EXCALIBUR

LABWARE

Precision Tools for Scientific Discovery

OIL ANALYSIS CATALOGUE

Equipment, glassware and consumables for petroleum and lubricant testing

Edition 2026 · 63 products

www.excaliburlabware.com · info@excaliburlabware.com

About this catalogue

Excalibur Labware supplies laboratory equipment, glassware and consumables for the analysis of crude oil, fuels, lubricants, greases and insulating oils. Products are designed for the standard test methods referenced on each item (ASTM, ISO, IEC).

For volume pricing, distributor terms, spare parts or products not listed here, please contact us. We are happy to quote on request.

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Oil Sampling



EXL-OA-001

Oil Sample Bottle 120 ml, PP, Screw Cap

Clear polypropylene sample bottle with leak-proof screw cap for in-service oil, fuel and lubricant samples sent to the laboratory.

- Capacity: 120 ml
- Material: PP, chemically resistant
- Screw cap with liner

Oil sampling

£22.62 pack of 100



EXL-OA-002

Oil Sample Bottle 250 ml, PP, Screw Cap

Larger sample bottle for fuels, hydraulic and transformer oils where a bigger sample volume is required.

- Capacity: 250 ml
- Material: PP
- Wide neck for easy filling

Oil sampling

£54 pack of 100



EXL-OA-003

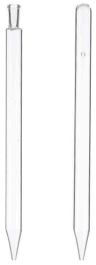
Tank Bottom Sampler, Quick-Coupling

Portable bottom sampler for tank trucks and storage tanks. Takes a representative sample from the outlet valve through a quick coupling.

- Connection: 3 inch quick coupling
- Sample volume: approx. 1000 ml
- For gasoline, diesel and lubricants

ASTM D4057 practice

£106 each



EXL-OA-004

Glass Drum Sampling Tube (Thief)

Borosilicate glass sampling tube for withdrawing all-level samples from drums and barrels.

- Diameter: 20 mm
- Length: 60 cm (80/100/120 cm on request)
- Open or closed top

ASTM D4057 practice

£4.98 each

Water & Sediment



EXL-OA-005

Centrifuge Tube 100 ml, Cone-Shaped, Graduated

Heavy-wall borosilicate cone-shaped centrifuge tube for water and sediment in crude oil and fuel oils by centrifuge.

- Capacity: 100 ml
- Borosilicate glass 3.3, fired-on graduations
- Conical tip, graduated from 0.05 ml

ASTM D4007 / D1796 / D96

£10.86 each



EXL-OA-006

Centrifuge Tube 100 ml, Pear-Shaped, Graduated

Pear-shaped (short-cone) centrifuge tube for water and sediment determination by centrifuge.

- Capacity: 100 ml
- Borosilicate glass 3.3
- Fired-on graduations

ASTM D96 / D1796

£15.38 each



EXL-OA-007

Crude Oil Water & Sediment Centrifuge, Heated

Heated centrifuge for water and sediment in crude oil. Holds 100 ml cone- or pear-shaped tubes at a controlled temperature.

- Takes 4 × 100 ml tubes
- Heated chamber, temperature controlled up to 60 °C+
- Digital speed (RCF) and timer

ASTM D4007 / ISO 9030

£10,770 each



EXL-OA-008

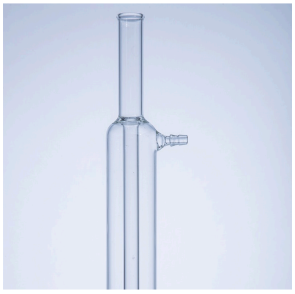
Water Content Apparatus, Distillation Method

Complete heated apparatus for water in petroleum products by distillation with an immiscible solvent (Dean-Stark).

- Electric heating mantles with power control
- Glass flask, condenser and graduated receiver
- Multiple test positions

ASTM D95 / ISO 3733

£2,540 each



EXL-OA-009

Water Receiver 10 ml (Dean-Stark Trap)

Graduated glass receiver for the distillation method of water determination.

- Capacity: 10 ml, 0.1 ml divisions
- Ground-glass joints
- Borosilicate glass

ASTM D95

£11.76 each



EXL-OA-010

Karl Fischer Titrator, Volumetric, Automatic

Automatic volumetric Karl Fischer titrator for water content in oils, fuels and chemicals from ppm to 100 %.

- Automatic end-point detection
- Colour touch-screen, result storage and printing
- Range: 0.01 % – 100 % water

ASTM D4377 / D1744 / ISO 760

£7,110 each



EXL-OA-011

Karl Fischer Titrator, Coulometric (Trace Water)

Coulometric Karl Fischer titrator for trace moisture in transformer oil, hydraulic oil and fuels.

- Range: 3 µg – 100 mg water
- Resolution: 0.1 µg
- Built-in printer, data storage

ASTM D6304 / IEC 60814

£2,180 each



EXL-OA-012

Mechanical Impurities Tester (Gravimetric)

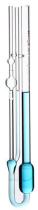
Apparatus for mechanical impurities (insolubles) in petroleum products and additives by filtration and weighing.

- Heated filtration, temperature controlled
- Vacuum filtration system
- Includes funnels and fittings

GB/T 511 (similar to ASTM D4055)

£3,990 each

Viscosity



EXL-OA-013

Ubbelohde Capillary Viscometer

Suspended-level glass capillary viscometer for kinematic viscosity of transparent liquids, supplied with calibration constant.

- Capillary sizes 0.3 – 1.2 mm
- Borosilicate glass
- Individual calibration constant

ASTM D445 / D446, ISO 3104

£33.93 each



EXL-OA-014

Cannon-Fenske Routine Viscometer

Routine glass capillary viscometer for kinematic viscosity of transparent petroleum products.

- Capillary sizes 0.4 – 3.5 mm
- Borosilicate glass
- Supplied with constant

ASTM D445 / D446

£16.74 each



EXL-OA-015

Reverse-Flow Viscometer (Opaque Liquids)

Reverse-flow capillary viscometer for kinematic viscosity of dark and opaque oils, fuel oils and used lubricants.

- Capillary sizes 0.3 – 6.0 mm
- Borosilicate glass
- Supplied with constant

ASTM D445 / D446

£40.72 each



EXL-OA-016

Kinematic Viscosity Bath, 4-Position

Transparent constant-temperature bath for glass capillary viscometers, with precise digital temperature control and stirring.

- 4 viscometer positions
- Temperature: ambient +5 to 100 °C, ±0.01 °C
- Viewing window, stirrer and lighting

ASTM D445

£2,040 each



EXL-OA-017

Automatic Kinematic Viscosity Analyzer

Automatic analyzer that times the flow of oil in glass capillaries and calculates kinematic viscosity.

- Automatic timing by optical sensors
- Temperature control ±0.01 °C
- Touch-screen, results storage and printing

ASTM D445 / ISO 3104

£5,340 each



EXL-OA-018

Digital Rotational Viscometer

Digital rotational viscometer for dynamic viscosity of oils, greases, paints and other fluids.

- Range: 1 – 100,000 mPa·s
- 4 spindles, 4 speeds
- Digital readout of viscosity, % torque

ASTM D2196 (general)

£769 each



EXL-OA-019

Engler Viscometer

Engler viscometer for conditional viscosity of fuel oils, emulsions and bitumen products.

- Standard Engler flow vessel
- Heated bath with digital control
- Includes receiving flask

Engler method

£995 each

Density



EXL-OA-020

Petroleum Hydrometer (Single)

Glass hydrometer for density of petroleum products, crude oil and fuels.

- Range: 0.050 g/ml per hydrometer (0.60 – 1.10)
- Division: 0.0005 g/ml
- Specify range when ordering

ASTM D1298 / ISO 3675

£4.75 each



EXL-OA-021

Petroleum Hydrometer Set (0.60 – 1.10)

Complete set of petroleum hydrometers covering densities from 0.60 to 1.10 g/ml, supplied in a case.

- 10 hydrometers, 0.050 range each
- Division: 0.0005 g/ml
- Storage case

ASTM D1298 / ISO 3675

£81 each



EXL-OA-022

Hydrometer Cylinder 500 ml, Glass

Clear glass cylinder for hydrometer density measurements.

- Capacity: 500 ml
- Borosilicate glass
- Stable base

ASTM D1298

£17.64 each



EXL-OA-023

Pycnometer (Specific Gravity Bottle) 25 ml

Glass pycnometer with capillary stopper for density and specific gravity of liquids.

- Capacity: 25 ml (10/50/100 ml available)
- Ground capillary stopper
- Borosilicate glass

ASTM D1217 / D1480

£2.94 each



EXL-OA-024

Digital Density Meter (Oscillating U-Tube)

Benchtop digital density meter using the oscillating U-tube method. Fast, small sample volume.

- Accuracy: 0.001 g/cm³
- Temperature-controlled cell
- Sample volume approx. 1 – 2 ml

ASTM D4052 / ISO 12185

£7,020 each



EXL-OA-025

Petroleum Density Tester with Thermostat Bath

Thermostatic bath with hydrometer cylinders for density of crude oil and petroleum products at controlled temperature.

- Temperature control ±0.1 °C
- Multiple cylinder positions
- Digital controller

ASTM D1298 / ISO 3675

£2,950 each

Flash Point



EXL-OA-026

Pensky-Martens Closed-Cup Flash Point Tester

Closed-cup flash point tester for fuel oils, lubricants and other petroleum products.

- Electric heating with rate control
- Stirrer and gas/electric ignition
- Brass test cup

ASTM D93 / ISO 2719

£1,270 each



EXL-OA-027

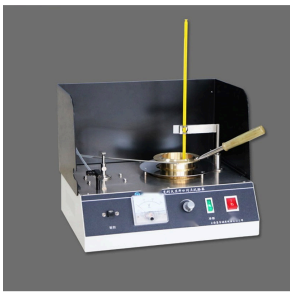
Automatic Closed-Cup Flash Point Tester

Fully automatic Pensky-Martens closed-cup flash point analyzer with automatic ignition, detection and cooling.

- Range: ambient to 370 °C
- Automatic ignition and flash detection
- Touch-screen, printer, data storage

ASTM D93 / ISO 2719

£7,330 each



EXL-OA-028

Cleveland Open-Cup Flash & Fire Point Tester

Cleveland open-cup tester for flash and fire points of lubricating oils and other petroleum products.

- Range: ambient to 400 °C
- Electric heating with control
- Brass test cup

ASTM D92 / ISO 2592

£1,360 each

Distillation



EXL-OA-029

Petroleum Distillation Apparatus

Atmospheric distillation apparatus for distillation range of gasoline, kerosene, diesel and other light products.

- Electric heating with fine control
- Cooling bath for condenser
- Flask, receiver and thermometer holder

ASTM D86 / ISO 3405

£4,530 each



EXL-OA-030

Graduated Receiving Cylinder 100 ml, Class A

Class A graduated cylinder used as distillate receiver and for general measurements.

- Capacity: 100 ml, Class A
- Borosilicate glass
- Hexagonal base

ASTM D86

£5.04 each

Cold Flow Properties



EXL-OA-031

Automatic Pour Point & Cloud Point Tester

Refrigerated tester for pour point and cloud point of petroleum products, with automatic cooling.

- Cooling to -70 °C (compressor)
- Multiple test positions
- Digital temperature display

ASTM D97 / D2500, ISO 3016

£5,660 each



EXL-OA-032

Pour Point / Cloud Point Test Jar

Flat-bottom glass test jar for pour point and cloud point tests.

- Size: 34 × 120 mm
- Borosilicate glass
- Fill mark

ASTM D97 / D2500

£5.88 each



EXL-OA-033

Cold Filter Plugging Point Tester (CFPP)

Automatic tester for the cold filter plugging point of diesel and heating oils.

- Automatic vacuum and timing
- Refrigerated bath
- Standard filter assembly

ASTM D6371 / EN 116

£3,990 each

Corrosion & Oxidation



EXL-OA-034

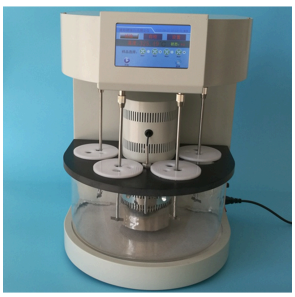
Copper Strip Corrosion Tester

Constant-temperature bath with pressure vessels for the copper strip corrosion test of fuels, solvents and lubricants.

- Temperature: up to 100 °C, ±1 °C
- Stainless steel test bombs
- Digital control and timer

ASTM D130 / ISO 2160

£4,300 each



EXL-OA-035

Rust-Preventing Characteristics Tester

Tester for the rust-preventing characteristics of inhibited mineral oils (turbine oils) in the presence of water.

- Oil bath at 60 °C, ±1 °C
- Multiple stirred test beakers
- Digital temperature and timer

ASTM D665 / ISO 7120

£4,980 each



EXL-OA-036

Rotating Pressure Vessel Oxidation Tester (RPVOT)

Oxidation stability tester for turbine, transformer and hydraulic oils using a rotating pressure vessel.

- Bath temperature 150 °C
- Pressure recording
- Rotating pressure vessel at 100 rpm

ASTM D2272

£13,580 each

Acid & Base Number



EXL-OA-037

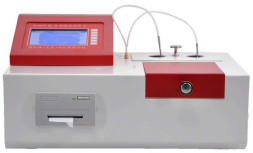
Automatic Potentiometric Titrator (TAN / TBN)

Automatic potentiometric titrator for acid number and base number of petroleum products and lubricants.

- Automatic end-point detection
- Motor-driven burette
- Result calculation, storage and printing

ASTM D664 / D2896

£4,530 each



EXL-OA-038

Automatic Acid Value Tester

Automatic acid number tester for fuels, lubricants and transformer oils using colour-indicator titration.

- Automatic titration and end-point
- Multiple samples
- Printer

ASTM D974

£4,530 each



EXL-OA-039

Burette 50 ml, PTFE Stopcock

Glass burette with PTFE stopcock for manual titrations of acid and base number.

- Capacity: 50 ml, 0.1 ml divisions
- PTFE stopcock, acid and alkali
- Borosilicate glass

ASTM D974

£20.63 each

Contamination & Wear



EXL-OA-040

Oil Particle Counter (Cleanliness)

Laser particle counter for cleanliness of hydraulic, lubricating and transformer oils.

- Particle sizes from 4 µm(c)
- Reports ISO 4406, NAS 1638, SAE AS4059
- Built-in sampler and printer

ISO 4406 / ISO 11500

£6,470 each



EXL-OA-041

Solvent Filtration Apparatus 1000 ml, Glass

Glass vacuum filtration set with fritted support for membrane filtration and gravimetric contamination tests.

- Funnel 300 ml, flask 1000 ml
- For 47/50 mm membranes
- Aluminium clamp

ASTM D4898 / ISO 4405

£53 each



EXL-OA-042

Membrane Filters 0.8 µm × 47 mm (50/box)

Mixed cellulose ester membrane filters for gravimetric contamination and patch tests of oils and fuels.

- Pore size: 0.8 µm
- Diameter: 47 mm
- 50 filters per box

ASTM D2276 / ISO 4405

£4.52 each



EXL-OA-043

Membrane Filters 0.45 µm × 47 mm (50/box)

Mixed cellulose ester membrane filters for insolubles and contamination testing.

- Pore size: 0.45 µm
- Diameter: 47 mm
- 50 filters per box

ASTM D4898

£4.52 each



EXL-OA-044

Oil-Free Diaphragm Vacuum Pump

Maintenance-free diaphragm vacuum pump for filtration, degassing and sampling.

- Oil-free, quiet operation
- Vacuum gauge and regulator
- Chemical-resistant head

General laboratory

£253 each



EXL-OA-045

Glass Petri Dish 90 mm

Borosilicate glass Petri dish with lid for drying and storing membrane filters.

- Diameter: 90 mm
- Borosilicate glass 3.3
- With lid

ASTM D4898

£10.41 pack of 10

Insulating / Transformer Oil



EXL-OA-046

Insulating Oil Dielectric Strength Tester (BDV)

Automatic breakdown voltage tester for transformer and insulating oils.

- Output: 0 – 80 kV
- Automatic test sequences, stirring
- Printer and data storage

IEC 60156 / ASTM D1816 / D877

£3,990 each



EXL-OA-047

Insulating Oil Dielectric Loss & Resistivity Tester

Tester for dielectric dissipation factor (tan δ) and DC resistivity of insulating oils.

- Heated test cell
- Automatic tan δ, permittivity and resistivity
- Printer

IEC 60247 / ASTM D924

£9,050 each



EXL-OA-048

Automatic Interfacial Tension Meter

Automatic tensiometer for interfacial tension of insulating oils against water (ring method).

- Ring and plate methods
- Touch-screen, automatic measurement
- High-resolution force sensor

ASTM D971 / ISO 6295

£3,170 each

Other Oil Tests



EXL-OA-049

Foaming Characteristics Tester

Tester for the foaming tendency and stability of lubricating oils.

- Two baths: 24 °C and 93.5 °C
- Air flow control and diffuser stones
- Digital timers

ASTM D892 / ISO 6247

£6,790 each



EXL-OA-050

Demulsibility (Water Separability) Tester

Tester for the water separability of petroleum oils and synthetic fluids.

- Bath at 54 °C / 82 °C
- Multiple cylinder positions
- Motorised stirring paddle

ASTM D1401 / ISO 6614

£4,650 each



EXL-OA-051

Petroleum Products Colour Tester

Colorimeter for the ASTM colour of lubricating oils, diesel and other petroleum products.

- Colour scale 0.5 – 8.0
- Standard light source
- Glass colour standards

ASTM D1500 / ISO 2049

£2,720 each



EXL-OA-052

Conradson Carbon Residue Tester

Apparatus for carbon residue of petroleum products by the Conradson method.

- Electric heating
- Porcelain and steel crucibles
- Hood and chimney

ASTM D189 / ISO 6615

£1,590 each



EXL-OA-053

Muffle Furnace 1000 °C

Laboratory muffle furnace for ash content and sulfated ash of oils and fuels.

- Max. 1000 °C
- Programmable digital controller
- Ceramic fibre chamber

ASTM D482 / D874

£1,720 each



EXL-OA-054

Porcelain Crucible 30 ml with Lid

High-temperature porcelain crucible for ash and carbon residue tests.

- Capacity: 30 ml
- Glazed porcelain
- With lid

ASTM D482 / D189

£10.41 pack of 10



EXL-OA-055

X-Ray Fluorescence Sulfur Analyzer

Energy-dispersive XRF analyzer for total sulfur in crude oil, diesel, fuel oil and lubricants.

- Range: approx. 5 ppm – 5 % S
- Fast analysis (minutes)
- No sample preparation

ASTM D4294 / ISO 8754

£19,460 each



EXL-OA-056

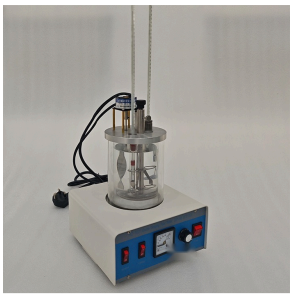
Grease Cone Penetrometer

Penetrometer for cone penetration (consistency) of lubricating greases and petrolatum.

- Standard grease cone
- Digital penetration readout 0.1 mm
- Automatic release and timer

ASTM D217 / ISO 2137

£4,440 each



EXL-OA-057

Grease Dropping Point Tester

Tester for the dropping point of lubricating greases over a wide temperature range.

- Range: up to 400 °C
- Heated aluminium block
- Digital temperature control

ASTM D566 / D2265

£3,050 each



EXL-OA-058

Reid Vapour Pressure Tester

Apparatus for vapour pressure of gasoline, crude oil and volatile products (Reid method).

- Water bath at 37.8 °C
- Pressure gauge or sensor
- Stainless steel vapour chamber

ASTM D323

£5,890 each



EXL-OA-059

Existent Gum Tester

Apparatus for existent gum in gasoline and aviation fuels by jet evaporation.

- Heated evaporation bath
- Air/steam jets
- Multiple beaker positions

ASTM D381 / ISO 6246

£9,280 each

General Lab Equipment



EXL-OA-060

ASTM Petroleum Thermometer

Liquid-in-glass precision thermometer to ASTM specification for petroleum testing.

- ASTM 37C – 42C and others
- Division: 0.1 – 0.2 °C
- Specify ASTM number when ordering

ASTM E1

£33.93 each



EXL-OA-061

Measuring Cylinder 100 ml, Borosilicate

Graduated borosilicate glass measuring cylinder with stable base.

- Capacity: 100 ml
- Borosilicate glass 3.3
- White graduations

General laboratory

£3.07 each



EXL-OA-062

Thermostatic Water Bath, 4-Hole

Digital thermostatic water bath for sample conditioning and general heating.

- 4 holes
- Range: ambient +5 to 100 °C
- Digital control with timer

General laboratory

£185 each



EXL-OA-063

Analytical Balance 0.1 mg

Electromagnetic force analytical balance for gravimetric tests (insolubles, ash, residue).

- Capacity: 200 g
- Readability: 0.1 mg
- Draft shield, internal/external calibration

General laboratory

£860 each

Ordering information

- All prices are in pounds sterling (GBP), excluding VAT, duties and delivery.
- Prices are valid for 30 days from the catalogue date and are subject to change without notice.
- Volume and distributor discounts are available on request.
- Glassware sizes, viscometer capillary sizes, hydrometer ranges and thermometer numbers: please state the required size/range on the order.
- Instruments are supplied with a user manual in English. Specifications may vary slightly by version; a detailed specification sheet is available on request.
- Delivery times are confirmed with each quotation.

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