

HERAEUS GROUP

GERMANY – HONG KONG – USA – SWITZERLAND

HERAEUS HOLDING GMBH – GERMANY

LOCATION

Heraeus Holding GmbH – through its wholly owned subsidiary, Heraeus Precious Metals GmbH & Co KG – is the world's largest privately-owned precious metals refiner and fabricator.

Its international headquarters is in Hanau, about 25 km east of Frankfurt.

Gold refining and the manufacture of Heraeus bars are undertaken at 4 locations:

Germany	Heraeus Precious Metals GmbH & Co KG
Hong Kong	Heraeus Limited
USA	Heraeus Incorporated
Switzerland	Argor-Heraeus SA (an affiliated company)

OWNERSHIP

Heraeus Holding GmbH has been privately owned since its establishment in 1851.

ACCREDITATION

1958	London Bullion Market Association (LBMA)
1974	CME Group - Market Contract: COMEX
1982	Tokyo Commodity Exchange (TOCOM)

BACKGROUND

The company dates its formal origins to 1851 when Wilhelm Carl Heraeus (W. C. Heraeus) took over his father's "Unicorn Pharmacy" which had been established in Hanau in the 17th century.

In 1856, when he constructed the country's first platinum foundry, he was recognized as the "father" of the German platinum industry.

Over the past 150 years, Heraeus – still privately owned by the Heraeus family – has grown into a global company with over 350 R&D employees in 25 development centres around the world producing the innovations that are the hallmark of Heraeus. In total, there are 12,900 employees (2010) operating in more than 120 subsidiary or affiliated companies.

Although gold refining and bar manufacture have always taken place in Hanau, bars are also manufactured by its refineries in Hong Kong and the USA, and by its affiliated company, Argor-Heraeus SA, in Switzerland.

The company focuses on the manufacture and marketing worldwide of precious metals products and applications, including dental materials and equipment, quartz glass, sensors, and laboratory and medical equipment.

Apart from gold, Heraeus refines platinum group metals and silver, producing bars and many products for the platinum group metal and silver industries.



Heraeus has been associated with the refining of precious metals for more than 150 years.



The company was authorised to manufacture London Good Delivery 400 oz bars in 1958.



Kilobars are manufactured to a fineness of 995 and 999.9 for the international market.



GOLD SERVICES

Heraeus Precious Metals GmbH & Co KG focuses on:

- (1) Gold refining and the recycling of scrap
- (2) Gold products for the jewellery industry
- (3) Gold products for the electronics and decorative industries
- (4) Gold products for the dental industry
- (5) Gold medals and coins
- (6) Gold bars

GOLD REFINING AND RECYCLING OF SCRAP

The company normally accepts the following gold-bearing materials for refining to specified purities up to 999.9:

- Semi-refined bullion
- Mine doré: predominantly gold
- Mine doré: predominantly silver
- Electrolytic slimes: derived from copper
- Electrolytic slimes: derived from silver
- Precipitated gold slimes
- Loaded carbon
- Old jewellery
- Jewellery manufacturers scrap
- Dental scrap
- Old coins and medals

Gold refining methods include pyrometallurgical chlorination, wet chemical chlorination (aqua regia and chlorine gas), electrolysis, wet chemical parting, solvent extraction, cupellation and ion exchange.

Annual gold refining capacity worldwide is recorded at 400-500 tonnes.

GOLD BARS

A standard range of 5 cast bars and 13 minted bars.

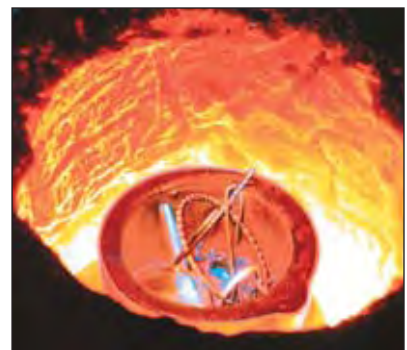
- Cast: 400 oz, 1000 g, 500g, 250 g, 100 g
- Minted: 1 g – 100 g, 1 oz (7 bars)
- Kinebars® : 1 g – 20 g, 1 oz (6 bars)

The kinebars® bear the stamps of Argor-Heraeus SA, but are issued in packaging under the name of Heraeus for distribution in Germany.

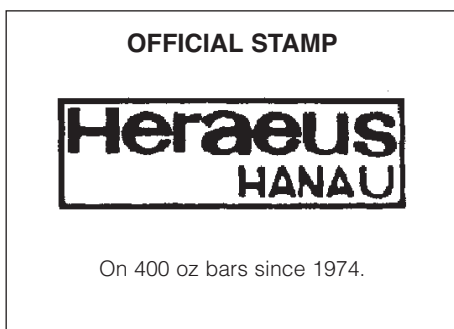
The company also manufactures bars weighing approximately 12.5 kg for fabricators.



Heraeus operates gold refineries in Germany, Hong Kong and the USA, and is a major shareholder of Argor-Heraeus (Switzerland).



Melting old gold scrap.



GOLD BARS – TECHNICAL DESCRIPTION

Weight	Type	Fineness	Shape	Dimensions mm	First Made	Serial Number System*	System Introduced
400 oz	Cast	995+, 999.9	Rectangular	245 x 82 x 34 230 x 60 (base)	1962	Letter Plus 5 numbers Plus year date	1962*
1000 g	Cast	995, 999.9	Rectangular	116.5 x 51.0 x 9.5	1995	Letter Plus 4 numbers	1995
500 g	Cast	995,999.9	Rectangular	91.0 x 41 x 7.6	1995	Letter Plus 4 numbers	1995
250 g	Cast	999.9	Rectangular	50.0 x 30.5 x 9.0	1995	Letter Plus 4 numbers	1995
100 g	Cast	999.9	Rectangular	44.0 x 26.0 x 4.5	2008	2 Letters Plus 4 numbers	2008
100 g	Minted	999.9	Rectangular	49.65 x 28.45 x 3.85	2001	6 numbers	2011
50 g	Minted	999.9	Rectangular	49.65 x 28.45 x 1.95	2001	6 numbers	2011
20 g	Minted	999.9	Rectangular	40.4 x 23.3 x 1.3	2001	6 numbers	2011
10 g	Minted	999.9	Rectangular	31.5 x 18.5 x 1.05	2001	6 numbers	2011
5 g	Minted	999.9	Rectangular	23.0 x 14.0 x 0.95	2001	6 numbers	2011
1 g	Minted	999.9	Rectangular	15.0 x 8.7 x 0.5	2001	6 numbers	2011
1 oz	Minted	999.9	Rectangular	40.4 x 23.3 x 1.75	2001	6 numbers	2011
20 g**	Kinebar®	999.9	Rectangular	40.5 x 23.4 x 1.3	1994	-	-
10 g	Kinebar®	999.9	Rectangular	31.6 x 18.6 x 1.05	1994	-	-
5 g	Kinebar®	999.9	Rectangular	23.1 x 14.1 x 0.95	1994	-	-
2 g	Kinebar®	999.9	Rectangular	19.15 x 11.55 x 0.55	1994	-	-
1 g	Kinebar®	999.9	Rectangular	15.1 x 8.8 x 0.5	1994	-	-
1 oz	Kinebar®	999.9	Rectangular	40.5 x 23.4 x 1.75	1994	-	-

Source: Heraeus Precious Metals GmbH & Co KG * Serial numbers for 1000 g, 500 g and 250 g bars have been applied sequentially since 1995. ** The 6 kinebars® bear the stamps of Argor-Heraeus SA – first made in 1994.

HISTORY OF GOLD BAR MANUFACTURE

Although gold refining dates back to 1856, historical information on bar manufacture is limited, due mainly to the destruction of archives during the Second World War.

In 1958 (est), the company issued 3 cast bars: 1000 g, 500 g and 250 g, together with 4 minted bars: 100 g, 50 g, 20 g and 10 g.

In 1962, although Heraeus had been accredited to the London Gold Market since 1958, 400 oz bars were introduced.

In 1977, 5 g minted bars were launched, followed by 1 g bars (1981).

Over the period 1984-1988, 1 g bars were also issued with a diverse range of decorative designs on their reverse side.

In 1994, the kinebar® range (1 g – 20 g, 1 oz) was introduced.

In 1995, the dimensions of its small cast bars (1000 g, 500 g and 250 g) were changed, as well as two minted bars (20 g and 10 g). In 2001, the dimensions of all its minted bars were changed.

In 2008, 100 g cast bars were issued.

In 2011, the company modified the “hand-with-roses” official stamp and the positioning of some words on bars, 1000 g and less. In addition, a serial numbering system was applied to minted bars, and new packaging was introduced that includes an assay certificate.



The company modified the dimensions of its 1000 g, 500 g and 250 g cast bars in 1995.



TRADE COMMUNICATION

Enquiries by gold dealers and industrial customers should be directed to:

Trading Department (Heraeus Metallhandel GmbH)

Tel: +49-6181-35 2750
Fax: +49-6181-35 9444
Email: edelmetallhandel@heraeus.com
tradinghu@heraeus.com

Website: www.heraeus-trading.com

Refining Department of Heraeus Precious Metals GmbH & Co KG

Tel: +49-6181-35 5645
Fax: +49-6181-35 4739
Email: thomas.trin@heraeus.com

Chemical Department of Heraeus Precious Metals GmbH & Co KG

Tel: +49-6181-35 5689
Fax: +49-6181-35 5914
Email: eric.scholl@heraeus.com

Bonding Wire Department of Heraeus Materials Technology (HMT) GmbH & Co KG

Tel: +49-6181-35 5591
Fax: +49-6181-35 5179
Email: juergen.dick@heraeus.com

Websites: www.heraeus.com and www.precious-metal.com

Correspondence address for all departments in Hanau:

Heraeus Precious Metals GmbH & Co KG
Heraeusstrasse 12-14
63450 Hanau
Germany



The company's international precious metals trading desk in Hanau.



Manufacturing blanks for minted bars.



Heraeus has issued small gold bars since the 1950s.

Kilobars can be stamped either "Feingold" or "Fine Gold".



Minting the blanks into gold bars.



EXAMPLES OF GOLD BARS



1000 g



500 g



100 g



Heraeus gold bars are available to investors in many countries.





100 g



50 g



20 g



10 g



1 oz

New packaging, which includes an assay certificate, was introduced in 2011.



Obverse



Reverse

10 g kinebar®



HERAEUS LIMITED – HONG KONG

LOCATION

Heraeus Limited, a major gold refiner and bar manufacturer, has its headquarters in Hong Kong, at Fanling in the New Territories.

Gold refining and the manufacture of bars and other precious metal products take place in Fanling.

OWNERSHIP

Heraeus Limited is wholly owned by Heraeus Precious Metals GmbH & Co KG whose international headquarters are in Hanau, Germany.

ACCREDITATION

- 2006 London Bullion Market Association (LBMA)
- 1989 CME Group - Market Contract: COMEX
- 1999 The Chinese Gold & Silver Exchange Society, Hong Kong
- 2006 Dubai Multi Commodities Centre (DMCC)

BACKGROUND

Heraeus Limited traces its origins in Hong Kong to Pacific Platers Ltd (established 1974) and Zenith Refinery Ltd (established 1975), which became subsidiaries of Heraeus Pacific Ltd in 1982, and wholly owned in 1985. Heraeus Pacific Ltd, renamed Heraeus Limited in 1986, had been established in Hong Kong to service the extensive gold jewellery and bar markets in South East Asia.

The original refinery had been established in Kwun Tong by Zenith Refinery Ltd in 1974. In 1994, Heraeus relocated the refinery to Fanling.

Sales offices have been located in Singapore since 1985, and in Manila since 1986. Other important Heraeus group companies are in Shanghai (Heraeus Materials Technology Shanghai Ltd) in Singapore (Heraeus Materials Singapore Pty Ltd) and South Korea (Heraeus Oriental Hi Tech Co Ltd), as well as in Japan (Heraeus KK).

Apart from gold, the company refines silver, platinum, palladium, also providing bars and other products for the platinum, palladium and silver industries.

Number of employees: 138

GOLD SERVICES

Heraeus Limited focuses on:

- (1) Gold refining and the recycling of scrap
- (2) Gold products for the jewellery industry
- (3) Gold products for the electronic industry
- (4) Gold products for the decorative industry
- (5) Gold bars

GOLD REFINING AND RECYCLING OF SCRAP

The company normally accepts the following gold-bearing materials for refining to specified purities up to 999.9:



Heraeus Limited was established in 1986, although its origins in Hong Kong date back to 1974.



Kilobars are manufactured to a fineness of 995, 999.9 and 999.99 for the international market.



The company's 400 oz bars have been accepted as London Good Delivery since 2006.



- Semi-refined bullion
- Mine doré: predominantly gold
- Mine doré: predominantly silver
- Electrolytic slimes: derived from copper
- Electrolytic slimes: derived from silver
- Precipitated gold slimes
- Old jewellery
- Jewellery manufacturers scrap
- Electronic scrap
- Dental scrap
- Old coins and medals
- Plating solutions

Gold refining methods include wet chemical chlorination (aqua regia), electrolysis and wet chemical parting.

Sources of gold-bearing material is mainly from Asia and Asia-Pacific including Hong Kong, China, Indonesia, Philippines, Singapore, Australia and New Zealand.

Annual gold refining capacity is approximately 200 tonnes.

GOLD BARS

A standard range of 5 cast bars: 400 oz, 1000 g, 10 tola, 5 tael (two versions).

TECHNICAL DESCRIPTION

Weight	Type	Fineness	Shape	Dimensions mm	First Made	Serial Number System	System Introduced
400 oz	Cast	995+	Rectangular	255 x 85 x 35 235 x 65 (base)	2006	2 letters Plus 4 numbers Plus year date	2006
1000 g	Cast	995	Rectangular	104 x 51.5 x 10	1986	Letter Plus 5 numbers	1986
1000 g	Cast	999.99	Rectangular	109 x 50 x 10	2005	Letter Plus 5 numbers	2005
1000 g	Cast	999.9	Rectangular	109 x 50 x 10	2005	Letter Plus 5 numbers	2005
10 tola	Cast	999	Rectangular	44.5 x 24.5 x 5.5	1986	-	-
5 tael	Cast	999.9	Rectangular	79.5 x 21.5 x 6.5	1986	-	-
5 tael*	Cast	99	Rectangular	79 x 21 x 6.5	2002	-	-

Source: Heraeus Ltd * 5 tael bars accredited to The Chinese Gold & Silver Exchange Society, Hong Kong.

Serial Numbering Systems

400 oz: Letters "GA" plus 4 numbers. Sequential since their launch in January 2006.

1000 g: If 999.9 purity: Letter "H" plus 5 numbers. If 995 purity: Letter "B" plus 5 numbers. If 999.99 purity: Letter "C" plus 5 numbers. The numbers are sequential since their launch. Over time, a bar may have the same numbers as an historical bar.



Manufacturing kilobars at the company's large refinery in Fanling.

OFFICIAL STAMP



On 400 oz bars issued under the name of Heraeus Limited, since 2006.



HISTORY OF GOLD BAR MANUFACTURE

Heraeus Limited launched 3 cast bars in 1986: 1000 g, 10 tola and 5 tael.

In 2002, the company was authorised by The Chinese Gold & Silver Exchange Society to produce 5 tael cast bars that also incorporate approved Exchange Society stamps.

In 2005, 1000 g bars with a millesimal purity of 999.99 were launched. Although this high purity gold is produced in irregular forms and shapes for industrial customers by several accredited refiners, Heraeus Ltd is understood to be the first to issue a standard rectangular bar with precise dimensions at 999.99 purity.

In 2006, London Good Delivery “400 oz” bars were manufactured for the first time.

TRADE COMMUNICATION

Enquiries by gold dealers and industrial customers should be directed to the company’s headquarters in Hong Kong.

Heraeus Limited
 30 On Chuen Street
 On Lok Tsuen
 Fanling
 New Territories
 Hong Kong

Tel: +852-2675 1200
 Fax: +852-2682 3220
 Email: Heraeus@heraeus.com.hk

Website: www.heraeus.com.hk



Refined gold sponge.

EXAMPLES OF GOLD BARS



5 tael



10 tola



1000 g



HERAEUS INCORPORATED – USA

LOCATION

Heraeus Incorporated has its headquarters in New York.

Gold refining and the manufacture of bars and other precious metal products take place at Newark (New Jersey).

OWNERSHIP

Heraeus Incorporated is wholly owned by Heraeus Precious Metals GmbH & Co KG whose international headquarters are in Hanau, Germany.

ACCREDITATION

1989 CME Group - Market Contract: COMEX

BACKGROUND

Although Heraeus Incorporated was established in 1986, the Heraeus group has been active in North America since 1903 when it acquired a substantial shareholding in an important precious metals company, Baker & Co. This company was managed by Charles Engelhard, founder of the Engelhard group and brother-in-law of Dr Wilhelm Heraeus, head of the Heraeus group at that time.

The company's gold refinery was opened in Newark (New Jersey) in 1989.

Apart from Newark, the company has manufacturing plants in Conshohocken (Pennsylvania) and Chandler (Arizona). Since 2000, it has also refined platinum group metals at Heraeus Metals Processing in Sante Fe Springs (California).

The company also refines silver. It has access to the comprehensive range of gold, silver and platinum group metal products manufactured by the Heraeus group of companies worldwide.

Number of employees: 1,800

GOLD SERVICES

Heraeus Incorporated focuses on:

- (1) Gold refining and the recycling of scrap
- (2) Gold products for the jewellery industry
- (3) Gold products for the electronics industry
- (4) Gold bars

GOLD REFINING AND RECYCLING OF SCRAP

The company normally accepts the following gold-bearing materials for refining to specified purities up to 999.9:

- Semi-refined bullion
- Mine doré: predominantly gold
- Mine doré: predominantly silver
- Precipitated gold slimes
- Loaded carbon
- Old jewellery
- Jewellery manufacturers scrap
- Electronic scrap
- Dental scrap
- Old coins and medals



Heraeus Incorporated opened its refinery in Newark in 1989.



The company manufactures kilobars to a fineness of 999.9.



Gold granules for the jewellery industry.



Gold refining methods include electrolysis.

GOLD BARS

One standard cast bar: 1000 g.

GOLD BARS – TECHNICAL DESCRIPTION

Weight	Type	Fineness	Shape	Dimensions mm	First Made*	Serial Number System	System Introduced
1000 g	Cast	999.9	Rectangular	110 x 48 x 10	1989	Letter Plus 5 numbers	1989

Source: Heraeus Incorporated

Serial numbering system

1000 g: Letter “E” plus 4 numbers. Sequential since their launch in 1989. Over time, a bar may have the same numbers as an historical bar.

HISTORY OF GOLD BAR MANUFACTURE

1000 g bars were first manufactured by Heraeus Incorporated in 1989. The bars incorporate the international official stamp of the Heraeus group which depicts a hand holding a bouquet of flowers. The serial numbering system has remained the same since 1989.

TRADE COMMUNICATION

Enquiries by gold dealers and industrial customers should be directed to the company’s headquarters in New York:

Heraeus Precious Metals Management

540 Madison Avenue, 16th Floor
 New York
 NY 10022
 USA

Tel: +1-212-752 2180
 Fax: +1-212-752 7141
 Email: hpm.sales@heraeus.com

Enquiries relating to gold refining should be directed to the refinery in Newark:

Heraeus Precious Metals Management

65 Euclid Avenue
 Newark
 NJ 07105-4527
 USA

Tel: +1-973-817 7878
 Fax: +1-973-578 2786
 Email: tradingus@heraeus.com

Website: www.heraeus.com



Heraeus Group minted bars range from 100 g to 1 g.



The same official stamp is applied worldwide to all gold bars, 1000 g and less, issued by Heraeus.

Refer to disclaimer on website: www.goldbarsworldwide.com

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