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- Town gas and hydrocarbons from sulfur-containing carbon monoxide--hydrogen mixtures (Sulfides of Group VI, especially Mo, used as catalyst; product gas in C₂, 12.8, C₃ 12.9; H 49.7, CH₄ 22.9; and N 1.7% by vol., with heating value of 4090 Kcal/m³), 4145
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Unsaturated gaseous hydrocarbons (Mixture of H and CO passed over stable oxidized metals of Groups 2-7; use of Al_2O_3 and acetydic acid), 4036
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 Work of the School of Louvain on synthetic motor fuels (Catalyst of 98.57 percent Co, 0.24 Ni, 0.15 Fe, 0.32 CaO, 0.03 S, and 0.07 Mn activated with 18 percent ThO_2 ; catalyst of Co-Ni precipitated on kieselguhr with K_2CO_3 (Co 2.6, Ni 3.6, Mn 1.4, MgO 1.4)), 6007
 Work of the Gas Research Board. Report of the Director (Review of complete gasification; synthesis of CH_4 using Ni catalyst; removal of organic sulfur from coal gas), 3400

CARBON MONOXIDE/REMOVAL

Catalytic conversion of fuel gases containing carbon monoxide and organic sulfur compounds (CO converted to CO_2 and H by steam and elimination of H_2S and organic S compounds by means of Fe oxide catalysts that may contain inert carriers and Mn, Cr, or Cu promoters in fixed or fluid beds), 1335
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 Conversion of carbon monoxide (Removal of CO and S-containing compounds from coke-oven gas; gas washed with solution of soda and anthraquinonesulfonic acid as catalyst; diagram of apparatus), 1356
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 Practical design considerations for gas purification processes (Use of amine, Fe sponge box, and K_2CO_3 processes for removing H_2S and CO_2 from natural gas), 1077
 Purification of fuel gases (Removal of S compound, such as CS_2 , CCS , thiols, thiophene, and H_2S , and by virtual elimination of CO), 1207
 Removing gaseous weak acids such as H_2S and CCl_2 from gases such as coal hydrogenation waste gases (By scrubbing with a solution of Na diethylenetriaminediacetate or other salt of an alkali, alkaline earth, or strong organic base with an aminocarboxylic acid containing at least 2N atoms and derived from ethylenediamine or a polymer), 528
 Removing weak gaseous acids from gases (Use of diamines, polyamines, and salts of amino-, imino-, or tertiary N-acid derivatives), 458

CARBON SULFIDES/OXIDATION

Gas desulfurization (S compounds (CO_2 , C disulfide, entrained and vaporized S, and H sulfide) oxidized to C dioxide and S dioxide), 2128
 Removing sulfur by the catalytic oxidation of the gases (Gases containing H_2S , CH_3SH , and COS oxidized with air or O to H_2O , CO_2 , and SO_2 over catalyst), 1211

CARBON SULFIDES/PRODUCTION

Two-stage gasification of coal (Production of CH_4 -enriched fuel gas; charred material reacts with O above 1370° and above 70 atm to give synthesis gas; this reacts with coal and steam above 870° and 70 atm to give product gas containing H, CH_4 , and oxides), 5521

CARBON OXIDES/REDUCTION

Catalytic reaction of oxides of carbon with hydrogen (Production of liquid hydrocarbons using powdered catalysts), 6106
 Catalytic conversion (Catalyst consisting of Fe_2O_3 in combination with oxide of 1 or more bivalent metals other than Fe; Mg, Zn, Mn, Cd, alkaline earth metals, Be, and Cu are suitable; typical catalysts MgO 54, Fe_2O_3 40, Cu_2O 12; catalyst preparation is described), 2793
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 Iron catalyst (Finely divided Fe catalyst for conversion of C oxides and H into hydrocarbons and oxygenated compounds prepared by mixing Fe oxide with KF solution and drying), 6406
 Synthesis of hydrocarbons in the presence of a solid adsorbent (Fe powder catalyst containing 1-2% K_2O and about 2-3% Al_2O_3), 6546
 Synthesis of hydrocarbons from carbon oxide and hydrogen under atmospheric pressure (the Fischer-Tropsch synthesis) (Review (20 references) 22 catalysts evaluated), 5761

CARBON OXIDES/REMOVAL

Adip process (For the substantial removal (to a few ppm) of hydrogen sulfide and the partial removal of incidental CO_2 , C dioxide, and mercaptans), 1959
 Beavon process (Purification of S plant tail gas to meet air pollution standards), 1949
 Benfield process (Removal of C dioxide, H sulfide, and COS from sour natural gas and raw gases produced during manufacture of substitute natural gas by partial oxidation of coal or oil or by naphtha reforming), 1957
 Catalytic process for the removal of organic sulfur compounds from a gas stream (Two catalysts used in

series: Fe oxide + 15-20% alkalies Na_2CO_3 followed by ZnO + 10% Fe_2O_3 ; 1st causes hydrogenation of S compounds, and 2nd absorbs resulting H_2S), 1507
 Purification of synthesis gas. Removal of dust, carbon dioxide, and sulfur compounds (Production by reaction of coal with O and steam), 953
 Purification of fuel gases (Washing with organic polar solvent such as methanol or acetone at -300°), 1293
 Purification of fuel gases (Removal of S compound, such as CS_2 , COS, thiols, thiophene, and H_2S , and by virtual elimination of CO), 1307
 Purification of high-percentage carbon monoxide gas from carbon oxysulfide, carbon dioxide, and water (Use of H_2O , milk of lime, aqueous NH_3 , $NaOH$ in H_2O and alcohols, aqueous Na_2CO_3), 751
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 Treatment of waste gas containing flammable sulfur compounds (Gas is burned and passed through metal halide solution to precipitate metal sulfite and sulfate), 2084
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 Benfield process (Removal of C dioxide, H sulfide, and COS from sour natural gas and raw gases produced during manufacture of substitute natural gas by partial oxidation of coal or oil or by naphtha reforming), 1957
 Catalytic process for the removal of organic sulfur compounds from a gas stream (Two catalysts used in series: Fe oxide + 15-20% alkalies Na_2CO_3 followed by ZnO + 10% Fe_2O_3 ; 1st causes hydrogenation of S compounds, and 2nd absorbs resulting H_2S), 1507
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- Treatment of waste gas containing flammable sulfur compounds (Gas is burned and passed through metal halide solution to precipitate metal sulfite and sulfate), 2084
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- Chemical desulfurization of coal: report of bench-scale developments. Volume 1 (Use of aqueous ferric salt solutions), 1915 (PB-221405)
- Chemical desulfurization of coal: report of bench-scale developments. Volume 1. Final report (Meyer's process; 50 to 130°C; 1 to 10 atm; and coal sizes of 1/4 in. to 100 mesh), 1916 (PB-221405-4)
- Chemical desulfurization of coal: report of bench-scale developments. Volume 1. Final report. See also Volume 2, PB--221 406 (Meyer process for oxidation of pyrite S by ferric compounds to soluble forms), 1913 (PB--221 405/4)
- Chemical removal of pyritic sulfur from coal (Aqueous ferric salts selectively oxidize pyrite S to forms that can be removed by vaporization, steam, or solvent extraction), 1891
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- Removal of sulfur from coal by treatment with hydrogen. Phase I. The effect of operating variables and raw material properties. Research and development report No. 77, interim report No. 1 (Effects of reaction time and temperature, pressure, solvent type, and solvent coal ratio), 1991 (NP-20138)
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