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det. quartz. After the minerals and other constituents of a dust sample have been identified, it is usually possible to choose suitable procedure. Sixteen references.

J. A. Kennedy

Study of dust-control methods in an asbestos-fabricating plant. Richard T. Page and J. J. Bloomfield. *U. S. Pub. Health Repts.* 52, 1713-27(1937).—The study is presented as an example of engineering control of an industrial hazard. Adequate data have not yet been published to justify the detn. of threshold limits of dustiness which will produce asbestosis in any definite period of time. In their absence, it is not possible to det. permissible limits of dustiness on a medical basis. Any appreciable decrease in the amt. of asbestos dust will cause a decrease in the incidence and severity of the resulting asbestosis. Elimination of all dust in an industrial workroom is rarely necessary from a physiol. standpoint and is usually economically impracticable. Consequently, actual atm. conditions in an industry resulting from the application of practical methods of dust control can be used as temporary standards by that industry. Seven references.

J. A. Kennedy

New domestic and foreign patents in the field of the production and application of synthetic (plastic) materials. Oskar Kausch. *Kunststoffe* 27, 149-51, 273-6(1937).—Over 100 patents issued during the latter part of 1936 are reviewed.

J. W. Perry

Phenol and cresol resins. Fritz Seebach. *Kunststoffe* 27, 287-90(1937); cf. *C. A.* 31, 6370⁴.—The type of intermediate cryst. product obtained on reaction of PhOH with CH₂O is detd. to a large degree by the type of condensation catalyst. Thus with acid catalyst, 4,4'-dihydroxydiphenylmethane (I) predominates, while basic catalysts, e. g., MgO or NH₃, favor formation of 2,4'-dihydroxydiphenylmethane. Other catalysts, e. g., AlCl₃, produce large amts. of both isomers. Similar results were obtained with cresols, the following products being isolated and their cryst. structure characterized with photomicrographs: 4,4'-dihydroxy-3,3'-dimethyldiphenylmethane, m. 125°, and 4,2'-dihydroxy-3,3'-dimethyldiphenylmethane, m. 121°, from *o*-cresol; 6,6'-dihydroxy-3,3'-dimethyldiphenylmethane (II), m. 126°, and small amts. of 2,6-di-(3-methyl-6-hydroxybenzyl)-4-methylphenol, m. 215°, from *p*-cresol; 4,4'-dihydroxy-2,2'-dimethyldiphenylmethane, m. 162°, and 4,2'-dihydroxy-4'-2-dimethyldiphenylmethane, m. 147°, from *m*-cresol. These cryst. reaction products, which probably exist in phenolic resins in solid soln., were isolated by distn. or by pptn. from an alk. soln. with dil. acid. The above-mentioned diphenylmethane derivs. were converted into readily sol. Na phenolates with the exception of II, while with I unexplained phenomena were observed, which are being investigated further.

J. W. Perry

Patentability and artificial resin emulsions. Johannes Gömöry. *Farben-Chem.* 8, 310, 317(1937).—Safeguarding the welfare of the nation when passing on questions of patentability, e. g., of alkyd resin emulsions, is emphasized.

J. W. Perry

Rayon, artificial resins and artificial substances. F. Ohl. *Monatsh. Seide Kunstseide* 42, 427-31(1937).—The treatment of rayons with phenol-formaldehyde or urea-formaldehyde resins (e. g., Kaurit KF) renders them resistant to creasing and water and increases their strength. The resistance to creasing can also be heightened by means of polymers of unsatd. aliphatic acids. Commercial waterproofing agents are listed. Synthofil, a polyvinyl alc. deriv., is used in place of catgut. As textile sizes are used polymerized vinyl derivs. and cellulose ethers. Rubber substitutes, synthetic materials suitable for elec. insulation and numerous synthetic resins, with their uses, are mentioned.

Leopold Scheflan

Molds for phenol resinoids. T. E. Casey. *J. Am. Soc. Naval Engrs.* 49, No. 3, 390-445(1937).—A discussion of mold types, operation and problems in their use and maintenance.

W. H. Bruckner

Insulation material and applications. E. L. Doty. *Elec. J.* 34, 445-9(1937).—A review.

C. G. F.

Insulation power factor. H. W. Bousman. *Gen. Elec. Rev.* 40, 522-5(1937).—A review.

C. G. F.

The testing and properties of heat-insulating materials. A. H. Jay and L. Lee. *Brit. Clayworker* 46, 318-23(1937).—The max. safe temp. is defined as the highest temp. a brick can withstand for a prolonged period without changing more than 1% linearly. The more important tests are: crushing, porosity, permeability, spalling resistance, max. safe temp. and thermal cond.

E. C. Petrie

Electrical impregnation processes. E. E. Hall. *Ice and Cold Storage* 40, 163-4(1937).—The impregnation of elec. equipment such as condensers with wax or other nonconducting substances is discussed. Paper condensers consisting of 2 or more electrodes sepd. by paper insulation are first heated to remove moisture. Preliminary drying is effected by passing a current of hot air through the system. A vacuum is applied to complete the drying at the end of which treatment the impregnant (usually hot wax) is introduced without breaking the vacuum. At the end of the impregnation period, excess wax is withdrawn and the charge being processed is cooled. In order to accelerate cooling, temp. as low as -8° to -12° is used.

A. H. Johnson

Adhesives and other products (used when laying) linoleum. P. Ohl. *Kunststoffe* 27, 257-63(1937).—Various compns. and their advantages and disadvantages are reviewed.

J. W. Perry

Which synthetic plastics are used as adhesives, cements, putty and (paint) vehicles? F. Ohl. *Kunststoffe* 27, 283-90(1937).—A review of recently developed German products.

J. W. Perry

Recent developments in the field of glue for wood and strength tests. Edgar Mörrath. *Kunststoffe* 27, 224-7(1937).—Adhesives made from artificial resins (PhOH-CH₂O, urea and thiourea condensation products and polyvinyl and polyacrylic derivs.) are emphasized.

J. W. Perry

Replacing rubber for certain uses with glycerol-glue (compositions). Walter Obst. *Kunststoffe* 27, 96-8(1937).—Possibilities and limitations are discussed.

J. W. Perry

The drop diameter. (A method for) determining the utility of foaming, wetting, washing, cleaning and similar agents. J. Hetzer. *Fette u. Seifen* 44, 425-6(1937); cf. *C. A.* 31, 5059⁵.—A method is described for using a glass cell with a tight-fitting cover to det. the max. diam. of a liquid drop which will adhere to the underside of a horizontal glass surface. Expts. with aq. solns. contg. varying concns. of "Nekal A trocken" show that the max. drop diam. becomes smaller as the drop no. (detd. in a stalagmometer) increases. The drop diam. method is the quicker and easier to carry out.

J. W. Perry

Addenda on emulsifiers. Francis Chilson. *Drug Cosmet. Ind.* 41, 774-5, 779(1937).—Emulsifying equipment is discussed.

H. M. Burlage

The newer detergents. Charles E. Mullin. *Soap* 13, No. 12, 27-30, 73-4(1937); cf. *C. A.* 32, 265⁷.—The properties, advantages and manuf. of compds. of the higher alcs. are discussed.

E. Scherubel

The structure and electrical properties of protective films. L. Hartshorn, N. J. L. Megson and E. Rushton. *J. Soc. Chem. Ind.* 56, 266-70T(1937).—Films of PhOH-CH₂O resin, prepd. by dipping copper foil into alc. solns. of resin, were placed between Hg electrodes and the dielec. const. and cond. was measured with a Schering bridge (*C. A.* 27, 2099). Within the limits of exptl. error, the dielec. const. and power factor of films of the same resin do not vary appreciably with thickness. The material may be regarded as homogeneous and films of varying thickness can be said to have a similar phys. structure. The dielec. const. and power factor (cond.) of synthetic resin and cellulose acetate films are reduced considerably by intensive drying at 100° at low pressure. From the decrease in dielec. const. on drying the water absorbed can be estd. The water absorption of phenolic resin films was detd. gravimetrically and found to be independent of the thickness up to 0.0165 cm. The measured amts. correspond