Raising the bar in Precious Metals and Technology

提昇貴金屬與材料科技領域
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About Heraeus

Leading in Hong Kong

Heraeus Limited (HLHL) is one of the foremost companies in the precious metals business in Hong Kong and was incorporated in 1974, a member of the global Heraeus Group. Heraeus Metals Hong Kong Limited (HMHL) is a subsidiary of Heraeus Limited and was established in 2012. With our strong international network, we offer the ability to trade all precious metals 24 hours a day.

Our principal activities in Hong Kong are the refining, trading, manufacturing and marketing of precious metals such as gold, silver, platinum, palladium, rhodium, iridium and ruthenium either as pure metals or as products. We are committed to long-term partnerships with our customers that reduce costs and lead-time, decrease on-hand inventory, and increase profits for both ourselves and our clients. To highlight our continuing commitment to quality and service, we have been accredited to the ISO 9001:2008 standard for our entire production operation since 2009.

關於賀利氏公司

香港的相關企業

賀利氏有限公司是香港貴金屬業務上領先的企業之一，於1974年在香港成立，是賀利氏集團有限公司的成員。賀利氏金屬香港有限公司是賀利氏有限公司的分公司，於2012年在香港成立。公司擁有強大的國際網絡，可提供二十四小時的貴金屬買賣及管理服務。

香港的主要業務是以貴金屬（如：黃金、白銀、鉑金、鉑金、鉑、銀、鉑）作為原料或其製品的採購、貿易、生產和市場推廣。我們致力於與客戶建立長期的關係，降低成本、減少現貨存貨，並從而提高我們和客戶雙方的利益。自2009年，我們已獲國際認證通過ISO 9001：2008的標準認證，顯示我們在繼續努力將提升服務和品質的決心。
A Global Leader

The Germany-based precious metals and technology group Heraeus is a globally active family-owned enterprise with a history of more than 160 years. We provide high-end solutions to our customers to lastingly strengthen their competitive position. Our areas of competence include precious metals, materials and technologies, sensors, biomaterials and medical devices, quartz glass and specialty light sources. In the financial year 2013, Heraeus achieved a revenue from the sale of products of €3.6 billion, while the revenue from precious metal trading was €13.5 billion. With about 12,500 employees in more than 110 companies worldwide, Heraeus is in a leading position on its global sales markets.

Heraeus Hong Kong is one of the core drivers of the Heraeus Group of companies in Asia, and represents the following business activities:

- Trading Division
- Chemicals Division - Recycling
- Chemicals Division - Chemical Products
- Functional Materials Division - Special Materials Technology
- Electronic Materials Division - Precious Metals
- Electronic Materials Division - Circuits & Components
- Electronic Materials Division - Display & Semiconductor

Heraeus Hong Kong is a leading player in the Asian precious metals market.
A History of Quality
品質的悠久歷史

Quality Accreditation

Over the years, Herexus has earned a reputation for providing high quality products and customized technical support to our clients. Herexus Limited was firstly awarded the ISO9002 certificate in 1996, and further upgraded its quality management system to ISO9001:2000 in 2002. In 2002, we were awarded the QS9000:1998 certificate for our Business Unit Chemical Products. Our Laboratory also is accredited under ISO/IEC 17025:2005 of the Hong Kong Laboratory Accreditation Scheme (HOKLAS) operated by Hong Kong Accreditation Service (HOKAS) since 2012.

The reason for our reputation for quality is simple—we control all aspects of the development process, including design, in-house production and product testing. Undermining our commitment to providing quality products and services that surpass customers' expectation, we have been accredited to the ISO9001:2008 standard, covering all of our Business Units with production including Chemical Products, Recycling and Special Materials Technology.

Industry Recognition

Herexus plays a pivotal role in the precious metals market in S.E. Asia. We are a button group member of the accredited refiners of the Chinese Gold and Silver Exchange Society (CGES). We produce 99.99% fine silver and gold bars and 99.99% 1-kilo gold bars for delivery on the Exchange, and in recognition of our market leadership, we were successfully listed on the London Bullion Market Association’s (LBMA) Good Delivery List for Gold in 2006 and for Silver in 2010; and on the London Platinum and Palladium Market’s (LPPM) Good Delivery List for Platinum in 2008 and for Palladium in 2011. Even now, we are the only Chinese refiner to be accepted onto both LBMA’s Good Delivery List for Gold and Silver and LPPM’s Good Delivery List for Platinum and Palladium in China.

As a responsible, family-owned company, Herexus is a refiner of conflict-free gold bullions of the London Bullion Market Association (LBMA). Herexus passed the Responsible Gold Audit successfully. We are committed to abstain from sourcing gold in regions where there are armed conflicts or serious violations of human rights.

Industry Recognition

In 2012, we were finally accepted by the Hong Kong Credit Reference Services Limited (HKCRSL) to be a member of its member database. We also received the prestigious Best Quality Award from the Hong Kong Quality Association (HKQA) for our outstanding work in the field of quality management.

We are proud to have received the award for our commitment to providing quality products and services that surpass customers' expectations. Our dedication to excellence is reflected in our ISO9001:2008 certification, which covers all of our Business Units with production including Chemical Products, Recycling and Special Materials Technology.
Analytical Services
化學分析服務

Heraeus’ analytical department provides one stop analytical support to all businesses of H.H. Since over 40 years, we have been dedicated to consistently meeting the needs of our productions by providing flexible services with the highest level of integrity, reliability and efficiency. We adopt reliable traditional and state-of-the-art analytical methods such as fire assay, wet chemical analysis and spectroscopic analysis, all traceable to the latest international standards, such as in BS, ASTM, ISO and EN.

Our highly-qualified team of experts utilizes the latest technology and the sophisticated equipment, such as auto-illuminators, atomic absorption spectrophotometers, X-ray fluorescence spectrometer, inductively-coupled plasma atomic emission spectrophotometers, and others. We provide a quick, value-added approach to technical service and support. To ensure each test is fully standardized, we have developed a set of standard operating procedures to ensure tests are performed according to clear and concise written instructions. We strive to upgrade the standard of testing and management of our laboratory. In 2012, our laboratory has been accredited under ISO/IEC 17025:2005 of the Hong Kong Laboratory Accreditation Scheme (HOLAS) operated by Hong Kong Accreditation Service (HKAS).

我們的化學分析部門成為所有業務的分析支援中心。在過去40年來，我們致力於滿足我們客戶的生產需要，並提供最可靠及高效率的服務。我們採用傳統可靠的及先進的分析方法，如火試金法、濕式化學分析及光譜分析，所有方法均可追溯至最新的國際標準，如BS、ASTM、ISO和EN標準。

我們的高資格專家團隊使用最新的技術和先進的設備，如自動化照明器、原子吸收光譜儀、X射線熒光光譜儀、電感耦合等離子體原子熒光光譜儀等，以確保我們的客戶擁有最佳的供應和服務的技術支援服務。為確保每一個測試都標準化，我們已制定了一套標準化的作業程序，以確保每一個測試都能根據先進的實踐標準進行。我們的實驗室在2012年已獲香港認可署（HOLAS）認證，而香港認可署（HKAS）是香港實驗室認可計劃（HOLAS）的運行機構。
Trading
貴金屬貿易
Precious Metals Trading is one of Heraeus' core fields of business in Hong Kong. We are one of the major traders in the physical markets of gold, silver, platinum, palladium, rhodium, iridium and ruthenium, both in the form of metals, and as products.

With our unique combination of industrial and financial market know-how, every member of our team is dedicated to understanding the needs of our clients, and delivering the right solutions. Whether it’s developing a demanding products system solution or precious metal management, our expertise is up to the task.

Heraeus is a truly global player, with other trading centers in Hanau, New York and Shanghai. With our strong international network, we offer the ability to trade all precious metals 24 hours a day. We are also closely connected to major market participants, such as mining firms, jewelry manufacturers, industrial users, traders, financial institutions and investors, giving us an unprecedented advantage in the marketplace.

Range of services:
- Sales and purchases of physical precious metals
- Purchase and sales via weight accounts
- Precious metal financing
- Forward transactions
- Options
- Limit orders
- Worldwide availability of precious metal and acceptance through in-house infrastructure

黃金貿易業務是香港赫拉利斯的核心業務之一。我們是黃金、白銀、鉑金、钯金、铑、铱和钌的實物金屬市場的主要交易商。

通過我們在鋼鐵市場和精密工業的豐富知識，我們專業團隊的每一位成員均能理解和滿足客戶的需求。我們提供了精確的方案，以確保我們的管理服務，並且在市場中佔有優勢。

赫拉利斯在香港設有貿易中心，分別位於漢諾、紐約和上海。憑藉我們強大的國際網絡，我們能夠為客戶提供24小時的黃金貿易服務。我們與多個市場參與者密切聯繫，如採礦公司、珠寶製造商、工業用戶、投資者、金融機構和投資者，以提供無與倫比的市場優勢。

服務範圍：
- 黃金貿易
- 通過重量貿易採購和銷售黃金
- 黃金金融
- 前向交易
- 期權
- 限價交易
- 限量貿易
- 理財投資
- 黃金價格走勢
- 全球黃金庫存的內部資金調配
Recycling
貴金屬回收
Hereaus’ Business Unit Recycling in Hong Kong is a major player serving the Asia Pacific market, and takes full advantage of the territory’s unique position as a free port, established logistics hub and close proximity to Asian countries. It is fully equipped to efficiently extract precious metals from almost any grade of concentrates, alloys, residues, scrap and sweeps containing gold, silver, platinum and palladium. By using state-of-the-art techniques and continuously investing in new technology, we offer high yields and short processing times. The key markets that we serve are the jewelry, electronics, semiconductor, mining and surface finishing industries.

We are also a fully licensed chemical waste collector and local leader in precious metals recycling. With an array of modern analytical instruments and techniques (such as fire assay, gravimetric analysis, titrimetric analysis, AAS, ICP-OES, etc.), we can accurately determine a material’s exact precious metal content. By using a variety of advanced treatment processes, we can recover precious metals in a way that is not only highly efficient, but also clean and environmentally friendly. All of our processes meet the stringent environmental regulatory requirements of Hong Kong.

As always, quality comes first. That is why our Business Unit Recycling in Hong Kong holds a number of important accreditations:

- London Bullion Market Association (LBMA) Acceptable Refiners of Gold and Silver
- London Platinum & Palladium Market Association (LPPM) Acceptable Refiners of Platinum and Palladium
- Dubai Metal & Commodities Centre (DMCC) Approved Refiner of Gold
- China Gold & Silver Exchange Society (GSE) Approved Refiner of Gold

Hereaus is a major provider of refining services around the world, with sites in Germany, China, India, South Africa, and the USA. At any of these sites, we have the capacity to efficiently refine materials containing gold, silver, platinum, palladium, rhodium, ruthenium, iridium, osmium and rhenium.
Chemical Products
貴金屬化工產品
Chemical Products 貴金屬化工產品
Precious Metal Compounds and Homogeneous Catalysts
貴金屬化合物及相催化劑

Our Business Unit Chemical Products is a highly reputable producer of precious metal products in Hong Kong, supplying the electronics, jewelry, watch and industrial plating industries in the regional and global markets. The production facilities of the Chemical Products in Hong Kong specialize in a broad range of electroplating and electroforming chemical products such as potassium gold cyanide, potassium silver cyanide, palladium salts, medium solutions and other precious metal compounds. Complementing our products and services to the electrodeposition industry, we are also a widely trusted and high quality supplier of silver granules and silver anodes.

The Business Unit Chemical Products, in conjunction with the Business Unit Recycling of Heraeus Limited, provides a complete one-stop-shop service solution to end users, covering both precious metal compounds and the subsequent refining of the precious metals.

In addition to locally manufactured products, we also supply a comprehensive range of specialty chemicals produced by sister companies in the Heraeus Group. These include organometallic compounds, homogeneous catalysts and other precious metal products that are essential technological elements of various industries such as the chemical, petrochemical, silicone, automotive, pharmaceutical, turbine engine and photovoltaic industries.

Globally, Heraeus is a leading producer of precious metal chemical products with manufacturing facilities in Germany, China, Hong Kong, USA, Ireland, South Africa and India. Over the years, we have been working closely and consistently with leading global companies in various industries to develop and supply technologically innovative solutions to our customers.

我們的貴金屬化工產品業務是香港貴金屬產品享負盛名的製造商，供應電子、珠寶、鐘錶和工業電鍍行業。我們擁有專業生產設施，能夠生產多種電鍍及電鍍工業化工產品，例如：金屬氰化物、銀氰化物、鈀鹽類及其它貴金屬化合物。我們所生產的貴金屬電鍍產品在品質、價格和性能上均獲得電鍍業界的高度認可。

除生產貴金屬產品外，我們還與赫克於實業有限公司的回收部門一起為終端用戶提供一站式貴金屬化工產品及電鍍的後續輔料及技術解決方案。

作為全球領導者，我們與赫克於實業有限公司的多家姐妹企業進行密切合作，為多家行業企業生產及供應高科技創新解決方案。
Special Materials Technology
特種材料技術
Special Materials Technology 特種材料技術
Master Alloy Products for Jewelry Applications
珠寶應用的補口產品

For over 13 years, Heraeus Limited in Hong Kong has been faithfully serving the jewelry industry. From gold master alloys and sterling silver alloys, to solders and a range of semi-finished jewelry, we stand for products of the highest quality. We also supply a wide selection of alloys for watch and gift manufacturers. Today, Heraeus is one of the top alloy product suppliers in the world.

Heraeus' Functional Materials Division combines state-of-the-art manufacturing processes with an advanced, fully equipped analytical laboratory and stringent quality control procedures that consistently guarantee the highest standards of product quality. With a wealth of experience, we fully understand the needs of the jewelry industry, with a wide selection of alloys in a variety of colors and physical properties available for all karatages and applications.

As always, technological innovation is what sets Heraeus and its semi-finished jewelry apart. With a well-equipped research and development laboratory, we can develop the best, most advanced, and most user-friendly products for the industry. As an added benefit, we can offer failure-analysis for our customers to troubleshoot their production systems. By working closely with clients, we can offer solutions that get to the root of the issue.
Precious Colours 貴重顏料
Products for the Ceramic and Glass Industry
陶瓷與玻璃工業產品

The Herseus’ Business Unit Precious Colours in Hong Kong is the key supplier of materials for the decoration of ceramics and glass for the entire region. Our precious metal preparations, lustres, organic colours and other auxiliary materials are all of the highest quality, meeting the requirements of mechanical and chemical resistance.

Our Precious Colour products are primarily used for application as surface decoration for ceramic tableware, arts and crafts ware, glassware, tiles and sanitary wares. They are designed to be applied through a variety of techniques, including brush application, direct and indirect screen printing (decalcs), machine lining, pad printing and spraying.

Around the world, our Business Unit Precious Colours is also one of the leading manufacturers of decoration materials for glass and ceramics. With representatives in over 80 countries and production sites in Germany, China, India and Turkey, we are perfectly positioned to serve our customers around the globe.
Circuits & Components 電路及元件材料

Thick Film Pastes and Clevis™ Conductive Polymer Capacitor Materials

厚膜電子漿料和Clevis™導電聚合物

Producers of electronic circuits and electronic components benefit from excellent material properties which can be achieved with thick film and Clevis™ conductive polymers.

As a market leader in the production of thick film pastes and passive component metallizations, Heraeus Circuits & Components offers a broad range of resistor, dielectric, resistive and conductor pastes, capacitor terminations and inner electrodes, as well as precious metal powders and LCC systems. The different types of pastes – applicable to various substrate materials like alumina, aluminum and steel – are used e.g. for the manufacturing of electronic circuits, passive components, sensors, fuel senders, fuel cells and transmission control. Furthermore thick printing copper conductor pastes serve amongst others the power electronic industry.

Clevis™ conductive polymers are essential to achieve low ESR, low leakage current, good reliability and long lifetime in electrolytic capacitors. Because of its high conductivity and outstanding temperature stability, poly-3, 4-ethylenedioxythiophene (PEDOT), is widely used in anodes in the capacitor industry. Clevis™ materials are used to manufacture traditional polymer type tantalum and aluminum capacitors, as well as new cutting edge high voltage devices. Clevis™ products offer are readily-use Clevis™ K types, and, for insitu polymerization, Clevis™ M monomer along with Clevis™ C oxidizer.

Display & Semiconductor 顯示器及半導體材料

Clevios™ Conductive Polymers and Heraeus Daychem advanced chemicals

Clevios™導電聚合物和賀利氏Daychem尖端化學材料

From advanced flexible materials for displays to class leading speciality chemicals, the Display and Semiconductor business of Heraeus Electronics Materials Division provides cutting edge materials for electronic applications.

Heraeus Electronic Materials Division, Display Business Unit is the world’s largest supplier of Inherently Conductive Polymers (ICP) marketed under the brand name Clevis™. The conductive polymers products portfolio comprises of:

Clevios™ P Type conducts a broad range of PEDOT:PPS material formulations and materials which can be tailor made to match particular application.

A family of polymerization agents and auxiliary materials, including electrolytes and hardcoats.

Heraeus serves a broad range of industries, including electronics, solar, optics, OLED, display, and touch technologies. Heraeus provides on a global basis know-how to enable the development of cutting edge functional materials for advanced coating, capacitive touch applications and sensors, HIL materials and electrodes for OLED/Organic solar cell and printed electronics technologies.

The combination of conductivity, transparency, and flexibility opens the way to a whole range of new cutting edge solutions.

Heraeus Daychem produces a range of advanced chemicals and protective materials primarily for the semiconductor and display industry. Daychem combines breakthrough innovation, precise chemical processing and rapid manufacturing turnaround to deliver results for clients in the semiconductor, display, electronic, and aerospace industry. The product range includes specialty chemicals, electronic grade photo acid generators (PAGs), along with ethoxides for advanced optical and electronic applications.

Clevios™ Capacitors is marketed by BU Circuits and Components.
Information

We invite you to visit our websites for access to the latest information regarding Heraeus’ products, services and technologies in both Hong Kong and worldwide.

香港寶利氏提供的產品、服務及科研的最新資訊，歡迎瀏覽香港及世界各地的寶利氏網頁。

Hong Kong  www.heraeus.com.hk
Worldwide  www.heraeus-trading.com
            www.heraeus-recycling.com
            www.heraeus-chemicalproducts.com
            www.heraeus-jewelleryproducts.com
            www.heraeus-preciouscolours.com
            www.heraeus-devices.com
            www.heraeus-circuits-components.com

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- Trading 黃金貿易
  tradinghk@heraeus.com
## Periodic Table of the Elements

### Atomic Number

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### Notable Elements

- **He**: Helium
- **H**: Hydrogen
- **Li**: Lithium
- **He**: Helium
- **Na**: Sodium
- **K**: Potassium
- **Ca**: Calcium
- **Sc**: Scandium
- **Ti**: Titanium
- **V**: Vanadium
- **Cr**: Chromium
- **Mn**: Manganese
- **Fe**: Iron
- **Co**: Cobalt
- **Ni**: Nickel
- **Cu**: Copper
- **Zn**: Zinc
- **Ga**: Gallium
- **Ge**: Germanium
- **As**: Arsenic
- **Se**: Selenium
- **Br**: Bromine
- **Kr**: Krypton
- **Rb**: Rubidium
- **Sr**: Strontium
- **Y**: Yttrium
- **Zr**: Zirconium
- **Nb**: Niobium
- **Mo**: Molybdenum
- **Tc**: Technetium
- **Ru**: Ruthenium
- **Rh**: Rhodium
- **Pd**: Palladium
- **Ag**: Silver
- **Cd**: Cadmium
- **In**: Indium
- **Sn**: Tin
- **Sb**: Antimony
- **Te**: Tellurium
- **I**: Iodine
- **Xe**: Xenon
- **Cs**: Cesium
- **Ba**: Barium
- **La**: Lanthanum
- **Hf**: Hafnium
- **Ta**: Tantalum
- **W**: Tungsten
- **Re**: Rhenium
- **Os**: Osmium
- **Ir**: Iridium
- **Pt**: Platinum
- **Au**: Gold
- **Hg**: Mercury
- **Ti**: Titanium
- **Pb**: Lead
- **Bi**: Bismuth
- **Po**: Polonium
- **At**: Astatine
- **Rn**: Radon
- **Fr**: Francium
- **Ra**: Radium
- **Ac**: Actinium
- **Pa**: Protactinium
- **U**: Uranium
- **Np**: Neptunium
- **Pu**: Plutonium
- **Am**: Actinium
- **Cm**: Curium
- **Bk**: Berkelium
- **Cf**: Californium
- **Es**: Energium
- **Fm**: Mischmetal
- **Md**: Meitnerium
- **No**: Nihonium
- **Lr**: Lawrencium

### Additional Information

- **Atomic Number**: The number of protons in the nucleus of an atom.
- **IUPAC**: International Union of Pure and Applied Chemistry.