

OXIDATION STABILITY OF LUBRICATING GREASES BY THE OXYGEN BOMB METHOD



Test Method

The sample is oxidized in a bomb initially charged with oxygen at 110psi (758kPa) and maintained at elevated temperature for a specified aging period. The pressure drop inside the bomb is measured by means of a gauge or transducer.

Oxidation Stability Test Apparatus

- Conforms to ASTM D942 and related specifications
- Four sample testing capability
- Available Oxidata® Pressure Measurement System

Consists of Oxidation Bombs, Sample Dishes, Pressure Measuring and Recording Equipment and Oxidation Bath.

Oxidation Bomb—Stainless steel bomb consists of body, lid with stem and needle valve, and dish holder per ASTM specifications. Bomb interior surfaces and inside of stem have a high polish to facilitate cleaning. Safely withstands a working pressure of 180psi (1241kPa) at 99°C (210°F). Includes PTFE gasket seals (3) and cap screws with wrench. PTFE-fluorocarbon seals are available (see Accessories).

Pressure Measurement and Recording Equipment—Select mechanical pressure gauges or, for greater convenience and accuracy in test reporting, the Oxidata® Pressure Management System designed expressly for ASTM oxidation tests.

Pressure gauge measures pressure inside Oxidation Bomb with accuracy of better than 0.5psi (3.45kPa) in accordance with ASTM specifications. Range: 0-160psi (0-1100kPa), graduated in 1psi intervals. Cleaned for oxygen service.

Oxidata® Pressure Measurement System—A complete electronic measurement system based on powerful Oxidata® software for Windows® and Windows 95® environments. Electronically measures and reports pressure versus time and accuracy of better than 0.5psi (3.45kPa) in the range of 0-200psi (0-1378kPa) for four channels in graphical tabular format. Included RTD attachment permits measurement and reporting of bath temperature. Includes transducers, data acquisition card, multiplexer, Oxidata® software, RTD probe assembly and connecting cables and hardware. Refer to page 115 for complete specifications on Oxidata® software.

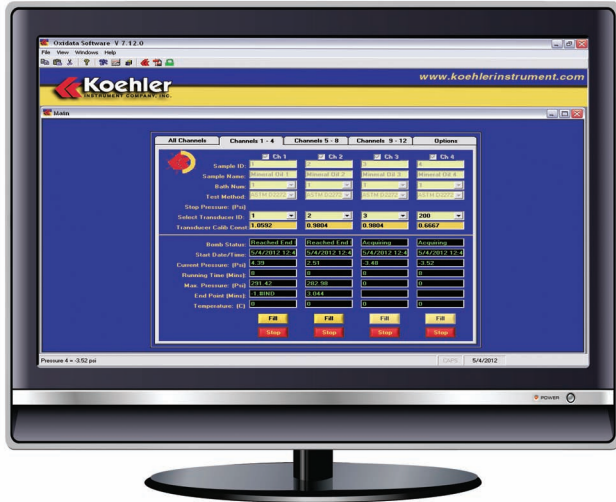
Oxidation Bath—Constant temperature oil bath holds bombs at the proper depth for determining oxidation stability of lubricating greases. Microprocessor PID control provides quick temperature stabilization without overshoot and the unit is protected by an overtemperature control circuit that interrupts power should bath temperature exceed a programmed cut-off point. Dual LED displays provide actual and setpoint temperature values in °C/°F format. *Communications software (RS232, etc.), ramp-to-set and other enhanced features are available as extra cost options. Contact your Koehler representative for information.* Heavily insulated welded stainless steel bath interior has a bomb support rack and overflow standpipe/drain to maintain proper working depth. Steel exterior has a corrosion-resistant polyurethane enamel finish.

Also available—Special baths to accommodate two test methods:

- *ASTM D942 and D525 (Oxidation Stability of Gasoline—Induction Method on pages 81-82)*
- *ASTM D942 and D972 (Evaporation Loss of Lubricating Greases and Oils on page 149)*
- *Higher temperature models are available.*

Please contact Koehler's Customer Service for additional information.

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Oxidata® Pressure Measurement System

Specifications

Conforms to the specifications of:

ASTM D942; IP 142; DIN 51808; FTM 791-3453

Oxidation Bath:

Capacity: four (4) oxidation bombs

Temperature Range: ambient to 275°F (135°C)

Bath Medium: 12.5 gal (47.3L) white technical oil

Electrical Requirements: **CE**

115V 60Hz, Single Phase, 13.0A

220-240V 50/60Hz, Single Phase, 6.8A

Dimensions dia.xh.in.(cm)

Interior: 16x14 (41x36)

Overall: 19½x28½ (50x72)

Shipping Information (with electronic pressure measurement system)

Shipping Weight:

Bath: 75 lbs (34.0kg)

Electronic Pressure Measurement System: 48 lbs (21.8kg)

Dimensions:

Bath: 16.7 Cu. ft.

Electronic Pressure Measurement System: 7.8 Cu. ft.

Ordering Information

Catalog No.		Order Qty
Oxidation Bomb		
K11000	Oxidation Bomb	4
Pressure Measurement and Recording Equipment		
<i>Select either Pressure Gauges or Oxidata® Pressure Measurement System*</i>		
311-160-003	Pressure Gauge	4
K11005	4-Unit Electronic Pressure Measurement for Lubricating Grease Oxidation Tests, 115V 60Hz	
K11095	4-Unit Electronic Pressure Measurement for Lubricating Grease Oxidation Tests, 220-240V 50/60Hz	
Oxidation Bath		
K10901	Oxidation Bath, 115V 60Hz	1
K10991	Oxidation Bath, 220-240V 50/60Hz	
Accessories		
K11040	Borosilicate Glass Dish	20
250-000-22F	ASTM 22F Thermometer. Range: 204 to 218°F	
250-000-22C	ASTM 22C Thermometer. Range: 95 to 103°C	1
355-001-001	White Technical Bath Oil, 1 Gallon container	13
355-001-003	White Technical Bath Oil, 5 Gallon container	3
<i>See page 8 for specifications</i>		
K10504-0-1	Transducer Assembly	
K10551	Pressure Line. For pressurizing Oxidation Bomb. 6 ft (1.83m) long, with quick release coupling for needle valve on bomb and threaded fitting for oxygen tank	1
K10556	Oxygen Manifold Pressure Relief System Connects to oxygen source to prevent overcharging of bomb. Equipped with relief valve to vent at 125psi and 300 series stainless steel 150psi burst disk assembly. Constructed from 300 series stainless steel. Cleaned for oxygen service.	
K11029	PTFE-fluorocarbon Gasket	



K11000 Oxidation Bomb

**This ordering information is for installation to Koehler grease oxidation test equipment. For other makes of equipment, a few items of basic hardware may also be required—please contact your Koehler representative for assistance.*