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AR226-1611

POLYMER PRODUCTS DEPARTMENT
EXPERIMENTAL STATION

PERSONAL AND CONFIDENTIAL

January 18, 1982

TO: DR. Y. L. POWER - PPD, Parkersburg

FROM: S. S. STAFFORD *S.S. Stafford*

ANALYSIS OF BLOOD SAMPLES FOR PERFLUOROOCTANOATE
(Job No. 810-578; PRAL Nos. 81-6006-6034, 81-6148-6162,
Notebook Nos. E27433, E26238, E27432)

As requested in your letters of 12/15 and 12/29/81 to L. J. Papa, the 44 blood samples submitted then have been analyzed for perfluorooctanoate (C_8) by the usual gas chromatographic method ES-567. Results and sample identification are given in the attached table.

Attachment
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Key Words:
Perfluorooctanoate
GC
Blood Analysis

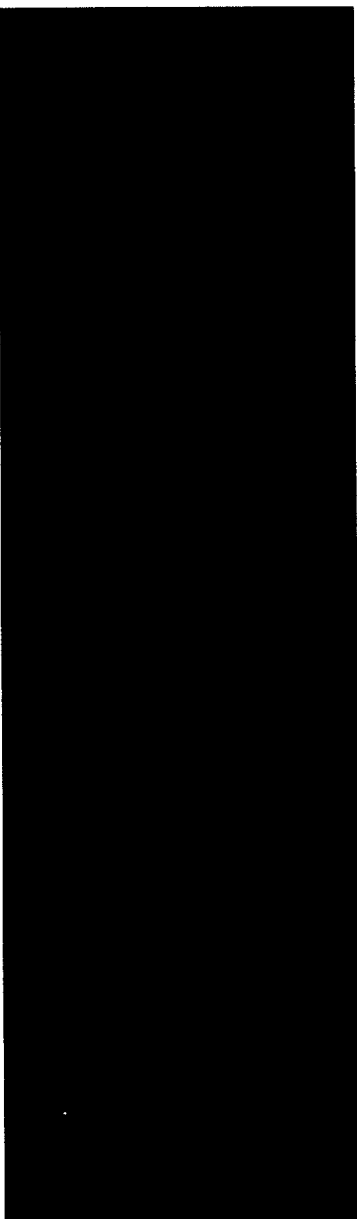
There's a world of things we're doing something about

EXP000077
EID713891

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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
81-6006	12/1/81	W.S.		12/21/81	0.16	
81-6007	12/1/81	W.S.		12/21/81 & 1/5/82	0.50	
81-6008	12/1/81	W.S.		12/21/81	0.34	
81-6009	12/1/81	656		12/21/81	0.096	
81-6010	12/2/81	4755		12/21/81	0.011	
81-6011	12/2/81	3869		12/22/81	2.8	
81-6012	12/2/81	3737		12/22/81	0.36	
81-6013	12/3/81	W.S.		12/21/81	0.15	
81-6014	12/3/81	3892		12/22/81	1.2	
81-6015	12/3/81	760		12/22/81	0.16	
81-6016	12/4/81	4756		1/5/82	0.021	
81-6017	12/4/81	4049		1/5/82	0.82	
81-6018	12/7/81	3448		1/5/82	0.64	
81-6019	12/7/81	4312		1/5/82 & 1/8/82	0.36	
81-6020	12/7/81	W.S.		1/5/82	0.066	
81-6021	12/7/81	W.S.		1/5/82	0.12	
81-6022	12/7/81	W.S.		1/5/82	0.13	
81-6023	12/8/81	W.S.		1/5/82	0.039	
81-6024	12/8/81	3022		1/5/82	0.21	
81-6025	12/8/81	W.S.		1/5/82	0.36	
81-6026	12/9/81	3495		1/6/82	0.086	
81-6027	12/9/81	4706		1/6/82	0.64	
81-6028	12/9/81	4015		1/6/82 & 1/8/82	1.4	
81-6029	12/9/81	3621		1/6/82 & 1/8/82	1.1	
81-6030	12/10/81	4528		1/6/82 & 1/8/82	1.7	
81-6031	12/11/81	1816		1/6/82	0.21	
81-6032	12/11/81	927		1/6/82	0.59	
81-6033	12/14/81	3964		1/6/82	0.65	
81-6034	12/14/81	3354		1/6/82	0.16	

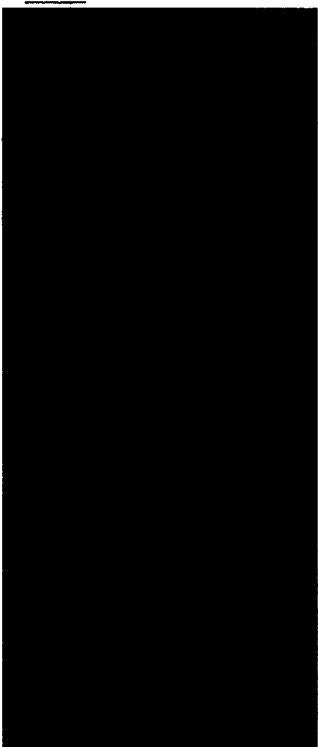
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TABLE I

CONCENTRATION OF PERFLUOROOCTANOATE IN BLOOD (a)

Sample				GC Analysis		(b)
PRAL No.	Date Sampled	P.R.No.	Name	Date Analyzed	[C ₈], $\mu\text{g F/g}$ blood	
81-6148	12/15/81	1850		1/6/82	0.22	
81-6149	12/16/81	4106		1/7/82	1.8	
81-6150	12/17/81	4493		1/7/82	0.54	
81-6151	12/17/81	W.S.		1/8/82	0.91	
81-6152	12/17/81	W.S.		1/7/82	0.034	
81-6153	12/17/81	3744		1/7/82	0.88	
81-6154	12/18/81	1698		1/7/82	0.63	
81-6155	12/18/81	4720		1/7/82	0.099	
81-6156	12/18/81	W.S.		1/7/82	0.14	
81-6157	12/18/81	3383		1/7/82	0.23	
81-6158	12/18/81	3611		1/7/82	0.17	
81-6159	12/21/81	W.S.		1/7/82 & 1/8/82	0.092	
81-6160	12/21/81	W.S.		1/7/82	0.027	
81-6161	12/21/81	W.S.		1/8/82	1.0	
81-6162	12/23/81	1959		1/8/82	0.34	
81-4872	10/7/81	4720		1/8/82	0.035	(c)

- (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. ($\text{ppm F} = 0.688 \times \text{ppm perfluorooctanoic acid}$) Estimated uncertainty is $\pm 10\%$ relative standard deviation. The lower limit for quantitation is $0.007 \mu\text{gF/g}$. The detection limit is $\sim 0.004 \mu\text{gF/g}$, but concentrations in that range cannot be well quantitated and are reported as < 0.007 . None detected (n.d.) is reported for samples with $[\text{C}_8] \lesssim 0.004 \text{ ppm}$, which cannot be distinguished from reagent background.
- (c) Previously analyzed sample, reanalyzed for comparison with repeat sample 81-6155; result of the original analysis (10/26/81) was 0.039.