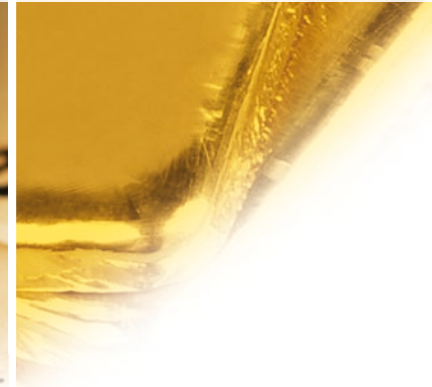




Gold, Precious Metals, Jewelry, Watches and Accessories

Professional measurement technology for analysis, valuation and authentication of precious materials



Metrological Solutions from FISCHER

Precision and reliability for the most sophisticated demands

Gold and precious metals have always held special appeal. Whether the objects made of these materials serve only aesthetic purposes or should perform some technical function, verification of the asserted quality and genuineness requires a precise and, above all, non-destructive measurement method. From quick valuation and authentication to high precision material analysis – Fischer offers the right measurement technology.

Knowledge, competence, experience

Since 1953, Fischer has created and produced increasingly innovative, powerful and versatile technologies for measuring coating thickness and micro-hardness, as well as for material analysis and testing.

Worldwide, Fischer customers in industry and trade, research and science depend on the reliability and accuracy of these fine instruments. Fischer rises to this challenge with its rigorous quality standards and relentless development strategy to produce the most technically advanced, yet practical and easy-to-use measuring systems and software on the market.

Product assortment

Fischer instruments cover a comprehensive range of measuring and analysis tasks that are relevant in diverse industries. For each application, the appropriate method is employed for maximum precision and accuracy: Whether magnetic induction or eddy current, beta backscatter, coulometric, microhardness or X-ray fluorescence – Fischer always has the right technology for the purpose.

Tailored to customers' requirements

Highest precision, yet quick and easy to use: Fischer adapts to the requirements of its customers and provides the optimum solution for any measuring application.

Measuring technology matched to the needs of customers – from personal consultation to the ideal solution.



Fine jewelry and watches, gold bars and accessories – diverse fields of application for Fischer measuring technology

Cash for Gold – Non-Destructive Evaluation

Fast and dependable analysis of jewelry and precious metals

Analyzing the authenticity of gold bullion

The skyrocketing prices of precious metals in recent years has spurred an upsurge in the frequency of counterfeit gold bars. Measuring the electrical conductivity of an ingot is a non-destructive method for verifying its genuineness without impacting its value. This method exploits the physical effect that fine gold, various alloys and impurities all differ in their electrical conductivity, thus allowing ingots of specific alloys or fine gold to be checked for authenticity. In contrast to the X-ray fluorescence method, which does not penetrate as far into the mass, the electrical conductivity method allows thick bars to be assessed in their full depth. Even hidden inclusions of non-precious metals with comparable density (e.g. tungsten) can be detected unambiguously and identified as counterfeit.

Measuring electrical conductivity with the SIGMASCOPE GOLD B is a quick and precise method for testing the genuineness of valuable precious-metal objects such as gold bars; it is an excellent supplement to X-ray fluorescence analysis.



SIGMASCOPE® GOLD B



The gold trade

Buying and selling gold is long an established market. Since dealers typically have only a few minutes to determine the value of the item offered for sale, they sometimes resort to unreliable methods such as the touchstone. More accurate but also destructive is the time-consuming fire assay. X-ray fluorescence, on the other hand, offers a non-destructive, quick and very reliable method for material analysis and coating thickness measurement on jewelry, watches and other precious metal items.

The FISCHERSCOPE X-RAY XAN 315 is ideally suited for use in the buying and selling of gold and precious metals.

FISCHERSCOPE® X-RAY XAN® 315



High Precision Analysis and Certification of Precious Metals

Solutions for refineries, assay offices and hallmarking institutes



Accurate alloy analysis for gold and other precious-metals recycling

Instruments with silicon drift detectors are employed especially in refinery and coin assay offices to identify gold and platinum even under challenging conditions. This high-resolution detector provides the most accurate readings for gold, platinum and other alloy elements such as silver, palladium or copper, as well as prohibited substances such as nickel or cadmium. In addition, these instruments allow for determining the thickness of very thin coatings, such as rhodium on white gold.

FISCHERSCOPE X-RAY XAN 220 is the analysis instrument of choice for reliable determination of precious-metal alloys.

Gold and precious metal certification

Instruments used in assay offices and hallmarking institutes for material analysis of gold and precious metals must meet the strictest of specifications. Besides analyzing the gold content, it is necessary to detect the presence of other precious metals or prohibited substances. Well-established in the industry, X-ray fluorescence analysis offers an excellent alternative to the widely-used fire assay method (cupellation) for analyzing precious metals and their composition – without damaging the item. With a repeatability precision of 0.3% or better, the number of cupellation tests necessary can be reduced significantly, thus saving valuable time and resources. The flexible configuration of the equipment also allows for measuring delicate structures or light elements.

The high end FISCHERSCOPE X-RAY XAN 250 was developed specifically for high precision analysis of precious metals as required in hallmarking and assay offices.



FISCHERSCOPE® X-RAY XAN® 220/250

A Range of Measurement and Analysis Applications for High-End Watches

Precision calls for precision



Gold coating measurement in watchmaking

Gold watches are often made of stainless steel and coated with a layer of 18K gold at least 20 µm thick. Besides being decorative, the gold coating should also be durable, since the external parts of a watch – such as housing, wrist-band and fastenings – are subject to significant wear.

Thick 18K gold coatings on watch components can easily be measured non-destructively with the FISCHERSCOPE MMS PC2 BETASCOPE.

Alloy analysis on luxury watches

Components of fine watches in the top price classes are not plated but machined from solid precious metals, such as 750‰ gold, 950‰ platinum or palladium alloys. Of course, the composition of these alloys must be strictly monitored.

Alloy analysis on exquisite watches with FISCHERSCOPE X-RAY XAN 250 and XDV-SDD.

Precious metal coatings on watch hands and other parts

Watch hands, faces, gear wheels and other visible elements inside high-quality timepieces are often plated with gold or other precious metals that lend the watch its elegant look. Here, not only is the visual effect important but also the functioning of the parts. Tight tolerance limits require extremely precise coating thickness measurements – such as those achieved using X-ray fluorescence.

FISCHERSCOPE X-RAY XAN 252 and XDV-SDD are particularly well suited for non-destructive, high precision analysis of thin gold and precious metal coatings.

Protective coatings on watch faces

A wristwatch is constantly being exposed to temperature stresses through body heat, cold outside air, solar irradiation or contact with water. So that the beautiful gold, silver, rhodium or palladium plating retains its glossy finish without surface discoloration, the precious metal layer is sealed with a thin coating of lacquer that prevents oxidation.

Precise thickness measurement of lacquer coatings on metallic watch dials is easy with the portable instruments of the FMP series and the FTA3.3-5.6 probe.



FISCHERSCOPE® X-RAY XDV®-SDD

FISCHERSCOPE® X-RAY XAN® 250/252

ISOSCOPE® FMP30

FISCHERSCOPE® MMS® PC2 BETASCOPE

Coating Thickness Measurement, Alloy Analysis and Detection of Harmful Substances

Taking a critical look at fashion jewelry and accessories



Coating thickness measurement for quality assurance

In addition to select fashion jewelry, one often sees high-end fountain pens, glasses frames and accessories that are finished with precious metals. A certain coating thickness is required for the surface to be able to withstand everyday influences like abrasion, skin oils and sweat.

Precise quality control of the applied coatings is simple with the FISCHERSCOPE X-RAY XAN 222 or XDAL.

Alloy analysis of materials used

Metal parts on clothing, closures and buckles on belts and handbags – these items are generally made of various alloys, the composition of which are decisive for the function and quality of the respective components. Quality control on incoming and outgoing goods is obligatory.

The FISCHERSCOPE X-RAY XDAL is designed especially for quick and reliable alloy analysis in quality assurance routines.

Analysis of harmful substances and trace elements

As a rule, the metal parts in costume jewelry and accessories are made of easily workable, inexpensive alloys such as brass or zinc alloys and then plated with decorative coatings. Consumer protection regulations require all components that come in contact with human skin to be free of harmful substances and heavy metals such as lead, nickel and cadmium. Fast and non-destructive, the X-ray fluorescence method is well-suited for this kind of high-precision screening.

The FISCHERSCOPE X-RAY XDV-SDD excels in accurate trace element analysis for safety testing fashion jewelry and accessories.

FISCHERSCOPE® X-RAY XDAL®



FISCHERSCOPE® X-RAY XDV®-SDD

FISCHERSCOPE® X-RAY XAN® 222

FISCHER's Worldwide Presence

With independent companies and qualified distributors



Anyone striving to succeed in today's globalized markets must know what their customers need and want. Because Fischer considers itself a partner to its customers, it places great emphasis on excellent consultation and close cooperation. In keeping with its high standards of quality and customer satisfaction, all members of the Helmut Fischer Group are certified according to DIN EN ISO 9001.

Consultation

Working together with you, our worldwide team of technical consultants will find the optimal solution for your unique requirements – of course, also onsite at your premises.

Service

Good service and efficient customer support are just as important to Fischer as technically advanced and innovative products. For this reason, Fischer has established a dense and tightly-linked global network of service partners with highly qualified staff offering extensive services such as setup, maintenance, training, and calibration service.



Application Laboratories

More and more, demanding applications require highly qualified application advice. Fischer has strategically located Application Laboratories around the world (Germany, Switzerland, China, USA, India, Japan and Singapore).



Training and seminars

Because we want you to benefit maximally from our products, Fischer experts are happy to share their application know-how, starting with seminars and training sessions on metrological basics, through the optimal use of instruments, to expert symposia on special topics.





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