

Carbon Neutral, Clean Energy

Hydrogen Production & Ammonia Cracking



Heesung Catalysts

Founded in 1983, Heesung Catalysts is a leading catalyst specialist delivering eco-friendly, catalyst-based solutions that help customers enhance productivity and competitiveness across multiple industries.

Technology for a Sustainable Future

Our catalyst technologies reduce harmful emissions and greenhouse gases while improving energy efficiency in industrial processes. By optimizing catalysts for specific reaction conditions, we help customers meet environmental regulations, achieve ESG goals, and transition toward carbon neutrality.

Integrated Solutions with Proven Expertise

We manage the full catalyst lifecycle—from development and mass production to application and performance analysis—using real industrial data. This enables continuous technology advancement and creates a virtuous cycle that drives next-generation products and process innovation.

Trusted Partnership & Circular Value Creation

Through long-term collaborations with leading companies, we deliver customized design, joint development, and mass production capabilities. In addition, our precious metal recovery and recycling services further contribute to a circular economy.

From Catalyst to Solution — partnering for sustainability and growth.

Business Areas



Chemical Catalysts

Process & Chemical catalysts
Carbon-neutral & clean energy catalysts



Environmental Catalysts

GHG reduction catalysts
Industrial catalysts



Automotive Catalysts

Vehicle emission control catalysts



Electrode Catalysts

Fuel cells,
Water electrolysis, MEA



Precious Metal Materials

Electroplating materials,
Dental materials

Vision & Core Values



VISION

Catalyst-based
green technology leader
enabling a carbon-free society



Core Values

Harmony



Collaboration



Challenge



Carbon Neutral, Clean Energy

H₂ Production Catalysts

Hydrogen as a Future Energy Source

- A clean and sustainable energy source with the potential to replace fossil fuels.

Hydrogen Value Chain Catalysts & Solutions

- Grey/Blue Hydrogen: Catalysts for fuel reforming systems
- Green Hydrogen: Catalysts for water electrolysis
- Hydrogen Utilization: Catalysts for fuel cells

Fuel Reforming Catalysts for Hydrogen Production

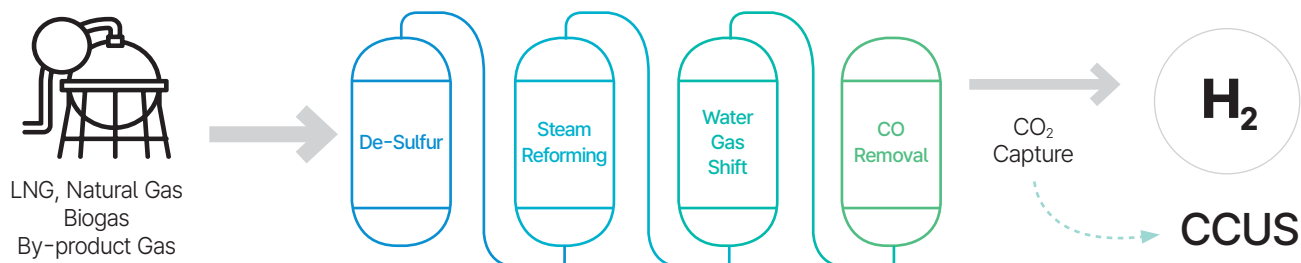
- Catalysts for hydrogen production via reforming of LNG, biogas, and off-gases.

HCC Hydrogen Production Catalysts

- We contribute to the expansion of a stable hydrogen supply infrastructure by supplying high-performance, process-optimized hydrogen production catalysts.

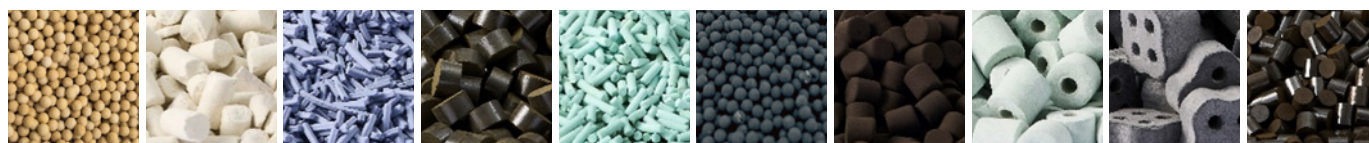


Fuel Reforming System



Hydrogen Production Catalyst Portfolio

Process	Desulfurization				Reforming				WGS	CO Removal
	High Temp.			Room Temp.	Pre-reforming	Reforming	Dry Reforming	Catalytic Partial Oxidation	Low Temp. Shift	Preferential Oxidation
Reaction	Hydro desulfurization	Adsorption	High Adsorption	Adsorption						
Catalyst	TAS-3900, NDS-40	DSZ-90	USR-406	DS1112	N-40R	NC Series, CATFORM Series	NC Series	N-952	COR Series	AR-100
Type	Pt Co-Mo	ZnO	Cu	Cu, Mn	Ni	Ni, Ru	Ni	Ni	Cu-Zn	Ru
Operating Temperature	280~ 350°C			RT	> 450°C	650~900°C	> 800°C	> 700°C	200~260°C	80~130°C



Carbon Neutral, Clean Energy

Ammonia Cracking Catalysts

Ammonia : A Key Enabler for Carbon-Neutral Transition

- The most efficient energy carrier for hydrogen storage and transportation

Advantages of Ammonia for Hydrogen Transport

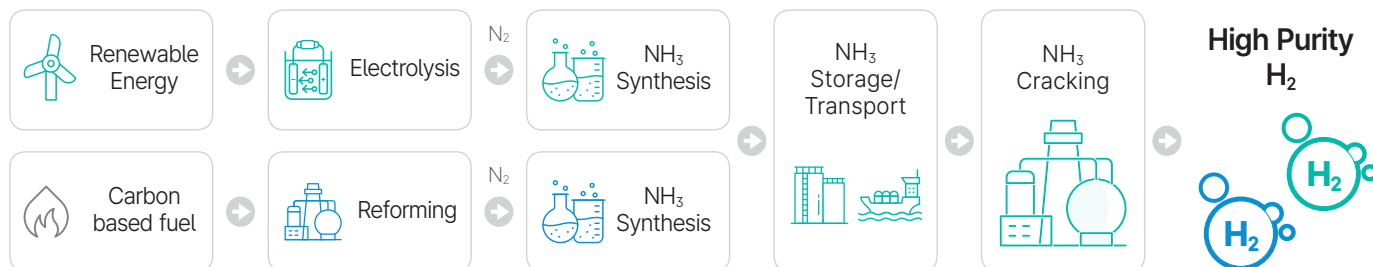
- Utilization of existing infrastructure
- High hydrogen storage density
- Easy liquefaction under ambient conditions
- Carbon-free fuel

Application Areas

- Marine power generation
- Onshore plants
- Fuel cells for green hydrogen applications



Ammonia-Based Energy Value Chain

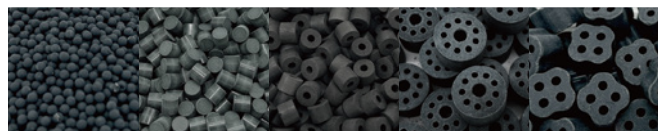


Ammonia Cracking Product Portfolio

Comprehensive NH₃ cracking process and catalyst product lineup

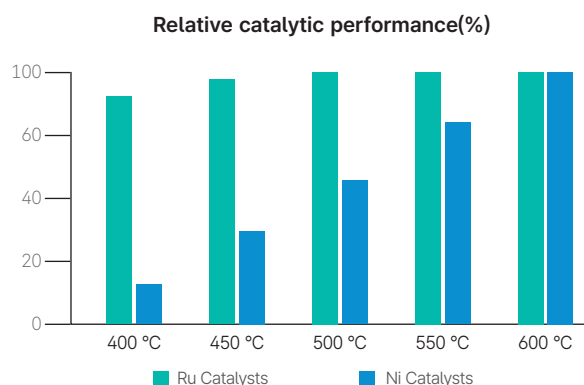
	Operating Temperature	Type	Size
Low Temperature	400~600°C	Ru Catalyst	Pellet Sphere 1-Hole
High Temperature	600~800°C	Ni Catalyst	4-Hole 10-Hole

1~20mm



Ammonia Cracking Catalyst Performance

Catalyst selection tailored to specific process conditions



Go Together with Heesung Catalysts

Building a sustainable future together with Heesung Catalysts

Quality Competitiveness	 Quality 5-Star First in Korea to receive the Grand 5-Star Certification for Automotive Catalysts	 Certifications ISO, KOLAS, OSHA, GMP and other accredited certifications	 Facilities Global Top-Tier production and R&D facilities	 Commercial Track Record 40+ years of accumulated global business experience
Cost Competitiveness	 Customs / Tariff Advantage Approx. 6.6% reduction in import duties	 Manufacturing Efficiency Optimized infrastructure and operational efficiency CAPEX and OPEX improvement	 Delivery Shortened lead time Improved supply stability	 Recycling Precious metal recovery through Heesung PMTech
Technical Support	 R&D Center World-class research centers	 R&D Continuous technology development and improvement	 Technical support Global Technical support Monitoring of process performance trends	
Supply Stability	 Minimal Impact from Global Geopolitical Risks			

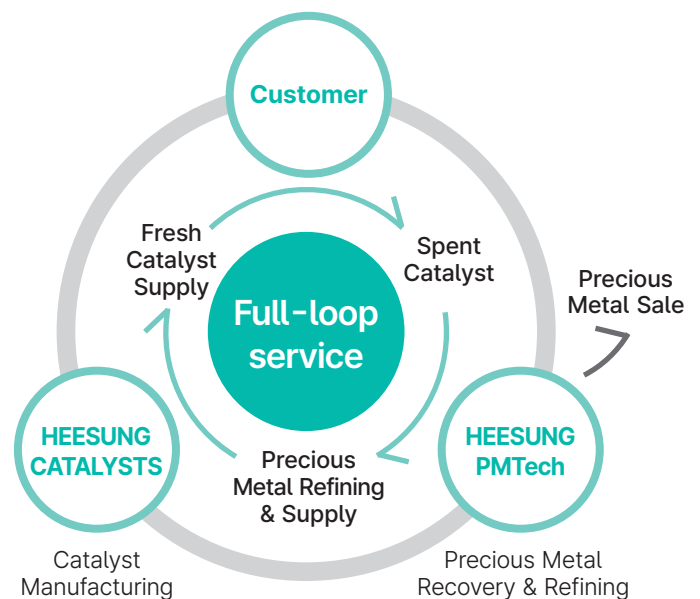
Technical Service

Providing optimal solutions to customer needs

 Catalyst Design Proposal Based on operating conditions	 Inspection Service Loading / replacement / handling
 Catalyst Improvement & R&D	 Procedures & Guidelines Loading, regeneration, handling
 Catalyst Analysis Service Physical properties, precious metal & special property analysis, performance evaluation	

Resource Recycling

Full-Loop Precious Metal Recovery Service





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 **HEESUNG CATALYSTS CORP.**



www.hscatalysts.com

Seoul Office 18th Floor, Youngpoong Building,
41 Cheonggyecheon-ro, Jongno-gu, Seoul

Siheung Plant 91 Somanggongwon-ro, Siheung-si,
Gyeonggi-do, Korea