



□ - BASF
We create chemistry

ENGELHARD
Materials Services

Precious Metal Chemicals

Your benefits

Products

We offer a wide range of homogeneous catalysts and heterogeneous catalyst precursors for industrial applications.



Development

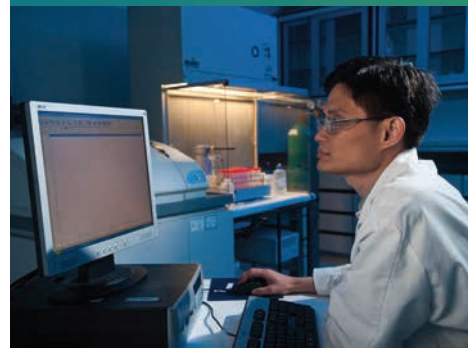
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Tel: +1-800-336-8559



Analytical Expertise

Our analytical laboratories around the world are working relentlessly to give you peace of mind. The quality of products supplied or the accuracy and transparency of spent catalyst settlements – we have you covered.



Resource Recovery

At the end of your catalyst life cycle, you want your precious resources recovered quickly, and at competitive terms.

We can help with that – worldwide, at competitive rates and with sustainability in mind.



Metal Trading

With our portfolio comes access to one of the world's largest precious metal trading organizations.

Buying, selling, hedging, leasing... find it all here.



Global Presence

Globally operating companies need globally operating partners.

Wherever you go, chances are you will find us there, ready to help.





High-quality chemical intermediates used in the synthesis of heterogeneous and homogeneous catalysts

Building on our core competencies in precious metals and catalysis, BASF offers a robust portfolio of PGM (Platinum Group Metals) chemical intermediates for use in a variety of industrial catalysis applications. Our innovative PGM compounds and solutions are manufactured at our ISO 9001 certified manufacturing facilities located at Seneca, SC, USA, and Rome, Italy.

Gold Products

| Product Number | Name | CAS Number | Formula | Metal % |
|----------------|-----------------------------------|------------|---------------------------------------|---------|
| PMC2101 | Sodium Tetrachloroaurate Solution | 15189-51-2 | NaAuCl ₄ (liq) | 20.0% |
| PMC2102 | Gold(III) Chloride Solution | 16903-35-8 | HAuCl ₄ ·xH ₂ O | 20.0% |

Iridium Products

| Product Number | Name | CAS Number | Formula | Metal % |
|----------------|--|------------|---|---------|
| PMC6101 | Hydrogen Hexachloro Iridium(IV) Solution | 16941-92-7 | H ₂ IrCl ₆ (liq) | 22.0% |
| PMC6201 | Hydrogen Hexachloro Iridium(IV) Hydrate | 16941-92-7 | H ₂ IrCl ₆ ·xH ₂ O | 40.0% |
| PMC6202 | Iridium Black | 7439-88-5 | Ir | 99.0% |
| PMC6203 | Ammonium Hexachloro Iridium(IV) | 16940-92-4 | (NH ₄) ₂ IrCl ₆ | 43.6% |

Note: Metal % for solutions is the highest content we can supply.

Palladium Products

| Product Number | Name | CAS Number | Formula | Metal % |
|----------------|---|------------|--|---------|
| PMC4101 | Sodium Tetrachloropalladium(II) Solution | 13820-53-6 | Na ₂ PdCl ₄ | 15.0% |
| PMC4102 | Tetraammine Pd(II) Nitrate Solution | 13601-08-6 | [Pd(NH ₃) ₄](NO ₃) ₂ | 5.0% |
| PMC4103 | Palladium Nitrate Solution | 10102-05-3 | Pd(NO ₃) ₂ | 18.0% |
| PMC4104 | Palladium Chloride Solution | 7647-10-1 | PdCl ₂ | 20.0% |
| PMC4105 | Tetraammine Palladium(II) Hydroxide Solution | 68413-68-3 | (NH ₃) ₄ Pd(OH) ₂ | 10.0% |
| PMC4201 | Palladium(II) Acetate | 3375-31-3 | Pd(OOCCH ₃) ₂ | 47.5% |
| PMC4202 | Sodium Tetrachloro Palladium(II) Crystals | 13820-53-6 | Na ₂ PdCl ₄ | 36.2% |
| PMC4203 | Pd Black high surface area (dry) | 7440-05-3 | Pd | 99.0% |
| PMC4204 | Pd Black high surface area (water wet) | 7440-05-3 | Pd | 50.0% |
| PMC4205 | Palladium(II) Oxide Hydrate | 64109-12-2 | PdO·xH ₂ O | 86.9% |
| PMC4206 | Palladium(II) Chloride Crystals | 7647-10-1 | PdCl ₂ | 60.0% |
| PMC4207 | Palladium(II) Oxide anhydrous | 1314-08-5 | PdO | 86.0% |
| PMC4209 | Bis(Acetonitrile)Pd(II) | 14592-56-4 | PdCl ₂ (CH ₃ CN) ₂ | 41.0% |
| PMC4210 | Pd (dppf) Chloride(II) | 72287-26-4 | [(C ₅ H ₄ P(C ₆ H ₅) ₂) ₂ Fe]PdCl ₂ | 14.5% |
| PMC4211 | Tetraamminepalladium Sulfate | 13601-06-4 | (NH ₃) ₄ PdSO ₄ | 39.3% |
| PMC4212 | Palladium bis-dibenzilidene acetone Pd / Pd(dba) ₂ | 32005-36-0 | (C ₆ H ₅ CH=CHCOCH=CHC ₆ H ₅) ₂ Pd | 18.5% |
| PMC4213 | Pd(dppf) Dichloride CH ₂ Cl ₂ adduct | 95464-05-4 | C ₃₅ H ₃₀ Cl ₄ FeP ₂ Pd | 13.0% |
| PMC4214 | Tris(dibenzilideneacetone) Dipalladium(0) | 52409-22-0 | (C ₆ H ₅ CH=CHCOCH=CHC ₆ H ₅) ₃ Pd ₂ | 23.0% |
| PMC4215 | Palladium(II) Acetylacetonate | 14024-61-4 | Pd(C ₅ H ₇ O ₂) ₂ | 34.9% |
| PMC4216 | Tetrakis triphenylphosphine Palladium / "Pd TK" | 14221-01-3 | Pd[(C ₆ H ₅) ₃ P] ₄ | 9.2% |

Rhodium Products

| Product Number | Name | CAS Number | Formula | Metal % |
|----------------|---|------------|---|---------|
| PMC5101 | Rhodium(III) Acetate Solution | 26105-49-7 | Rh(C ₂ H ₃ O ₂) ₃ | 14.0% |
| PMC5102 | Rhodium(III) Chloride Solution | 20765-98-4 | RhCl ₃ ·xH ₂ O | 10.0% |
| PMC5103 | Rhodium(III) Nitrate Solution | 10139-58-9 | Rh(NO ₃) ₃ | 10.0% |
| PMC5201 | Rhodium(III) Acetate Crystals | 42204-14-8 | Rh(C ₂ H ₃ O ₂) ₃ | 36.8% |
| PMC5202 | Rhodium(III) Chloride Hydrate | 20765-98-4 | RhCl ₃ ·xH ₂ O | 40.0% |
| PMC5203 | Rhodium(II) Octanoate | 73482-96-9 | [[CH ₃ (CH ₂) ₆ CO ₂] ₂ Rh] ₂ | 26.4% |
| PMC5204 | Chloro Tris (triphenylphosphine) Rhodium(I) (Wilkinson's Catalyst) | 14694-95-2 | Rh(ClCP(C ₆ H ₅) ₃) ₃ | 11.1% |
| PMC5205 | Rhodium (Acac)carbonyl, CARAC | 14874-82-9 | Rh(CO) ₂ (C ₅ H ₇ O ₂) | 39.9% |
| PMC5206 | Rh(C ₅ H ₇ O ₂)(CO)P(C ₆ H ₅) ₃ , ROPAC | 25470-96-6 | C ₂₄ H ₂₂ O ₃ PRh | 20.9% |
| PMC5207 | Bis(norbornadiene)Rh(I) Tetrafluoroborate | 36620-11-8 | Rh(C ₇ H ₈) ₂ BF ₄ | 27.5% |
| PMC5208 | HRh(CO)(PPh ₃) ₃ ; RODRIDO | 17185-29-4 | RhH(CO)(P(C ₆ H ₅) ₃) ₃ | 11.2% |
| PMC5209 | Chloro (1,5-cyclooctadiene) Rhodium(I) | 12092-47-6 | RhCl(C ₈ H ₁₂) | 42.0% |


Platinum Products

| Product Number | Name | CAS Number | Formula | Metal % |
|----------------|--|------------|---|---------|
| PMC3101 | Platinum Ethanolamine Solution (Platinum A Solution) | 68133-90-4 | $(\text{HOCH}_2\text{CH}_2\text{NH}_2)_3\text{Pt}(\text{OH})_6$ | 12.0% |
| PMC3102 | Tetraammine Platinum(II) Chloride Solution | 13933-32-9 | $[\text{Pt}(\text{NH}_3)_4]\text{Cl}_2 \cdot x\text{H}_2\text{O}$ | 6.0% |
| PMC3103 | Chloroplatinic Acid (CPA) Solution | 16941-12-1 | H_2PtCl_6 | 30.0% |
| PMC3104 | Potassium Tetrachloro Pt(II) Solution | 10025-99-7 | K_2PtCl_4 | 3.0% |
| PMC3105 | Tetraammine Pt Nitrate Solution | 20634-12-2 | $[\text{Pt}(\text{NH}_3)_4](\text{NO}_3)_2$ | 3.0% |
| PMC3106 | Tetraammine Pt Hydroxide Solution | 15651-37-3 | $[\text{Pt}(\text{NH}_3)_4](\text{OH})_2$ | 10.0% |
| PMC3107 | Pt-Nitrate Solution | 18496-40-7 | $\text{Pt}(\text{NO}_3)_2$ | 30.0% |
| PMC3201 | Platinum(IV) Oxide Hydrate (Adam's Catalyst) | 12137-21-2 | $\text{PtO}_2 \cdot x\text{H}_2\text{O}$ | 81.0% |
| PMC3202 | PtO_2 (Adam's Catalyst) 50% Moist | 1314-15-4 | PtO_2 | 81.0% |
| PMC3203 | Dihydrogen Hexahydroxyplatinum(IV) | 52438-26-3 | $\text{H}_2\text{Pt}(\text{OH})_6$ | 65.2% |
| PMC3204 | Pt Black (fuel cell grade) | 7440-06-4 | Pt | 99.0% |
| PMC3205 | Pt Black (low surface area) | 7440-06-4 | Pt | 99.0% |
| PMC3206 | Pt Black (low bulk density) | 7440-06-4 | Pt | 99.0% |
| PMC3207 | Potassium Tetrachloro Platinite(II) | 10025-99-7 | K_2PtCl_4 | 47.0% |
| PMC3208 | Potassium Hexachloro Platinum | 16921-30-5 | $\text{K}_2[\text{PtCl}_6]$ | 40.1% |
| PMC3209 | 1,3 Divinyl-1,1,3,3, Tetramethyldisiloxane Platinum(0) Karstedt's Catalyst | 68478-92-2 | $\text{C}_{24}\text{H}_{54}\text{O}_3\text{Pt}_2\text{Si}_6$ | 2.0% |
| PMC3210 | Dinitrodiammineplatinum(II) in NH_3 ("P-Salt") | 14286-02-3 | $(\text{NH}_3)_2\text{Pt}(\text{NO}_2)_2$ | 15.0% |
| PMC3211 | Tetramethyl Tetravinyl Cyclotetrasiloxane Platinum(0) Ashby's Catalyst | 68585-32-0 | $\text{Pt}[(\text{C}_3\text{H}_6\text{SiO})_4]_x$ | 2.0% |
| PMC3212 | Platinum(II) Acetylacetonate | 15170-57-7 | $\text{Pt}(\text{C}_5\text{H}_7\text{O}_2)_2$ | 49.6% |
| PMC3213 | Platinum(II) Chloride Powder | 10025-65-7 | PtCl_2 | 73.3% |

Ruthenium Products

| Product Number | Name | CAS Number | Formula | Metal % |
|----------------|---|------------|---|---------|
| PMC7101 | Sodium Ruthenate Solution | 17001-79-5 | NaRuO_4 | 5.0% |
| PMC7102 | Ruthenium(III) Chloride Solution | 10049-08-8 | $\text{RuCl}_3 \cdot x\text{H}_2\text{O}$ | 20.0% |
| PMC7201 | Ruthenium Oxide Hydrate | 32740-79-7 | $\text{RuO}_2 \cdot x\text{H}_2\text{O}$ | 76.0% |
| PMC7202 | Ruthenium Acetylacetonate or Tris (2,4-Pentanedionato) Ruthenium(III) | 14284-93-6 | $\text{Ru}(\text{C}_5\text{H}_7\text{O}_2)_3$ | 25.4% |
| PMC7203 | Ruthenium(II) Chloride Cymene | 52462-29-0 | $[\text{Ru}(\text{p-cymene})\text{Cl}_2]_2$ | 33.0% |
| PMC7204 | Ruthenium(III) Chloride Crystals | 14898-67-0 | RuCl_3 | 37.0% |

Over 100 years of precious metals expertise

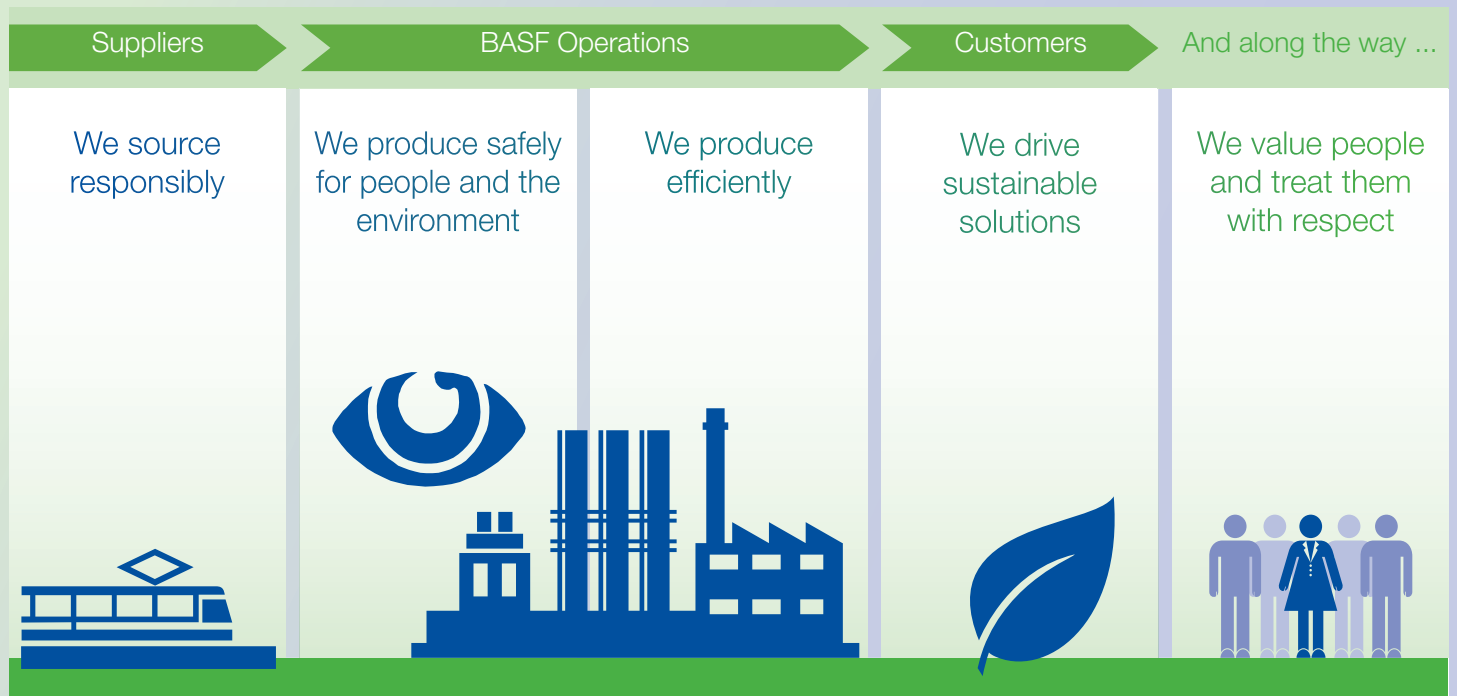
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- 1902 Engelhard was started by Charles W. Engelhard, Sr. when he purchased the Charles F. Croselmir Company in Newark, New Jersey, USA.
 - 1905 With the purchase of Hanovia Chemical and Manufacturing Company, Engelhard officially became the world's largest refiner and fabricator of Platinum, Gold and Silver.
 - 1920s Became Inco's exclusive dealer of platinum in the United States.
 - 1930s Created a research-and-development department to pioneer new uses for platinum.
 - 1960 Opened precious metals facility in Rome, Italy.
 - 1962 Opened precious metals facility in Cinderford, UK.
 - 1970s Wall Street Journal started publishing EIB (Engelhard Industrial Bullion) prices.
 - 1974 Engelhard introduced the modern TWC (Three-Way Catalyst) for cars.
 - 1985 Opened precious metals facility in Seneca, SC.
 - 1992 Opened precious metals recycling site in Lincoln Park, MI.
 - 2006 BASF purchased Engelhard.
 - 2012 Opened precious metals facility in Shanghai, China.
 - 2015 Installed State-of-Art Autocat Preparation plant in Cinderford, UK.
 - 2017 Doubled precious metals milling and sampling capacity at Seneca site.

We create chemistry for a sustainable future

We want to contribute to a world that provides a viable future with enhanced quality of life for everyone. We do so by creating chemistry for our customers and society and by making the best use of available resources. Sustainability is at the core of what we do, a driver for growth as well as an element of our risk management.



Our Corporate Commitments cover every part of our value chain and operations to deliver long-term business success.



About Us

BASF's Catalysts division is the world's leading supplier of environmental and process catalysts. The group offers exceptional expertise in the development of technologies that protect the air we breathe, produce the fuels that power our world and ensure efficient production of a wide variety of chemicals, plastics and other products, including advanced battery materials. By leveraging our industry-leading R&D platforms, passion for innovation and deep knowledge of precious and base metals, BASF's Catalysts division develops unique, proprietary solutions that drive customer success.

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