

MONSANTO CHEMICAL COMPANY
ORGANIC CHEMICALS DIVISION
NITRO, WEST VIRGINIA

Standard Manufacturing Process
For
Sodium 2,4,5-Trichlorophenate
In
Department 895.06

Revised: Standard Manufacturing Process
Manual prepared by L. P. Harich
July 6, 1960.

Revised: June 26, 1962

Revised By: J. T. Peabworth

Approved By: Research Group Leader
Safety Director
Production Superintendent

This is copy 7 of 15.

001775

19004

Ex 49

TABLE OF CONTENTS

	<u>PAGE NO.</u>
SECTION I SYNOPSIS OF PROCESS	4
SECTION II FLOW SHEET	5 - 6
SECTION III PROCESS IN DETAIL	7 - 10
SECTION IV COMMENTS ON THE PROCESS	11 - 12
APPENDIX A EQUIPMENT LIST	13 - 15
APPENDIX B MATERIAL SPECIFICATIONS	16 - 20
APPENDIX C PHYSICAL CONSTANTS DATA	21 - 25
APPENDIX D UTILITIES	26
APPENDIX E PERSONNEL	27
APPENDIX F PACKAGING AND SHIPPING	28
APPENDIX G MATERIAL BALANCE	29 - 30
APPENDIX H STANDARD COST SHEET	31 - 32
APPENDIX I PROCESS CONTROL PROCEDURE	33
APPENDIX J SAFETY AND TOXICITY DATA	34 - 41
APPENDIX K MATERIALS OF CONSTRUCTION	42
APPENDIX L BACKGROUND INFORMATION	43 - 44
APPENDIX M TIME CYCLES	45
APPENDIX N MISCELLANEOUS	46 - 56

001760

APPENDIX J

SAFETY AND TOXICITY DATA

General - The Sodium TCP solution produced contains chemical compounds known as "chloracnogens." These materials, as yet not isolated or identified, produce a form of dermatitis known as chloracne, very similar in appearance to common acne. Care must be taken to avoid contacting the solution of Sodium TCP or the hot vapors from the solution. Personal cleanliness, frequent washing, barrier creams, are all necessary to forestall chloracne exposure.

Toxicity

1. Tetrachlorobenzene - The material is mildly toxic, causing nausea. Respirators and mono-goggles are required for handling.
2. Sodium TCP - A corrosive material. Rubber gloves and goggles are required.
3. Methanol - Highly toxic. Respirators required.
4. Tars - A highly active chloracnogen. Complete protection of the skin and eyes required.
5. Caustic Soda - A highly corrosive material. Rubber gloves, face shield, and respirator are required.

Fire Hazards

1. Dimethyl Ether - This by-product has a boiling point of -27°C at 760 mm and is vented through the condenser when the batch is transferred to the still. It is a highly inflammable gas. The operating area must be kept free from all spark sources while the autoclave is under pressure. Any leaks in the system will allow the release of dimethyl ether.

The flash point (closed cup) is -40°F.

2. Methanol - Methanol is a highly inflammable material with a boiling point of 64°C. Its flash point is 12°C and its auto-ignition temperature is 470°C. The explosive limits with air (% of volume) are 6.0 to 36.5%.

The same precautions as for dimethyl ether apply.

001813