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THE ELECTROCHEMICAL PERFLUORINATION OF PROPANESULFONYL FLUORIDES

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Propanesulfonyl fluorides and propanedisulfonyl fluorides are good starting materials for electrochemical perfluorination. They allow study of the influence of independent cell parameters, i.e. cell temperature, condenser temperature, starting concentration, voltage and current on dependent parameters, i.e. yield of product(s), current efficiency, current density, yield per volume and time. Quantitative estimation of all products formed allow a discussion of reaction pathways. Preparations and yield of perfluoropropanedisulfonyl difluorides show the influence of two functional groups in one small molecule on the fluorination reaction. In the case of 1,3-propanedisulfonyl difluoride no isomerisation could be detected, where as with 1,2-propanedisulfonyldifluoride only 1,3-perfluoropropanedisulfonyldifluoride is formed.