| JM | | 1% Pt/C | 1%Pt(Fe)/C | 3% Pt/C | | 5% Pt/C | | | 5% Pt(S)/C | 5% Pt/Al ₂ O ₃ | | 5% Pd/C | | | | | | | | 5% Pd/Al ₂ O ₃ | 5%Pd(Pb)/CaCO | 7 | | | Pd/C | | | 5% Rh/C | 5% Rh/Al ₂ O ₃ | , | 5% Ku/C | 5% Ru/Al ₂ O ₃ |
|---|--|-----------|------------|-----------|-----------|-----------|------------------------|-----------|------------|--------------------------------------|-----------|------------------------|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------------------------|---------------|------------|------------|------------|------------|------------|------------|-----------|--------------------------------------|-----------|-----------|--------------------------------------|
| Heterogeneous | Catalyst | 100 | 8 | 32 | 00 | 8 | 32 | 00 | 32 | 99 | 23 | 9 % | 2 2 | 3 8 | 18 | 33 | 32 | 8 | 8 8 | 5 = | - 18 | 000 | 000 | 328 | 000 | 000 | 90 ك | 3 2 | 2 6 | 22 5 | 3 6 | 3 = |
| Applications Table | | 1SB128M00 | 1SB163000 | 3SB113032 | 55B103000 | 55B103018 | 5SB103032 5SB117000 | 5SB128M00 | 5SB106032 | 5SB312099 | 5SA102023 | 55A390000 55A405028 | 50 A 2 A D A D D D | 5SA452000 | 55A487000 | 5SA503023 | 5SA503032 | 5SA580000 | 55A87L000 | 55A302039 | 55A305050 | 10SA390000 | 10SA394000 | 10SA402028 | 10SA424000 | 10SA487000 | 10SA87L000 | 55C101023 | 55C301099 | 5SD101002 | 55D970000 | 5SD302011 |
| | Aniline to cyclohexylamine | | | | | | | | | | | | | | | | | | | | | | | | | \top | | • | | | | • |
| | Benzyl halide to cyclohexylmethyl halide | | | | | | | | | | | | | | | | | | | | | | | | | | • | • | • | | | |
| Carbocycles | Carbocyclic ring | | | | | | • | | | • | • | | | | | | | | | | | | | | | | | | • | | | |
| | Partial carbocylic ring | | | | | | | | | • | | | | | | | | | | | | | | | | | | | | | | • |
| | Phenol to cyclohexane | | | | | | • | • | | | | | | | | | | | | | | | | | | | | | | | | |
| | Phenol to cyclohexanol | | | | | | | | | | | | | | | | | | | | | | | | | | | | • | | | |
| | Phenol to cyclohexanone | | | | | | | | | | • | | | | | | | | • | | | | | | | | | | | | | |
| | Carbocylic and heteroaromatic reduction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Heterocycles | Furans | | | | | | | | | | • | | | • | | | | | | | | | | | | | | • | | | | |
| | Pyridines | | | | | | • | - | | | | | | | | | | | | | | • | • | • | • | \top | | | | | | |
| | Pyrroles | | | | | | • | • | | | | | | | | | | | | | | | | | | | | • | | | | |
| | Selective heteroaromatic reduction | | | | | | | | | | | - | • | | | | | | | | | • | | • | | | | | | | | |
| | Alkene to alkane | | | | | | • | • | | | | - | • | • | | • | | | | | | | | | | | | 1 | | | | |
| | Alkyne to alkane | | | | | | | | | | | - | • | • | | • | | | | | | | | | | | | | | | | |
| | Cyclic alkene to cyclic alkane | | | | | | • | • | | | | | | • | | • | | | | | | | | | | | | | | | | |
| Carbon-Carbon Multiple Bonds | Halo-vinyl to halo-alkane | | | | | • | • | • | | | | | | | | | | | | | | | | | | | | | | | | |
| | Selective alkene reduction different substitution | | | | | | | | | | • | | | • | | • | | | | | | | | | | | | | | | | |
| | Selective alkene reduction same substitution | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Aldehyde to aliphatic alcohol | | | | | | • | • | | • | | | | | | | | | | | | | | | | | | | | • | | |
| | Ketone to aliphatic alcohol | | | | | | • | • | | • | | | | | | | | | | | | | | | | | | | | • | | |
| | Aldehyde to aromatic alcohol | | | | | | | | | | | | | | | • | | | | | | | | | | | | | | | | |
| | Alkylcetophenone to cyclohexyk alkyl alcohol | | | | | | | | | | | | | | | | | | | | | | | | | | | • | | • | | |
| Carbonyl Compounds | Benzaldehyde to toluene | | | | | | | | | | | • • | | | | • | | | | | | | | | | | | | | | | |
| | Ketone to aromatic alcohol | | | | | | | | | | • | | | | | - | | | | | | | | | | | | | | | | |
| | Substituted benzylalcohol to phenylalkane | | | | | | | | | | | | | | | • | | | | | | | | | | | | | | | | |
| | α-β-unsaturated aldehyde to unsaturated alcohol | | | | | • | • | | | • | | | | | | | | | | | | | | | | | | | | | | |
| | Alkyl α-β-unsaturated nitro to alkyl amine | | | | | | | | | | | - | • | • | | • | | | | | | | | | | | | | | | | |
| Nitro, Nitroso & Halonitroaromatic Compounds | Halonitro to haloamine | | • | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Nitro to aliphatic amine | | | • | | | | • | | • | | | | • | | | | | | | | | | | | | | \top | | | | |
| | Nitro to aromatic amine | | | | | | • | • | | • | | 1 | | • | | | | | | | | | | | П | | | | | | | |
| | Nitro to aromatic hydrazine dimer | | | | | | | | | | | | | • | | | • | | | | | | | | | | | | | | | |
| | Nitro to aromatic hydroxylamine | • | | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | |
| | Nitroso to aliphatic amine | | | | | | | • | | | | | | • | | • | • | | | | | | | | | | | \top | | | | |
| | Nitroso to aromatic amine | | | | | | | • | | | | | | • | | | • | | | | | | | | | | | \top | | | | |
| | Phenyl α - β -unsaturated nitro to phenyl ethyl amine | İ | | | | | | | | | | - | | • | | • | | | | İ | | | | | | | | | | | | 1 |



| JM | Heterogeneous Catalyst Applications Table | | 1%Pt(Fe)/C | 3% Pt/C | | 5% | % Pt/C | | 5% Pt(S)/C | 5% Pt/Al ₂ O ₃ | | | | 5 | % Pd/ | 'C | | | | 5% Pd/AI O | 0.00 - 0.00 | 5%Pd(Pb)/CaCO ₃ | | 1 | 0% I | Pd/C | | | 5% Rh/C | 5% Rh/Al ₂ O ₃ | 5% Ru/C | | 5% Ru/Al ₂ O ₃ |
|--|--|-----------|------------|-----------|-----------|-----------|-----------|------------------------|------------|--------------------------------------|-----------|-----------|-----------|-----------|------------------------|----------|-----------|-----------|-----------|------------|-------------|----------------------------|------------|------------|------------|------------|------------|------------|-----------|--------------------------------------|------------------------|-----------|--------------------------------------|
| _ | • | 100 | 000 | 132 | 000 | 18 | 32 | 3 5 | 32 | 99 | 123 | 8 | 28 | 00 8 | 3 8 | 33 | 32 | 000 | 00 | 99 | = | 20 | 000 | 000 | 028 | 000 | 000 | 300 | 23 | 66 | 00 | 3 0 | = |
| | | 1SB128M00 | 1SB163000 | 3SB113032 | 55B103000 | 55B103018 | 5SB103032 | 55B11/000 55B128M00 | 55B 106032 | 55B312099 | 5SA102023 | 55A390000 | 5SA405028 | 5SA424000 | 55A452000 55A487000 | 55050303 | 55A503032 | 5SA580000 | 55A87L000 | 55A302099 | 55A302011 | 5SA305050 | 10SA390000 | 10SA394000 | 10SA402028 | 10SA424000 | 10SA487000 | 5SC20A0000 | 5SC101023 | 5SC301099 | 5SD101002 5SD600000 | 5SD970000 | 5SD302011 |
| | Reductive amination from ketone | | | | | | | | | | | | | • | | • | | • | | • | | | | | | | | | | | | | |
| Reductive Aminations | Reductive alkylation from ketone | | | | | | • | • | • | | | • | | | | • | | | • | | | | | | | | | | | | | | |
| & Alkylations | Nitro reduction and reductive alkylation from ketone | | | | | | | | • | | | • | | | | | | | • | | | | | | | | | | | | | | |
| | Imine to amine | | | | | | • | • | • | • | - | • | | | - | | | | | • | | | | | | | | | | | | | |
| | Amino imine to hydrazine | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Imines & Oximes | Oxime to amine | | | | | | | | | | | | | | | • | • | • | | | | | | | | | | | • | | | | |
| | Oxime to hydroxylamine | | | | | | | | | | • | | | | | | • | • | | | | | | | | | | | | | | | |
| | Nitrile to 1°-aliphatic amine RNH ₂ | | | | • | | • | | | | | | | | | | • | • | | | | | | | | | | • | • | | | | |
| | Nitrile to 2°-aliphatic amine R ₂ NH | | | | | | | | | | | | | | | | • | • | | | | | | | | | | | | | | | |
| Alter 1 | Nitrile to 3°-aliphatic amine R ₃ N | | | | | | | | | | | | | | | | • | | | | | | | | | | | | • | | | | |
| Nitriles | Nitrile to 1°-aromatic amine RNH ₂ | | | | | | • | • | • | | | | | | | • | | | | | | | | • | | | | | | | | | |
| | Nitrile to 2°-aromatic amine R ₂ NH | | | | • | | • | | | | | | | | • | | • | | | | | | | | | | | | | | | | |
| | Nitrile to aldehyde | | | | | | | | | | | | | | | • | | | | | | | | | | | | | | | | | |
| | Aryl and alkyl halide hydrodehalogenation | | | | | | | | | | | | | • | - | | | | | | | | | | | | | | | | | | |
| | Vinyl halide to alkane | | | | | | | | | | | • | • | • | | • | | | | | | | | | | | | | | | | | |
| | Benzyl X cleavage | | | | | | | | | | | • | | • | | - | | | | | | | | • | | | | | | | | | |
| | O-debenzylation | | | | | | | | | | | • | | • | • | | | | | | | | • | | • | | • | | | | | | |
| Hydrogenolysis | N-debenzylation | | | | | | | | | | | • | | • | | - | | | | | | | • | | • | | | | | | | | |
| | N-decarbobenzyloxylation | | | | | | | | | | | • | • | • | | | | | | | | | • | • | • | • | | | | | | | |
| | O-decarbobenzyloxylation | | | | | | | | | | | • | • | • | | | | | | | | | • | • | • | • | | | | | | | |
| | Epoxide opening | | | | | | | | | | | • | • | | | • | | | | | | | | | | | | | | | | | |
| | Nitro to amine | | | | | | | | | | • | | | | • | | | | | | | | | | | | | | | | | | |
| Transfer I hydrogonation | Alkene to alkane | | | | | | | | | | - | | | | | | | | | | | | | | | | | | | | | | |
| Transfer Hydrogenation | O-/N-debenzylation | | | | | | | | | | | • | • | | • | - | | | | | | | • | • | • | | • | | | | | | |
| | O-/N-decarbobenzyloxylation | | | | | | | | | | | • | • | | | - | | | | | | | | • | • | | | | | | | | |
| | Cyclohexane to benzene | | | | | | | | | | | | | | | • | | | | | | | | | | | • | i i | | | | | |
| | Cyclohexene to benzene | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dehydrogenation & Alcohol Oxidation | Alkene to alkane | | | | | | | | | | | | | | | | | | | | | | | | | | • | i i | | | | | |
| | Alcohol to acid | | | | | | | • | • | | | | | | | | | | | | | | | | | | | | | | | • | |
| | Alcohol to aldehyde | | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | • | | |
| | Alcohol to carbonyl | | | | | | | • | • | | | | | | | | | | | | | | | | | | • | | | | | • | |

