

GENERAL CATALOGUE





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 5th 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.

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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 analyzers 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 optimize space allows you to perform all required tests on the field.

PROFESSIONAL CUSTOM SOLUTION

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

FLAMMABILITY

FLASH POINT BY PENSKY MARTENS

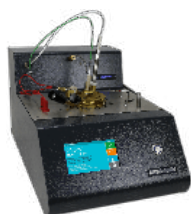
ASTM D 93 - IP 34 - ISO 2719

NPM 450 – Automated - Ref 60400



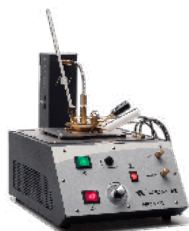
Efficient and compact, the NPM 450 is a fully automated Pensky-Martens Closed Cup Flash Point Tester that combines latest technologies. It offers you the best performances thanks to its predictive heating regulation and the air turbine enabling fast sample cooling after the test.

NPM Tech - Half automated - Ref 42100



The NPM Tech is a compact half-automated instrument delivering fast and reliable results. Operation is made easy and safe with minimum 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 - ISO 9038 - IP 303

NPV Tech - Half automated - Ref 42000



The apparatus 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.

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.

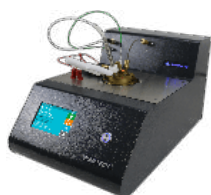


ABEL FLASH POINT TESTER

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 42300

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.



CLEVELAND FLASH POINT TESTER

ASTM D 92 - ISO 2592 - IP 36

NCL 440 – Automated - Ref 40400

NCL 440 flash point, combines flash and fire point detection. Fully automatic, it offers good repeatability and reproducibility of your analysis. Easy to use, simply select a pre-installed program: 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 heating element, 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

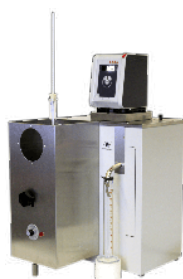
ASTM D 86 - D 850 - D 1078 - ISO 3405 - IP 123 - IP 195

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

ASTM D 2500, D 97, IP 219, ISO 3015; ISO 3016

CPP Classic – Half automated - Ref 941592



CPP test cabinet is mechanically refrigerated by CFC free Gas. There are 4 compartments (0, -18, -33, -51°C), each with 4 wells whose temperature is controlled by digital display. For the filtration limit temperature (ASTM D 6371 - IP 309 - EN 116) a kit is available in option.

CLEANLINESS



OXIDATION CHARACTERISTICS

ASTM D 943, D 2274, D2893, D4310, IP 157, IP 388, ISO 4263-1-2-3, ISO 12205

TOST Classic – Half automated - Ref 9416260

The oxidation characteristics bath is a 8-places unit. User can select suitable accessories according to its needs and get a customized instrument. (glassware and options list are available on 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 ($155 \pm 0,5 \text{ }^{\circ}\text{C}$), steam temperature ($232 \pm 2 \text{ }^{\circ}\text{C}$), 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°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.



COPPER AND SILVER CORROSION DETECTION

Copper corrosion: ASTM D 130, ASTM D 4048, ASTM D 7095, EN/ISO 2160, IP154, IP112 / Silver corrosion: D 7671, IP 227

NTB Classic - Ref 23007

Thermostatic bath has a temperature range from ambient to $+250^{\circ}\text{C}$. 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.



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 with two autonomous and independent stations. The 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. An external cooling source is needed for temperatures under ambient.

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 fuels.

CENTRIFUGE

ASTM D 91 - D 893 - D 1796 - D 2273 - D 2709 - D 4007 - ISO 3734 - IP 75 - IP 359

NCP Tech 2 - Ref 29600



NCP Tech 2 centrifuge has been specially designed for the determination of water and sediment in petrol and used oils, as well as precipitation and demulsibility features. It allows fast and easy operation for accurate measurements. The model NCP Tech 2 is available in a non-heated version and a large version to centrifuge up to 8 tubes.

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 electronical 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.

ASPHALTENES CONTENT IN PETROLEUM PRODUCTS

Conforms to NFT 60-115, corrolates with IP 143 and ASTM D 6560

ASPHAN 02 - Ref 24472

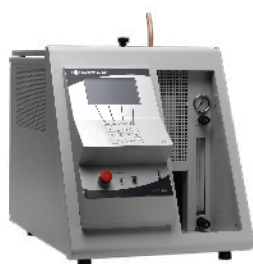


ASPHAN 02 Asphaltenes extractor improves the characteristics of the standard methods, decreases the cost of analysis thanks to manipulation and time reduce to 50%. A better repeatability (5% weight) joins a lower limit of detection (0,2 / 0,3% weight). The ASPHAN 02 is designed to avoid any affluence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

DETERMINATION OF CARBON RESIDUE (MICRO METHOD)

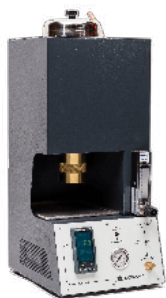
ASTM D 4530 - D 189 - IP 398 - ISO 10370

NMC 445 – Automated - Ref 41030



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

Thanks to the software, you can create 18 methods in addition to the 2 preset methods, the NMC 445 allows 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.



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.

LUBRICANTS



FOAMING CHARACTERISTICS OF LUBRICATING OILS

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

FOAM 1: Ref 941640 & FOAM 2: Ref 941643

These instruments are used to detect foaming characteristics in lubricating oils. This model allows to perform sequence I, II or III.



Foam HT: Ref 9416432

FOAM HT can perform a test at max. 150 °C. For sequences I, II, III and IV in one bath.



DIFFUSER WASHER

ASTM D 892 - IP 146

NDW Tech – Half automated - Ref 941645

The NDW Tech allows to automatically clean and dry your stone diffusers or your stainless steel diffusers. It also reduces solvent exposure of the users.

AIR RELEASE VALUE (IMPINGER METHOD)

ASTM D 3427 - IP 313 - ISO 9120 - DIN 51381 - NFT 60149

ARV Tech – Ref 942900



The ARV Tech measure precisely the time required for an oil to separate from water. The test is realised with Impinger method, oil is heated at a temperature of 25°C, 50°C, or 75°C, then compressed air is sent into the oil. The graph shows the evolution of the test in real time. The connected balance allows automatic determination.

FOAMING TESTER

NFT 60185

CNOMO - Ref 23360



The test consists to make a liquid circulate with a pump. The liquid comes from a calibrated ferrule at a specified height in a graduated glass cylinder. The volume of foam created during the test allows characterizing foaming tendency and/or stability.

DEMULSIBILITY TESTER

ASTM D 1401 - ISO 6614 - IP 412

DEM Tech – Half automated - Ref 42500

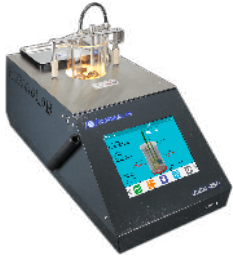


The DEM Tech is an half-automated demulsibility tester that can define the ability of petroleum oils and synthetic fluids to separate from water. It can contain four measurement stations (+ 2 preheat spots). Its stirring paddle is automatically positioned in the test tube. (6mm between the stirring paddle and the bottom of the test tube). Thanks to its large viewing window and the non-reflective enhanced LED lighting, the test can be easily observed. The touch screen allows easy configuration.

BITUMEN, WAXES & GREASE

SOFTENING POINT TESTER (RING AND BALL METHOD)

ASTM D 36, ASTM E 28, IP 58, EN ISO 1427, DIN 52011, AASHTO T53
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
NPN Tech - Half automated - Ref 942734



The half automated penetrometer, NPN Tech, is a compact unit able to measure automatically the penetration value of the sample. With an auto-electronic detection of depth penetration, this device is used for consistency and resistance determination of pasty, creamy, semi-solid or highly viscous samples. An automatic surface detection is available for conductive samples.

GREASE WORKER

ASTM D 217
GWM Classic – Automated - Ref 9417582



Automatic GWM Classic reduces the procedure required for grease, in order to realize the shear stability test. The grease machine achieves 60 (± 10) strokes/min with a movement of 67mm. This apparatus is used ageing the greases prior to the penetrability test.

VISCOSITY

VISCOSITY BATH

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

NVB Classic – Ref 23207



This viscosity bath, NVB Classic, has a temperature range from ambient to 230°C (stability of $\pm 0.01^\circ\text{C}$). Its 40 liters bath has an opening of 260 x 240 mm. There are 7 openings for holding viscometers and a cooling coil to work below ambient temperature.

AUTOMATIC VISCOMETER WASHER FOR TUBES

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

VTW Classic - Automated - Ref 18450



The viscometer washer allows external and internal washing of all types of viscometer tubes. Viscometer tubes are suspended in solvent vapor. An external cooling circuit is necessary to condensate the vapors. It also reduces solvent exposure of the users.

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 .

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.

Our main activities are :

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



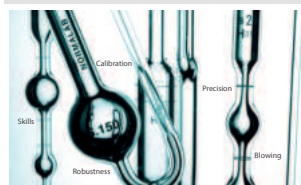
Also, in order to offer a complete service to its customers, **NORMALAB** proposes calibration of various articles made of glass. With this intention the company is certified according to ISO 9001. Delivered certificates ensure a conformity with the international standards like ASTM, IP, EN, ISO, DIN,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

SCIENTIFIC GLASSWARE CATALOGUE

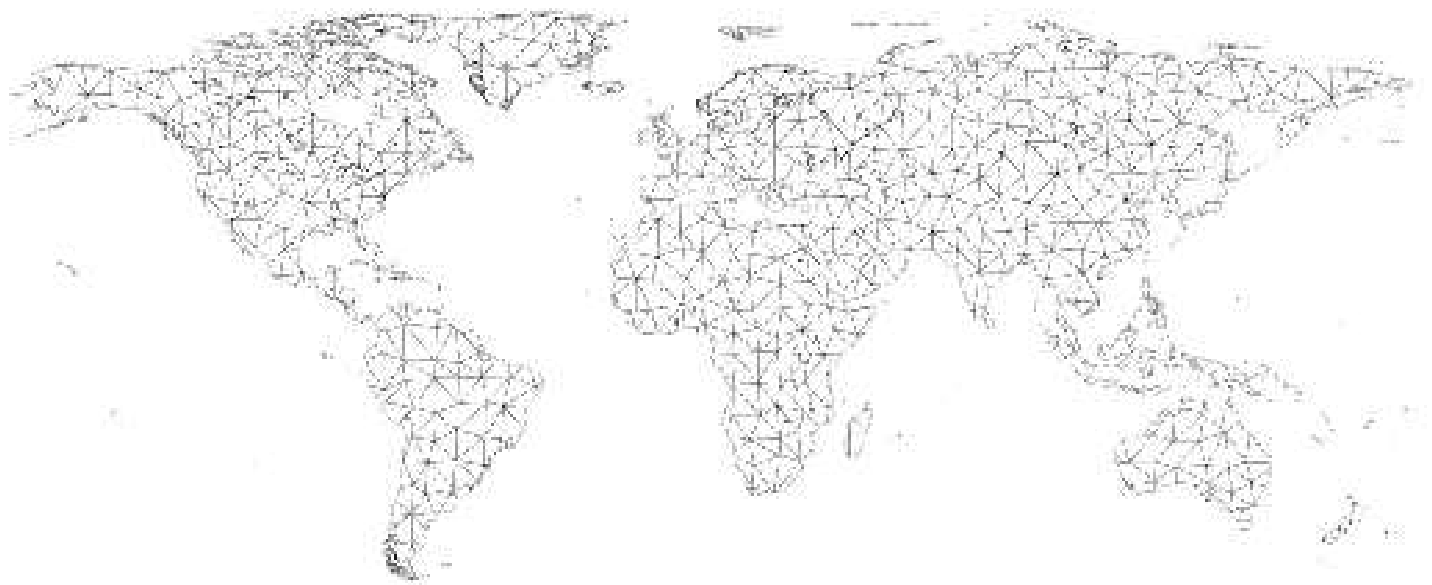


From beaker to extractor through cylinder, find the complete list of visco tubes and all the glass instruments and accessories for the petroleum test analysers.

If you need a glassware catalogue, you can contact us at **sales@normalab.com**

APPLICATION

Product Group	Flammability					Volatility			Cold Flow Prop.	Oxidation	Colour	Cleanliness		Carbon & Sediment					Lubricant				Bitumen & Waxes	Viscosity																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
STANDARDS	D 93	IP 170	D 56	D 3828	D 92	D 86	D 97	D 943	D 381	D 525	D 1500	D 130	D 613	D611	IP 143	D 91	D 3230	D 4530	D 892	D 3427	D 1401	D 5	D 36	D 217	D445																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Industry & Application	NPM 450					NPM TECH					NPM 131					NAB 450					NAB 110					NTA 440					NPV Tech					NCL 440					NCL 120					NDI 450					NDI Classic					NDI Basic					CPP Classic					TOST Classic					NGT Classic					NPI 442					AF 650					NTB Classic					NABLEND					NAE 440					ASPHAN 02					NCP Tech 2					NSB Tech					NMC 445					NMC 215					FOAM 2					FOAM 1					FOAM HT					NDW Tech					ARV Tech					DEM Tech					NPN Tech					NBA 450					GWM Classic					NVB Classic					VTW Classic																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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