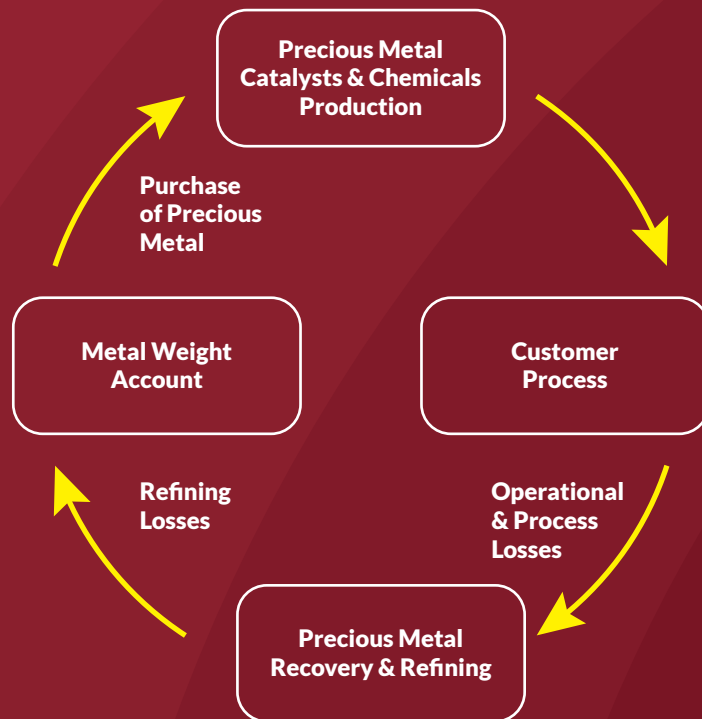


PRECIOUS METAL CYCLE



- We offer the best recoveries in the industry from precious metal spent as well as spent from homogeneous catalysts.
- We also recover Ru and Rh from homogeneous and heterogeneous catalyst spent.
- We can provide high purity(>99.95%) precious metals and precious metal salts.



OUR VISION

By our behavior, inspire society to propagate universal harmony, peace and understanding by upholding high ethical standards and respect of environment in all sphere of life and work.



OUR MISSION

Explore and develop new catalytic solutions which are elegant, inspiring and also high in performance to drive sustainable growth.

To have healthy equitable relationship with our customers, vendors as well as employees by sharing our knowledge and act as catalyst in their growth.



OUR OBJECTIVE

Provide an alternative catalytic route of synthesis to conventional hazardous chemical route.

To provide a platform for aspiring organisations aiming to create a cleaner environment.

To bridge the gap between institutional research on catalyst development and making the catalyst available on commercial scale.



OUR OFFER

"We are confident that we can offer you an improved solution to your catalyst need such as..."

Be at par with global standards and maintain consistency in quality with efficient deliveries.

Derive the best result with our excellent technical support.

Catalyst development at our research centre for new and emerging applications.



neocat
grow...evolve...grow

NAUTILUS SHELL is the symbol of Golden Ratio $\phi = 1.618$

This "golden" number, 1.61803399, represented by the Greek letter Phi, is known as the Golden Ratio, Golden Proportion, Golden Mean, Golden Section and Devine Proportion. It was written about by Euclid in "Elements" at around 300 B.C., by Luca Pacioli, a contemporary of Leonardo Da Vinci, in "De Divina Proportione" in 1509, by Johannes Kepler around 1600 and by Dan Brown in 2003 in his best selling novel, "The Da Vinic Code". It is widely believed that one of the greatest western inventor 'Leonardo Da Vinci' named this ratio as 'Divine Proportion' which symbolizes 'beauty with balance' and found it to be present in the designs from DNA to that of Galaxies. This number is also represented by an equally fascinating 'Fibonacci Series', which seems to be basis of design of many objects found in our universe.

The description of this number which is symbolised by Nautilus Shell, as Golden and Devine is fitting perhaps because it is seen by many to open the door to a deeper understanding of spirituality in life. That is an incredible role for a single number to play, but again this one number has played an incredible role in human history and in the universe at large, thus inspiring us at NEOCAT to achieve the highest form of beauty, perfection and performance in our catalyst design.

And just the way universe has envolved through various stages (growth of civilization, evolution of various species), we also take aspiration from this golden ratio to chart our journey of growth and inspire the evolution of humanity through our contribution.

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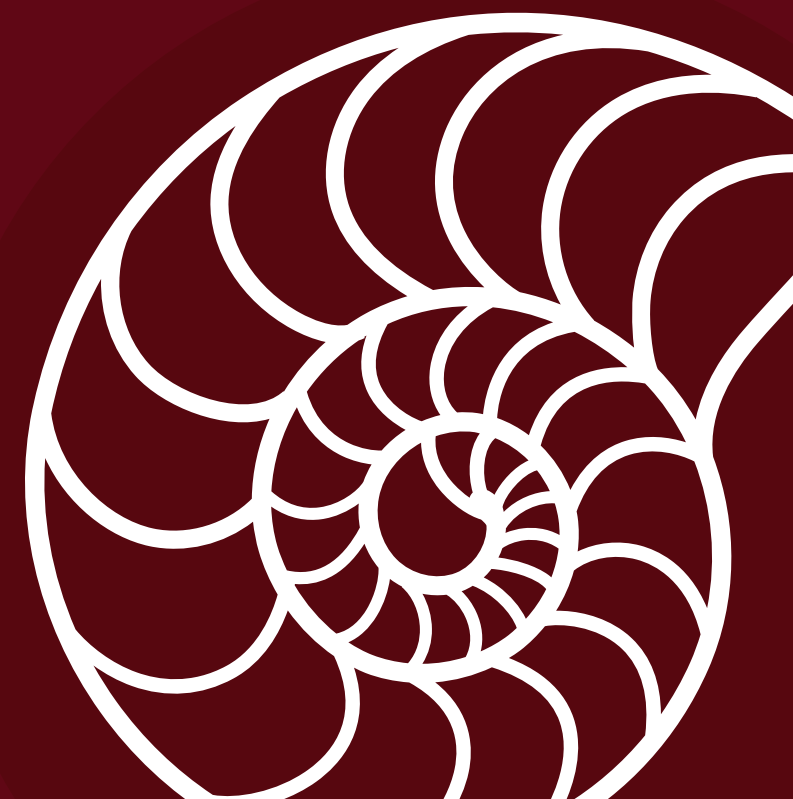
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PRECIOUS METAL HETEROGENEOUS CATALYSTS



Characteristics of Support Material

Type	Activity	Surface Area
Activated Carbon	High	High 2 (800 to 1000 m/g)
Activated Alumina	Medium	Medium 2 (200 to 1000 m/g)
Calcium Carbonate (CaCO ₃)	Low	Low 2 (Less than 10 m/g)
Barium Sulphate (BaSO ₄)	Low	Low 2 (Less than 10 m/g)

- Catalyst are manufactured with different precious metals - Palladium, Platinum, Ruthenium & Rhodium and having different Metal Loading ranging from 1% to 20%.

- Unique characteristics
 - Supports like Activated Carbon, Alumina, Calcium Carbonate, Barium Sulphate
 - Surface Area, Pore size, Pore volume
 - Activity & Selectivity
- Every grade is designed based on its applications. Specifically designed for better selectivity towards different
- functional groups.

Grades	Description	Applications
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Grades	Description	Applications
NCAT 1110-2	2%Pd/C	- Hydrogenation of Aliphatic and Aromatic Nitro to amine - Hydrogenation of CC triple bond to Alkyls - Hydrogenation of Imines to amine - Debenzylation - e.g. Sertraline HCl, INPA, Valacyclovir
NCAT 1110-5	5%Pd/C	
NCAT 1110-10	10%Pd/C	
NCAT 1110-20 Pearlman's catalyst	20%Pd/C	
NCAT 1121-1	1%Pd/C	- Hydrogenation of Aromatic and Heteroaromatic Ring - Hydrodehalogenation - Debenzylation - e.g. Nebivolol
NCAT 1121-2	2%Pd/C	
NCAT 1121-5	5%Pd/C	
NCAT 1121-10	10%Pd/C	
NCAT 1171-5	5%Pd/C	- Debenzylation - Cbz deprotection - Nitrile to amine - Hydrogenation Heteroaromatic ring - Hydrogenation of Aliphatic Ketone to alcohol - Ketone to Alkyls (Hydrogenolysis) - e.g. Lisinopril, Tamsulosin
NCAT 1172-5	5%Pd/C	
NCAT 1130-5	5%Pd/C	
NCAT 1134-5	5%Pd/C	
NCAT 1230-2.5	2.5%Pd/C	
NCAT 1230	5%Pd/C	
NCAT 1140-5	5%Pd/C	- N, O- debenzylation - Cbz deprotection - Hydrodehalogenations
NCAT 1142-5	5%Pd/C	
NCAT 1143-5	5%Pd/C	
NCAT 1834-5	5%Pd/CaCO ₃	- Acid Chloride to Aldehydes - Isomerization - Hydrogenation of C-C Triple bond to C-C double bond
NCAT 1834L-5 Lindlar Catalyst	5%Pd/CaCO ₃	
NCAT 1611-0.3	0.3%Pd/Al	- Hydrogenation of CC Double bond - Hydrogenation of Aliphatic aldehydes/ketones to Alcohols - Dipentene to 3-p-Menthene - Isomerization
NCAT 1611-0.5	0.5%Pd/Al	
NCAT 1611-1	1%Pd/Al	
NCAT 1611-3	3%Pd/Al	

Grades	Description	Applications
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Grades	Description	Applications
NCAT 2423-1	1%Pt/C	Hydrogenation of Aliphatic and Aromatic Nitro to amine
NCAT 2231-3	3%Pt/C	Hydrogenation of Aromatic Nitro to amine without dehalogenation
NCAT 2323-3	3%Pt/C	Hydrogenation of CC double bonds
NCAT 2241-5	5%Pt/C	Hydrogenation of Ketone to Alcohol
NCAT 2312-5	5%Pt/C	Reductive Alkylation (Imine hydrogenation)
NCAT 7541	Pd+Pt	Selective hydrogenation of Nitro to amine
NCAT 8120-1	1%Pt/C	- Selective hydrogenation of halogenated nitro compounds - Aromatic Nitro Phenol to corresponding Aminophenol
NCAT 2622-1	1%Pt/Alumina	- Aldehyde to Alcohol - CC double bond hydrogenation

Grades	Description	Applications
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Grades	Description	Applications
NCAT 3111-3	1%Pt/C	• Aromatic ring hydrogenation • e.g. Ring Hydrogenation of Aniline to MCHA & DCHA • P TBP to TBCH, OTBT to OBCH
NCAT 3111-5	3%Pt/C	
NCAT 3611-3	3%Pt/C	• Hydrogenation of fused aromatic ring • α-Pinene to cis-Pinane
NCAT 3611-5	5%Pt/C	

Grades	Description	Applications
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Grades	Description	Applications
NCAT 4111-5	5%Rh/C	Heteroaromatic Ring Hydrogenation

Grades	Description
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Grades	Description	Applications
NCAT FCb0P-Pt20	20%Pt/C/Black	Fuel Cell
NCAT FCb0P-Pt40	40%Pt/C/Black	

Grades	Description	Applications
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Grades	Description	Applications
NCAT DA0E-Pd0.3	0.3%Pd/Al ₂ O ₃	Removal of Oxygen from gases Removal of Hydrogen from gases
NCAT DA0S-Pd0.3	0.3%Pd/Al ₂ O ₃	
NCAT DA0E-Pd0.5	0.5%Pd/Al ₂ O ₃	
NCAT DA0S-Pd0.5	0.5%Pd/Al ₂ O ₃	

- Catalyst & H₂ handling needs to be addressed together.

- Check & ensure the reactor is clean & purged with Nitrogen
- Employ engineering & environmental controls – probes, alarms etc
- Check all the pressure regulators, valves etc are leak proof
- Inspect & test the vent & lines to prevent fouling & plugging of vent & accumulation of pyrophoric substances.
- Plan, train & communicate adequately

- Always wear safety Apparels(Safety Goggles, Hand gloves, Face shield, helmet and Safety shoes)

- Always store in cool & shaded place, away from solvent & acid fumes.
- Ensure that the material remains in sealed condition, after removal of part catalyst.
- Always wet the catalyst with water or suitable solvent before use.
- Always keep the fire extinguisher near the catalyst handling area.
- Ensure removal of organic solvents from Spent catalyst and adequate washing with water.
- Spent catalyst should be stored in HDPE drums and in a separate demarcated area properly labeled with details including inputs. (Do not use paper or corrugated boxes for storage).
- Ensure the spent catalyst drums are properly labeled & sealed during transportation.