

dioxane was heated in a sealed glass tube at 120–130 °C for 60 min. Twofold fractionation gave compound **2c** (2.12 g, 60%), b.p. 60 °C, n_D^{20} 1.298. Found (%): C, 24.3; N, 4.93. $C_6F_{11}N$. Calculated (%): C, 24.41; N, 4.75. ^{19}F NMR, δ : –5.8 (br.d, 6 F, 2 CF_3 , $J = 4.8$ Hz); –11.3 (dd, 3 F, $CF_3C=N$, $J_1 = 20.1$ Hz, $J_2 = 8.3$ Hz); 4.9 (m, 1 F, CF_2); 14.0 (dq, 1 F, CF_2 , $J_1 = 20.1$ Hz, $J_2 = 15.0$ Hz).

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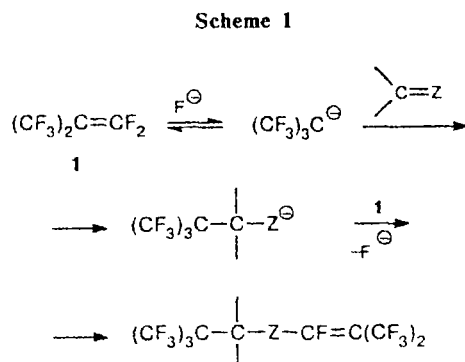
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Fluoride ion-catalyzed condensation of perfluoroisobutene with diethyl azodicarboxylate

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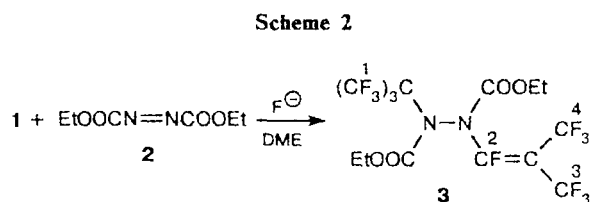
Reactions of perfluoroisobutene (**1**) with compounds having electrophilic multiple bonds catalyzed by fluoride anions can occur as the conjugated nucleophilic addition with the perfluoro-*tert*-butyl anion as a nucleophile and the second molecule of olefin **1** as an electrophile in the final stage of the reaction (Scheme 1).



This reaction scheme, implying the formation of intermediate C- or O-anions, occurs in the reaction of olefin **1** with acrylonitrile, olefins $CF_2=CFX$ ($X = F, CF_3$, and OCF_3), or aromatic aldehydes.^{1–3}

It is shown that the reaction of compound **1** with diethyl azodicarboxylate (**2**) (in this case, via an N-anion) also follows a similar pathway leading to a derivative of 1,2-hydrazinodicarboxylic acid (**3**) in high yield (Scheme 2).

The reaction discovered opens a new route to hydrazine derivatives containing the $(CF_3)_3C$ group at the nitrogen atom (cf. Ref. 4).



Diethyl 1-perfluoro-*tert*-butyl-2-perfluoro(2-methylprop-1-enyl)hydrazino-1,2-dicarboxylate (3). Ester 2 (6.8 g) was added dropwise with stirring to a mixture of CsF (3 g) and olefin 1 (18 g) in 70 mL of monoglyme. After the exothermic reaction was completed and the solution turned colorless, the nonconsumed olefin 1 was removed *in vacuo* and the residue poured into dilute HCl (1 : 5). The oil that formed was extracted with ether, dried with MgSO₄, and distilled to give the title product 3 (20 g, 88%), b.p. 88–90 °C (2 Torr), n_D^{20} 1.3593. Found (%): C, 29.21; H, 1.66; F, 53.01. C₁₄H₁₀F₁₆N₂O₄. Calculated (%): C, 29.28; H, 1.75; F, 52.94. IR, ν/cm^{-1} : 1695, 1800. ¹⁹F NMR (CCl₄, CF₃COOH as the standard), δ : -18.9 (dq, F-4); -16.5 (m, F-3); -13.6 (s, F-1); 7.3 (m, F-2); $J_{2,4} = 20$ Hz, $J_{3,4} = 8$ Hz.

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