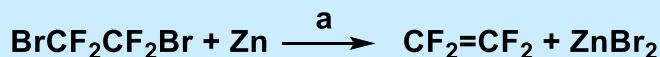


1,2-Dibromotetrafluoroethane

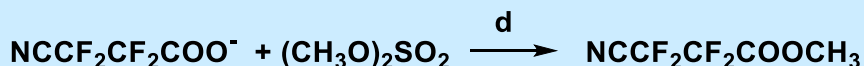
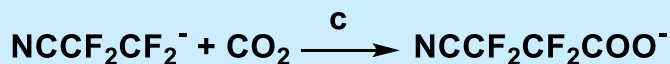
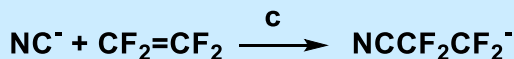
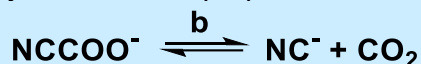
BrCF₂CF₂Br

Purity	97%
CAS Number	124-73-2
Molecular Formula	C ₂ Br ₂ F ₄
Molecular Weight	259.82

Synthesizing tetrafluoroethylene (abb: TFE) by debrominating 1,2-dibromotetrafluoroethane has the advantage of being O₂-free, and is often employed as a laboratory synthesis method.



In addition, while investigating the synthesis of functional fluoroalkyl compounds from the carbanion of TFE using a nucleophile, it is discovered that CO₂ is a useful scavenger for improving selectivity as long as it has an equilibrium relationship with the nucleophile. It is assumed that CN⁻ forms a reversible complex with CO₂, resulting in industrially useful cyanotetrafluoropropionic acid ester.



a. DMA 1.6L + Zn 25g + Cu(OAc)₂ 10g + H₂SO₄ * 120–60°C 1hr keep + BrCF₂CF₂Br 1200g dropwise

b. DMSO, 50°C*2hr,

c. NaCN 0.50 mol + DMSO + CO₂ 0.52 mol + CF₂=CF₂ 0.50 mol, –25°C ~ 30°C*1hr + 50°C*1hr

d. (CH₃O)₂SO₂ 0.55 mol * RT

b.~d. overall yield; 72%

Synthesis of fluoro-organic compounds Vol.1, 2010, p106, Moscow (in Russian, by P&M-Invest LLC), Progress in Polym. Sc., 29, 2, 2004, p75–106, J. Am. Che. Soc., 1984, 106, 5544–5546, J. Org. Chem. 1986, 51, p326–332

Properties:

Appearance	Liquid
Boiling point, °C	46-48

Packing:

UN, PG:

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