Solutions from upstream to downstream

Anton Paar

Petroleum Industry

Your tomorrow **is our mission**

Anton Paar, the market leader in the development and manufacturing of reliable and accurate measuring instrumentation, is your trusted partner for optimizing production processes at key points. We specialize in increasing the productivity of routines in many areas of refining, processing, distributing, and trading of petrochemical products. To meet our customers' various needs, we offer a full-range portfolio. From the analysis of crude oil to the testing of fuels and biofuels, lubricants, liquefied petroleum gas, asphalt, and much more, you can be certain you will find the right solution for your laboratory or process environment.

- ✓ **Safeguard** your processes and people with high-quality instruments and integrated safety features
- ✓ **Enhance** your productivity with automated solutions and minimal operator interaction
- ✓ **Maximize** your production output and eliminate product loss due to quick measurements and fast reaction times
- ✓ **Certify** your products according to relevant standards and specifications
- ✓ **Reduce** waste and environmental impact by using smaller samples and fewer solvents
- ✓ **Save** time thanks to fast measurements and minimum sample preparation

GET IN TOUCH

FIND OUT MORE

Your tomorrow **is our mission**

YOUR CHALLENGES
We support you in your challenges: complying with national and international regulations, reaching maximum efficiency in the development of new products, meeting the highest safety standards, and fulfilling current requirements for sustainable procedures and technologies.

OUR PORTFOLIO
Our instruments are at hand for the analysis of crude oil, fuels, lubricants, and asphalts at the refinery, before transport and distribution, and for consumers as well as testing laboratories. Instruments by Anton Paar are known for their reliability, accuracy, and robust construction.

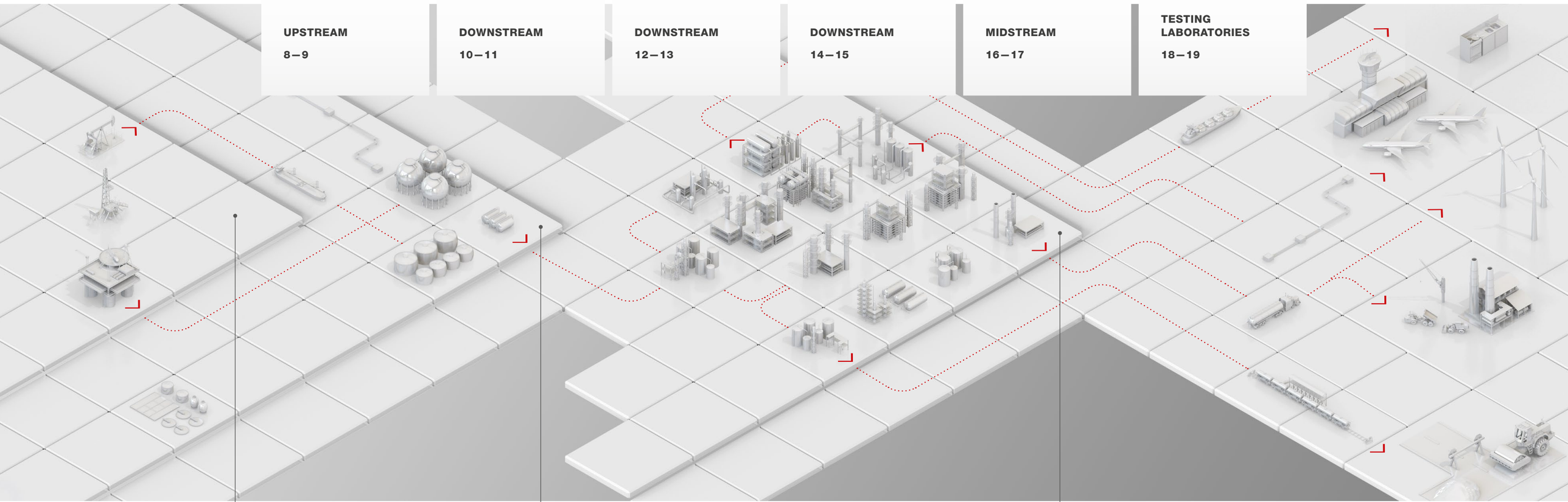
“We are confident in the high quality of our instruments. That’s why we provide **full warranty for three years**.”

All new instruments* include repair for 3 years.
You avoid unforeseen costs and can always rely on your instrument.
Alongside the warranty we offer a wide range of additional services and maintenance options.

*Due to the technology they use, some instruments require maintenance according to a maintenance schedule. Complying with the maintenance schedule is a prerequisite for the 3-year warranty.

Anton Paar Certified Service

Analysis for exploration and oil recovery	Fuel analysis at refineries	Lubricant analysis at refineries	Asphalt and bitumen analysis at refineries	Transportation and storage of finished products	Analysis of raw materials, petroleum products, and oil-condition monitoring
UPSTREAM 8–9	**DOWNSTREAM** 10–11	**DOWNSTREAM** 12–13	**DOWNSTREAM** 14–15	**MIDSTREAM** 16–17	**TESTING LABORATORIES** 18–19



Broadest standards compliance on the market

READ MORE
ABOUT OUR FULL COMPLIANCE

CRUDE OIL

Density	D5002
Viscosity	D7042
Cold flow properties	D5853

FUEL OIL

ASTM: D396, D2880
EN: EN 14214
ISO: ISO 4261, ISO 8217

Density	D4052, ISO 12185
Viscosity	D7042
Cold flow properties	ISO 3016
Pensky-Martens flash point	D93, EN ISO 2719
Distillation	D86, ISO 3405

AVGAS

ASTM: D910, D6227, D7547, D7960

Density	D4052, ISO 12185
Pensky-Martens flash point	D93, EN ISO 2719
Distillation	D86, ISO 3405
Gum content	D381, ISO 6246

DIESEL & BIODIESEL

ASTM: D975, D6751, D7467
EN: EN 590, EN 14214, EN 15940, EN 16709, EN 16734

Viscosity	D7042, EN 16896, ISO 23581
Oxidation stability	D7545, EN 16091
Cold flow properties	D6371, D2500, ISO 3015, EN 23015, ASTM D97
Pensky-Martens flash point	D93, EN ISO 2719
Distillation	D86, ISO 3405

AVIATION TURBINE FUELS

ASTM: D1655, D7566
DEF STAN 91-091
JIG AFQRJOS

Density	D4052, ISO 12185
Viscosity	D7042
Pensky-Martens flash point	D93, EN ISO 2719
Abel/Tag flash point	D56, EN ISO 13736
Distillation	D86, ISO 3405
Gum content	D381, ISO 6246

KEROSINE

ASTM: D3699

Viscosity	D7042
Abel/Tag flash point	D56, EN ISO 13736
Distillation	D86, ISO 3405

ASPHALT

AASHTO M320, M332
ASTM: D449, D2521, D3381, D5078, D6114, D6373, D8239
EN: EN 12591, EN 13108, EN 14023
AGPT T190 / GOST R58400.1 / IS 15462, IS 73

Density	D8188
Penetration	D5, EN 1426
Softening point	D36, EN 1427
Fraass Breaking Point	EN 12 593
Cleveland flash & fire point	D92, ISO 2592
Rheology	AASHTO T315, T316, T350, TP101 UL, TP123, TP126, ASTM D7175, D4402, D7405, D7552, DIN EN 13302, EN 13702, EN 16659, EN 14770 GOST R58400.10, R33137, R58400.6 R58400.7 R58400.9, AGPT T125, T192, T194, FGSV AL720, AL721, AL722, AL723

ETHANOL

ASTM: D4806

Density	D4052, ISO 12185
Distillation	D86, ISO 3405
Gum content	D381, ISO 6246

GASOLINE

ASTM: D4814, D5797, D5798, D8011
EN: EN 228, EN 15293

Density	D4052, ISO 12185
Oxidation stability	D525, D7525, ISO 7536
Distillation	D86, ISO 3405
Gum content	D381, ISO 6246

FURTHER TEST METHODS

Density	D7777, D7961, IP 365, IP559
Viscosity	D2161, D2270, D2501, D2502, IP 626
Oxidation stability	D8206
Penetration	D5, D217, D1321, D1403
Distillation	D850, D1078
Refractive index	D1218
Elemental analysis	D7876

UPSTREAM

Analysis for exploration and oil recovery

Evaluate crude oil properties by using Anton Paar's measuring instruments. Receive hard facts to make decisions about the drilling process, yield improvement, crude oil treatment, and transportation.

Using measuring instruments to evaluate and simulate conditions at the well will help you to optimize the drilling process and take the right steps to improve reservoir yield. To support your crude oil exploration, Anton Paar offers a wide range of solutions for crude oil analysis, including measurement of density, viscosity, and rheological behavior. Knowledge of these parameters gives you the information you need to optimize your crude oil treatment and ensure hassle-free transportation to the refinery. As the refining process is highly sensitive to changes in the crude oil composition, constant monitoring with reliable instrumentation enables you to react immediately to any deviations in output quality and process safety.

USE CASES	BENEFITS	DENSITY	VISCOSITY	RHEOLOGICAL PROPERTIES
Choosing the right extraction strategy based on actual reservoir conditions	Characterize the composition of artificially changed crude oil in pressure-volume-temperature studies by measuring density to increase the exploitable reservoir capacity by up to 80 %.	✓		
Determining the bubble point to increase the extraction potential of the well	Expand the extraction potential of a well by up to 40 % by measuring the technology-based determination of the bubble point.	✓		
Improving drill fluid management	This will reduce the costs for crude oil recovery and ensure well bore stability by optimizing the drilling fluid performance without on-site presence or sample drawing.	✓	✓	
Checking the purity of crude oil after treatment	Determine automatically the °API for crude oil classification and checking the crude oil purity within 30 seconds in just 1 measurement.	✓		
Evaluating the flow behavior to obtain good pumpability	Ensure the most economic pipeline transport conditions by simulating and fine-tuning the crude oil's flow behavior.		✓	✓

DOWNSTREAM

Fuel analysis at refineries

From fuel research to fuel quality testing, using analytical instruments at key points in your work will help you increase productivity and maximize returns.

At the refinery, measuring technology can help you ensure that incoming crude oil keeps flowing as it should and that the additives you use have the right composition when delivered. Our instruments provide process and laboratory measurements to identify incoming raw material, monitor production processes, or conduct quality testing of final products ranging from jet fuel to heavy bunker oils. Anton Paar's devices determine parameters such as density, viscosity, distillation behavior, flash point, or oxidation in full compliance with ASTM, EN, or ISO. Automated measurements relieve your lab personnel, increase efficiency, and minimize handling errors. Anton Paar's instruments assess the best time to make distillation cuts and ensure that the final products meet specifications. They also speed up the time required for sample preparation in elemental analysis. For researching new products as well as reducing carbon emissions and overall environmental impact, our portfolio offers the equipment you need.

USE CASES	BENEFITS	DENSITY	VISCOSITY	RHEOLOGICAL PROPERTIES	REFRACTIVE INDEX	DISTILLATION	FLASH POINT	GUM CONTENT	OXIDATION STABILITY	COLD FLOW PROPERTIES	SAMPLE PREPARATION / ELEMENTAL ANALYSIS	MOLECULAR SPECTROSCOPY
Determining the cloud and pour point of incoming crude oil	Ensure the right concentration of additives to keep the crude oil moving (along the pipeline).		✓	✓								
Certifying petroleum products and novel biofuels according to relevant standards	Achieve the highest accuracy and convenient quality control for efficient, fast, and error-free process and product safety.	✓	✓		✓	✓	✓	✓	✓	✓		
Automating data management to increase productivity	Reduce the work load of lab personnel, eliminate the risk of human error, and ensure data integrity.	✓	✓									
Precisely measuring the mass of final products to ensure profitable trading and a reliable basis for account settlement	Save time and money when trading goods by using mass-to-volume conversion.	✓										
Optimizing sample preparation (digestion) for elemental analysis (ICP)	You will save time and increase safety during routine sample preparation.										✓	
Characterizing new fuels, blends, and solvents during research and development	Benefit from economically efficient measurements and get several physical parameters with easy-to-use instruments to save time.	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Measuring fully and automatically the density and viscosity of highly viscous samples	Minimize the operator's contact with hot substances, increase your lab's safety and productivity, and eliminate potential human errors.	✓	✓									
Obtaining the correct boiling point characterization during crude oil and fuel distillation	Safely and accurately simulate the distillation in the lab to maximize process output and meet environmental regulations.					✓						
Atmospheric distillation measurement according to ASTM D86	Benefit from step-by-step user guidance to ensure that distillation results comply to ASTM D86 and avoid repeated testing due to possible operator error.					✓						
Checking the composition of incoming additives used for cracking and other manufacturing steps to ensure safe operation	Quickly and correctly identify and prevent hazardous reactions due to mixups and eliminate risk for personnel and process plants.	✓	✓									✓