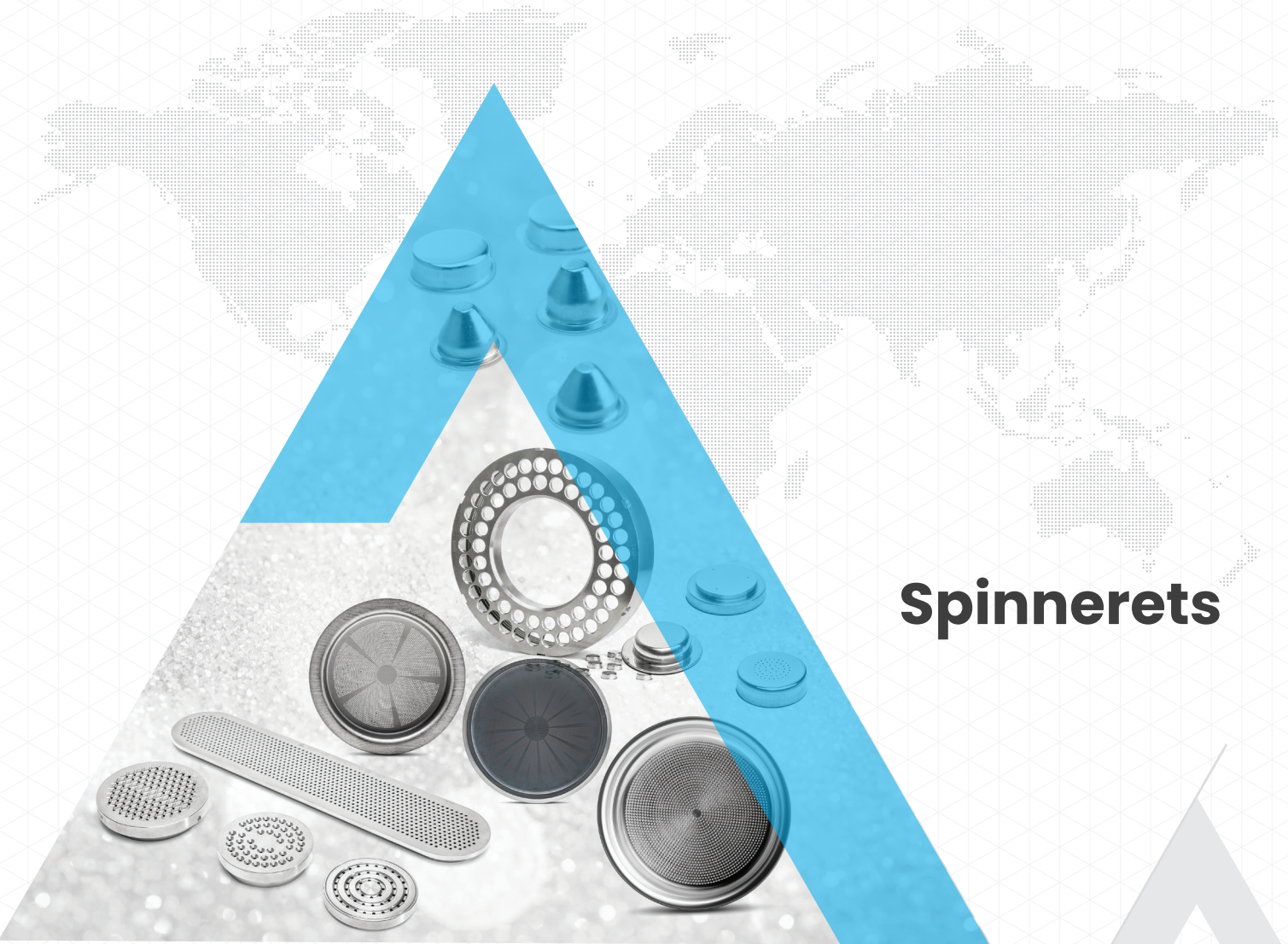




Hindustan Platinum



Spinnerets

Enriching everyday life
through precious metals!

Since 1961



State-of-the-art refinery and production facility located in Navi Mumbai



ENGINEERED PRODUCTS | REFINING SERVICES | CATALYST & CHEMICALS | ELECTRICAL CONTACTS | NITRO TECHNOLOGIES





Hindustan Platinum

About Hindustan Platinum

Established in 1961, Hindustan Platinum is a leading manufacturer and refiner of precious metal products and services that have a wide array of industrial applications. With an impressive legacy spanning over six decades, Hindustan Platinum is a specialist when it comes to refining precious metals and manufacturing precious metal products. We also provide a full spectrum of services that range from technical advisory to metal management.

Our drive for excellence, our perseverance to serve our customers' requirements, and our unflagging effort to build a global brand have enabled us to establish a customer base in over 50 countries across 5 continents. Supporting our global footprint are two subsidiaries in United Arab Emirates (UAE) and Puerto Rico.

- **Hindustan Platinum Private Limited, India**
- **Hindustan Platinum, DMCC, UAE**
- **Hindustan Platinum P.R. LLC, Puerto Rico**

We serve a diverse set of industries such as Oil Refining, Petrochemical, Pharmaceutical, Chemical, Agrochemical, Flavours & Fragrance, Fine & Bulk Chemicals, Fertilizer, Sodium Nitrite/Nitrate, Industrial & Defence, Caprolactam & Cyanide, Mining, Switchgear, Home Appliances, Automobile, Glass, Jewellery, Man-made Fibre, Research and Analytical Laboratories and others.

Over the years, we have honed our in-house capabilities and supply technologically advanced products and services to our clients. Today, our team of over 950 multi-cultural and diversified professionals is dedicated to developing innovative solutions that create value for our customers. The on-going production capacity expansion at our Navi Mumbai plant will further enable us to cater to the growing demand for our products and services across the world. Our manufacturing unit's proximity to major airports and seaports is another strategic advantage that enables us to better serve our global customers.

At Hindustan Platinum, we understand the responsibility of being a manufacturer's manufacturer and are committed to delivering excellence across our portfolio of offerings. We work with our global partners for new product development as well as for process engineering and value engineering projects. Our steady investment in R&D has allowed us to continuously innovate and hone our refining and manufacturing capabilities.

World-wide, we are among a handful of companies to be listed on the London Platinum and Palladium Market's (LPPM) Good Delivery List for Platinum and Palladium and on the London Bullion Market Association's (LBMA) Good Delivery List for Silver.

Industries We Serve

With an ambition to make a big difference to our customers' business, Hindustan Platinum serves a plethora of industries.



Research & Analytical Laboratories



Pharmaceuticals



Jewellery



Glass Fiber



Glass Industry



Man-made Fibre



Watch Industry






Engineered Products, Spinnerets – Introduction

Hindustan Platinum, a pioneer in production of precious metal spinneret in India has been serving the man-made fibre industry globally for over three decades. In addition to the manufacturing, the company also extends its service for repairing and refabrication of old and worn-out spinnerets regardless of the original makers or brands.

State-of-the-art Manufacturing Facility

Our manufacturing facility meets all the requirements of producing spinnerets of exact standards demanded by today's producers of man-made fibres. Our rich experience in the sophisticated process of production of spinnerets has helped us constantly in meeting the challenges created by an increasingly innovative industry striving to manufacture products with outstanding characteristics.

Hindustan Platinum has in-depth knowledge, command, and expertise in spinneret technology where precision, consistency and accuracy are constant benchmarks. Having a full in-house capacity for refining with an entire streamlined and controlled process, allows us the flexibility to work on customized designs, based on product-specific needs of the customer. When working on precious metal spinnerets, whether for a standard design or one specifically developed by our customer, we ensure that the metal or alloy used has the following characteristics:

-  **Extremely resistant to corrosion**
-  **Stable enough to continuously resist deformation**
-  **Recyclable**

Our Products

We Manufacture High Precision Custom-Made Spinnerets of Global Standards

- 1. Precious Metal Spinnerets for viscose staple fiber, filament, rayon and tyre cords yarn**
- 2. Cluster holders fitted with precious metal spinnerets for viscose staple fiber**
- 3. Tantalum filters used for viscose staple fiber and rayon filament**
- 4. Stainless Steel Cup Form and Ring Spinneret for acrylic fiber**

Hindustan Platinum spinnerets are characterized by high uniformity and offer hole diameter ranging from 40 μ and above with $\pm 1\mu$ tolerance and hole L/D ratio up to 2:1 with capillary length tolerance $\pm 10\mu$.



1. Precious Metal Spinnerets For Viscose Staple Fiber, Filament, Rayon And Tyre Cords

Gold, Platinum, and Rhodium are the basic components of alloy used for manufacturing spinnerets for wet spinning process. With fully integrated in-house manufacturing process, which starts with melting of virgin metal or used spinnerets, refining/rolling, heat treating, cup drawing from sheets etc. This process requires machines and tools of utmost precision, quality conscious and extensive know-how of advance and efficient manufacturing technique. At Hindustan Platinum, we constantly strive for innovation through technological advancement to take our precision to a higher level.

We are currently supplying spinnerets having holes as per customer requirement with hole diameter as low as 40 microns.

The Principle Alloys and their Mechanical Properties we work with:

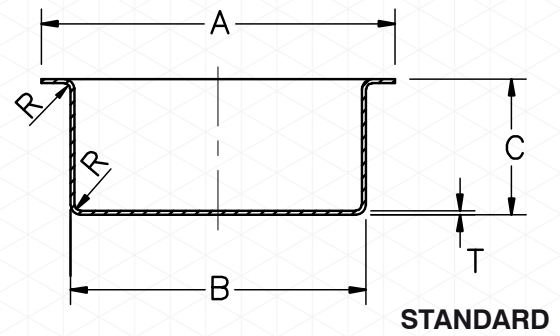
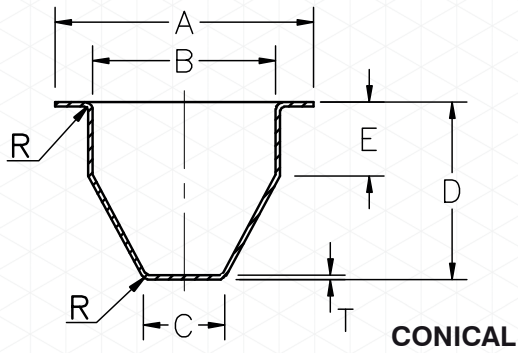
Alloy	HP - N31	HP - N51
Composition		
Gold	69.5%	49.5%
Platinum	30%	49.5%
Rhodium	0.5%	1%
Specific gravity (g/cm ³)	20	20.3
Vickers hardness (kg/mm ²)	200-240	185-200
Tensile strength (kg/mm ²)	40-60	85

In addition to the above-mentioned principle alloys, we also manufacture spinnerets in any composition on customer request.

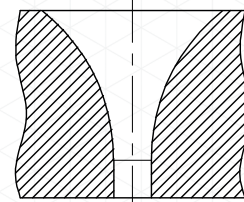
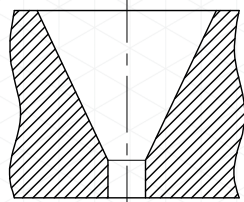
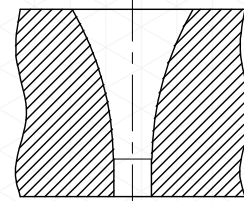
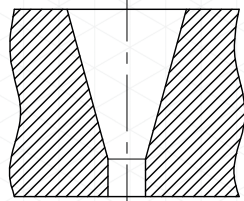
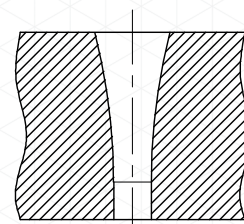
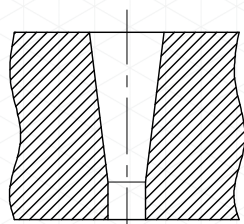




Typical Shape



Typical Hole Profile



CONICAL

HYPERBOLIC

Manufacturing Tolerance Parameter

Description	Parameter
Minimum capillary diameter	40 μ
Number of holes	As per requirement
Capillary diameter tolerance	$\pm 1 \mu$
Capillary length tolerance	$\pm 10 \mu$
L/D ratio	As per requirement



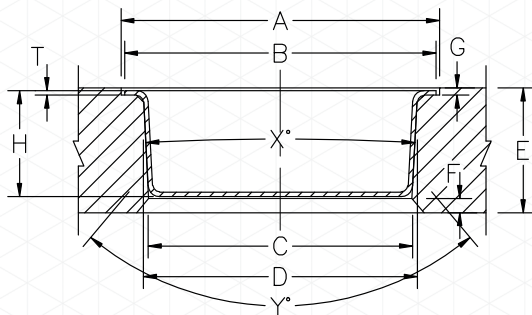


2. Cluster Holders

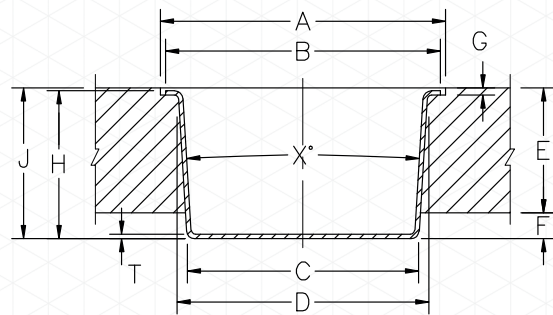
We supply special steel alloy Cluster Holders fitted with precious metal spinnerets for Viscose Staple Fibre used in wet spinning process. This tremendously saves the customer's investments into precious metals. Another advantage is easy replacement of individual eyes/thimbles instead of the entire spinnerets.



Typical Assembly



SUNKEN FITTING



RAISED FITTING



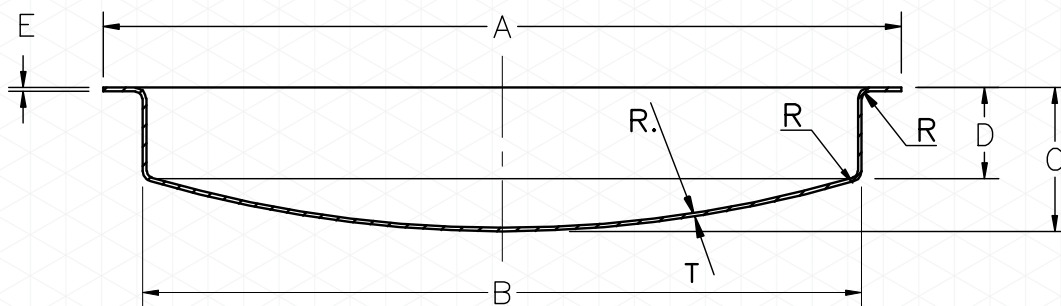


3. Tantalum Spinnerets For Wet Spinning

Tantalum is extremely resistant to corrosion and has superior hardness and workability. Hence, making it highly suitable for manufacturing spinnerets for certain wet spinning processes. The inherent properties of tantalum also give the spinnerets a longer operating life. They are used for production of acrylic fiber.

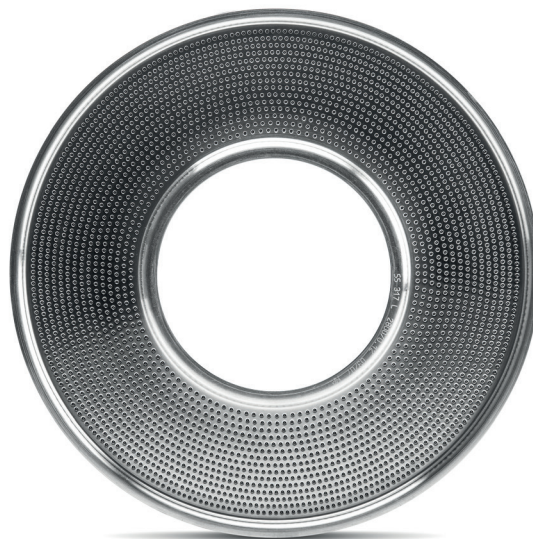


Typical Spinneret Shape

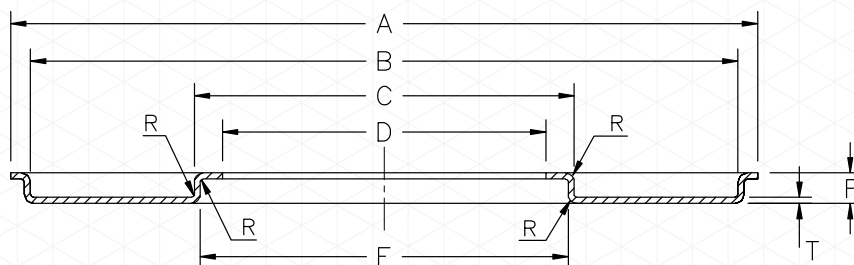


4. Stainless Steel Ring Type Spinnerets

These Spinnerets for acrylic Staple Fibre is used in dry spinning process. These can have upto 2800 holes with 50 microns hole diameter to produce acrylic staple fiber using the dry spinning process. Every spinneret, tailor-made to meet the customer's specifications, adheres to exceptionally narrow tolerances, with a diameter accurate to within half a micron.



Typical Ring Type Spinneret Shape



The market offers a wide range of steels suitable for manufacturing of spinnerets. The largely used materials are listed with their suitable SS grade, their composition, analysis, and mechanical properties.

Chart of Most Used Materials

AISI	304	316	316 Ti	329	430	431	630	
DIN	1.4031	1.4401	1.4571	-	1.4016	1.4057	1.4542	
ANALYSIS:								
C	0.08 max	0.08 max	0.08 max	0.06 max	0.12 max	0.20 max	0.07 max	0.05 max
Cr	18-20	16-18	16-18	25	16-18	15-17	15.5-17.5	14-16
Ni	8-10.5	10.14	10.14	5	-	1.25-2.50	3-5	5-7
Mo	-	2-3	2-3	1.5	-	-	-	0.5-1
Cu	-	-	-	-	-	-	3.5	1.25-1.75
Ti	-	-	5 x C min	-	-	-	-	-
Cb/Ta	-	-	-	-	-	-	5 x C min	8 x C min
MECHANICAL PROPERTIES:								
Density	7.9	7.95	7.95	7.8	7.7	7.7	7.75	7.75
Yield strength Hg/mm ²	20	21	23	50	27.5	60	80-130	65-130
Tensile strength Hg/mm ²	50-60	50-65	50-65	70	50-65	80-140	86-140	99-130
Elongation (min) %	50	40	40	30	20	14	14-22	14-24
Reduction (min) %	60	50	50	55	60	45	52-66	48-66
Impact (min) kgm	8.60	8.60	8.60	8	-	3.0	2.2-13.8	2.5-9.7
Hardness HB solution annealed	130-180	130-180	130-190	200-220	130-170	250-275* [26-28 AC]	270-290* [28-30 RC]	270-290* [28-30 AC]
Hardness (max) HB	130-180	130-180	130-190	-	130-170	450 [48RC]	450 [48RC]	450 [48AC]
Magnetizable	-	-	-	yes	yes	yes	yes	yes





Service of Used and Worn Out Spinnerets

In addition to manufacturing, Hindustan Platinum repairs and refabricates old and worn out spinnerets, regardless of the original maker.

Although spinnerets formed of platinum and gold alloy are comparatively durable, it may be maintained over prolonged usage. However, it is important to eliminate replacement of new spinnerets as much as possible. Even spinnerets manufactured from the metals which are acknowledged as the most suitable, at times become unfit for use, due to defects developed after prolonged use. The pressure required to force the viscous cellulosic solution through the minute hole in the base of respective spinnerets causes the bent, otherwise distorted. Furthermore, incrustations formed around the edges of the orifices decreases the respective diameters thereof and in many instances the orifices become completely closed. Closing of certain of the orifices results in the production of a fiber, which varies from the initially formed fiber. Hence, making it necessary to remove and replace such clogged or partially clogged spinnerets.





Our Commitments

Employees' Health and Safety

At Hindustan Platinum, managing health, safety, and enterprise risk is a core responsibility.

As a Member of the British Safety Council, Hindustan Platinum has pledged to keeping people safe and healthy at work. We have always strived to integrate health, safety, and risk management in our corporate strategies, business practices, workplace culture, and employee behaviour. We see adherence to health and safety norms as a leading indicator of our overall business and operational performance





Accreditations and Certifications:

Over six decades, Hindustan Platinum has grown from being a quality precious metals refiner and fabricator to a comprehensive solution provider. In our unceasing endeavour to innovate, we have invested deeply in R&D to enhance our refining, manufacturing, and analytical capabilities.

1. NABL



Our Analytical Testing Laboratory has been recognised as NABL Accredited Testing Laboratory vide Certificate Number TC-8930. This accreditation enables us to issue test certificates with ILAC MRA Mark for high-purity Platinum, Palladium, Gold and Silver.

#1 NABL - National Accreditation Board for Testing and Calibration Laboratories, is a Constituent Board of Quality Council of India. ILAC MRA Mark is registered as a worldwide mark and is owned by the International Laboratory Accreditation Cooperation (ILAC).

2. London Good Delivery

Our Navi Mumbai refinery is among a select list of refiners on the London Platinum and Palladium Market (LPPM) Good Delivery list for Platinum and Palladium and on the London Bullion Market Association (LBMA) Good Delivery list for Silver.





3. ISO Accreditations

All Businesses

Bureau Veritas Certification



Hindustan Platinum Pvt. Ltd.
हिंदुस्तान प्लैटिनम प्रायवेट लिमिटेड

Corporate Office
VIOS Tower, 22nd Floor, New Cuffe Parade, Off Eastern Freeway,
Wadala, Mumbai - 400 037, India.

Manufacturing Plant
C 122, TTC Industrial Area, Pawane, Navi Mumbai - 400 703, India.

This is a multi-site certificate, additional site(s) are listed on the next page(s)

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above Organisation has been audited and found to be in accordance with the requirements of the Management System Standard detailed below.

Standard
ISO 9001:2015
Scope of certification

Refiners and manufacturers of precious metal products made of Ruthenium, Rhodium, Palladium, Silver, Iridium, Platinum, Gold and its alloy and services for industrial applications

- Refining and recovery of precious metals from spent of various chemical and industrial applications
- Develop, manufacture and sale of precious metals based heterogeneous & homogeneous catalysts, salts and their solutions for diverse chemical applications
- Manufacture and sale of precious metals based engineered products mainly spinnerettes, cup, cluster holder, bushing, thimbles, granules, rings, bars, etc.
- Design, manufacture and supply of platinum gauzes, getter and supporting screens
- Design, manufacture and sale of electrical contacts like solid & bimetal rivets, profile contacts, brazing foils, contact assemblies, wires and strips

Original cycle start date: 06 July 2010
Expiry date of previous cycle: 18 December 2022
Recertification Audit date: 23 January 2023
Recertification cycle start date: 03 May 2023

Subject to the continued satisfactory operation of the Organisation's Management System, this certificate is valid until: 18 December 2025
Certificate No. IND.23.5096/QM/U Version: 1 Issue date: 03 May 2023

For certificate authenticity, click here <https://certcheck.ukas.com/>

ISO 9001 IN643326

Signed on behalf of BVCH SAS UK Branch
Jagdish N. MANIAN
Director - CERTIFICATION, South Asia
Commodities, Industry & Facilities Division

Certification body address: 5th Floor, 95 Prescot Street, London, E1 9HG, United Kingdom.

Local office: Bureau Veritas (India) Private Limited (Certification Business)
72 Business Park, Marol Bhayander East, MIDC Cross Road 1st,
Andheri (East), Mumbai - 400 093, India.

Further certifications regarding the scope of this certificate and the applicability of the management system requirements may be obtained by consulting the organisation.
To check this certificate validity please call + 91 22 6274 2000.

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Bureau Veritas Certification



Hindustan Platinum Pvt. Ltd.
हिंदुस्तान प्लैटिनम प्रायवेट लिमिटेड

Standard
ISO 9001:2015
Scope of certification

SITE	ADDRESS	SCOPE
Corporate Office	VIOS Tower, 22nd Floor, New Cuffe Parade, Off Eastern Freeway, Wadala, Mumbai - 400 037, India.	Procurement, Sales and Services of following businesses - Refining Services - Chemical and Catalyst - Nitro Technologies - Engineered Products - Electrical Contacts and R & D of Nitro Technologies
Refining Services Unit	C 122, TTC Industrial Area, Pawane, Navi Mumbai - 400703, India.	Refining and recovery (Reclamation) of precious metals from spent catalyst / chemical from various industries (Mainly from Pharma, Petrochemical, Agro, Speciality chemicals, Mining and Jewellery etc.)
Catalyst & Chemical Division	C 122, TTC Industrial Area, Pawane, Navi Mumbai - 400703, India.	Develop and manufacture of Catalysts (Heterogeneous and Homogeneous), Salts and Salts Solutions of various industrial applications.
Precious Metal Engineered Products	C 122, TTC Industrial Area, Pawane, Navi Mumbai - 400703, India.	Manufacture and Sale of precious metals based engineered products mainly spinnerettes, cups, cluster holder, bushing, thimble, granules, rings, bars etc.
Nitro Technologies	C 122, TTC Industrial Area, Pawane, Navi Mumbai - 400703, India.	Design, manufacture and supply of: 1. Platinum alloy catalyst gauzes / systems 2. Palladium alloy getter / catchment 3. Catalyst systems supporting / separator screens
Electrical Contact Division	C 122(C-154), TTC Industrial Area, Pawane, Navi Mumbai - 400703, India.	Design, manufacture and sale of silver and silver alloy: 1) Solid and bimetal rivets 2) Profile contacts 3) Contacts on carriers 4) Wires 5) Brazing foils and wires

Certificate No. IND.23.5096/QM/U Version: 1 Issue date: 03 May 2023

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We are committed to create value for our customers





Responsible. Sustainable

Hindustan Platinum is more than just a business. It is a socially responsible business committed to positively impacting the environment and community. We believe that the world belongs to every living being. It is our duty to protect and nourish it for future generations.

One of the key elements of our Mission statement is “Protecting the environment and community by striving for zero waste”. We have pledged to implement sustainable business practices by embracing clean energy

We consistently work towards developing and adopting solutions that are better for our planet. Over time, our constant efforts have brought us closer to our goals of becoming energy-positive and achieving zero-waste across our business units. Through investments in wind farms and solar parks, we generate more energy than we consume. In addition to meeting strict environmental regulations our R&D team strives endlessly to improve processes, with a particular focus on increasing water and energy conservation.

Our commitment to clean energy and zero waste can be seen in our fully integrated effluent treatment plant, root zone system, rainwater harvesting facility, organic waste converter as well as stringent air-quality control and waste liquid neutralization processes.

We are dedicated to the social wellbeing of the community, especially the development of weaker and under privileged sections of the society. Various initiatives by Hindustan Platinum and its associate foundation - Choksi Charity Foundation focus on health care and sanitization, education, women’s empowerment, building facilities for senior citizens, environmental sustainability, promotion and protection of art & culture, sports, rural development, and disaster relief.





Hindustan Platinum

Industries We Serve

Products We Make

Electroplating industry

Precious metal salts and solutions

Fertiliser, industrial & defense explosives, Caprolactam and cyanide manufacturers gauzes

Platinum/Rhodium catalyst

Palladium alloy catchment gauzes

Glass fiber and glass wool industries

Platinum/Rhodium alloy bushings Spinner baskets

Glass and optical glass industries

Platinum/Rhodium alloy stirrers Thimbles, orifice rings, liners, etc

Man-made fiber industries

Precious metal spinnerets cluster spinnerets Tantalum filters Stainless steel spinnerets

Pharmaceutical and chemical industries

Precious metal salts supported and unsupported catalysts

Research and analytical laboratories

Platinum laboratory apparatus

Steel and glass industries

Platinum and Platinum/Rhodium Thermocouple wires Throwaway tips

Switchgear, control gear, automobile, spacecraft, elevator and home appliance industries

Electrical contacts

Oil refineries, petrochemical industry and all other industries

Recovery and refining of precious metals from industrial scrap

Jewellery Industry

Supplier of Pt 950 granules in composition of Palladium, Cobalt, Copper, Ruthenium, Iridium etc.

Supplier of Pt 950 Chain in roll, Pt 950 Blanks/Rings and other Pt 950 allied products for jewellery industries.





Hindustan Platinum

Hindustan Platinum Pvt. Ltd.

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www.hp.co.in