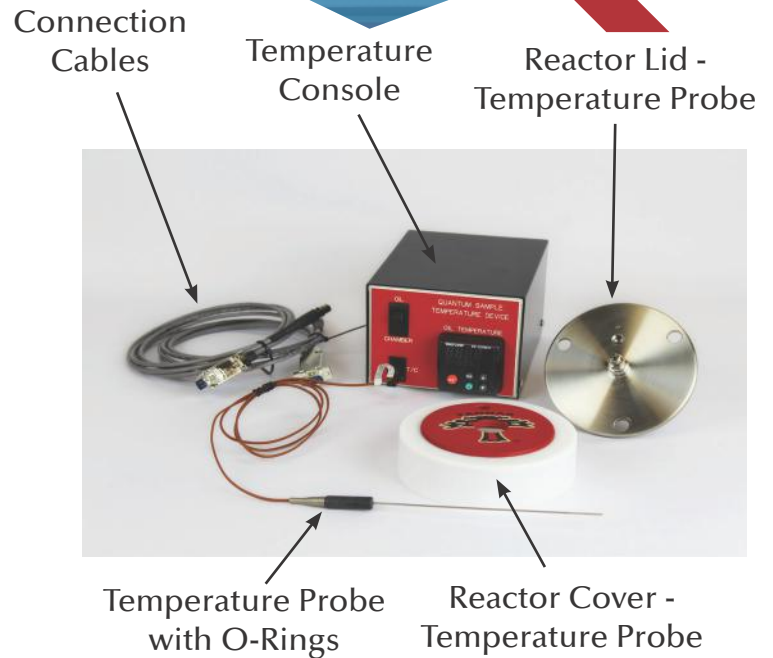
- A. Quick and easy access to the sample during test.
- B. Measure temperature of sample throughout test to identify exothermic reactions.
- C. Effective tool for routine Quantum temperature calibration.

MORE THAN OXIDATION RESISTANCE

One of the opportunities provided by the open-face, non-liquid bath design of the Quantum® is the ability to access the sample while under test temperature and pressure by use of the Sample Temperature Probe. The first studies undertaken using this device were for measuring the sample temperature during the test. Consequently, these studies showed that when the oxidation of the sample reached the break point and accelerated, a repeatable temperature exotherm was formed (as shown in graph).

As the exotherm is a measure of the rate of energy released to the test fluid with the oxidation of the fluid, the maximum in the exotherm occurs at the maximum of the rate of decreasing pressure change. The degree of temperature increase was found to range from a few tenths of a degree to as high as 30°C. The variation of oxidation reactivity may have value identifying and understanding the relationship of type, amount, and effectiveness of oxidation inhibitors in relation to the process of oxidation. The more rapidly the oil oxidizes the more pronounced the exotherms.

The Sample Temperature Probe device is also a useful tool for calibrating temperature of the Quantum® during the Water Calibration technique.



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4800 James Savage Rd.,
Midland, MI, 48642, USA



tannas@savantgroup.com
www.TannasKing.com

