side delivery tube on a clean 500 ml filtering flask (see note #2). Place a disk on 5.5 cm Whatman #4 filter paper, 2 discs of 5.5 cm glass fibre paper, and size #2 retainer ring in the funnel, in that order.

8. Replace the 400 ml beaker from Step #5 onto hot plate and bring to a gentle boil.
9. Pre-wet with Tetrachloroethylene filter paper prior to filtration and apply gentle suction to the flask; then rapidly pour the hot tetrachloroethylene solution thru the filter. Using a wash bottle, rinse beaker, retainer ring, and paper 4 times with 10-15 ml portions of near boiling tetrachloroethylene (see note #3). Disconnect funnel from the filtering flask.
10. To contents of the filtering flask add 175 ml precooled methanol (maximum 10 C). Swirl to disperse thoroughly; let stand for 10 min in cold water bath to completely precipitate the polyethylene.
11. Weigh accurately 2 pieces of 7.0 cm moisture free fiber glass paper; and place them, along with the size #1 retainer ring, in the California Modified Buchner funnel. Place funnel on a 1 liter filtering flask, and with gentle suction, filter the solution from Step #9. Using a wash bottle, wash flask, retainer ring, and paper 4 times with 20 ml portions of methanol.
12. Pull air through the fiber glass paper for 2 min. Carefully remove paper from the funnel; dry in an oven at 150 C to constant wt. Ten (10) min drying time should be sufficient. Cool in a dessicator; reweigh paper and contents.

D. Calculation:

Calculate the ppm polyethylene in the sample as follows:

PPM Polyethylene analyzed =

1. $$\frac{\text{Wt of precipitate in gm} \times 10^6}{\text{Wt of sample in gm}}$$

or

2. Wt of precipitate in gm x 10,000 x dilution factor.

E. Accuracy:

Probable accuracy is ± 20 ppm from 50-500 ppm (see note 7).

F. Notes:

1. When samples high in polyethylene (PE) are anticipated or found experimentally by prior analysis, the sample should be diluted with a polyethylene free vegetable salad oil according to the following schedule:

	Sample wt/gm		
PPM PE expected	Fat	Salad oil	Dilution factor
0-750	100	0	1.0
751-1500	50	50	2.0
>1501	25	75	4.0

2. The filtering flask (500 ml) used in steps 7 thru 10 should be cleaned thoroughly of any residual polyethylene film after each completed analysis. A strong, hot, caustic solution is adequate for this purpose.
3. Step 9 requires complete and thorough washing. Tetrachloroethylene must be kept near the boiling point at all times.
4. Methanol used in steps 10 and 11 should be precooled below 10 C by refrigeration or cold water bath to insure complete and rapid precipitation.
5. Fiber glass paper is very rapid and extremely retentive, but it is also very delicate and must be handled with great care at all times.

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