30716r Fillers for Plastics. Wake, W. C. (Butterworth: London, Engl.). 1971. 152 pp. 75 s.

30717s Construction Polymers. Methods of Experimental Study, Book 2. (Konstruktsionnye Polimery. Metody Eksperimental'nogo Issledovaniya, Kn. 2) Ogibalov, P. M.; Malinin, N. I.; Netrebko, V. P.; Kishkin, B. P. (Izd. Mosk. Univ.: Moscow, USSR). 1972. 306 pp. 2.16 r.

30718t Degradation and Stabilization of Poly(Vinyl Chloride). (Destruktsiya i Stabilizatsiya Polivinilkhlorida) Minsker, K. S.; Fedoseeva, G. T. (Khimiya: Moscow, USSR). 1972. 420 pp. 1.98 r.

30719u Practical Course in Plastics Technology (Study Books in the Technical Sciences). (Praktikum der Kunststoftechnik (Studienbuecher der Technischen Wissenschaften)) Haenle, Siegfried; Gnauck, Bernhard; Harsch, Guenter (Hanser: Munich, Ger.). 1972. 349 pp. DM 29.

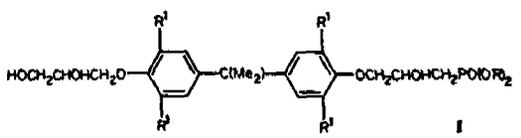
30720n Strength and Durability of Adhesive Joints. (Prochnost i Dolgovechnost Kleevykh Soedinenii) Freidin, A. S. (Khimiya: Moscow, USSR). 1971. 256 pp. 1.03 r.

30721p Small Encyclopedia for the Plastics and Rubber Industry. (Muanyag- es Gumiipari Kislexikon) Kiss, B. (Muszaki Kiado: Budapest, Hung.). 1971. 433 pp. 81 Ft.

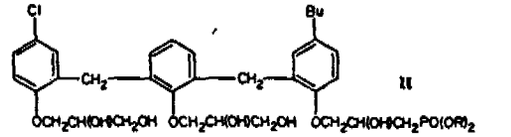
— — — —

30722q Concentration of sodium ethenesulfonate solutions. Schenk, Walter; Stockburger, Dieter (Badische Anilin- und Soda-Fabrik A.-G.) **Ger. Offen. 2,118,248** (Cl. C 07c, C 08f, C 23b), 02 Nov 1972, Appl. P 21 18 248.9, 15 Apr 1971; 9 pp. Dry *Na ethenesulfonate* (I) [3039-83-6] or concd. aq. I solns., useful as monomer in copolymn., stabilizer for polymer dispersions, or brightener in Ni electroplating, were obtained by spray-drying or spray-evapn. in a steam of air at 50–7°. Thus, 175 kg 33.7% I soln./hr (iodine no. 58.4, contg. 1.3% Na_2SO_4) was spray-dried at 27 atm gage in 2000 std. m^3 hot (200°) air/hr by using a 1-component nozzle to give 50° hot I contg. 5% H_2O and 3.65% Na_2SO_4 and of grain size 10–300 μm, bulk d. 860 g/l., and iodine no. 165.5.

30723r Flame-retardant compositions. Kuehn, Erich (Atlas Chemical Industries, Inc.) **U.S. 3,700,739** (Cl. 260/613R; C 07c), 24 Oct 1972, Appl. 728,913, 14 May 1968; 9 pp. Division of U.S. 3,644,599 (*CA* 75;154826e). Fire-retardant polyurethane



I



II

foams were prepd. using the polyols I (R = Et, Bu, $CH_2CH{:}CH_2$, $CH_2CHBrCH_2Br$; R' = Br, Cl) and II(R = Et, $CH_2CH{:}CH_2$, $CH_2CHBrCH_2Br$). Condensation of 3-halo-1,2-propanediol and 1,3-dihalo-2-propanol with a tetrahalo bisphenol A and treatment of the condensate with a phosphite gave I. Treatment of 2 phenols with a chlorophenol, HCHO, and a phosphite gave II. Foams were prepd. by known methods from polymethylene polyphenyl isocyanate, ethylene glycol, polyethylene glycols and I or II.

30724s Purifying high-boiling esters. Biarnais, Paul; Falize, Claude; Sitaud, Gilbert (Melle-Bezons) **Ger. Offen. 2,215,902** (Cl. C 07c, C 10m, C 08k, B 01d), 09 Nov 1972, Fr. Appl. 71 15,732, 26 Apr 1971; 50 pp. Aliph. and arom. mono-, di-, and tricarboxylic ester plasticizers were continuously sepd. from neutralized by-products assocd. with H_2SO_4-catalyzed esterification. After heating the mixt. at 130–90° and adding a water-sepn. aid, salt and org. contamination of the esters was decreased by washing and decanting at 150–90°/3–20 bars (rather than at 60–100°/1 atm according to prior-art processes). Thus, a feedstream contg. *bis(2-ethylhexyl) phthalate* [117-81-7], 2-ethylhexanol, 2-ethylhexyl H phthalate, and 2-ethylhexyl H sulfate was fed at 20° to a column, where it was emulsified with aq. Na_2CO_3 at 179–83% 15 bars, and transferred to a decanting vessel contg. water, and the mixt. cooled to 98–100°. Alk. analysis of the sepd. phases showed a sepn. coeff. of 7950 compared to 41 for a conventional sepn.

30725t Acrylonitrile polymer dopes. Masui, Kazuo; Nakano, Mineo; Ebina, Etsuo (Hitachi Chemical Co., Ltd.) **Japan. Kokai 72 22,493** (Cl. 26(3)E311.1), 07 Oct 1972, Appl. 71 9,966, 10 Mar 1971; 4 pp. Acrylonitrile (I) and optionally other vinyl monomers were polymd. (40–90%) in DMF contg. azobis(methylvaleronitrile) (II) and coloring inhibitors [citric acid, glyceric acid, and (or) itaconic acid (III)] and sepd. from the unreacted monomers to give polymer solns. esp. useful manufg. fibers and films. Thus, I 32, Me methacrylate 3, allylsulfonate 1, II 0.05, and III 0.03 part were dissolved i parts DMF, polymd. 8 hr at 50° in N, and kept 1 hr at 7 mm to give a dope with 81% light transmission. H. Kurz

30726u Polymeric phosphoramidates as stabilizers. Ja Elmar Harry (Uniroyal, Inc.) **Ger. Offen. 2,216,453** (Cl. C C 08f), 19 Oct 1972, US Appl. 131,077, 05 Apr 1971; 27 The title polymers, which were used to stabilize *polypropy* [9003-07-0], *poly(vinyl chloride* [9002-86-2], and *ethylene-pr ylene-ethylidenenorbornene copolymer* [25038-36-2] ru against the decompn. by the action of light, heat, and O, prepd. by reaction of 2,5-dialkylhydroquinones, PCl_3, an secondary amine. Thus, 0.3 mole 2,5-di-*tert*-butylhydroquir and 0.15 mole PCl_3 in PhCl were heated 19 hr at 90° and 3 h 130°, 0.5 mole morpholine was added, and the mixt. heated at 90° to give a sticky glassy, amber-colored *2,5-di-tert-but hydroquinone-phosphorus trichloride-morpholine copolymer* [37999-58-9] of av. mol. wt. 800.

30727v Butadiene-styrene rubber-modified vinyl copolym Shima, Takesaburo; Fujii, Yoshikazu; Kondo, Masatsu Nishimura, Hisashi (Sumitomo Chemical Co., Ltd.) **Offen. 2,218,191** (Cl. C 08d), 26 Oct 1972, Japan. Appl 24,010, 14 Apr 1971; 17 pp. Transparent butadiene-styr rubber (I)-modified *Me methacrylate-styrene copolymer* [25034-86-0] and *acrylonitrile-methyl methacrylate-styr copolymer* [25213-88-1] of good impact strength and dyeabi were prepd. by dissolving I in the monomers followed by b polymn. to prepolymers in the presence of lauroyl peroxide (I and dodecanethiol (IV, for uniform distribution of I in polymers), and subsequent suspension polymd. in the presence III. Thus, 8 parts 75:25 I was dissolved in 60 parts methacrylate and 40 parts styrene. III (0.15 part) was added the soln. and bulk polymn. conducted to 6.6% conversion un N during 4 hr at 78°. IV (0.25 part) was added to the mixt. a polymn. conducted to 26.2% conversion. This prepolymer (3 parts) was suspended in 300 parts H_2O contg. 0.14 part poly(vi alc.) and 0.06 part Me hydroxypropyl cellulose. III (1.0 pa was added to the mixt. and the mixt. kept 3 hr at 70° and 1 hr 90° to give I-modified II pearls of particle size 0.53 μ. transparent molding from this material had Charpy notch impa strength 6.2 kg cm/cm^2 and tensile strength 546 kg/cm^2.

30728w Polyamides. Reske, Eckart; Brinkmann, Ludw Cherdron, Harald (Farbwerke Hoechst A.-G.) **Ger. Offen. 2,118,510** (Cl. C 08g), 26 Oct 1972, Appl. P 21 18 510.4, 16 A 1971; 13 pp. High-melting, difficultly sol. or insol. polyam films and moldings were prepd. by condensation of dicarboxy acids or their chlorides with *N,N'*-di-*tert*-butyl-, diisobutyl-, diisopropyl-substituted diamines followed by partial or compl cleavage of isobutylene or propene during or after forming. Th condensation of 4.968 g *N,N'*-di-*tert*-butyl-*p*-xylylenediam with 4.061 g isophthaloyl chloride in DMF contg. Et_3N at 2 gave a *N,N'-di-tert-butyl-p-xylylenediamine-isophthalo chloride copolymer* (I) [37953-37-0] of reduced sp. viscosity 1. dl/g (1 g in 100 ml 60:40 parts PhOH-tetrachloroethane at 2 and sol. in $CHCl_3$, Me_2CO, DMF, and $AcNMe_2$. I in Me_2CO w poured onto a support, heated to 240°, and heated to 300° 20°/hr to give under isobutylene cleavage an insol. dealkylated I.

30729x Bis(aminophenyl)methanes and aniline-formaldehy copolymers. Buysch, Hans Josef; Krimm, Heinrich (Farben fabriken Bayer A.-G.) **Ger. Offen. 2,218,490** (Cl. C 07c), Oct 1972, Appl. P 21 18 490.7, 16 Apr 1971; 10 p The title compds., useful in the manuf. of polyamide polyurethanes, and epoxy resins, were prepd. from mixts. cont aniline (I) or aniline derivs. and formaldehyde or paraformalc ehyde (II) by heating at 250–80° without catalysts. Thus, 1000 I and 30 g II were heated under N 2 hr at 280° and H_2O and distd. to give 139 g isomeric *bis(aminophenyl)methane* [26446-71-9] and 23 g *aniline-formaldehyde copolymer* [25214-70-4 which were sepd. by distn. (187–220°/0.3–0.5 mm).

30730r Cyclohexane-1,2-dicarboxylic anhydride condensatio product. Krueger, Alfred **Ger. Offen. 2,119,274** (Cl. C 08g 02 Nov 1972, Appl. P 21 19 274.5, 21 Apr 1971; 3 pp. Addn. Ger. 2,111,003. 2-Hydroxyethyl methacrylate 60, dicyandiamic 10, paraformaldehyde 10 parts, 100 ppm hydroquinone, and 1 ppm *p*-$MeOC_6H_4OH$ were heated 26 days at 40° and filtered The filtrate (80 parts) was heated with 20 parts cyclohexane-1,2-dicarboxylic anhydride at 40° up to acid no. 121 to giv *cyclohexane-1,2-dicarboxylic anhydride-dicyandiamide-2-hyd roxyethyl methacrylate-paraformaldehyde copolymer* (I) [37953-63-6] of viscosity 12 P (20°). I gave a clear, hard resin on heatin 1 hr at 130° and was useful as coating material.

30731s Flexible polyurethane foams. Lebedeva, E. V. Kryuchkov, F. A.; Kulikov, A. A.; Tarasova, V. D.; Petrov, C N.; Sinaiskii, A. G. **U.S.S.R. 340,669** (Cl. C 08g), 05 Ju 1972, Appl. 15 Jun 1970. From Otkrytiya, Izobret., Prom Obraztsy, Tovarnye Znaki 1972, 49(18), 82. Flexible polyurethan foams prepd. by reaction of hydroxylated conjugated diene-α-substituted olefin copolymers (e.g. OH-contg. butadiene-isopren copolymer) and diisocyanates with subsequent foaming durin

OLI 7370