The American Ceramic Society

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89

CERAMIC ABSTRACTS

1950

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Oil Development Co.). U. S. 2,481,825, Sept. 13, 1949 (July 9, 1943).—In a process for the manufacture of synthetic inorganic gels comprising silica wherein variations in the density of the gel products result from inadequate process controls, the method of compensating for the variations and thereby producing a product of more uniform density comprises forming a silica hydrogel, washing the hydrogel with an aqueous medium having a constant pH value in the neutral to slightly alkaline range, thereafter washing the hydrogel with an aqueous medium having a constant acid pH value, maintaining the total length of the two washing treatments constant, and varying the lengths of the individual washing treatments to compensate for the variations.

Seed for production of titanium dioxide and process of making. MAX J. MAYER. U. S. 2,480,869, Sept. 6, 1949 (Dec. 30, 1943).—1. In a process of making a rutile inducing seed for use in hydrolysis of hydrolyzable titanium salt solutions, heating at a temperature of 70°C. to boiling a dispersion containing a stabilizer which, on calcination, volatilizes before the temperature reaches 950°C. and has polyvalent anions and a member of the class consisting of the monobasic-acid salts of the metals of the fourth group and the orthohydrates of the metals of the fourth group peptized with a monobasic acid, the monobasic acid referred to in the class being 1 to 2.2 moles per mole of the metal of the fourth group and the amount of stabilizer being 4 to 55 millimoles per mole of the metal of the fourth group, the heating being carried out until curing is effected and then rapidly cooling below 60°C.

SiF_4-impregnated alumina catalyst and process of preparing. ALLEN D. GARRISON (Texaco Development Corp.). U. S. 2,483,130, Sept. 27, 1949 (May 13, 1944; Jan. 23, 1947).—1. The method of activating an alumina catalyst consists in subjecting the catalyst to contact with anhydrous SiF_4 at a temperature in the range of 70° to 950°F. until the aluminum oxide absorbs about 5 to 15% by weight of SiF_4.

SiF_4-impregnated silica-alumina catalyst. ALLEN D. GARRISON (Texaco Development Corp.). U. S. 2,483,131, Sept. 27, 1949 (Jan. 23, 1947; Dec. 31, 1948).—1. A catalyst effective in converting hydrocarbons at elevated temperatures consisting essentially of silica-alumina complex containing at least 5% by weight anhydrous SiF_4, absorbed at a temperature within the range of about 70° to 950°F.

Silicate-titanate phosphors. FERDINAND A. KROGER (Guaranty Trust Co.). U. S. 2,473,960, June 21, 1949 (Jan. 14, 1946; in Netherlands Nov. 16, 1942).—A crystalline luminescent material consists of titanium activated silicates in the form of silicate-titanates and of the fired reaction product of silicon dioxide, titanium dioxide, and an oxide of a metal of the group consisting of calcium, strontium, cadmium, sodium, and lithium, the constituent oxides of the silicate-titanates being in the mole ratios of $x:(y + z)$ between about 1:1 and 1:5 and $z:y$ between about 1.5:1 and 1:100, wherein x represents the metal oxide component, y represents the silicon dioxide component, and z represents the titanium dioxide component.

Additional abstracts

Sect. V: Comparative effect of various stabilizing treatments on the extractability of fresh glass surfaces. Damping of luminescence of glasses and uranyl salts. Effect of hydrostatic pressure on plasticity and strength. Flow of glass. Fundamental studies on the chemical resistance of optical glass. Glass structure and glass properties. Infrared study of the structure of glasses prepared by melting crystals. Sect. VII: Transition of β-alumina by heating. Sect. VIII: Studies on the crystallization properties of fused silicates. Sect. X: Rheology of stiff pastes. Sect. XI: Gypsum clay and its thermal dissociation. X-ray studies in some fire-clay and shale deposits.

XIV—General and Historical

Government closes case in flat glass antitrust suit—court recesses until November. ANON. *Glass Ind.*, 29 [6] 325–27 (1948).—A summary is given of the court proceedings of the suit filed by the Antitrust Division of the Department of Justice against 8 manufacturers of flat glass products and others.

W.W.C.

How to establish reduction to practice of a chemical invention. ROGER T. MCLEAN. *Chem. Inds.*, 65 [6] 882–84 (1949).

E.D.M.

New horizons in ceramics. HOBART M. KRANER. *Ohio State Univ. Eng. Expt. Sta. News*, 21 [3] 39–42, 111–14 (1949).—New developments are given in the fields of (1) raw materials, (2) purification, (3) synthesis (quartz, greenockite (CdS), crocoite ($PbCrO_4$), rutile, etc.), (4) abrasives, (5) vitreous enamels, (6) glass, (7) structural clay products, (8) whiteware (tile and electrical porcelain), (9) refractories, and (10) bonding agents.

W.D.F.

New micro methods ease storage and finding of facts. ANON. *Chem. Inds.*, 65 [5] 717, 833 (1949).—A brief discussion of the advantages of microfilm, microcards, microcombinations of the two, and micro- and mini-prints. E.D.M.

Organization and function of an analytical and testing group. R. P. CHAPMAN. *Chem. Inds.*, 65 [5] 718–21 (1949).—A detailed description of the semicentralized analytical and testing group of the American Cyanamid Co. It operates independently of but cooperates with other divisions in the research laboratory. C. describes its functions, the types of reports used, etc. E.D.M.

Review of pneumoconiosis and dust suppression in mines: I, Medical aspects of pneumoconiosis. A. G. HEPPLESTON. *Trans. Inst. Mining Engrs.* (London), 108 [10] 456–64 (1949); *Bull. Inst. Mining Met.*, No. 511, pp. 9–19 (1949).—H. discusses the present state of medical knowledge. 73 references. W.B.

BOOK

Handbook of Patents. HARRY A. TOULMIN, JR. D. Van Nostrand Co., New York, 1949. 800 pp. Price $9.00. Reviewed in *Chem. Inds.*, 65 [5] 798, 800 (1949).—This worth-while analysis of patent law and "patent considerations" is intended for the professionally trained client rather than the lawyer or solicitor.

E.D.M.

Sixth Semiannual Report of the Atomic Energy Commission. Prepared by the U. S. Atomic Energy Commission. U. S. Government Printing Office, Washington, 1949. 203 pp.—The report deals primarily with the medical and biological applications of nuclear energy: research into the effects of radiation on living things, the protective measures established for the use of radioactive materials, and the expanding use of radioisotopes in medical diagnosis and treatment, and in cancer research. The report also covers the highlights of other Commission activities during the last 6 months.

Symposium on Usefulness and Limitations of Samples: Introduction. H. F. DODGE. Sampling and Its Uncertainties. S. S. WILKS. Variations in Materials, Testing, and Sample Sizes. LESLIE E. SIMON (cf. *Ceram. Abstracts*, 1949, March, p. 94*f*). Amount of Inspection as a Function of Control of Quality. G. R. GAUSE. Published by the American Society for Testing Materials, Philadelphia 3, 1948. 39 pp. Price $1.00.—The authors consider the amount of testing necessary for the acceptance of good material and the rejection of poor material. They also discuss the general principles governing the degree to which the amount of testing of consistently good material can be reduced compared with that required when the quality is erratic.

PATENTS

Investment material. T. E. MOORE AND C. H. WATTS (Ransom & Randolph Co.). U. S. 2,479,504, Aug. 16, 1949 (July 12, 1943).—Soluble acid phosphate salts will react with silica at elevated temperatures (1400°F.) forming a refractory bond suitable for investments. Ammonium, magnesium, calcium, and sodium acid phosphates may be used, added as 5 to 10% of the total. D.F.K.

Making insulating and acoustical materials. JOHN M. CAMPBELL (J. M. Campbell and P. J. Haber). U. S. 2,481,391, Sept. 6, 1949 (May 15, 1945).—A process for the manufacture of insulating material having a specific gravity under 1 and resistance to crumbling at 2270°F. from expanded vermiculite comprises (1) spraying the expanded vermiculite with powdered magnesium or aluminum oxide, (2) adding a gel composed of sodium silicate, magnesium fluosilicate, urea, and water, (3) adding plastic clay, and (4) extruding the mass. D.F.K.

Additional abstracts

Sect. II: Hispano-Moresque ware. Italian majolica. Sect VII: (*patent*) [Design for an all] ceramic space heater.