SOIL ADSORPTION (METHOD DEVELOPMENT)

TEST SUBSTANCE

Identity: Perfluorooctanoic acid, ammonium salt; may also be referred to as PFOA ammonium salt, Ammonium perfluorooctanoate, PFO, FC-116, FC-126, FC-169, or FC-143. (Octanoic acid, pentadecafluoro-, ammonium salt, CAS # 3825-26-1)

Remarks: The 3M production lot number was not noted. The test sample is radiolabeled FC-143. It's purity was not sufficiently characterized, though current information indicates it is a mixture of 96.5 - 100% test substance and 0 – 3.5% C_6, C_7, and C_9 perfluoro analogue compounds.

METHOD:

Method: The attached study explores the use of Thin Layer Chromatography Plates for determining the soil mobility of ammonium perfluorooctanoate. This autoradiographic method was developed by 3M while looking for alternatives for studying the adsorption/desorption properties of the test substance.
GLP (Y/N): No
Year (study performed): 1978
Statistical methods: None.
Temperature: Not noted in the report.
Remarks field: Very little detail is available on the study method. The procedure followed is described in the attached one-page of study notes.

RESULTS

This study using TLC greenhouse soil plates indicated that ammonium perfluorooctanoate did not move from the spot it was placed.

CONCLUSIONS

This study concluded that ammonium perfluorooctanoate is likely to adsorb to soil.

Submitter: 3M Company, Environmental Laboratory, P.O. Box 33331, St. Paul, Minnesota, 55133

DATA QUALITY

Reliability: Klimisch ranking 3. This study lacks sufficient explanation of the methodology. Radiochemical purity, type of label, position of label and specific activity of the label for the test substance are not characterized. Sensitivity of the methodology is not explored. The analytical methodology lacks validation.

REFERENCES

Excerpt from 3M Technical Notebook No. 48277 30, “Soil Thin-Layer Chromatography – FC 95, FC 143, FM 3422”, Page 30, A. Mendel, Project Number 9970612600, November 13, 1978. No Lab Request Number available.

Review of Technical Notebook No. 48277-30. Soil Thin Layer Chromatography. Professor Stephen A. Boyd, Michigan State University, May 19, 1993.

OTHER

Last changed: 4/01/01