ORGANIC CHEMICALS DIVISION RESEARCH Report

RECEIVED
APR 6
MONSANTO COMPANY
TECHNICAL REPORTS R-225
ST. LOUIS

REPORT NO.- 3684 JOB NO.- 2-02-760.01-8903209

FINAL REPORT ON
SPECTROSCOPY METHODS DEVELOPED - 1970

DATE - January 1971 WRITTEN BY - M. W. Dietrich et al

Monsanto

ST. LOUIS, MO.

MONS 220550

MONSANTO COMPANY
ORGANIC CHEMICALS DIVISION
ST. LOUIS TECHNOLOGY DEPARTMENT

DO NOT REPRODUCE, TRANSFER, STORE OR DESTROY
RETURN REPORT TO: ORGANIC RESEARCH DEPARTMENT
TECHNICAL INFORMATION GROUP
1700 SOUTH SECOND STREET

St. Louis Research Report No. 3684

FINAL REPORT ON
SPECTROSCOPY METHODS DEVELOPED - 1970

Job No. 2-02-760.01-8903209

Date: January, 1971

Work Done and Reported By:

M. W. Dietrich
T. J. Furdak
D. Guerry
B. Katlafsky
O. E. Kinast
G. W. Mappes
J. P. Mieure
H. Yepez

MONS 220551

DISTRIBUTION FOR
REPORT NO. 3684

1. File Copy - South Second Street Library
2. Technical Reports Library - Research Center 4-5 11
3. Extra
4. Extra
5. Extra
6. Circulate to Organic Research Managers, Organic Director of Technology and Return to Library*
7. Supervisor/Author
8. Manager - R. E. Keller
9. Patent Department - J. E. Maurer
10. W. E. Koerner - Research Center*
11. Ruabon Information Center - Ruabon (via D. Danna)*
12. R. A. Geisman - JFQ*
13. R. Blowers/H. J. Horner - WGK*
14. H. Kilbourne/J. Paul Ferrin - Nitro
15. O. Dolin - ~~Anniston~~ Nitro*
16. J. Graves - Luling*
17. J. Willmore - Delaware River*
18. T. Bell - Anniston*
19. B. S. K. Fung - Seattle*
20. Extra*
21. Extra*

*Appreviated report containing only the index, section titles, introduction and summary.

This report contains confidential information which is the property of the Monsanto Company and which shall be disclosed only to duly authorized persons. The recipient is held accountable for the filing and safe custody of the report, which must be returned on demand.

TABLE OF CONTENTS

		Page No.
I.	INTRODUCTION	1
II.	GENERAL SUMMARY	1
III.	NEW COMPOUNDS FOR SRC	1
IV.	SPECTROSCOPY METHODS	1
	A. Component Index	1
	B. Product Index	3
	C. Methods (Methods 70-1 through 70-26)	

I. INTRODUCTION

This report contains chemical and instrumental methods developed by the Spectroscopy Group at St. Louis for the Organic Chemicals Division Research and Development Laboratories projects during 1970. The methods are indexed alphabetically according to component measured and to product. The work included in this report is covered by PA TC-03, entitled "New Spectroscopy Technology".

II. GENERAL SUMMARY

Twenty-six spectroscopy methods were developed in support of Organic Research and Development Laboratories projects during 1970. These procedures were developed and applied to the analysis of products for both organic and inorganic components.

The methods developed have provided both accurate and specific data needed to evaluate laboratory projects and products. Major efforts during the year were in the Fine Chemicals, Functional Fluids, General Chemicals and Plasticizers Product Groups.

III. NEW COMPOUNDS FOR SRC

No new compounds were prepared or procured in the course of these investigations.

IV. SPECTROSCOPY METHODS

A. Component Index (1970)

Method No.	Component
70-20	Chlorinated Dibenzo-p-Dioxins, Determination in Chlorophenols
70-23	Chlorinated Dibenzofurans, Determination in Aroclor
70-8	Components, IR Determination in 3,3',4,4'-Tetrachlorocarbanilide Mother Liquors
70-9	Components, IR Determination in 3,3',4-Trichlorocarbanilide Mother Liquors
70-10	Components, IR Determination in Mixed Carbanilide Mother Liquors
70-11	Dichlorophenyl Isocyanate Dimer, IR Determination in Dichlorophenyl Isocyanate
70-26	Dipropylene Glycol, IR Determination in Naphthalene

A. Component Index (1970) (Cont'd)

Method No.	Component
70-2	Glutaric Anhydride, IR Determination in Adipic Acid
70-24	Isomers, NMR Determination in Santophen 7
70-14	Mercury, Flameless AA Determination of Forms in Water
70-21	Metals, AA Determination in Cobalt Oxide
70-5	Octachlorodibenzo-p-Dioxin, Determination in Pentachlorophenol
70-6	Octachlorodibenzo-p-Dioxin, Determination in Santobrite
70-12	Oil, IR Determination in Aroclor 1242
70-16	Oil, IR Determination in Pydraul 280
70-17	Oil, IR Determination in Pydraul 281
70-18	Oil, IR Determination in Pydraul 625(A)
70-19	Oil, IR Determination in Pydraul A-200
70-3	Palladium, AA Determination in BMT Mother Liquors
70-4	Palladium, AA Determination on Charcoal
70-1	PCB(s), GC/MS Identification
70-22	Rhodium, AA Determination in BMT
70-7	Silicon, AA Determination in Triphenylphosphate
70-2	Succinic Anhydride, IR Determination in Adipic Acid
70-25	Sulfone, NMR Determination in Aroclor 1242
70-15	2,3,7,8-Tetrachlorodibenzo-p-Dioxin, Determination in Pentachlorophenol
70-13	Water, IR Determination in Bromine

B. Product Index (1970)

Method No.	Component
70-2	Adipic Acid, IR Determination of Glutaric and Succinic Anhydrides
70-23	Aroclor, Determination of Chlorinated Dibenzofurans
70-12	Aroclor 1242, IR Determination of Oil
70-25	Aroclor 1242, NMR Determination of Sulfone
70-22	BMT, AA Determination of Rhodium
70-3	BMT Mother Liquors, AA Determination of Palladium
70-13	Bromine, IR Determination of Water
70-10	Chlorocarbanilides, IR Determination of Components in Mother Liquor
70-4	Charcoal, AA Determination of Palladium
70-20	Chlorophenols, Determination of Chlorinated Dibenzo-p-Dioxins
70-21	Cobalt Oxide, AA Determination of Trace Metals
70-11	Dichlorophenyl Isocyanate, IR Determination of Dichlorophenyl Isocyanate Dimer
70-1	Mixtures, GC/MS Identification of PCB's
70-26	Naphthalene, IR Determination of Dipropylene Glycol
70-5	Pentachlorophenol, Determination of Octachlorodibenzo-p-Dioxin
70-15	Pentachlorophenol, Determination of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin
70-19	Pydraul A-200, IR Determination of Oil
70-16	Pydraul 280, IR Determination of Oil
70-17	Pydraul 281, IR Determination of Oil
70-18	Pydraul 625(A), IR Determination of Oil
70-6	Santobrite, Determination of Octachloro-dibenzo-p-Dioxin

B. Product Index (1970)

Method No.	Component
70-24	Santophen 7, NMR Isomer Analysis
70-8	3,3',4,4'-Tetrachlorocarbanilide, IR Mother Liquor Analysis
70-9	3,3',4-Trichlorocarbanilide, IR Mother Liquor Analysis
70-7	Triphenyl Phosphate, AA Determination of Silicon
70-14	Water, Flameless AA Determination of Forms of Mercury

C. Methods

(Methods 70-1 Through 70-26)