

Analytical Solutions for Aerospace, Space, and Defense

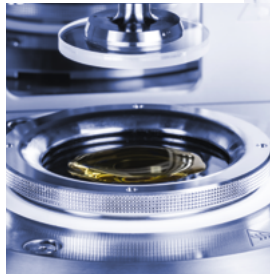


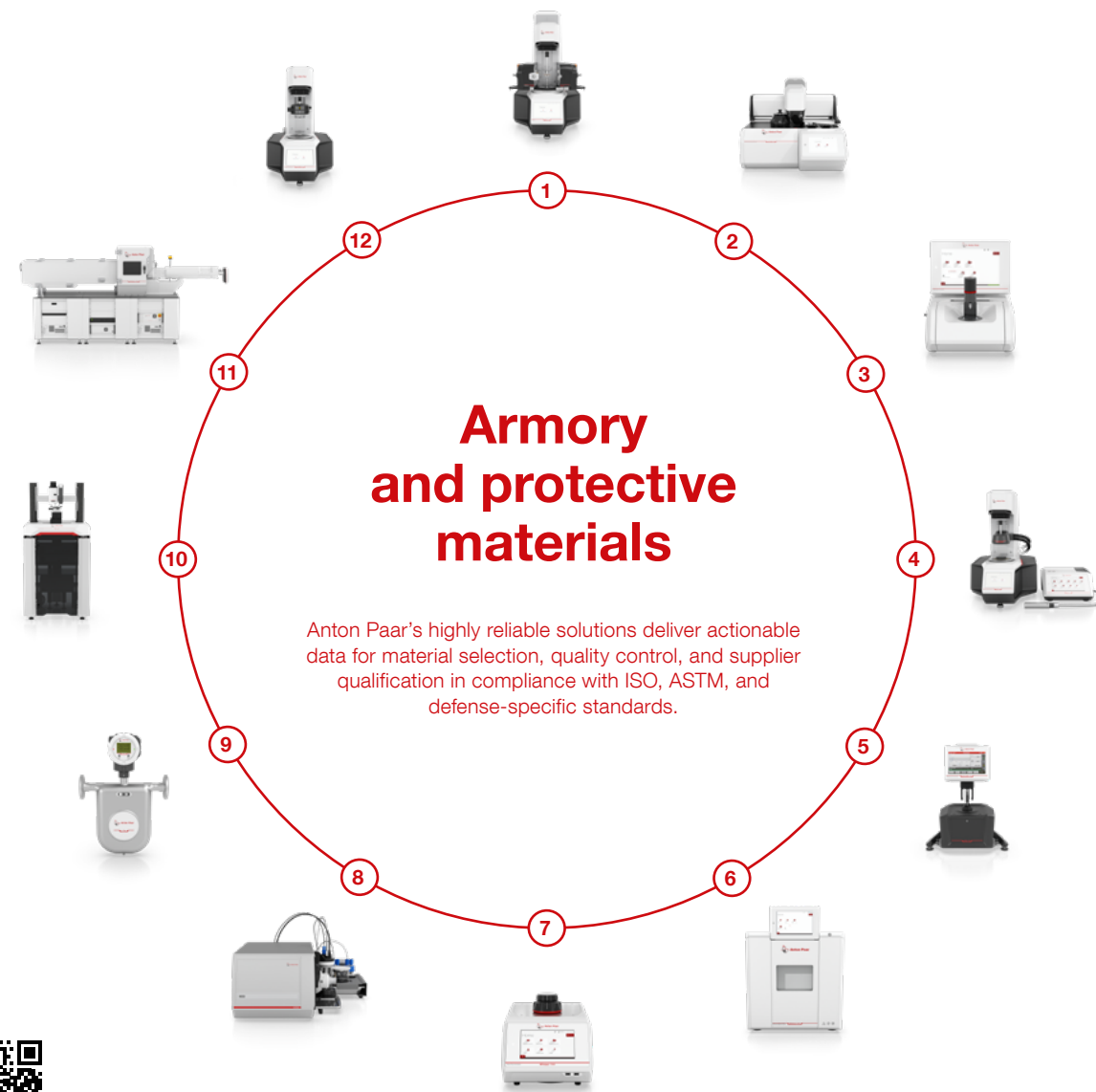
Aerospace, Space, and Defense



Find out more

When strength, safety, and reliability are critical, precision material analysis is non-negotiable. From protective armor to advanced fuels, our technologies empower innovation by delivering data-driven confidence for industries that operate under extreme conditions.





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Free e-book: "Polymer Processing"



1 | Dynamic mechanical analysis
MCR 703 MultiDrive
Dynamic mechanical thermal material characterization, DMA of composites

2 | Differential scanning calorimetry
Julia DSC Series
Melting, crystallization, glass transition, and curing behavior

3 | FTIR spectroscopy
Lyza Series
Qualitative and quantitative material characterization

4 | Raman spectroscopy
Cora 5001 Fiber + MCR Series
Real-time crystallization, composition analysis, and curing monitoring

5 | Rotational viscometry
ViscoQC Series
Viscosity measurement of paints and coatings



6 | Microwave acid digestion
Multiwave Series
Sample preparation for elemental analysis

7 | Gas pycnometry
Ultrapyc Series
Preparation-free skeletal (true) density measurement

8 | Surface analysis
SurPASS 3
Surface modification characterization by zeta potential

9 | In-line flow and concentration measurement
L-Cor Series
Real-time flow and concentration control in aramid fiber production

10 | Surface and scratch testing
Micro Combi Tester
Micromechanical mapping, indentation, and scratch testing



11 | Small-angle X-ray scattering
SAXSpoint Series
Nanostructure Characterization

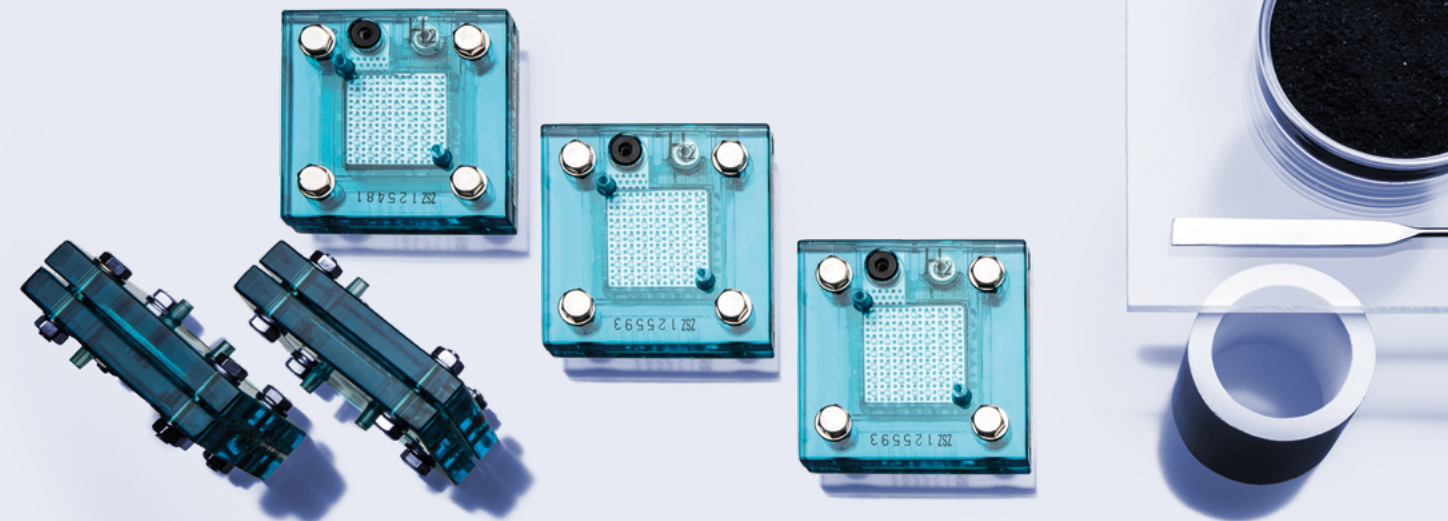
12 | Rotational/oscillatory rheology
SmartMelt Series
Viscoelastic flow behavior

Energy systems

Aerospace and defense engineers rely on Anton Paar instruments to validate the physical and functional performance of materials used in hydrogen storage, batteries, and fuel cells.



Scan to find out more
Free e-book: "Field Guide to Battery Materials Characterization"



1 | Rotational/oscillatory rheology

MCR Series

Slurry viscosity, sedimentation stability, and electrical conductivity

2 | Differential scanning calorimetry

Julia DSC Series

Thermal stability of electrode materials, separators, and electrolytes

3 | Dynamic image analysis and laser diffraction

Litesizer Series

Particle size and shape of solid electrode materials in micrometer range

4 | Dynamic light scattering

Litesizer DLS Series

Particle size and zeta potential of electrode materials in nanometer range

5 | Surface analysis

SurPASS 3

Catalyst surface modification characterization by zeta potential

6 | X-ray diffraction

XRDynamic 500

Identification of crystal structure

7 | Rotational viscometry

ViscoQC Series

Viscosity of slurries for quality control

8 | Small-angle X-ray scattering

SAXSpoint Series

Nanostructure characterization

9 | Microwave acid digestion

Multiwave Series

Sample preparation for elemental analysis

10 | Gas pycnometry

Ultrapyc Series

Preparation-free skeletal (true) density measurement

11 | In-line concentration measurement

L-Sonic Series

Real-time monitoring of potassium and sodium hydroxide concentrations in alkaline water electrolysis for green hydrogen production

12 | BET surface area analysis

Nova Series

Surface area analysis via gas sorption

13 | Advanced physisorption and chemisorption

Autosorb Series

Surface area analysis and full catalyst characterization

14 | Powder rheology

MCR Series

Powder flow behavior



1 | FTIR spectroscopy

Lyza Series

Qualitative and quantitative material characterization

2 | Raman spectroscopy

Cora 100

Non-destructive in-situ detection of explosives and chemical agents

3 | Differential scanning calorimetry

Julia DSC Series

Decomposition temperatures, reaction enthalpies, and aging behavior

4 | Dynamic image analysis and laser diffraction

Litesizer Series

Particle size and shape of explosive materials to determine flow stability and burn rate

5 | Rotational viscometry

ViscoQC Series

Viscosity measurement of explosive pastes

6 | Gas pycnometry

Ultrapyc Series

Preparation-free skeletal (true) density measurement

7 | In-line concentration and mass flow measurement

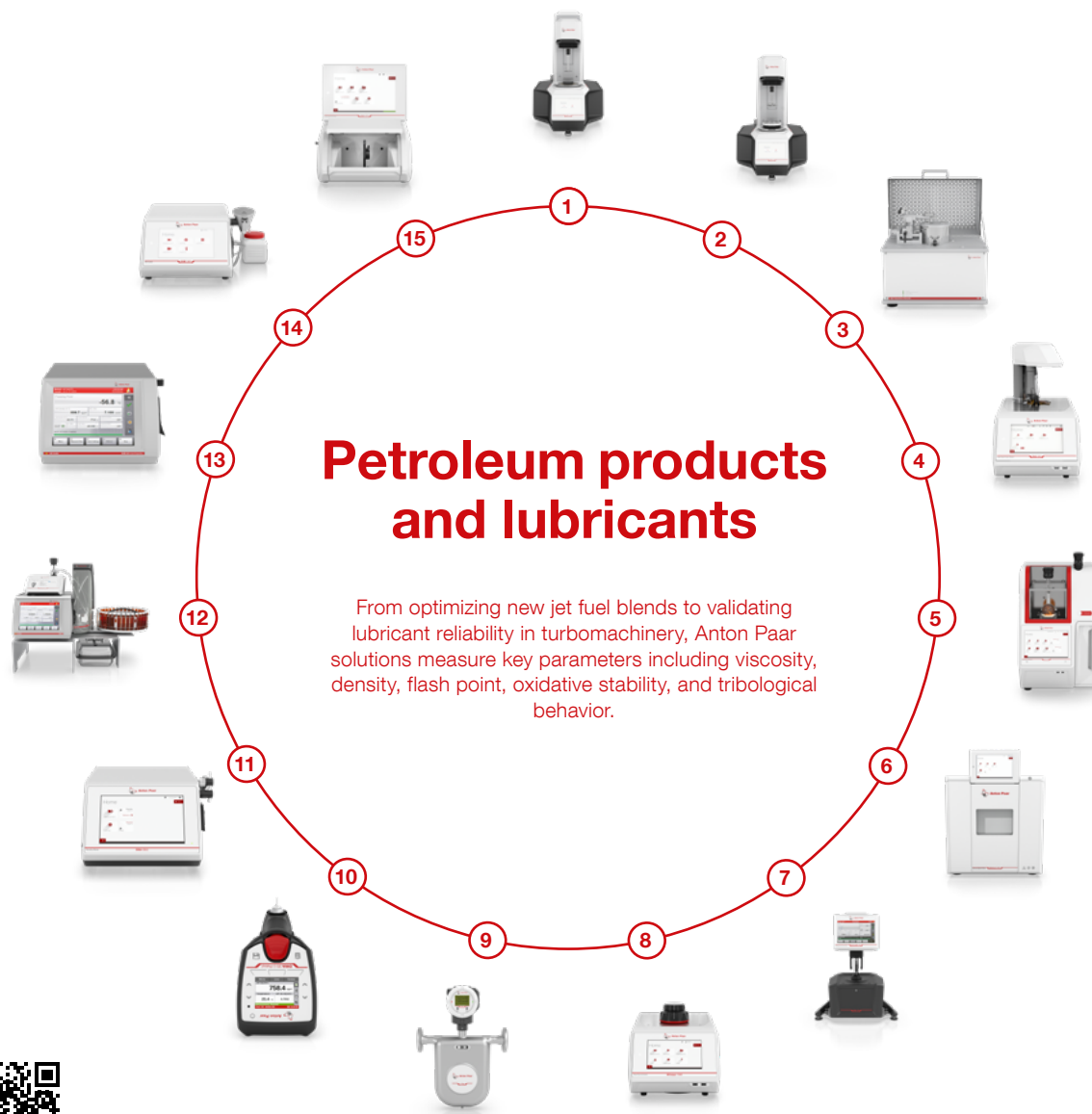
L-Dens Series, L-Sonic Series, L-Cor Series

Real-time concentration measurement of base chemicals

8 | Advanced physisorption and chemisorption

Autosorb Series

Porosity control in reactive powders or additives



Petroleum products and lubricants

From optimizing new jet fuel blends to validating lubricant reliability in turbomachinery, Anton Paar solutions measure key parameters including viscosity, density, flash point, oxidative stability, and tribological behavior.



Scan to find out more
Free e-book: "Analytical Methods for the Evaluation of Lubricants"



1 | Rotational/oscillatory rheology
MCR Series
Rheological characterization of lubricants

2 | Tribology testing
MCR Series
Friction and lubrication properties of petroleum products under controlled conditions

3 | Pin-on-disk tribology testing
THT
Friction and wear behavior of materials lubricated with petroleum products at high operating temperatures

4 | Flash point testing
TAG-, PMA-, ABA- and CLA Series
Flash and fire point analysis following a range of industry standards

5 | Atmospheric distillation analysis
Diana Series
Atmospheric distillation measurement according to various ASTM, ISO, IP, JIP, and GOST standards

6 | Microwave acid digestion
Multiwave Series
Sample preparation for elemental analysis

7 | Rotational viscometry
ViscoQC Series
Viscosity measurement of lubricants according to ASTM D2983

8 | Gas pycnometry
Ultrapyc Series
Determination of the true density of vacuum grease

9 | In-line concentration and mass flow measurement
L-Dens Series, L-Sonic Series, L-Cor Series
Real-time density measurement, product detection, and product quality monitoring during transportation and storage

10 | Portable liquid density
DMA 35 EX Petrol
API density analysis of fuels, lubricants, and other petroleum products on the move

11 | Liquid density
DMA Series
API density analysis of fuels, lubricants, and other petroleum products at low and high temperatures

12 | Lubricant measurement system
SVM 4001 + Abbemat 5101 + Xsample 520
Carbon type characterization and multiparameter analysis of petroleum products

13 | Multiparameter Analysis
SVM Series
Multiparameter analysis of fuels and lubricants: viscosity, density, viscosity index, API, cloud- and freeze-point, and more

14 | Kinematic viscometry
SVM 1001 Simple Fill
Kinematic viscosity analysis of fuels and lubricants

15 | FTIR spectroscopy
Lyza Series
Used oil analysis, QC for lubricants and fuels, and FAME in diesel quantification

Across aerospace, space, and defense programs, decisions hinge on data quality. Anton Paar delivers ultra-reliable measurement solutions built on traceable results, validated methods, and documented uncertainty budgets – enabling you to qualify materials, verify processes, and pass audits with confidence.

Our specialists collaborate with R&D, QA, and procurement to align measurement strategies with MIL, ISO 17025, and comparable standards, from feasibility through to method transfer. By integrating rheology, DMA, tribology, mechanical testing, spectroscopy, thermal analysis, gas sorption, X-ray scattering, and particle characterization, we create workflows that provide engineering insight, not just numbers.

