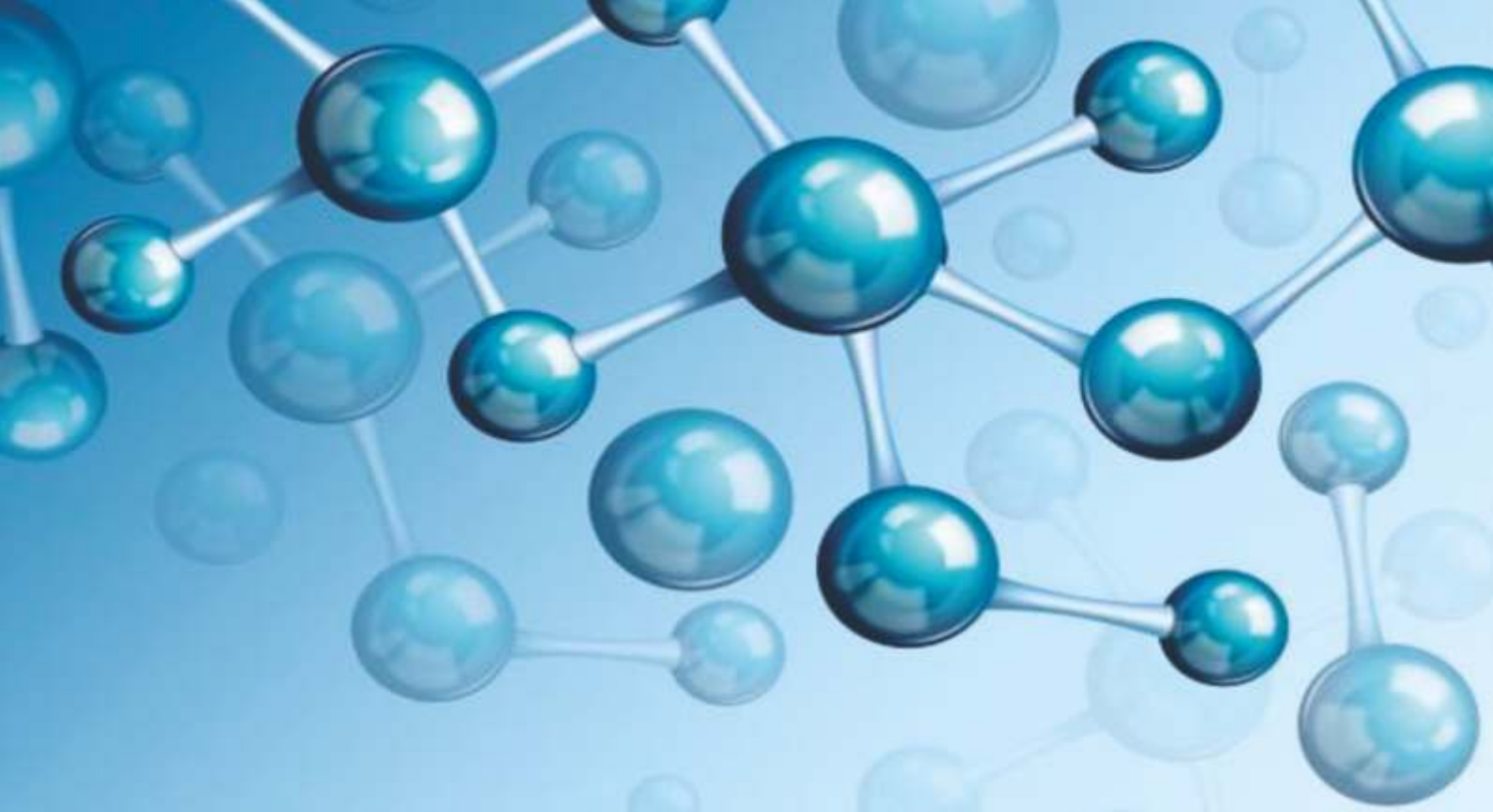


# metalchem

Mfrs. of: Nickel Catalyst, Custom Catalyst & Salts

*"Catalytic ideas for a better world"*

# Welcome to Metal Chem

## ABOUT US :

Metal Chem is an ISO 9001:2015 certified HALAL & KOSHER compliant an Indian Chemical company based in Mumbai & having its plant located in Badlapur MIDC. The plant is spread across 12,000 sq feets. The company was established in the year 2005, with an aim to provide high quality Nickel and Cobalt based salts like Nickel Sulphate, Nickel Carbonate, Nickel Oxide & various other derivatives. The company served various chemical domains like pharmaceuticals, fine & specialty chemicals, automotive companies & others. With over a decade of experience coupled with vast technological expertise & in depth knowledge about Nickel Salts, in the year of 2019 Metal Chem ventured into manufacturing and supply of Nickel Catalyst, specialty catalyst & salts. The company's strength lies in its unique offering of range of catalyst and services.

These catalysts finds its application in hydrogenation of API'S, intermediates, speciality chemicals, vegetable oils, fats, soaps, stearic acid, oleo chemicals, vanaspati ghee, margarine, hydrogenated castor oil, and various others oleo chemicals.

Nickle Catalyst is sold under the METCAT™ brand.

Special grades of METCAT™ brand catalysts are available for various hydrogenation reactions of edible and non-edible oils.

Our goal is to provide quality products to our customers by using latest technologies and enhance our quality from time to time. We work towards continuous improvement of our products and processes to enhance quality of product and cost competitiveness in order to build value for our customers. The company is equipped with state of the art manufacturing facilities having reactors of various sizes, supported by in house Quality Control, Quality Assurance & R & D centre. Company follows rigorous EHS policy company is highly conscious about prevention of environmental pollution and has adopted mechanism to ensure environmental protection. The employees are periodically educated about house-keeping and safety aspects pertaining to manufacturing, storage and handling as most of the products are pyrophoric in nature

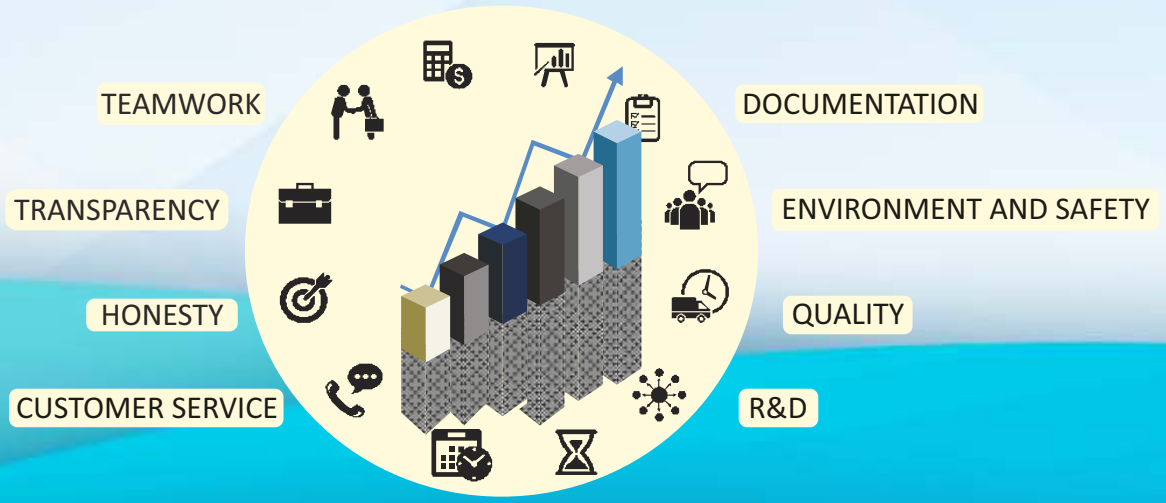

**VISION :**

"To be recognized as a global leader and one stop solution provider for all catalyst needs by using latest technologies and processes"

**MISSION :**

"To assist 2025 chemical companies by providing innovative catalyst solutions by end of 2025, for betterment of life, today and tomorrow"


## VALUES:



## PRODUCTS OFFERED :

| Products | Applications |
|---|---|
| 1) Nickel Catalyst | For Hydrogenation of Oils and Fats |
| 2) Raney Nickel Catalyst | For Hydrogenation of API'S, Intermediate, Fine chemicals & Bulk Drugs |
| 3) Precious Metal Catalyst (Palladium, Platinum, Rhodium & Ruthenium) | For Hydrogenation of API'S, Intermediate, Fine chemicals & Bulk Drugs |
| 4) Nickel Oxide | For Automotive Glass & Electroplating Purpose |

## APPLICATIONS :

- Lifesciences
- Petrochemicals
- Industrial chemicals
- Petrochemicals
- Agrochemicals & various others

Company's Products Find Application Mainly in Hydrogenation of Edible Oils and Non-edible Oils. The Manufacture of Vanaspati, Stearic Acid, Margarine, Soap Noodles, Soaps, Bulk Drugs, Drug Intermediates, Aromatic Chemicals, Specialty Chemicals, Rubber Additives, Pesticides, Dyes and Dye-intermediates, Fine Chemicals and Organic Chemicals Etc. Where Hydrogenation is the Key Reaction.

## NICKEL CATALYST : THE METCAT™ BRAND

METCAT™ products are silica supported Nickel Catalysts manufactured by a innovative technology wherein the nickel particles are embedded in solid fats. They offer good conversion ratio & excellent quality of the finished good required to be hydrogenated. They are easy to use & handle. They are sold as hydrogenation catalysts for oils and fats (OFCs) in every major vegetable oil producing and/or processing countries in the world. They find application in almost every domain of life like in the manufacture of soaps, oleo chemicals, vanaspati ghee, margarine, stearic acid, hydrogenated castor oil, and others. Special grades of METCAT™ Catalysts are available for different hydrogenation reactions of edible and non-edible oils alike.

| SR NO | GRADES METAL CHEM | Nickel % | APPLICATION | EXAMPLES |
|---|---|---|---|---|
| 1 | METCAT™ 888 | 23 ± 1 | PARTIAL & FULL HYDROGENATION INDUSTRIAL OILS & FATTY ACID | RICE BRAN OIL, RICE BRAN FATTY ACID, PALM FATTY ACID, PALM STEARIN FATTY ACID |
| 2 | METCAT™ 999 | 23 ± 1 | PARTIAL & FULL HYDROGENATION OF TRIGLYCERDES | FOR EDIBLE OILS LIKE SOYABEAN, SUNFLOWER, MUSTARD OIL, EDIBLE RICE, BRAN OIL, CRUDE PALM OIL, MARGARINE SHORTENINGS, VANASPATI |
| 3 | METCAT™ 666 | 20 ± 1 | PARTIAL & FULL HYDROGENATION OF TRIGLYCERIDES | FOR EDIBLE OILS LIKE SOYABEAN, SUNFLOWER, MUSTARD OIL, EDIBLE RICE,BRAN OIL, CRUDE PALM OIL, MARGARINE SHORTENINGS, VANASPATI |
| 4 | METCAT™ 777 | 23 ± 1 | LOW TEMPERATURE HYDROGENATION OF CASTOR OIL | CASTOR OIL |
| 5 | METCAT™ 555 | 18 ± 1 | PARTIAL HYDROGENATION & ISOMERISATION OF TRIGLYCERIDES & FATTY ACID | MARGARINE & SHORTENINGS |

**Packing :** They are offered in 25kgs, 50kgs virgin grade PP woven bags with polyethylene bag liners. They are also offered in 50kgs HDPE carboys & 175kgs MS drums as per client requirement.

**Storage :** The catalyst should be stored in well ventilated place, away from direct sunlight.

**Shelf Life :** With proper storage condition, shelf life is upto 12months.

# PRECIOUS METAL SUPPORTED CATALYST (METCAT Brand)

## Palladium

| Grade (Metal chem) | Metal Loading % | Support Material | Application |
|---|---|---|---|
| Pd108-1 | 5 | Calcium Carbonate | Selective hydrogenation e.g. alkyne to alkene In presence of a catalyst modifier (Lindlar), |
| Pd108-2 | 5 | Alumina powder | Di-imine to Diamine (Dibed process) |
| Pd108-3 | 0.3,0.5 | Alumina 2.4mm spheres | Hydrogenation /Dehydrogenation, Gas Purification |
| Pd108-4 | 3,5,10 | Carbon powder/paste | Debenzylation, C-N and C-0 clevage, Alkene hydrogenation |
| Pd108-5 | 5,10 | Carbon powder/paste | Hydrogenation of aromatic and aliphatic nitro groups, Reductive alkylatlon/amination. Hydrogenation of aromatic nitrites to $1^0$-amines |
| Pd108-6 | 5,10 | Carbon powder/paste | Hydrogenation of alkynes, alkenes , Aromatic nitro, Aromatic aldehyde,ketone . Hydrogenolysis e.g. Dehalogenation, C-N & C-0 cleavage, Rosenmund reduction, Rosin disproportionation, Reductive alkylation/amination, Selective oxidation. |
| Pd108-7 | 10 | Carbon powder/paste | Aromatic nitro group hydrogenation, Hydrogenation of alkenes to alkanes,Debenzylation |
| Pd108-8 | 20 | Carbon powder /paste | Debenzylation (Pearlman's catalyst) |
| Pd108-9 | 20% Palladiun hydroxide | Carbon powder/paste | Debenzylation (Pearlman's catalyst) |

## Platinum

| Grade (Metal chem) | Metal Loading % | Support Material | Application |
|---|---|---|---|
| Pt195-1 | 3,5,10 | Carbon powder/paste | Schiff's base and nitro hydrogenation, Aromatic ring hydrogenation,Hydrogenation of alkenes, aliphatic carbonyls, Selective oxidation |
| Pt195-2 | 1,5,10 | Carbon powder/paste | Pyridine ring hydrogenation, Hydrogenation of halonitroaromatics and aliphatic nitro groups. , p-aminophenol production from nitrobenzene.z |

## Rhodium

| Grade (Metal chem) | Metal Loading % | Support Material | Application |
|---|---|---|---|
| Rh103-1 | 5 | Carbon Powder/Paste | Aromatic Ring Hydrogenation, Hydrogenation of alkenes to alkanes |
| Rh103-2 | 5 | Alumina Powder | Aromatic Ring Hydrogenation.Hydrogenation of alkenes to alkanes |

## Ruthenium

| Grade (Metal chem) | Metal Loading % | Support Material | Application |
|---|---|---|---|
| Ru101-1 | 5 | Carbon Powder /Paste | Aromatic Ring Hydrogenation, Hydrogenation of aliphatic carbonyls. sugar. selective oxidation |
| Ru101-2 | 5 | Alumina Powder | Aromatic Ring Hydrogenation. Hydrogenation of aliphatic carbonyls. sugar. selective oxidation |

## Mix Metal

| Grade (Metal chem) | Metal Loading % | Support Material | Application |
|---|---|---|---|
| | 2.5%Pd,'2.5% Pt | Carbon Powder/Paste | Hydrogenation of nitrogroups, Hydrogenation of alkenes |
| | 8%Pd,2%Pt | Carbon Powder / Paste | Selective Hydrogenation of nitrate to hydroxylamine |

# CROSS-COUPLING CATALYST (METCAT Brand)

## Palladium

| Name | CAS No. | Formula | Mol. Weight | % Metal |
|---|---|---|---|---|
| Bis(triphenylphosphine)palladium(II) dichloride | 13965-03-2 | $C_{36}H_{30}Cl_2P_2Pd$ | 701.9 | 15.16 |
| Tetrakis(triphenylphosphine)palladium(0) | 14221-01-3 | $C_{72}H_{60}P_4Pd$ | 1155.59 | 9.2 |
| [1,2-Bis(diphenylphosphino)ethane]dichloropalladium(II) | 19978-61-1 | $PdCl_2[(C_6H_5)_2P(CH_2)_2P(C_6H_5)_2]$ | 575.75 | 18.48 |
| 1,4-Bis(diphenylphosphino)butane-palladium(II) Dichloride | 29964-62-3 | $C_{28}H_{25}CL_2P_2Pd$ | 603.8 | 17.62 |
| [1,1'-Bis (diphenylphosphino) ferrocene]dichloropalladium(II), dichloromethane | 95464-05-4 | $C_{34}H_{28}P_2FePdCl_2CH_2Cl_2$ | 816.64 | 13 |
| Dichlorobis(tricyclohexylphosphine)palladium (II) | 29934-17-6 | $C_{36}H_{66}Cl_2P_2Pd$ | 738.19 | 14.42 |
| Dichloro[bis(diphenylphosphinophenyl)ether]palladium(II) | 205319-06-8 | $C_{36}H_{28}Cl_2OP_2Pd$ | 715.89 | 14.87 |
| (1,1'-Bis (disopropylphosphino) ferrocene) dichloropalladium | 215788-65-1 | $C_{22}H_{36}Cl_2FeP_2Pd$ | 595.64 | 17.87 |
| [1,3-Bis (diphenylphosphino) propane]palladium(II) dichloride | 59831-02-6 | $C_{27}H_{26}Cl_2P_2Pd$ | 589.77 | 18.04 |
| [1,1'-Bis(di-cyclohexylphosphino)ferrocene]dichloropalladium(II) | 917511-90-1 | $C_{34}H_{52}CL_2P_2Pd$ | 755.9 | 14.08 |
| Bis(di-tert-butyl(4-dimethylaminophenyl)phosphine)dichloropalladium(II) | 887919-35-9 | $C_{32}H_{56}N_2Cl_2P_2Pd$ | 708.08 | 15.03 |
| Dichloro [9,9-dimethy]-4,5-bis (diphenylphosphino)xanthene]palladium (II) | 205319-10-4 | $C_{39}H_{32}OP_2Cl_2Pd$ | 755.95 | 14.08 |
| [1,1'-Bis (diphenylphosphino)ferrocene]dichloropalladium(II) | 72287-26-4 | $C_{34}H_{28}P_2FePdCl_2$ | 731.74 | 14.54 |
| Bis(benzonitrile)dichloropalladium(II) | 14220-64-5 | $C_{14}H_{10}Cl_2N_2Pd$ | 383.57 | 27.74 |
| Bis (acetonitrile)dichloropalladium(II) | 14592-56-4 | $C_4H_6Cl_2N_2Pd$ | 259.43 | 41.02 |
| Tetrakis (acetonitrile)palladium (II) tetrafluoroborate | 21797-13-7 | $C_8H_{12}N_4B_2F_8Pd$ | 444.24 | 23.96 |
| Palladium (II) acetylacetonate | 14024-61-4 | $C_{10}H_{14}O_4Pd$ | 304.64 | 34.93 |
| Dichloro (1,5-cyclooctadiene) palladium(II) | 12107-56-1 | $C_8H_{12}Cl_2Pd$ | 285.5 | 37.27 |
| Bis(dibenzylideneacetone)palladium(0) | 32005-36-0 | $C_{34}H_{28}O_2Pd$ | 575.02 | 18.51 |
| Tris (dibenzylideneacetone)dipalladium(0) | 51364-51-3 | $C_{51}H_{42}O_3Pd_2$ | 915.73 | 23.24 |
| Tris(dibenzylideneacetone)dipalladium(0).Chloroform | 52522-40-4 | $C_{51}H_{42}O_3Pd_2CHCl_3$ | 1035.11 | 20.56 |
| Allylpalladium (II) chloride dimer | 12012-95-2 | $C_6H_{10}PD_2Cl_2$ | 365.89 | 58.17 |
| Bis (triphenylphosphine)palladium(II) Diacetate | 14588-08-0 | $C_{40}H_{36}O_4P_2Pd$ | 749.08 | 14.21 |
| Dichloro[1,1-bis(diphenylphosphino)ferrocene]palladium(II)acetone | 138549-82-3 | $C_{34}H_{25}Cl_2FeP_2Pd1/2C_3H_6O$ | 783.74 | 13.58 |
| Palladium (II) trifluoroacetate | 42196-31-6 | $C_4F_6O_4Pd$ | 332.45 | 32.01 |
| Palladium(n-cinnamyl) chloride dimer | 12131-44-1 | $C_{18}H_{18}Cl_2Pd_2$ | 518.08 | 41.08 |

## Platinum

| Name | CAS No. | Formula | Mol. Weight | % Metal |
|---|---|---|---|---|
| cis-Bis (acetonitrile)dichloroplatinum (II) | 13869-38-0 | $[PtCl_2(CH_3CN)_2]$ | 348.09 | 56 |
| Platinum (I) acetylacetonate | 15170-57-7 | $[Pt(C_6H_7O_2)_2]$ | 393.29 | 49.6 |
| cis-Dichlorobis(triphenylphosphine)platinum(11) | 15604-36-1 | $[(C_6H_5)_3P]_2PtCl_2]$ | 790.56 | 24.67 |
| cis-Dichlorobis (diethyl sulfide)platinum(I) | 15442-57-6 | $[(C_2H_5)S]_2PtCl_2$ | 446.36 | 43.7 |
| trans-Dichlorobis(diethy\|sulfide)platinum(II) | 15337-84-5 | $PtCl_2[(C_2H_5)_2S]_2$ | 446.36 | 43.7 |
| Tetrakis (triphenylphosphine)platinum (0) | 14221-02-4 | $Pt[P(C_6H_5)_3]_4$ | 1244.22 | 15.67 |


## Rhodium

| Name | CAS No. | Formula | Mol. Weight | % Metal |
|---|---|---|---|---|
| Rhodium(III) acetylacetonate | 14284-92-5 | $C_{15}H_{21}O_6Rh$ | 400.2 | 25.71 |
| Bicyclo[2.2.1]hepta-2,5-diene-rhodium (1) chloride dimer | 12257-42-0 | $C_{14}H_{16}Cl_2Rh_2$ | 461 | 44.64 |
| (1,5-Cyclooctadiene)rhodium chloride dimer | 12092-47-6 | $C_{16}H_{24}Cl_2Rh_2$ | 493.08 | 41.74 |
| (Acetylacetonato) (1,5-cyclooctadiene)rhodium (1) | 12245-39-5 | $C_{13}H_{19}O_2Rh$ | 310.2 | 33.17 |
| Bis (1,5-cyclooctadiene)rhodium (I) tetrafluoroborate | 35138-22-8 | $C_{16}H_{24}BF_4Rh$ | 406.1 | 25.34 |
| Bis(norbornadiene)rhodium () tetrafluoroborate | 36620-11-8 | $C_{14}H_{16}BF_4Rh$ | 373.99 | 27.52 |
| Hydridotetrakis(triphenylphosphine)rhodium( D | 18284-36-1 | $RhH[P(C_6H_5)_3]_4$ | 1153.06 | 8.9 |
| Chloro- tris (triphenyl phosphine) rhodium (1) | 14694-95-2 | $[RhCl\{P(C_6H_5)_3\}_3]$ | 925.22 | 11.1 |
| Bromo- tris(triphenyl phosphine) rhodium (I) | 14973-89-8 | $[RhBr\{P(C_6H_5)_3\}_3]$ | 969 | 10.6 |


## Ruthenium

| Name | CAS No. | Formula | Mol. Weight | % Metal |
|---|---|---|---|---|
| Dichloro[1,1-bis(diphenylphosphino)ferrocene] (2-aminomethylpyridine)ruthenium(I) | 1287255-62-2 | $C_{40}H_{36}CL_2FeN_2P_2Ru$ | 834.49 | 12.11 |
| Dichloro(1,5-cyclooctadiene)ruthenium(II) | 50982-12-2 | $C_8H_{12}Cl_2Ru$ | 280.15 | 36.08 |
| Dichlorotris(triphenylphosphino)ruthenium (I) | 15529-49-4 | $C_{54}H_{45}Cl_2P_3Ru$ | 958.85 | 10.54 |
| Dichloro (p-cymene)ruthenium(II) Dimer | 52462-29-0 | $C_{20}H_{30}Cl_4Ru_2$ | 612.39 | 33.01 |
| [1,3-Bis(diphenylphosphino)propane]ruthenium(II) dichloride | | | | |
| (1,1'-Bis (disopropylphosphino) ferrocene)dichlororuthenium | | | | |


## Iridium

| Name | CAS No. | Formula | Mol. Weight | % Metal |
|---|---|---|---|---|
| Chlorobis (cyclooctene)iridium (1) dimer | 12246-51-4 | $C_{32}H_{56}Ir_2Cl_2$ | 896.13 | 42.9 |
| Bis (1,5-cyclooctadiene)dimethoxydiridium | 12148-71-9 | $C_{18}H_{30}Ir_2O_2$ | 662.87 | 58 |
| Chloro (1,5-cyclooctadiene)iridium (I) dimer | 12112-67-3 | $C_{16}H_{24}Ir_2Cl_2$ | 671.71 | 57.23 |
| Chloro (1,5-cyclooctadiene) (1,10-phenanthroline)iridium (I) | 41396-69-4 | $C_{20}H_{20}N_2ClIr.C_4H_8O$ | 588.17 | 32.68 |
| Dichloro(pentamethylcyclopentadienyl)iridium (III)dimer | 12354-84-6 | $C_{20}H_{30}Ir_2Cl_4$ | 796.69 | 48.25 |
| (Acetylacetonato)(1,5-cyclooctadiene)iridium(I) | 12154-84-6 | $C_{13}H_{19}IrO_2$ | 399.51 | 48.11 |
| Bis(1,5-cyclooctadiene iridium (I) tetrafluoroborate | 35138-23-9 | $C_{16}H_{24}BF_4Ir$ | 495.39 | 38.8 |


## Nickel

| Name | CAS No. | Formula | Mol. Weight | % Metal |
|---|---|---|---|---|
| [1,3-Bis (diphenylphosphino)propane]dichloronickel(II ) | 15629-92-2 | $C_{27}H_{26}C1_2NiP_2$ | 542.05 | 10.83 |
| [1,1'-bis (diphenylphosphino)ferrocene]dichloronickel (II) | 67292-34-6 | $C_{34}H_{38}Cl_2FeNiP_2$ | 694.1 | 8.46 |
| Bis(triphenylphosphine)nickel(II) dichloride | 14264-16-5 | $[(C_6H_5)_3P]_2NiCl_2$ | 654.17 | 8.97 |
| Nickel(II) acetylacetonate | 3264-82-2 | $Ni(C_5H_7O_2)_2$ | 256.91 | 22.85 |
| Bis (1,5-cyclooctadiene)nickel(0) | 1295-35-8 | $C_{16}H_{24}Ni$ | 275.06 | 21.34 |
| Bis(tricyclohexylphosphine)nickel(II) dichloride | 19999-87-2 | $C_{36}H_{66}Cl_2NiP_2$ | 690.46 | 8.5 |

# Precious Metal Salts (METCAT Brand)

## Palladium

| Name | CAS No. | Formula | % Metal | Application |
|---|---|---|---|---|
| Palladium Metal | 7440-05-3 | Pd | 99.9 | Catalyst Preparation |
| Palladium Black | 7440-05-3 | Pd | 98 | Catalyst |
| Palladium (II) Oxide | 1314-08-5 | PdO | 87 | Catalyst Reduction in organic synthesis |
| Palladium Chloride | 7647-10-1 | $PdCl_2$ | 60 | Manufacturing of Catalyst |
| Palladium (II) nitrate Solution | 10102-05-3 | $Pd(NO_3)_2.nH_2O$ | 46 | Catalyst Preparation |
| Ammonium Hexachloropalladate (IV) | 19168-23-1 | $(NH_4)_2[PdCl_6]$ | 30 | Plating Chemicals |
| Ammonium tetrachloropalladate (II) | 13820-40-1 | $(NH_4)_2[PdCl_4]$ | 37 | Plating Chemicals |
| Dinitrodiamminepalladium(II) Palladium 'P' Salt | 14852-83-6 | $[Pd(NO_2)_2(NH_3)_2]$ | 46 | Plating Chemicals |
| Sodium Tetrachloropalladate(II) | 13820-53-6 | $Na_2[PdCl_4].nH_2O$ | 31 | Salt Preparation |
| Dichlorodiammine palladium (II) | 14323-43-4 | $Pd(NH_3)_2Cl_2$ | 50 | Plating Chemicals |
| Palladium(II) Acetate Trimer | 53189-26-7 | $[PD(Oac)_2]_3$ | 47.4 | Carbonylation, Heak Coupling |
| Palladium (II) bromide | 13444-94-5 | $PdBr_2$ | 40 | Precatalyst |

## Platinum

| Name | CAS No. | Formula | % Metal | Application |
|---|---|---|---|---|
| Platinum Metal | 7440-06-4 | Pt | 99.9 | |
| Platinum Black | 7440-06-4 | Pt | 98.5 | Catalyst |
| Platinum (IV) Oxide | 1314-15-4 | $PtO_2.nH_2O$ | 80 | Hydrogenation Catalyst, Suitable for Double and Triple Bond, Aromatic Cabonyls, Nitriles Etc. |
| Platinum (II) Chloride | 10025-65-7 | $PtCl_2$ | 72 | Hydrosilylation |
| Chloroplatinic acid, Hydrogen hexachloroplatinate (IV) Solution | 16941-12-1 | $H_2[PtCl_6].nH_2O$ | 39-42 | Hydrosilylation |
| Ammonium hexachloroplatinate (IV) | 16919-58-7 | $(NH_4)_2[PtCl_6]$ | 44 | Salt |
| Ammonium tetrachloroplatinate (II) | 13820-41-2 | $(NH_4)_2PtCl_4$ | 44 | Plating |
| Dinitrodiammine Platinum (II) Platinum 'P' Salt | 14286-02-3 | $[Pt(NO_2)_2(NH_3)_2]$ | 33 | Plating |
| Hydrogen hexachloroplatinate (IV) | 16941-12-1 | $H_2[PtCl_6]$ | 25 | Catalyst, Electroplating |
| Platinum (IV) chloride | 13454-96-1 | $PtCl_4$ | 55 | Catalyst, Electroplating |
| Potassium hexachloroplatinate(IV) | 16921-30-5 | $K_2PtCl_6$ | 40 | Raw material for cisplatin |
| Potassium tetrachloroplatinate(II) | 10025-99-7 | $K_2PtCl_4$ | 47 | Used to make precious metallic cancer drug |

## Ruthenium

| Name | CAS No. | Formula | % Metal | Application |
|---|---|---|---|---|
| Ruthenium Metal Powder | 7440-18-8 | Ru | 99.9 | |
| Ruthenium Black | 7440-18-8 | Ru | 98.5 | Catalyst |
| Ruthenium Trichloride Anhydrous | 10049-08-8 | $RuCl_3$ | 48 | Oxidising Agent |
| Ruthenium (ill) Chloride, hydrated | 14898-67-0 | $RuCl_3.nH_2O(n\sim2)$ | 39 | Catalyst Precursor |
| Ruthenium (IV) Oxide Hydrated | 3274-79-7 | $RuO_2.H_2O$ | 55 | Catalyst |
| Ruthenium (IV) Oxide Anhydrous | 12036-10-1 | $RuO_2$ | 73 | Dye |
| Ruthenium Red | 11103-72-3 | $Cl_6H_{42}N_{14}O_2Ru_3$ | 34 | Catalyst |
| Ruthenium (III) nitrosyl nitrate solution | 34513-98-9 | $[Ru(NO)(NO_3)_3]$ | - | Catalyst |
| Ruthenium (III) Acetate | 55466-76-7 | $RuC_{12}H_{28}BF_4O_{18}$ | 35.66 | Catalyst |

## Iridium

| Name | CAS No. | Formula | % Metal | Application |
|---|---|---|---|---|
| Iridium Black | 7439-88-5 | Ir | | Catalyst |
| Iridium Chloride Hydrate | 14996-61-3 | $IrCl_3.nH_2O$ | 64.4 | Catalyst and plating |
| Iridium (IV) Oxide | 12030-49-8 | $IrO_2$ | 85.7 | Catalyst |
| Potassium Hexachloroiridate (IV) | 16920-56-2 | $K_2IrCl_6$ | 39.8 | Plating |

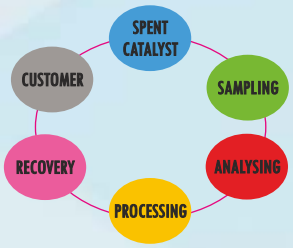
## Rhodium

| Name | CAS No. | Formula | % Metal | Application |
|---|---|---|---|---|
| Rhodium Powder | 7440-16-6 | Rh | 99.9 | |
| Rhodium Black | 7440-16-6 | Rh | 98 | Catalyst |
| Rhodium (III) chloride | 20765-98-4 | $RhCl_3.nH_2O$ | 39 | Surface Coating, Catalyst precursor |
| Rhodium (III) sulfate 10% solution | 10489-46-0 | $Rh_2(SO_4)_3$ | 41.66 | Plating |
| Rhodium II Octanoate Dimer | 73482-96-9 | $[Rh(C_7H_{15}COO)_2]_2$ | 26.46 | Crclopropanation, Carbene reaction |
| Rhodium(II) acetate dimer | 15956-28-2 | $[Rh(CO_2CH_3)_2]_2$ | 46.57 | Cyclopropanation of alkenes, Carbene reaction |
| Rhodium (III) Nitrate in aqueous solution | 10139-58-9 | $Rh(NO_3)$ | | Catalyst |

## Silver

| Name | CAS No. | Formula | % Metal | Application |
|---|---|---|---|---|
| Sliver Metal Powder | 7440-22-4 | Ag | 99.99 | Catalyst |
| Silver (1) Chloride | 7783-90-6 | AgCl | 75.26 | Photographic filims |
| Silver ( Nitrate | 7761-88-8 | $AgNO_3$ | 63.5 | Silver Plating, Photography, Mirrors |
| Silver (I) oxide | 20667-12-3 | $Ag_2O$ | 93 | Catalyst |

## SERVICES OFFERED :




**Recycling,recovery & Re-process Of Spent Catalyst Containing Nickel & Precious Metal.**

**Catalyst screening & Customization as per clients requirements**

**Process optimization scale up studies**

Material Safety Data Sheets (MSDS) are provided to customers for storage and handling. The company provides after sales service and also technical consultation to its customers.

## EHS : ENVIRONMENT, HEALTH & SAFETY :

- Environment, Health & Safety (EHS) forms an integral part of METAL CHEM's management policy covering General Safety, Personal Safety, Product Safety, and Machinery Safety & Environment Control.
- METAL CHEM is committed to work in sync with nature and to protect the health and safety of our employees, customers and the community through our businesses activities by implementing effective policies for environmental protection, prevention of occupational illness and prevention of work injuries.


## For any further queries please contact :

metalchem

"Catalystic ideas for a better world"

**Mfrs. Of : Nickel Catalyst**
**Custom Catalyst & Salts**

**Plant :**
**Plot No.: F-1/15-16, MIDC,**
**Badlapur, Post Kulgan - 421503,**
**Dist. Thane, Maharashtra, INDIA**
**+91 0251 2690300**
**+91 788 799 2000**

**Office :**
**Prem Yash, Bk No. 802/1,**
**Above Indian Overseas Bank,**
**Link Road, Ulhasnagar - 421 003.**
**Dist. Thane, Maharashtra, INDIA**
**+91 90118 82000 / +91 8999856889**
**+91 0251 2709684**

**info@metal-chemindia.com**
**sales@metal-chemindia.com**

**www.metal-chemindia.com**