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NEW RESULTS IN REACTION-CHEMISTRY OF BROMINE(III)FLUORIDES

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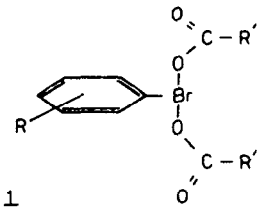
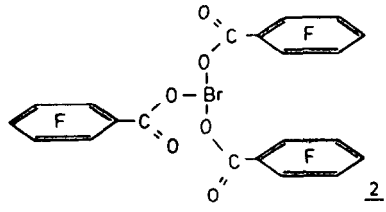
Arylbromine(III)difluorides are formed by nucleophilic substitution of fluorine in BrF_3. Besides the perfluorinated product pentafluorophenylbromine(III)difluoride, also stable Br(III)-compounds with hydrogen containing arylgroups can be prepared by this method. Two fluorine atoms in BrF_3 can be substituted by aryl groups when using the appropriate amount of aryl-transfer-reagent in the presence of a Lewis acid. Triarylbromine(III) is an unstable intermediate and eliminates Ar-Ar and Ar-radicals.

Substitution of bromine-bonded fluorine in arylbromine(III)difluorides by carboxylates yields the new class of arylbromine(III)dicarboxylates 1. Transfer of this reaction to BrF_3 itself delivers the new class of bromine(III)tricarboxylates 2.



1



2

Besides other fluorine-exchange-reactions the preparatively useful fluorinatio and oxidation-potential of arylbromine(III)difluorides is demonstrated for organoelement-compounds of main group V to VII.

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