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PROCAT grow...evolve...grow

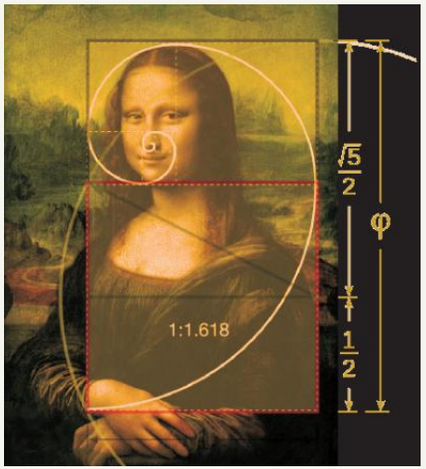
neocat grow...evolve...grow

Catalyst Catalogue

Offering a wide range of catalysts tailored for your specific reaction needs.

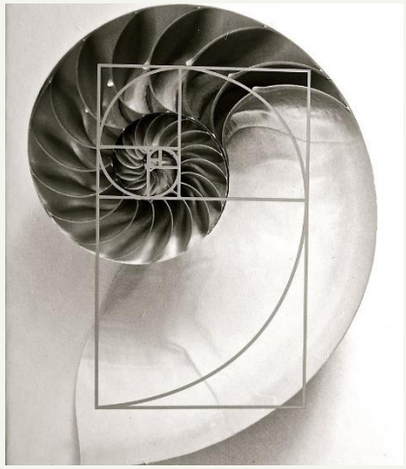
The Golden Ratio

The "golden" number 1.61803399, represented by the Greek letter Phi (Φ), is known by many names — the Golden Ratio, Golden Mean, Golden Section, and Divine Proportion. It has captivated thinkers for centuries: first described by Euclid around 300 B.C. in Elements, later by Luca Pacioli in De Divina Proportione (1509), a work illustrated by Leonardo da Vinci, explored by Johannes Kepler around 1600, and even celebrated in modern times by Dan Brown in The Da Vinci Code (2003).



It is widely believed that Leonardo da Vinci named this ratio the Divine Proportion, symbolizing beauty in balance. He found its presence in nature's design — from DNA to galaxies, from the structure of leaves to the flow of waves. This ratio is mirrored in the elegant sequence of the Fibonacci Series, which seems to underpin the very fabric of our universe.

The Nautilus Shell, whose spiral perfectly follows this ratio, has come to symbolize its harmony. Described as both golden and divine, it represents a deeper understanding of the unity between science, nature, and spirituality.



For us at PROCAT and NEOCAT, it embodies our pursuit of beauty, perfection, and performance in catalyst design.

Just as the universe evolves through stages — from the growth of civilizations to the evolution of species — we, too, draw inspiration from the Golden Ratio to chart our own journey of growth, innovation, and contribution toward a more sustainable future.

At PROCAT & NEOCAT

We are working to develop highly selective catalysts and catalytic processes for various reactions such as ***alkylation, acylation, oxidation, hydroxylation, isomerization, nitration*** etc.
The main focus of the organization is to work in collaboration with customers, be their partners in development and make available these catalysts on commercial scale to help **replace the conventional polluting, non-catalytic processes** with **environmentally sustainable and more efficient processes**.

Contents

Skeletal Nickel Catalysts
(Raney Nickel-type)

Grades	Recommended Applications
SNC 1211	✓ Hydrogenation of C=C bond to alkanes ✓ Hydrogenation of Nitro to Amine ✓ Nitro-haloaromatics to corresponding amines with minimum dehalogenation e.g., Dichloro Nitrophenol To Dichloro Aminophenol ✓ Hydrogenation of Oximes to Amines Specific API use : Lisinopril, Sertraline, Mebevarine
SNC 2211	✓ Hydrogenation of Straight chain Aldehydes to Alcohols e.g., Butyraldehyde to Butanol. ✓ Nitro to Amino in neat conditions e.g. P-Nitro Cumene to P- Cumidiene
SNC 3211 SNC 3213 SNC 3214 SNC 3216	✓ Hydrogenation of Oxime to Amine ✓ Hydrogenation of Imine to Amine ✓ Hydrogenation of Aromatic compounds. e.g., Phenol to Cyclohexanol, Pyridine to Piperidine, Specific API use: Lisinopril, 4-TAC *Varied Grades available depending on Particle Size requirements of the process

Skeletal Nickel Catalysts
(Raney Nickel-type)

Grades	Recommended Applications
SNC 4211 SNC 4251	✓ Hydrogenation of Carbonyls to corresponding Alcohols e.g., Benzophenone to Benzhydrol ✓ Hydrogenation of Nitrile to primary Amine e.g., Benzonitrile to Benzylamine Specific API use: Venlafaxine, Atorvastatin, Verapamil, CHEA
SNC 6211 SNC 6213 SNC 6214 SNC 6216 SNC 6231 SNC 6251	✓ Hydrogenation of Dextrose to Sorbitol ✓ Hydrogenation of Nitrile to amine e.g., Butanediol *Varied Grades available depending on Particle Size requirements of the process.
SNC 7211	✓ Dehydrogenation in Carbazole
SNC 8211	✓ Hydrogenation of Aromatic ring ✓ Hydrogenation of Aromatic Nitrile to Amine ✓ Hydrogenation of Carbonyls to Alcohol e.g., Substituted Phenols to Cyclohexanols & Cyclohexadienone. Specific API use: Octopamine HCl

Homogenous Palladium Catalysts

Grades	Catalysts	CAS Nos.
NCAT 1001	Sodium Tetrachloro Palladate (II) Salt, Solution	13820-53-6
NCAT 1002	Palladium (II) Chloride	7647-10-1
NCAT 1003	Palladium (II) Nitrate solution	10102-05-3
NCAT 1004	Palladium (II) Acetate	3375-31-3
NCAT 1005	Trans- Dichlorobis (Triphenylphosphine) Palladium (II)	13965-03-2
NCAT 1006	Tetrakis (Triphenylphosphine) Palladium (0)	14221-01-3
NCAT 1007	Palladium Acetylacetonate (PdAcac)	14024-61-4
NCAT 1008	Pddppf [1,1'Bis(diphenylphosphino)ferrocene] dichloropalladium(II)	72287-26-4
NCAT 1009	Pddppf.DCM complex [1,1'-Bis(diphenylphosphino)ferrocene] dichloropalladium(II) DCM complex	95464-05-4
NCAT 1010	$Pd(PCy_3)_2Cl_2$ Bis(tricyclohexylphosphine) Palladium(II) Dichloride	29934-17-6
NCAT 1011	Allyl Palladium Chloride	12012-95-2
NCAT 1012	$Pd_2(dba)_3$ Tris(dibenzylidene Acetone) Palladium	51364-51-3
NCAT 1013	Bis(acetonitrile) Dichloropalladium (II)	14592-56-4

Precious Metal Catalysts

Homogenous Platinum Catalysts

Grades	Catalysts	CAS Nos.
NCAT 2001	Platinum (IV) Oxide Hydrate	52785-06-5
NCAT 2002	Platinum (IV) Oxide Anhydrous	1314-15-4
NCAT 2003	Chloroplatinic Acid Di Hydrogen Hexachloro Platinate(IV) Hydrate	26023-84-7
NCAT 2004	Platinum Tetrachloride	13454-96-1
NCAT 2005	Tetra-ammine Platinum (II) Chloride solution "TPC Pt"	13933-32-9
NCAT 2006	Potassium Tetrachloro Platinate (II) [PTCP]	10025-99-7
NCAT 2007	Pt-A Salt Solution Bis (Ethanol Ammonium) Hexa Hydroxo Platinum	68133-90-4
NCAT 2008	Karstedt's Catalyst Divinyl Tetramethyl Disiloxane Pt (0)	68478-92-2

HOMOGENOUS RUTHENIUM CATALYSTS

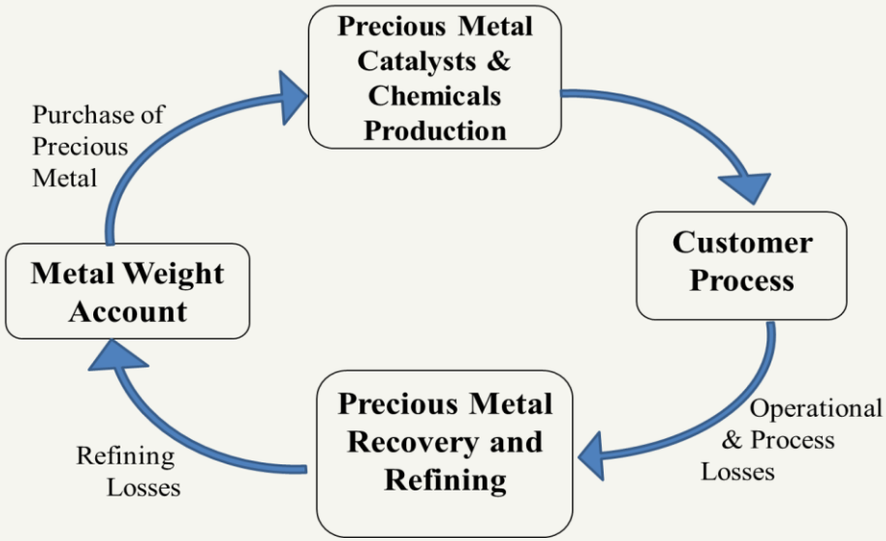
Grades	Catalysts	CAS Nos.
NCAT 3001	Ruthenium (III) Chloride Hydrate	14898-67-0
NCAT 3002	Ruthenium Acetylacetonate	14284-93-6
NCAT 3003	Triruthenium dodecacarbonyl	15243-33-1
NCAT 3004	Dichloro(1,5-cyclooctadiene) Ruthenium(II), Polymer	50982-12-2
NCAT 3005	Ru Binap Complex Diacetato[(R)-(+)-2,2'-bis(diphenylphosphino)-1,1'-binaphthyl]Ruthenium(II)	325146-81-4

HOMOGENOUS RHODIUM CATALYSTS

Grades	Catalysts	CAS Nos.
NCAT 4001	Rhodium(III) Chloride Hydrate	20765-98-4
NCAT 4002	Rhodium(II) Acetate Dimer	15956-28-2
NCAT 4003	Rhodium(II) Octanoate Dimer	73482-96-9

PRECIOUS METAL CATALYSTS

PRECIOUS METAL RECOVERY



We also **recover** Ruthenium **spent** catalysts!

Heterogeneous Palladium Catalysts

Description	Grades	Applications
1%Pd/C	NCAT 1121-1	Hydrogenation of ✓ Aromatic and Heteroaromatic Rings ✓ Aliphatic and Aromatic Nitro to Amiane, ✓ Dehalogenation ✓ CC Triple Bond to Alkyls, (e.g. Sertraline HCl, INPA, Valacyclovir, Nebivolol) ✓ Cbz Deprotection ✓ Nitrile to Amine ✓ Hydrogenation of Heteroaromatic Ring ✓ Ketone to Alkyls (Hydrogenolysis) ✓ (e.g. Lisinopril, Tamsulosin) ✓ N, O-Debenzylation ✓ Hydrogenation of Imines to Amine
2%Pd/C	NCAT 1110-2, NCAT 1121-2	
2.5%Pd/C	NCAT 1230-2.5	
5%Pd/C	NCAT 1110-5, NCAT 1121-5, NCAT 1171-5, NCAT 1130-5, NCAT 1134-5, NCAT 1230-5, NCAT 1140-5, NCAT 1142-5, NCAT 1143-5	
10%Pd/C	NCAT 1110-10, NCAT 1121-10	
20%Pd/C (Pearlman's Catalyst)	NCAT 1110-20	
5%Pd/$CaCO_3$ (Including Lindlar Catalyst)	NCAT 1834-5, NCAT 1834L-5	✓ Acid Chloride to Aldehydes, Isomerization ✓ C-C Triple Bond to C-C Double Bond
0.3%Pd/Al	NCAT 1611-0.3	✓ Hydrogenation of C-C Double Bond, ✓ Aldehydes/Ketones to Alcohol, Dipentene to 3-p-Menthene, Isomerization
0.5%Pd/Al	NCAT 1611-0.5	
1%Pd/Al	NCAT 1611-1	
3%Pd/Al	NCAT 1611-3	
5%Pd/Al	NCAT 1611-5	

Precious Metal Catalysts

Heterogeneous Platinum Catalysts

Description	Grades	Applications
1%Pt/C	NCAT 2423-1, NCAT 8120-1	Hydrogenation of ✓ Aliphatic and Aromatic Nitro to Amine ✓ Selective Hydrogenation of Halogenated Nitro Compounds, ✓ Aromatic Nitro Phenol to Corresponding Aminophenol, ✓ Aromatic Nitro to Amine Without Dehalogenation ✓ CC Double Bonds, ✓ Aldehyde & Ketone to Alcohol, ✓ Reductive Alkylation (Imine Hydrogenation) ✓ Bamberger Rearrangement
3%Pt/C	NCAT 2241-3, NCAT 2323-3	
5%Pt/C	NCAT 2241-5, NCAT 2312-5	
Pd+Pt	NCAT 7541	✓ Selective Hydrogenation of Nitro to Amine
1%Pt/Alumina	NCAT 2622-1	✓ Aldehyde to Alcohol ✓ CC Double Bond Hydrogenation

Heterogeneous Ruthenium Catalysts

Description	Grades	Applications
3%Ru/C	NCAT 3111-3	Hydrogenation of ✓ Substituted Aromatic Rings (e.g., Aniline to MCHA & DCHA, PTBP to TBCH, OTBT to OBCH)
5%Ru/C	NCAT 3111-5	
3%Ru/Al	NCAT 3611-3	✓ Aromatic rings to cyclohexenes ✓ Fused Aromatic Rings ✓ α-Pinene to cis-Pinane
5%Ru/Al	NCAT 3611-5	

Heterogeneous Rhodium Catalysts

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

Precious Metal Catalysts

Fuel Cell Catalysts

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

Heterogenous Deoxo Catalysts

Description	Grades	Applications
0.3%Pd/Al_2O_3 (Spheres or Extrudates)	NCAT DA0E-Pd0.3, NCAT DA0S-Pd0.3	✓ Removal of Oxygen from Gases ✓ High Purity N_2 Generation
0.5%Pd/Al_2O_3 (Spheres or Extrudates)	NCAT DA0E-Pd0.5, NCAT DA0S-Pd0.5	✓ Removal of Hydrogen from Gases

Zeolite Catalysts

Grades	Application	Examples
PROCAT™ ZB0P	Acylation	Acylation of anisole
PROCAT™ ZM0E	Isomerization	Xylenes, Toluidine, Cresols
PROCAT™ ZMd0E	Alkylation	Alkylation of m-cresol to Thymol
PROCAT™ ZT0P	Hydroxylation	Anisole to MEHQ & Guaiacol, Phenol to Hydroquinone & Catechol
	Epoxidation	Propylene to Propylene Oxide, Styrene to Styrene Oxide
PROCAT™ ZS0P	Selective Opening of Epoxide ring	Styrene Oxide to Phenyl acetaldehyde (PAA)
PROCAT™ ZX2E	O-alkylation	PC to PCME, Phenol to Anisole

Alumina Catalysts

Grades	Application	Examples
PROCAT™ AG0E	Dehydration	Dehydration of alcohol, Methanol to DME
PROCAT™ AP0E – 50	O-Alkylation	Catechol to Guaiacol
PROCAT™ AP0E - 30	Dehydration and ring formation	DEG to 1,4 Dioxane
	Dehydration	Dehydration of Alcohols to Ethers (High purity): Ethanol to DEE, Methanol to DME

Silica Alumina Catalysts

Silica Catalysts

Grades	Application	Examples
PROCAT™ SS0P	Nitration	Nitration of Benzene, Toluene
	Epoxidation	Styrene to Styrene Oxide
PROCAT™ SS11P PROCAT™ SS12P	Esterification	Ethanol to Ethyl Acetate

Note: Our catalysts are available in various shaped forms. In all the above trade names last Character represents form of the catalyst as follows;

Character	Form of catalyst
E	Extrudes
P	Powder
S	Spheres
T	Tablets

Mixed Metal Oxide Catalysts

12	13	22	23	24	25	26
Mg Magnesium 24.30	**Al** Aluminium 26.98	**Ti** Titanium 47.90	**V** Vanadium 50.94	**Cr** Chromium 52.00	**Mn** Manganese 54.94	**Fe** Iron 55.85
27	**29**	**30**	**40**	**42**	**55**	**56**
Co Cobalt 58.93	**Cu** Copper 63.55	**Zn** Zinc 65.40	**Zr** Zirconium 91.22	**Mo** Molybdenum 95.95	**Cs** Cesium 132.9	**Ba** Barium 137.3

Grades	Application/Examples
PROCAT™ CA15T	Methanol Synthesis catalyst
PROCAT™ CR3P	Reduction / Fatty ester to fatty alcohol
PROCAT™ CR4P PROCAT™ CR4E PROCAT™ CR4T	Selective Hydrogenation / Hydrogenation of Menthone to Menthol
PROCAT™ CR15T	N-Alkylation / For Alkylation of Amine to produce mono alkylated product Aniline + methanol to $N(CH_3)_2$
PROCAT™ TiO_2	Isomerization / Alpha Pinene to Camphene
PROCAT™ CS0P	Selective Hydrogenation of Carbonyl without affecting double bond: >C=O to >CH-OH
PROCAT™ DHC0E PROCAT™ DHC0T	Decarboxylation Dehydration / Propionic acid to Diethyl Ketone (DEK)

Mixed Metal Oxide Catalysts

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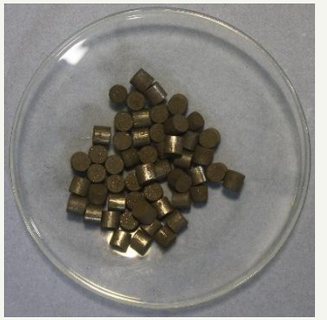

Our New Production Site:

NEOCAT PVT. LTD.

Neocat was born to further expand the existing products of *Zeolites, Mixed Metal Oxides, Super Acids, Shaped Catalysts & Fuel Cell Catalysts*.
This greenfield project expansion at new site in Additional Ambernath MIDC will have state-of-the-art production facilities to strengthen our quality assurance.

The New families of the catalyst to be produced at NEOCAT:

- SNC catalyst
- PMC catalyst

From Vision ...

Our New Production Site:

NEOCAT PVT. LTD.

...To Reality