

limit of 3800°F. Cooled probes may also be calibrated against reference standards at lower temperatures and higher temperatures may be estimated by extrapolation. Aspirated thermocouples, cooled-tube probes, cooled-gas probes and pneumatic probes for the measurement of

total temperatures are described. Optical-radiation instruments for the measurement of static temperature are discussed. Accurate values are obtained only when several distinctly different instruments are operated in the same gas stream.

NEW PATENTS

Catalytic Reforming

SOCONY MOBIL OIL CO. INC. *British Patent 812,895*
A hydrocarbon mixture is reformed by contacting it under reforming conditions with a catalyst consisting of a mechanical mixture of particles of less than 100 microns diameter of (1) a porous inert carrier on which is deposited 0.05-5% by wt. of a Pt metal and (2) an acidic cracking component, the components being present in a predetermined relationship. The carrier may be Al_2O_3 , the Pt metal, Pt or Pd and the cracking component $SiO_2-Al_2O_3$.

Catalytic Cracking of Hydrocarbons

SOCONY MOBIL OIL CO. INC. *British Patent 812,896*
A hydrocarbon charge is cracked by contacting it in the presence of hydrogen with a catalyst consisting of a mechanical mixture of particles of less than 100 microns diameter of (1) a porous carrier inert to cracking activity on which is deposited 0.05-10% by wt. of a Pt metal and (2) an acidic cracking component, the components being present in a specified relationship.

Production of Hydrogen

THE BRITISH PETROLEUM CO. LTD. *British Patent 813,443*

Hydrogen is produced by contacting a petroleum distillate having an initial boiling point above 200°C, which has been hydrocatalytically desulphurised, in the presence of hydrogen, with a Pt/ Al_2O_3 catalyst at 600-850°F and a pressure of 50-500 p.s.i.g.

2-(β -Amino-Ethyl)-5-Hydroxy-Indole

J. R. GEIGY A.G. *British Patent 813,777*

Pd/charcoal is used at an intermediate stage, involving the hydrogenolysis of an amino compound, in the preparation of 2-(β -Amino-ethyl)-5-hydroxy indole.

Supported Catalysts

THE DISTILLERS CO. LTD. *British Patent 814,003*

A catalyst for use in the selective hydrogenation of unsaturated aldehydes is made by treating a solid mildly alkaline support material, e.g. Al_2O_3 , TiO_2 , Cr_2O_3 , charcoal, SiO_2 gel or pumice, with a solution of a Pt group metal compound in an organic solvent to deposit the oxide of the metal, treating the product with an aqueous solution of

an alkali metal hydroxide, carbonate or bicarbonate and reducing the oxide to the metal. The catalyst contains 0.01-5% by wt. of the Pt group metal, preferably Pd. The organic solvent used is a ketone.

Thermocouple Elements

H. NISHIMURU *British Patent 814,011*

A thermocouple has one limb formed of a Pt-13%Rh alloy and the other limb of Mo and W and balance Pt (0.5-5% Mo plus 0.5-10% W).

Production of Cyano-Benzylamines

THE DISTILLERS CO. LTD. *British Patent 814,631*

Cyano-benzylamines are prepared by hydrogenating phthalonitrile, isophthalonitrile and/or terephthalonitrile in liquid phase in the presence of a Pd or Pt catalyst. The presence of this catalyst enables selective hydrogenation of only one of the two nitrile groups. Pd or Pt/ Al_2O_3 or C is used.

Glass-to-Metal Seals

THE BRITISH THOMSON-HOUSTON CO. LTD. *British Patent 814,644*

The hermetic seal between a glass part and a ferrous alloy part sealed by fusion is protected against the effect of humidity by coating the ferrous alloy in the region of the intended seal with a layer of Rh of 0.00003-0.00005 in. thick. A layer of Ag of 0.0003-0.0005 in. thick may be first applied.

Dehydronovobiocin

THE UPJOHN CO. *British Patent 815,517*

Dehydronovobiocin is prepared by reacting novobiocin in a solvent therefor with hydrogen in the presence of a PtO_2 catalyst.

Catalyst Preparation

ENGELHARD INDUSTRIES INC. *U.S. Patent 2,885,369*

In making a Pt/ Al_2O_3 reforming catalyst by forming an alumina hydrate slurry by precipitation from a water soluble Al salt, transforming the washed slurry to a mixture of hydrate phases predominating in alumina trihydrates, drying and calcining, the Pt metal is incorporated in the mixture at a point subsequent to initial precipitation of the hydrate and prior to a transformation thereof to an over 50% alumina trihydrate composition.

Reforming Catalyst

SOCONY MOBIL OIL CO. INC. *U.S. Patent 2,884,382*
A catalyst is made by pretreating porous Al_2O_3 to replace the air in the pores with gaseous CO_2 and then, out of contact with air, impregnating the Al_2O_3 with a solution of H_2PtCl_6 in amount to give 0.05-5% by wt. of Pt in the final catalyst and calcining at 500-1000°F.

Ferro-magnetic Compositions

E. I. DU PONT DE NEMOURS & CO. *U.S. Patent 2,885,365*

A ferro-magnetic composition in the form of small acicular particles of tetragonal crystal structure of average length not over 2 microns contains 58.4-61.9% Cr combined with oxygen and 0.008-4.4% Ru combined with oxygen.

Hydrocarbon Conversion Catalyst

SUN OIL CO. *U.S. Patent 2,887,449*

A hydrocarbon fraction boiling above the gasoline range is converted to high octane gasoline by contacting it with a catalyst consisting of by weight 63-92% SiO_2 , 6-20% Al_2O_3 , 0.05-5% ruthenium oxide and 1-12% manganese oxide.

Improved Rosin

HERCULES POWDER CO. *U.S. Patent 2,887,475*

A Pt or Pd catalyst may be used in the treatment of rosin which includes subjecting the rosin to disproportionation until it contains less than 5% abietic acid in the presence of the catalyst.

Hydrocarbon Conversion Process

THE M. W. KELLOGG CO. *U.S. Patent 2,888,397*

A hydrocarbon reactant is contacted at 400-1250°F, a pressure of from atmospheric to 2,500 lb/sq. in. and a wt. space velocity of 0.01-15, with a catalyst made by combining an ammine complex of Pt or Pd, 0.01-10% based on wt. of carrier, of Hg as an activating agent, and a carrier material and treating the mixture to decompose the ammine complex to the metal.

Production of Hexahydroterephthalic Acid

HERCULES POWDER CO. *U.S. Patent 2,888,484*

Hexahydroterephthalic acid is made by treating terephthalic acid with hydrogen at 150-300°C and at least 1,000 p.s.i.g. pressure in the presence of a Pd catalyst and of an inert liquid medium in which the acid is at least partly soluble.

Electrical Resistance Element

W. C. HERAEUS G.M.B.H. *U.S. Patent 2,890,114*

A potentiometer resistance element in wire form is composed of a Pd alloy containing 1-30% of W, Mo or mixtures thereof and balance Pd.

Conversion Process

UNIVERSAL OIL PRODUCTS CO. *U.S. Patent 2,890,167*

A hydrocarbon, boiling in the gasoline range, is

contacted at reforming conditions with a catalyst comprising a refractory oxide, 0.1-5% by wt. of P, halogen and 0.01-10% by wt. of a Pt group metal.

Hydrocarbon Conversion Catalyst

ESSO RESEARCH & ENGINEERING CO. *U.S. Patent 2,890,178*

A hydrocarbon conversion catalyst is made by forming an intermediate catalyst concentrate by impregnating finely divided adsorptive solid oxide carrier with 1-35% by wt. of a Pt group metal compound and drying. A minor amount of this concentrate is then mixed with a major proportion of a metal oxide (Al_2O_3), which is free of Pt group metal, to form a final catalyst containing the required Pt group metal concentration.

Hydroforming Catalyst

ESSO RESEARCH & ENGINEERING CO. *U.S. Patent 2,890,179*

Highly active and selective hydroforming catalyst is made by spray drying a high purity Al_2O_3 hydrosol to form Al_2O_3 microspheres, segregating the particles in the size range of 40-80 microns, incorporating 0.3-2% by wt. of Pt on the segregated particles to form a Pt catalyst concentrate, mixing this with unplatined finely divided Al_2O_3 to form a fluidisable final catalyst containing 0.005-0.2 wt. % Pt.

Platinum Catalysts

PHILLIPS PETROLEUM CO. *U.S. Patent 2,891,013*

A Pt metal catalyst is made by reacting a halo acid of a Pt metal with H_2SO_4 in aqueous solution; evaporating the solution until a yellow to orange precipitate forms with solution remaining; dissolving this precipitate in H_2O and impregnating a catalyst support with this precipitate solution, drying and heating to activate the catalyst.

Removal of Arsenic with Catalyst

UNIVERSAL OIL PRODUCTS CO. *U.S. Patent 2,987,131*

A gasoline fraction containing As impurities is contacted at 500-750°F, first with a Pt/ Al_2O_3 catalyst (0.1-1% Pt), which has previously been deactivated by use in the reforming reaction, to remove the As impurities and then at 850-1000°F with the catalyst in the remainder of the zones to effect reforming.

Catalyst

THE M. W. KELLOGG CO. *U.S. Patent 2,897,137*

A hydrocarbon reactant is contacted at 600-1250°F, a pressure of 1 atm. to 2,000 p.s.i.g. and a wt. space velocity of 0.01-15 with catalyst particles containing 1-25% by wt. of Pt on a carrier material in physical admixture with particles of a carrier material in amount sufficient to provide an average Pt concentration of 0.05-0.95% by wt. of the mixture.