

# CORRELATION BETWEEN BIOLOGICAL AND CHEMICAL TESTS OF FLUOROCARBONS

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Highly sensitive chemical method of determination of the total concentration of toxical hydrogen-containing and unsaturated impurities in fluorocarbons has been developed. This method is based on the preliminary interaction of the mixture investigated with primary amines followed by the measurement of the fluoride-ion bulk concentration.

The most informative biological test of fluorocarbons toxicity determination consists in examining their activity on contactindependent lymphoid strain 'Raji' human's cells.

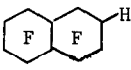
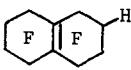
The data in Table 1 show the dependence growth of the 'Raji' cells against the bulk concentration of the fluoride-ion in perfluorodecalin samples of different purities.

TABLE 1

N sample PFD	F <sup>-</sup> Bulk concentration $C_F \cdot 10^{-4}$	Cells growth against control group %
1	11.22	30
2	3.02	60
3	0.60	100
4	0.46	100
5	0.19	100
Control	-	100

The sensitivity of the method developed is rather high. The data in Table 2 demonstrate the influence of concentrations of some nonfluorinated impurities in perfluorodecalin samples on the cells growth.

TABLE 2

Impurities type	Impurities, content in PFD % wt. F <sup>-</sup> Bulk concentration $C_f \cdot 10^{-4}$		Cells growth against control group %
 PFD -	0.026	9.12	75
	0.0026	0.85	100
	0.0000	0.14	100
	0.021	22.9	10
	0.0031	4.89	15
	0.0003	0.32	84