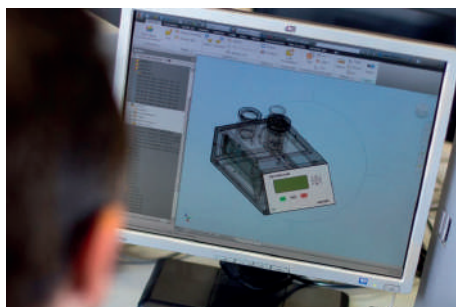


# GENERAL CATALOGUE



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 **NORMALAB**  
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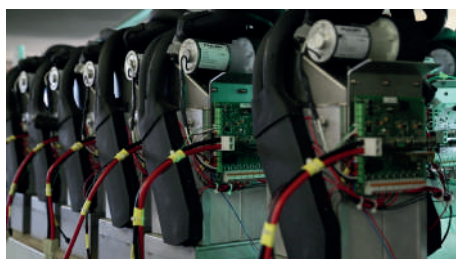
For more than 55 years, **NORMALAB** has been designing, developing and manufacturing scientific laboratory instruments for the petroleum sector and related activities: refining, extraction, lubricating plants, chemicals, petrochemicals.

**NORMALAB** is taking care of its experience and your needs for laboratory analysis. The 5<sup>th</sup> generation of automatic analysers uses new technologies, as **NORMALAB** also implements some of these ideas to extend its range of instruments.



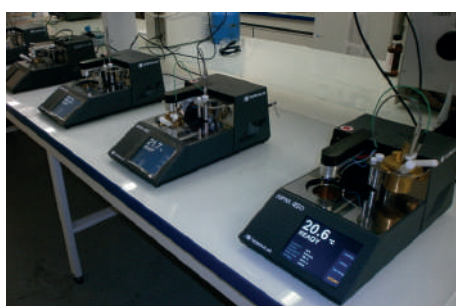
To adapt ourselves to a constantly changing market, **NORMALAB's** R & D team has developed the latest generation of analyzers designed to meet the needs of our customers. Finally, the validation of our instruments goes through technicians in charge of product applications, participation in round robin tests and CE regulatory validation.

In order to keep our core business efficient, we participate actively in ASTM, Energy Institute, ISO and AFNOR standards committees. Our teams also follow equivalent standards of national associations like GBT, GOST, JIS and others. Thus, **NORMALAB** offers a complete range: scientific glassware, manual, semi-automatic or fully automated equipment, meeting the needs of the market and the standards in force within laboratories.



In addition to its production, **NORMALAB** is able to offer other test methods through its partnerships with well-known manufacturers. Thanks to the confidence of its customers wishing to centralize their purchasing process from a single source, **NORMALAB** is their one and only partner.

The technical support and the assistance offered to our customers are at the heart of our concerns: from the offer to the commissioning, **NORMALAB** ensures a close follow-up with its customer. Our technical service offers assistance in installation, maintenance of your equipment and training of staff.



The purpose of our actions within the company is the satisfaction of our customers, whether they are in geographical proximity or several thousand kilometers away. The loyalty of our customers over time is proof of their satisfaction and their trust. Collaboration with our network and our partners is the key to our success.

Discover our compagny through video :



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# LAB CONTAINER



## TURNKEY MOBILE LABORATORY

**NORMALAB** puts its experience at your disposal. From conception to completion, our team guides you and contributes to the success of your project laboratory conforming to international standards.

Moreover, **NORMALAB** has developed a mobile laboratory concept equipped with bench-tops, an electric generator and all laboratory analysers for lubricants, fuel or crude oil analysis in a container or truck. The equipment all in one just needs to be connected with water, gas and electrical supply. The optimized space allows you to perform all required tests on the field.

## PROFESSIONAL CUSTOM SOLUTION

- Needs analysis
- Tailored layout
- Specific fittings
- Safety features



## CLOSED CUP FLASH POINT TESTER

### PENSKY MARTENS FLASH POINT



ASTM D 93 - IP 34 - ISO 2719 - GBT 261

NPM 450 – Automated - Ref 60400

Efficient and compact, the NPM 450 is a fully automated Pensky-Martens Closed Cup Flash Point Tester that combines latest technologies.

Due to its unique design, the NPM 450 offers you the best performance thanks to its predictive heating regulation and the air turbine enabling fast sample cooling after the test.



NPM Tech – Half-automated - Ref 42100

Unique on the market, NPM Tech is a compact half-automated instrument delivering fast and reliable results. Operation is made easy and safe with minimal operator intervention.

The NPM Tech regulates itself thanks to its predefined temperature rise and the turbine allowing rapid cooling of the sample after the test.



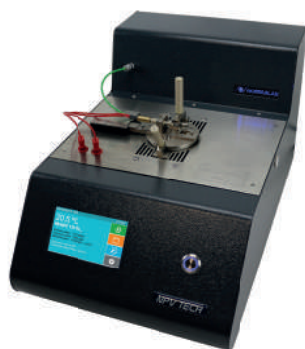
NPM 131 – Manual instrument - Ref 942616

The NPM 131 offers electric heating, automatic stirring and easy flame control. NPM 131 performs method A or B.

### SMALL VOLUME CLOSED CUP FLASH POINT TESTER

ASTM D 3828 - ISO 3679

NPV Tech - Automated - Ref 42000



The NPV Tech is equipped with an automatic heating slope. To perform a flash point with the NPV Tech, it is possible to work with a small volume of 2 or 4 ml only.

Measurements are possible thanks to an automatic detection by a thermocouple. The unit offers the possibility to run the method manually or to set an automatic heating rate.

## ABEL FLASH POINT TESTER

IP 170 - ISO 13736

NAB 440 – Automated - Ref 41300

The NAB 440 model, fully automatic tester, has 3 preset standard methods, and 1 quick research method. The instrument features a dual detection thermal system and ionization. The user-friendly interface allows to memorize the last 200 test results. NAB 440 can be connected to an external chiller to operate from -30°C to +110°C.

NAB Tech – Half-automated - Ref 41300

Unique on the market, NAB Tech is a compact half-automated instrument delivering fast and reliable results. Operation is made easy and safe with minimal operator intervention.

NAB 110 – Manual instrument - Ref 941601

The manual ABEL Flash Point offers the possibility to work as per the traditional standard method with dry ice.

## TAG FLASH POINT TESTER

ASTM D 56

NTA 440 – Automated - Ref 40600

The NTA 440 covers the determination of the flash point by Tag closed cup testers, of liquids with a viscosity below 9,5 CST at 25°C and having a flash point below 93°C. Automated Tag flash point features 3 preset standard methods, and 1 quick research method.

## OPEN CUP FLASH POINT TESTER

## CLEVELAND FLASH POINT TESTER

ASTM D 92 - ISO 2592 - IP 36

NCL 440 – Automated - Ref 40400

NCL 440 flash point, combines leading flash and fire point detection with a user friendly interface. Fully automatic, the NCL 440 can boost your laboratory's productivity with the 6-cups autosampler (in option), while improving repeatability and reproducibility of your analysis. Easy to use, simply select a pre-installed program and press the Start button. The evolution of the test is displayed in real time on the screen.

NCL 120 – Manual instrument - Ref 942611

The NCL 120 allows the determination of flash and fire point. The instrument is fitted with electric heater, power adjustable by energy regulator on the front panel. Pilot and test flame are adjustable by knob.

# VOLATILITY



## DISTILLATION OF PETROLEUM PRODUCTS AT ATMOSPHERIC PRESSURE

ASTM D 86 - D 850 - D 1078 - ISO 3405 - IP 123 - IP 195

NDI 450 – Automated - Ref 60502

Reliable and robust, the NDI 450 is a fully automated distillation unit at atmospheric pressure with a combination of latest technologies.

Due to our expertise, the NDI 450 offers you the best performance thanks to its low voltage heating element (easily removable) and its built-in Peltier cooling system.

NDI Classic – Half-automated - Ref 942228

NDI Classic includes an analogic condenser bath regulator for a more comfortable operation. The equipment is delivered with glassware and necessary accessories to run ASTM D 86 test.

NDI Basic – Manual instrument- Ref 941228

Distillation apparatus with electric heater. Temperature up to 400°C

Distillation Flask - Accessories - Ref 24019

Round bottom. provided chemical and thermal resistance. Capacity: 125 ml. Other capacities available. On request, an Optidist distillation flask is available (ref 25030).



# COLD FLOW PROPERTIES



## CLOUD & POUR POINT (CPP)

ASTM D 97 - D 2500 - IP 15 - IP 219 - ISO 3015 - ISO 3016

CPP Classic – Half automated - Ref 941592

With internal cooling system. CPP test cabinet is mechanically refrigerated by CFC free Gas. There are 4 compartments (0, -18, -33, -51°C), each with 4 wells. It comes with useful glassware and thermometers.

For Cold Filter Plugging Point, a kit is available in option to perform ASTM D 6371, IP 309 and EN 116 standards.

# CLEANLINESS

## OXIDATION

### OXIDATION CHARACTERISTICS

ASTM D 943 - D 2274 - D 2893 - IP 157 - IP 388 - ISO 12205

TOST Classic – Half automated - Ref 9416260

The oxidation characteristics bath is a 8-place unit. User can select suitable accessories according to its needs and get a custom instrument. Glassware and option list available upon request.



### EXISTENT GUM IN JET FUELS BY JET EVAPORATION

ASTM D 381 - IP 131 - IP 540 - ISO 6246 - DIN 51784

NGT Classic - Steam-jet and air-jet version - Ref 941320

The device determines existent gum in fuels by steam-jet and air-jet evaporation. There are double digital controllers for : air temperature ( $155 \pm 0,5^{\circ}\text{C}$ ), steam temperature ( $232 \pm 2^{\circ}\text{C}$ ), and both air & steam flows ( $1000 \text{ mL/s} \pm 15\%$ ).



### INDUCTION PERIOD & POTENTIAL GUMS

ASTM D 525 - D 873 - ISO 7536 - IP 40 - IP 138

NPI 442 - 4 stations — Dry bath - Ref 40925

The NPI 442 offers graphic screen with friendly software. It can record the last 200 results. The temperature range goes from ambient to  $120^{\circ}\text{C}$ . Vessels and glassware to be ordered separately. As a safety measure to fill and unfill the test vessel, use the optional **NPC 210**, a secured oxygen filling and decompression unit with protective screen.





# FUEL CHARACTERISTICS

## AUTOMATIC BLENDING UNIT

ASTM D 613 - D 2699 - D 2700

NABLEND - Automated - Ref 52300

The NABLEND automates the blending procedure for reference and check fuels used for octane and cetane number measurements by CFR engine. It is a unique system for error-free sample preparation. Printing and traceability of results are available according to quality control requirements, thanks to high accuracy in results and time saving.



## ANILINE POINT TESTER

ASTM D 611 - IP 2 - NFM 07021 - ISO 2977

NAE 440 – Automated - Ref 40500

The NAE 440 Aniline point tester is the unique twin tester available on the market using the dry bath concept. Instrument allows visual control of the aniline point during test. The NAE operates within a range of -10°C to +150°C. For safety, the heating element is protected in case of tube breakages.



## COPPER CORROSION DETECTION

ASTM D 130 - IP 154 - NFM 07015 - ISO 2160 - DIN 51811

NTB Classic - Ref 23007

Thermostatic bath has a temperature range from ambient to +230°C. In order to work under ambient temperature, tap water or external chiller can be connected. Standard is equipped with a bath drain. In option, you have the possibility to increase the capacity from 6 to 9 tests positions.



## FLUORESCENT INDICATOR ADSORPTION

ASTM D 1319 - IP 156

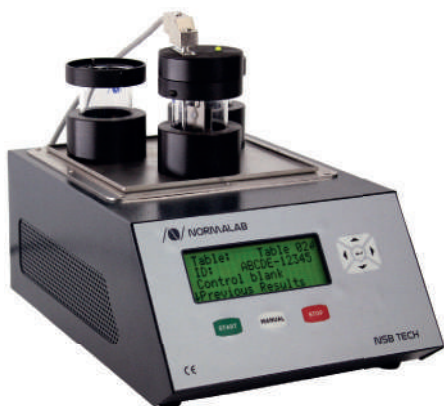
FIA Classic - Ref 941600

The test characterizes the quality of petroleum fractions as gasoline blending components and as feeds to catalytic reforming processes. This information is also important in characterizing petroleum fractions and products from catalytic reforming and from thermal and catalytic cracking as blending components for motor and aviation



# CARBON AND SEDIMENT

## SALT IN CRUDE ANALYSER



ASTM D 3230 - IP 265

NSB Tech - Automated - Ref 942800

Fully automatic, the NSB TECH offers a precise test of salt concentration in crude oil. This test measures conductivity in the crude oil due to the presence of common chlorides, such as sodium, calcium, and magnesium by electronic methods.

Knowledge of the chloride concentration gives information on the efficiency of the desalination process and provides a solid basis for assessing the need for crude oil desalting. The corrosion rates in refining units depend on the chloride concentration.



## OIL TEST CENTRIFUGE

ASTM D 91 - D 893 - D 1796 - D 96 - D 4007 - D 2709 - D 2711 - D 2273

NCP Tech - Ref 29408

NCP Tech centrifuge has been specially designed for the determination of water and sediment in petrol and used oils, as well as precipitation and demulsification features. It has a pre-heating program to set the chamber at the test temperature before spinning the sample.



## ASPHALTENES CONTENT IN PETROLEUM PRODUCTS

IP 143 - ASTM D 6560

ASPHAN 02 - Ref 24472

ASPHAN 02 Asphaltenes extractor improves the characteristics of the standard methods, decreases the cost of analysis thanks to manipulation and time reduce to 50%. A better repeatability (5% weight) joins a lower limit of detection (0,2 / 0,3% weight). The ASPHAN 02 is designed to avoid any affluence of toxic solvents.



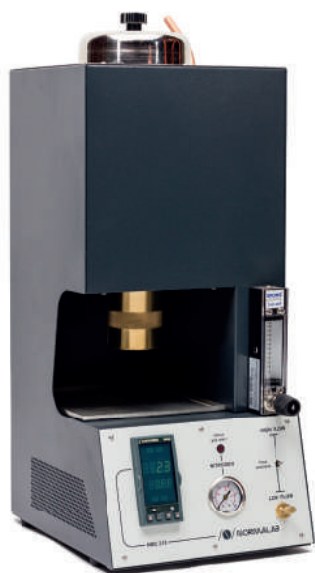
## DETERMINATION OF CARBON RESIDUE (MICRO METHOD) MICRO CONRAD- SON RESIDUE TESTER

ASTM D 4530 - D 189 - IP 398 - ISO 10370

NMC 445 – Automated - Ref 41030

Fully automatic and easy to use, the Normalab's NMC 445 provides all safety requirements for a carbon residue measurement of carbon residue formed after evaporation and pyrolysis of petroleum products. Due to our experience, the NMC 445 offers you the best specifications thanks to an automatic calculation of carbon residue % (Required balance).

Including a software with the possibility to create 18 methods in addition to the 2 pre-set methods, the NMC 445 offers the possibility to check the nitrogen flow rate on front panel. For ease of use, it has an automatic nitrogen flow rate switch. Can be used with small, medium or large vials, depending on your needs.



## MICRO CONRADSON TESTER

ASTM D 4530 - IP 398 - ISO 10370

NMC 215 – Half automated - Ref 941690

NMC 215 is a light version of NMC 445 to perform MCRT analysis. Quick start of test, temperature and nitrogen pressure control are automatic and in accordance with the method. Temperature accuracy: 1°C. Max furnace temperature: 550°C.

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## ASTM COLOUR SCALE OF PETROLEUM PRODUCTS

ASTM D 1500 - D 6045 - ISO 2049

AF 650 – Manual instrument - Ref 24415



The colorimeter AF 650 model is delivered with a 16-filter colorimetric scale from 0,5 to 8,0 units. It is a 3-field instrument for visually determining the ASTM colour of samples by direct comparison with coloured glass standards. The instrument is delivered with 3 glass sample jars and a calibration certificate for the filters.

# LUBRICANT

## FOAMING CHARACTERISTICS OF LUBRICATING OILS

ASTM D 892 - D 6082 - IP 146 - ISO 6247

Ref 941643 : Foam 2 Classic

Ref 941640 : Foam 1 Classic

Ref 9416432 : Foam HT Classic

The Foam instruments are used to detect undesirable foaming characteristics in lubricating oils, which could cause inadequate lubrication, overflow and cavitation.

To avoid mechanical failure, the test measures the foaming characteristics of lubricating oils at different temperatures by empirically rating the foaming tendency and the foam stability.



## DIFFUSER WASHER

NDW Tech – Half automated - Ref 941645

The NDW Tech automates and improves the washing cycles of diffuser stones. This instrument allows to save time. It also reduces solvent exposure of the users.



## AIR RELEASE VALUE (IMPINGER METHOD)

ASTM D 3427 - IP 313 - DIN 51381

ARV Tech – Ref 942900

The ARV Tech is delivered ready to use including a circulating bath capable of maintaining the test cell at required temperatures. Temperature can be set through the interface for sample. The graph show in real time the weight evolution. More than 1000 results can be stored in the software or export.



## WATER SEPARABILITY OF PETROLEUM OILS AND SYNTHETIC FLUIDS

ASTM D 1401 - ISO 6614

DEM Classic – Half automated - Ref 942545

The DEM Classic has 7 places with 2 of them for sample preheating. Temperature is controlled by electronic temperature controller between ambient and 95°C (+/- 0.1°C), with digital display. Easily movable, the stirring head can regulate stirring speed by electronic controller. Illuminated and manually turning base plate (330x330x70 mm) is an option.



# BITUMEN, WAXES & GREASE



## SOFTENING POINT TESTER (RING AND BALL METHOD)

ASTM D 36 - EN ISO 1427 - IP 58 - DIN 52011 - AASHTO T 53

NBA 450 – Automated - Ref 60700

The NBA 450 is equipped with automatic detection of softening point by optical cells. With the 4 preset methods, it offers the possibility to test bitumen, waxes, resins...

This test defines the temperature at which the sample softens under the effect of temperature and defines the classification of bitumens with the determination of penetrability.



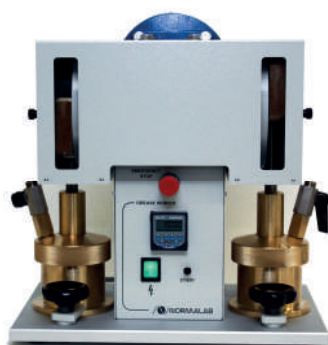
## PENETROMETER

ASTM D 5 - D 217 - D 937 - D 1321 - D 1403 - EN 1426

NPN Tech - Automated - Ref 942734

Automatic penetrometer, the NPN Tech is a compact unit. The device is able to measure automatically the penetration value of the sample.

With an auto-electronic detection of depth penetration (optional accessories), the NPN Tech is used for consistency and resistance determination of pasty, creamy, semi-solid or highly viscous samples.



## MECHANICAL GREASE WORKER

ASTM D 217

GWM Classic – Automated - Ref 9417582

Automatic GWM Classic reduces exhausting procedure required for grease in order to realise the shear stability test. The grease machine achieves 60 ( $\pm 10$ ) strokes / min with a displacement of 67 mm. It is equipped with a digital display meter, a dial thermometer calibrated at 25°C. and a perforated brass base with 51 ¼ " (6.35 mm) dia. This apparatus is used for the determination of penetration.



# VISCOSITY



## VISCOSITY BATH

ASTM D 445 - D 446 - ISO 3104 & 3105 - IP 71

NVB Classic – Ref 23207

Viscosity bath, conforms ASTM D445, with a temperature range from ambient to 230°C. Temperature stability is  $\pm 0.01^\circ\text{C}$ . The bath volume is 40 liters and has an opening of 260 x 240 mm. There are 7 openings for holding viscometers. A cooling coil to work below ambient temperature is integrated. A bath drain is included.



## AUTOMATIC VISCOMETER WASHER FOR TUBES ASTM D 446

Standards : ASTM D 446 - ISO 3104 - IP 71

VTW Classic – Automated - Ref 18450

Viscometer washer supplied with 6 nozzle stoppers. This apparatus allows external and internal washing of all current types of viscometer tubes. Viscometer tubes are suspended in solvent vapour at its boiling temperature.



## INTELLIGENT CHRONOMETER

Standards : ASTM D 446 - ISO 3104 - IP 71

CHRONOTECH – Automated - Ref 41900

The CHRONOTECH is a software based chronometer. It allows automatic calculation of viscosity by entering tube constants in its internal memory. Mobile and easy to handle, three different times measures can be done simultaneously with the CHRONOTECH.

# PETROLEUM GLASSBLOWING WORKSHOP



**NORMALAB** France S.A.S. is specialized in the scientific glass blowing since the beginning of the company in 1963. Thanks to this experience and a team of glassblowers accustomed to work with various techniques, **NORMALAB**'s workshop is the French leader of scientific glass blowing specialized in the oil field.

Our main activities are :

- Standard production
- OEM manufacturing
- Custom-tailored design
- Repair

Also, in order to offer a complete service to its customers, **NORMALAB** proposes calibration of various articles made of glass. With this intention the company is certified according to ISO 9001. Delivered certificates ensure a conformity with the international standards like ASTM, IP, EN, ISO, DIN, JIS, GOST ...

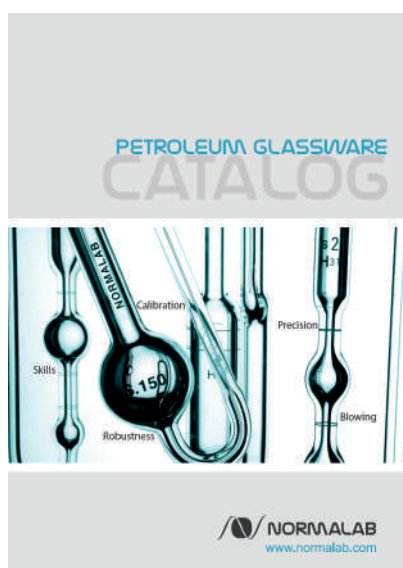
Normalab's reputation for distillation flasks and viscosimetric tubes is well-known in analytical laboratories. Their accuracy and resistance make a world wide reference of them.

Quality, robustness and accuracy of work are the daily objective of this historical workshop.

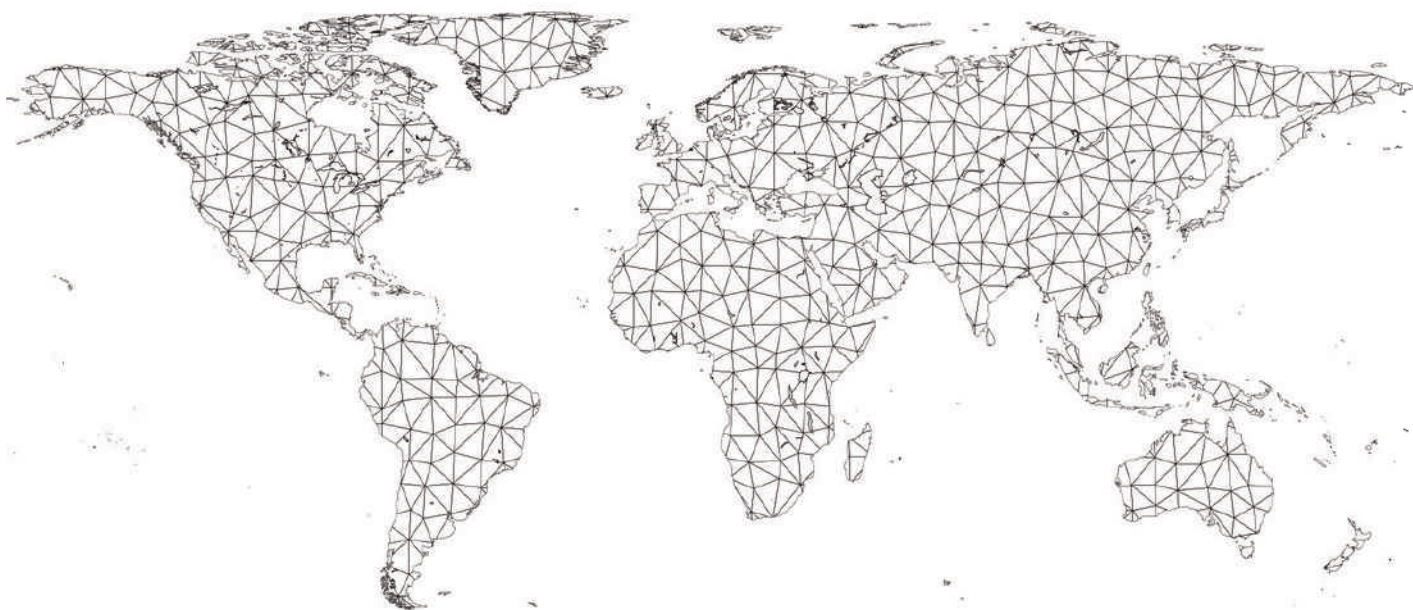
## PETROLEUM GLASSWARE CATALOGUE

From beaker to extractor through cylinder, find the complete list of visco tubes and all the glass instruments and accessories for the petroleum test analysers.

**REQUEST OUR GLASSWARE CATALOGUE**







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