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CENTRAL INSTITUTE FOR NUTRITION AND FOOD RESEARCH

 Utrechtseweg 48
 Zeist

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UV method not suitable to GC. Now use GC for
 Frypans smoked longer than tape or tubing.

REPORT NO. B78-1484

DETERMINATION OF POSSIBLE RESIDUES OF MONOMERS
AND C8-EMULSIFIER IN VARIOUS PERFLUOROCARBON
POLYMERS

Authors : Drs. D. van Battum, M.A.H. Rijk,
 A. Schouten and A. Tas

At the request of : Du Pont de Nemours International SA,
 Geneva, Switzerland
 Hoechst AG, Gendorf, Germany
 ICI Ltd, Welwyn Garden City, England

Approved by : Prof. Ir. B. Krol

Analysis No : B78-1484

Date : July 1979

Number of copies : 10

EID112163

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shaken, the absorbance spectrum of the clear supernatant was run between 700 and 600 nm with a reagent blank in the reference cell and the absorbance at 640 nm was determined. From the absorbance at 640 nm of sample and standard solutions the C8-emulsifier content of the extracts was calculated.

- standard solutions

A stock solution of C8-emulsifier in distilled water, containing 3 g ammonium perfluorooctanoate per l, was prepared from which diluted standard solutions were made, containing 9, 15, 45, 60, 90 and 180 µg C8-emulsifier per 100 ml respectively. The solutions thus obtained were further treated as described in section 2.2.2.

- detection limits

The calibration graph for the determination of C8-emulsifier is depicted in fig. 4. From this graph it can be deduced that 10 µg C8-emulsifier per 100 ml water, corresponding to 1 mg/kg polymer (1 ppm) for the granular resin samples, can still be detected.

2.3 Determination of the specific migration of C8-emulsifier

Samples of the skived tapes, unsintered tapes and tubing, having a total surface area of 2 dm² were cut in strips of 2.5 x 10 cm. The strips were kept submerged in 100 ml distilled water for 10 d at 40 °C. After the storage period the liquids were decanted, filtered over a coarse glass filter and further treated as described in section 2.2.2.

The absorbance at 640 nm of the solutions was determined and then the C8-emulsifier content of the solution was calculated by means of the calibration graph mentioned in section 2.2.2. From the results thus obtained the specific migration of ammonium perfluorooctanoate was calculated.

3. RESULTS

The following results were obtained.

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3.1 Monomer content

sample	monomer content (mg/kg)	
	TFE	HFP
TEFLON 701-N granular resin	< 0.01	-
TEFLON 701-N skived tape	< 0.01	-
TEFLON 669-N unsintered tape	< 0.01	-
TEFLON 100 FEP granular resin	< 0.01	0.08
HOSTAFLON TF 1620 granular resin	< 0.01	-
HOSTAFLON TF 1620 skived tape	< 0.01	-
HOSTAFLON TF 2026 granular resin	< 0.01	-
HOSTAFLON TF 2026 tubing	< 0.01	-
FLUON G 163 granular resin	< 0.01	-
FLUON G 163 skived tape	< 0.01	-
FLUON CD 1 unsintered tape	< 0.01	-

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3.2 C8-emulsifier content

sample	C8-emulsifier content (mg/kg)
TEFLON 701-N granular resin	4
TEFLON 701-N skived tape	3.1
TEFLON 669-N unsintered tape	23.5
TEFLON 100 FEP granular resin	1.5
HOSTAFLOX TF 1620 granular resin	1.5
HOSTAFLOX TF 1620 skived tape	0.2
HOSTAFLOX TF 2026 granular resin	94
HOSTAFLOX TF 2026 tubing	0.4
FLUON G 163 granular resin	1.2
FLUON G 163 skived tape	2.1
FLUON CD 1 unsintered tape	5.5

3.3 Specific migration of C8-emulsifier

sample	Specific migration of C8-emul: (mg/dm ²)
TEFLON 701-N skived tape	< 0.005
TEFLON 669-N unsintered tape	< 0.005
HOSTAFLOX TF 1620 skived tape	0.007
HOSTAFLOX TF 2026 tubing	< 0.005
FLUON G 163 skived tape	< 0.005
FLUON CD 1 unsintered tape	< 0.005

CIVO-TNO 10x
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