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POLYMER PRODUCTS DEPARTMENT
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TO: J. D. DE LAURENTIS, M.D. - CR&DD, BUILDING 301

FROM: S. R. LAAS

S.R. Laas

ANALYSIS OF BLOOD SAMPLES FOR PERFLUOROOCTANOATE

(Job No. 820-969, PRAL Nos. 82-4096, 4099, 4100, 5166, 5168, 5172,
5176-77, 5262, 5269, 5573-75, 5578)

Notebook Nos. E29297, E29298

The 14 blood samples, previously reported in letters to you dated 10/19/82 and 10/29/82 as having perfluorooctanoate (C8) concentrations greater than the blank, have been analyzed for C8 by the usual gas chromatographic method ES-567. Results and sample identifications are given in the attached table.

The samples are all very low; indeed 3 of the samples are indistinguishable from the blank and 5 are below the quantitation limit. The estimated uncertainty for these analyses is higher than usual due to the very low levels of C8 and the difficulty in integrating the small C8 peak which elutes between the 05 and 06 peaks.

If you have any questions regarding these analyses, don't hesitate to call me.

Key Words

Perfluorooctanoate
GC
Blood Analysis

SRL:kab
Attach.

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TABLE I

CONCENTRATION OF PERFLUOROOCTANOATE IN BLOOD (a)

Sample			GC Analysis		(b)
PRAL No.	Date Received	Name	Date Analyzed	[C8], µg F/g blood	
82-4096	7/21/82		10/25/82	0.009	
82-4099	7/21/82		10/25/82	n.d.	
82-4100	7/21/82		10/25/82	<0.007	
82-5166	9/17/82		10/22/82	<0.007	
82-5168	9/17/82		10/22/82	0.010	
82-5172	9/17/82		10/22/82	0.007	
82-5176	9/17/82		10/22/82	<0.007	
82-5177	9/17/82		10/25/82	0.007	
82-5262	9/24/82		10/25/82	<0.007	
82-5269	9/24/82		10/25/82	0.009	
82-5573	10/8/82		10/26/82	0.007	
82-5574	10/8/82		10/26/82	<0.007	
82-5575	10/8/82		10/26/82	n.d.	
82-5578	10/8/82		10/26/82	n.d.	

(a) Analysis as described in Lab Method ES-557 ("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 + 20% relative standard deviation. The lower limit for quantitation is 0.007 µg F/g. The detection limit is ~0.004 µg F/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] ≤ 0.004 ppm. which cannot be distinguished from reagent background.

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