



ESTD 1802

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DR. R. LAUREYSSSENS
F&F
MECHELEN, BELGIUMANALYSIS OF BLOOD SAMPLES FOR PERFLUOROOCTANOATE
(Job No. 811-700; PRAL Nos. 81-2382 to 2392; Notebook Nos. E22514, E26238)

As requested in your letter of 5/26/81 to L. J. Papa, the 11 blood samples submitted then have been analyzed for perfluorooctanoate (C₈). Results and sample identification are given in the attached table.

As noted there, the analyses were done using a gas chromatographic method specific for C₈ (Lab Method Number ES-567) but results have been reported as ppm F for comparison with total organic fluorine analyses. Precision is $\pm 10\%$ relative standard deviation over most of the concentration range, somewhat less at the lowest values. The lower limit for quantitation is 0.007 ppm F (0.01 ppm perfluorooctanoic acid), with a detection limit of ~ 0.004 ppm which can be distinguished from the reagent background but not well quantitated.

Please contact me (772-4440) or L. J. Papa (772-2745) if you have any questions regarding the analyses. General questions on blood sampling can be directed to J. W. Raines or L. F. Percival.

S. S. Stafford

Attachment
jah

Key Words:

Perfluorooctanoic Acid
Perfluorooctanoate
Blood Analysis
GCEXP000028
EID713842

000092

TABLE I

CONCENTRATION OF PERFLUOROOCTANOATE IN BLOOD (a)

Sample				GC Analysis		(b)
PRAL No.	Date Sampled	P.R.No.	Name	Date Analyzed	[C ₈], µg F/g blood	
81-2382	5/22/81	1457		6/8/81	<.007	
81-2383	5/22/81	0941		6/8/81	n.d.	
81-2384	5/25/81	0942		6/8/81	0.008	
81-2385	5/25/81	0585		6/8/81	0.11	
81-2386	5/25/81	1352		6/8/81	0.16	
81-2387	5/25/81	0085		6/9/81	0.011	
81-2388	5/25/81	0697		6/9/81	0.013	
81-2389	5/25/81	0479		6/9/81	n.d.	
81-2390	5/25/81	0405		6/9/81	n.d.	
81-2391	5/25/81	0060		6/9/81	<.007	
81-2392	5/25/81	0325		6/9/81	n.d.	

- (a) Analysis as described in Lab Method ES-567 ("Determination of Perfluorooctanoic Acid in Blood, Gas Chromatographic Method", S. Stafford, 4/3/81), using the packed column GC analysis with perfluoro-n-octanoic acid as calibration standard.
- (b) Although the analysis is specifically for perfluorooctanoate (acid or salts), concentrations are given in ppm fluorine for comparison with the results of total organic fluorine analyses. (ppm F = 0.688 x ppm perfluorooctanoic acid) Estimated uncertainty is $\pm 10\%$ relative standard deviation. The lower limit for quantitation is 0.007 µgF/g. The detection limit is ~ 0.004 µgF/g, but concentrations in that range cannot be well quantitated and are reported as < 0.007. None detected (n.d.) is reported for samples with [C₈] $\lesssim 0.004$ ppm, which cannot be distinguished from reagent background.