

33—ALIPHATIC COMPOUNDS

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- Chlorocarbons and chlorohydrocarbons: chlorinated paraffins. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 231-40 (1964) (Eng.). A review on chlorinated deriva. of natural or synthetic higher paraffins, without regard to whether the parent material is normally solid or liquid, including properties, manuf., economic aspects, handling, storage, and uses. 39 references. VNJZ
- Automatic preparative gas chromatography apparatus. Ya. M. Kuchinov and A. P. Litovub. *Neftepromyshl. i Neftskh. Abad. Nauk Ukr. SSR, Resp. Mezvedomstv. Sb.* 1965, 135-40 (Russ.). A 1:1.0.5 isooctane-octane-maine mixt. was sepd. in a column of 6 m. length and 16 mm. diam., N carrier gas velocity 0.5 l./min., Wheatstone bridge current 170 ma., recorder sensitivity 50 mv. Samples (3.5 cc.) were injected at 112°, and the components were collected and frozen in glass tubes at 0°. The yield of the components was 55-60%, although by condensation of the vapors, the yield could be increased to 80%; the purity of the collected compds. was 90-95%. BNJR
- Reactions of active nitrogen with organic substrates. IV. Isoprene. Terukiyo Hanafusa and Norman N. Lichtin (Boston Univ., Boston, Mass.). *Can. J. Chem.* 44(10), 1230-2 (1966) (Eng); cf. CA 55, 17622c; 64, 11070d. The reaction of isoprene with active N at 60°/2 mm. was investigated. Products trapped at -195° were HCN, MeCH:CH, CH:CH, C₂H₄, HC:CH, propyne, EtMeC:CH₂, (CH₂:CH), and propane. Monomeric products trapped at -78° but volatile at 60°/0.01 mm. were β -methylpyrrole, pyrrole, NH₃, 1-cy isoisoprene, and at least 12 other unidentified compds. The polymeric product was a complex mixt. which probably contained CN and amino groups. C. M. Buess
- Study of heterogeneous oxidation of n-butenes to 1,3-butadiene in the presence of steam. I. I. Yukel'son and E. A. Dorusivskii. *Tr. Lab. Khim. Vysokomolekul. Soedin., Leningradsk. Univ.* 1964(3), 63-6 (Russ.). The effect of steam concn. on oxidn. of n-butenes over newly developed catalysts (oxides of group VIII modified by elements of group IV) was studied. The raw material was an industrial fraction of butenes with the compn. H₂ 0.1, C₂H₄ 0.3, C₂H₆ 0.6, C₂H₂ 1.5, 1-C₂H₃ 32.6, 2-C₂H₃ 63.4, and C₂H₄ 1.5 mole-%. Oxidn. was effected in a continuous flow app. at 650° and a 1:2.5 diam. of the butenes with air over 1 ml. catalyst (particle size 3-3 mm.) in a quartz tube (diam. 8 mm.). With an increase in butene-air-H₂O mole ratio from 1:1.6 to 1:15.8, the 1,3-butadiene (I) content of the contact gas increased from 13.3 to 20.8 mole-% (basis dry gas). Curves were obtained showing the dependence of total butene conversion and I yield per smt. of passed and decompd. butene on the steam concn. in the initial mixt. From *Ref. Zh., Khim.* 1966(4), Pt. II, Abstr. No. 4N7. MVRK
- Chlorination reaction in the manufacture of hexachlorobenzene. Jerzy Jaworski and Tadeusz Mazonski (Katedra Technol. Chem. Org., Politech. Slaska, Poland). *Przemysl Chem.* 43 (2), 92-4 (1964) (Pol.). Continuous chlorination of o-dichlorobenzene in the gas phase (at 300-400°) and in the presence of a fixed bed catalyst was investigated. The catalyst used was inexpensive activated C, Carbolopol 2, in the form of irregular granules, about 5 mm. in diam., with a density of 230 g./l. and a sp. surface area of 157.7 m²/g. A uniform temp. gradient was obtained when the upper part of the vertical pipe reactor was filled with less active catalyst from a previous charge. The use of a partly deactivated catalyst resulted in a total absence of catalyst baking, even when its load was increased by 40%. The reaction product contained more than 95% of hexachlorobenzene, besides some pentachlorobenzene. A schematic diagram of the equipment used is shown. Edward A. Ackermann
- Chlorination of isobutylene to methallyl chloride. E. M. Mokrii, Kh. Z. Kotovich, and D. K. Tolopko. *Khim. Prom., Inform. Neft. Tekhn. Zh.* 1965(4), 7-10 (Ukrain.). A 99.3% pure isobutylene (I) was prepd. by dehydration of *tert*-BuOH on Al₂O₃ at 350° with the 2 l./hr. rate of I formation. The catalyst was regenerated at 500-20° for 3 hrs. in a stream of hot air. Mixing 1.2 moles I with 1 mole Cl at 90-100° gave a mixt. of products, which on rectification at 70-5° gave methallyl chloride (II). The fraction collected at 72-5° consisted of a 95:4 ratio of II and dimethylvinyl chloride which were difficult to sep. A lower I-Cl molar ratio caused addnl. chlorination of the products and a higher ratio decreased the yield of II. At 90°, a 62-72.6% yield of II was obtained. BNJW
- Chlorocarbons and chlorohydrocarbons: vinyl chloride. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 171-8 (1964) (Eng.). A review on the phys. and chem. properties, manuf., economic aspects, standards, handling, toxicity, and uses. 38 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: methyl chloride. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 104-11 (1964) (Eng.). A review on the phys. and chem. properties, manuf., economic aspects, standards, analysis, handling, toxicity, and uses. 43 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: allyl chloride. B. H. Pilorz. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 207-15 (1964) (Eng.). A review on the phys. and chem. properties (typical addns. to the double bond, a mme replacements of Cl, formation of allyl esters and of N compds., and synthesis of complex moles.), manuf. (mechanism, reaction variables, econ. practice, feed prepn., reaction system, and product recovery), safety and handling (toxicity, precautionary measures, and remedial treatment), and uses. 25 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: ethyl chloride. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 140-7 (1964) (Eng.). A review on the phys. and chem. properties, manuf., economic aspects, standards, handling, toxicity, and uses. 39 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: dichloroethylenes. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 178-83 (1964) (Eng.). A review on the phys. and chem. properties, manuf., and uses of 1,1- and 1,2-dichloroethylene. 10 references. VNJZ
- Tri- and perchloroethylene. S. A. Müller. *Chem. Process Eng.* 47(6), 268-75 (1966) (Eng.). A review of processes for the manuf. of C₂HCl₃ and C₂Cl₄. The relative feasibilities depend on the availability of raw materials and the utilization of by-products. 18 references. Paul A. Haas
- Chlorocarbons and chlorohydrocarbons: chloroacetylenes. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 203-5 (1964) (Eng.). A review on the properties of mono- and dichloroacetylene. 5 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: chloroprene. P. S. Baerwitz (E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.). *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 215-31 (1964) (Eng.). A review on the phys. and chem. properties (including reactions with O, S, SO₂, N₂O, halogens, H, halides, and hypohalous acids and esters, Diels-Alder addns. and dimerizations, free-radical reactions, and polymerization), prepn. (from C₂H₂ via monovinylacetylene, butadiene, butenes and 1,3-dichloro-2-butene), industrial manuf., health and safety factors, and isomers and homologs. 73 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: trichloroethylene. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 180-5 (1964) (Eng.). A review on phys. and chem. properties, manuf., economic aspects, standards, handling, toxicity, and uses. 53 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: methylene chloride. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 111-19 (1964) (Eng.). A review on the phys. and chem. properties, manuf., economic aspects, standards and analysis, handling, toxicity, and uses. 40 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: chloroform. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 119-27 (1964) (Eng.). A review on phys. and chem. properties, manuf., economic aspects, standards, analysis, handling, toxicity, and uses. 25 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: tetrachloroethylene. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 193-203 (1964) (Eng.). A review on the phys. and chem. properties, manuf., economic aspects, standards, handling, toxicity, and uses. 45 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: other chloroethanes. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 148-70 (1964) (Eng.). A review on the phys. and chem. properties, manuf., economic aspects, standards, handling, toxicity, and uses of 1,1- and 1,2-dichloroethane, 1,1,1- and 1,1,2-trichloroethane, 1,1,1,2- and 1,1,2,2-tetrachloroethane, pentachloroethane, and hexachloroethane. 101 references. VNJZ
- Chlorocarbons and chlorohydrocarbons: carbon tetrachloride. D. W. F. Hardie. *Kirk-Othmer En cycl. Chem. Technol., 2nd Ed.* 5, 122-35 (1964) (Eng.). A review on the phys. and chem. properties, manuf., economic aspects, standards and analysis, toxicity, and uses. 73 references. VNJZ
- Synthesis of trialkylamine-type extraction agents by the Hofmann reaction. B. N. Laskorin, D. I. Skorozavov, and V. A. Semenov. *Zh. Prikl. Khim.* 39(5), 1048-55 (1966) (Russ.). Lab. and bench-scale (6-100 kg.) methods were described for prepn. of R₃N, where R is C-C₆. RBr was prepd. by heating a mixt. of KOH, HBr or NaBr, and H₂SO₄. The org. phase obtained, contg. 75-90% RBr and unreacted KOH, was treated with 8-34% NH₄OH at 100-180°/several atm. The yield of R₃N increased with decreasing NH₄-RBr ratio to 2-3 l. and with increasing temp. The yield was not affected by NH₄OH concn. or size of R. The yield of resin began to increase at 180°, the yield of solid product, probably R₃NBr, increased with decreasing temp. The starting composition of ammonium salts became milder as the batch size increased, because the reaction is exothermic and a large batch provided a larger proportion of the required heat than a small batch under similar conditions. A typical final product of a C₇-C₈ prepn. contained R₃N 65-70.