



Oxidation Stability



LT/OX-192000/L-M



LT/OX-192000/D-M

ASTM D943
ASTM D2274
ASTM D4310
DIN 51587
EN ISO 12205
IP 388
ISO 4263

ASTM D943 - DIN 51587 - ISO 4263
Test Method for Oxidation Characteristics
of Inhibited Mineral Oils

This test method is used to evaluate the oxidation stability of inhibited steam-turbine oils in the presence of oxygen, water, and copper and iron metals at an elevated temperature. The test method is also used for testing other oils such as hydraulic oils and circulating oils having a specific gravity less than that of water and containing rust and oxidation inhibitors.

ASTM D2274 - IP 388
Oxidation Stability of Distillate Fuel Oil
(Accelerated Method)

This test method covers the measurement of the inherent stability of middle distillate petroleum fuels under specified oxidizing conditions at 95°C.

ASTM D4310 - Determination of the Sludging
and Corrosion Tendencies
of Inhibited Mineral Oils

This test method is used to evaluate the tendency of inhibited mineral oil based steam turbine lubricants and mineral oil based anti-wear hydraulic oils to corrode copper catalyst metal and to form sludge during oxidation in the presence of oxygen, water, and copper and iron metals at an elevated temperature. The test method is also used for testing circulating oils having a specific gravity less than that of water and containing rust and oxidation inhibitors.

LT/OX-192000/L-M Oxidation Stability Liquid Bath 8 Places EN ISO 12205 / ASTM D2274 / ASTM D943

- Compact steel structure with powder coating and wheels for easily positioning.
- Heavy designed stainless-steel bath with capacity of approx. 45 liters and equipped with lateral drain valve for easily empty the bath.
- Double total immersion heating elements allow perfect bath stability and temperature range from ambient up to +150°C, stability $\pm 0.1^\circ\text{C}$.
- Uniformity is granted by internal motorized stirring system and protection/diffusion grid.
- Upper part made in stainless-steel for easily cleaning and draining.
- Oxygen supply system consist of 8 flowmeters equipped with needle regulation valve for fine regulating.
- Cooling water supply system consist of inlet and outlet piping with 8 individual valves for easily maintenance and cleaning.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +150°C, resolution 0,1°C and stability $\pm 0.1^\circ\text{C}$ (with cover).
- Light protection cover made in steel with polymeric handle.
- Manually settable overtemperature cut-off alarm.
- Low level liquid alarm and warning light.

Range

- Ambient to +150°C

Power supply

- 230 or 115 Vac 50 Hz

Consumption

- 4000 Watt

Dimensions and Weight

- 46 x 42 x 131 cm
- 50 kg

LT/OX-192000/D-M Oxidation Stability Dry Bath 8 Places EN ISO 12205 / ASTM D2274 / ASTM D943

- Compact steel structure with powder coating and wheels for easily positioning.
- Internal tube-positioning system with stainless steel centering guide, optimal heat distribution over the entire cell length from ambient up to +150°C, stability $\pm 0.1^\circ\text{C}$, heating uniformity is granted by an high-temperature circulating fan.
- Oxygen supply system consist of 8 flowmeters equipped with needle regulation valve for fine regulating.
- Cooling water supply system consist of inlet and outlet piping with 8 individual valves for easily maintenance and cleaning.
- Temperature controlled by a digital thermoregulator with PID functions that control the temperature trough an A class PT100 sensor in the range from ambient to +150°C, resolution 0,1°C and stability $\pm 0.5^\circ\text{C}$ (with cover).
- Light protection cover made in steel with polymeric handle.
- Manually settable overtemperature cut-off alarm.

Range

- Ambient to +150°C

Power supply

- 230 or 115 Vac 50 Hz

Consumption

- 1200 Watt

Dimensions and Weight

- 46 x 42 x 131 cm
- 55 kg (empty)



Oxidation Stability

Spare Parts for LT/OX-192000/D-M

- 3707: Heating element 800 W.
- 3186: Digital thermoregulator K38.
- 3708: Relay 25A.
- 3709: PT100 for air measurement.
- 3425: Motor for chamber uniformity – high temperature.
- 3135: Safety thermostat 0-120°C, 220 Vac.

Spare Parts for LT/OX-192000/L-M

- 5021: Heating element 2000 W.
- 3186: Digital thermoregulator K38.
- 3708: Relay 25 A.
- 3184: Floating switch in SS.
- 3072: Stirring motor without propeller, 230 Vac.
- 3135: Safety thermostat 0-120°C, 220 Vac.
- 3168: PT100 Probe.
- 17546: Fuses 20 A, pack of 10 pcs.

Mandatory Accessories for Oil Bath

- 7058: Silicone Oil – Kinematic viscosity 50 mm²/s at 25°C, can of 20 litres for working up to +150°C, 3 cans are recommended to fill correctly the bath.

Accessories ASTM D2274 / EN 12205

- 2113: Evaporating vessel, borosilicate glass beaker 200 ml capacity tall form.
- 7146: Silicon carbide paper 100 grit, pack of 100 pcs.
- T-AS40C: Thermometer ASTM 40C IP 80C.
- 1266+2138+1270: Oxidation cell D2274.
 - Oil test tube.
 - Oxygen inlet tube.
 - Fungus condenser.
- 1000511: Heating device unit 600 W.
 - Construction material: Technopolymer.
 - Heating plate: aluminum alloy coated with a special protection.
 - Heating plate diameter: 155 mm.
 - Power: 600 Watt.
 - Power supply: 220 Vac - 50/60 Hz.
 - Temperature regulation: from ambient to +370 °C.
- 1280: Filter assembly.
 - 2000 ml vacuum flask made of glass with side welded nozzle for filtrations under vacuum.
 - Stopper and tubing.
 - Funnel set and funnel clamp.
- 7487: Membrane filter, cellulose esters membrane filters 47 mm diameter, nominal pore size of 0.8 µm, pack of 100 pcs.
- 7577: Compact diaphragm air pump.
 - Vacuum and compression application.
 - Flow rate max. 7 l/min.
 - Pressure max. 2.5 bar rel.
 - Ultimate Vacuum max. 130 mbar (abs.).
 - Weight: 1.3 kg.
 - Dimensions: 75 × 119 × 156 mm.
 - Valve material FKM, diaphragm PTFE coated.
 - 6 mm connector and silencer included.
 - Adjustable speed control and maintenance free.
 - Universal power supply included 100-240 Vac, 50-60 Hz.
- LT/DO-248000/F-250: Hot air oven.
 - 250 litres volume.
 - Power 2500 W.
 - Weight 90 kg.
 - 220 Vac 50/60 Hz.

- 1000015: Analytical balance.
 - Capacity: 220 g.
 - Readability: 0.1 mg.
 - Linearity: ±0.2 mg.
 - Repeatability: ±0.05 mg.
 - Response time: 4/6 sec.
 - Pan diameter: 80 mm.
 - Calibration: internal.
 - LCD display with small decimal digits.
 - Membrane keyboard, water proof and solvent resistant, easy to use with TARE, ON/OFF, PRINT and MENU.
 - Indication of the reached stable weight.
 - Bar-graph indicator of dosage and remaining capacity of the balance.
 - Parameters configurable by menu: reading in g (grams), lb (pound), oz (ounce), ct (carats), pcs (pieces), % (percentage).
 - Full scale automatic calibration with internal and/or external mass.
 - Weighing underneath the balance, selectable response time: "fast/slow".
 - Data output: RS232 I/O adjustable.
 - Operating temperature: 18° ÷ 35°C.
 - Power supply: 100 ÷ 240 VAC
 - Power consumption: 200 mA.
 - Dimensions: 21,6 × 38 × 36 cm.
 - Weighing chamber dimensions: 18 × 17 × 24 cm.
 - Net weight: 7 kg.
 - Power supply: 230/115 Vac 50 Hz.
- 1057: Dessicator made in glass, 200 mm diameter, with tap plate made in porcelain.
- 3665: Digital stopwatch multi-channel.
 - 2 independent channels.
 - 6 digits display maximum setting 99 hrs, 59 min, 59 sec.
 - Start-Stop and countdown.
 - Alarm at countdown end.
 - Clock 12 o 24 hours format, with date and alarm clock.
- 5455: Tweezers made in SS, length 120 mm.

Accessories for ASTM D943

- 1266+1268+1270: Oxidation cell D943:
 - Oil test tube.
 - Oxygen inlet tube
 - Fungus condenser
- 7146: Silicon carbide paper 100 grit, pack of 100 pcs.
- 7151: Copper wire 500 g, 1.6 mm diameter, approx. 28 m.
- 7157: Steel wire, 500 g, 1.59 mm diameter.
- 7159: Thermometer bracket (for test cell).
- 1272: Syringe Luer-lock 10 ml.
- 2371: Syringe Luer-lock 50 ml.
- 7160: Syringe sampling tube stainless steel L = 560 mm.
- 6030: Stopper for Luer fitting.
- 5294: Sampling tube holder.
- 6031: Sampling tube spacer.
- 5295: Wire coiling mandrel to form spiral of steel and copper catalyst wire.
- 5665: Reducer manometer for O₂, primary 0-250 bar, reducer 0-1 bar.
- 5298: Oil level indicator for test cell.
- T-AS137C: Thermometer ASTM 137C.

Accessories for ASTM D4310

- 1266+1268+1270: Oxidation cell D943-D4310.
 - Oil test tube.
 - Oxygen inlet tube.
 - Fungus condenser.
- T-AS40C: Thermometer ASTM 40C IP 80C.
- T-AS137C: Thermometer ASTM 137C.
- 5295: Wire coiling mandrel - to form spiral of steel and copper catalyst wire.
- 5298: Oil level indicator for test cell.
- 7146: Silicon carbide paper 100 grit, pack of 100 pcs.
- LAB-102-274/B-5: cellulose esters membrane filters 47 mm diameter, nominal pore size of 5 µm, pack of 100 pcs.
- 1280: Filter assembly
 - 2000 ml Vacuum flask made of glass with side welded nozzle for filtrations under vacuum.
 - Stopper and tubing.
 - Funnel set and funnel clamp.
- LAB-4310-002: Weighing gravity bottle cylinder shape.
 - Made in Pyrex® glass.
 - Inside diameter 45 mm approx.
 - 60 ml capacity.
- 7151: Copper wire 500 gr, 1.6 mm diameter, approx. 28 m.
- 7157: Steel wire 1.59 mm diameter, 500 gr.
- 7577: Compact diaphragm air pump.
 - Vacuum and Compression application.
 - Flow rate max. 7 l/min
 - Pressure max. 2.5 bar rel.
 - Ultimate Vacuum max. 130 mbar (abs.).
 - Weight 1.3 kg
 - Dimensions 75 × 119 × 156 mm.
 - Valve material FKM / diaphragm PTFE coated.
 - 6 mm connector and silencer included.
 - Adjustable speed control and maintenance free.
 - Universal power supply included 100-240 Vac, 50-60Hz.
- 1057: Dessicator made in glass, 200 mm diameter, with tap plate made in porcelain.
- 5499: Stainless steel forceps for manage the test strips/filters.
- 1272: Syringe Luer-lock 10 ml.
- 2371: Syringe Luer-lock 50 ml.
- 7160: Syringe sampling tube stainless steel L = 560 mm.