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THE UNIVERSITY OF CHICAGO

DEPARTMENT OF CHEMISTRY

PH.D. THESIS

TITLE: THE EFFECTS OF SUBSTITUENTS ON THE REACTIVITY OF AROMATIC NITRO COMPOUNDS IN ELECTROPHILIC AROMATIC SUBSTITUTION REACTIONS.

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ABSTRACT: The effects of substituents on the reactivity of aromatic nitro compounds in electrophilic aromatic substitution reactions have been studied. The relative rates of nitration, sulfonation, and bromination of various substituted nitrobenzenes have been determined. The results show that electron-withdrawing groups increase the rate of reaction, while electron-donating groups decrease it. This is contrary to the general trend observed in other electrophilic aromatic substitution reactions where electron-donating groups are known to activate the ring towards electrophilic attack.

KEYWORDS: Electrophilic aromatic substitution; Nitro compounds; Substituents; Reaction rates.

TABLE OF CONTENTS:

Page

Introduction 1

Experimental Section 5

Results and Discussion 10

Conclusions 25

Bibliography 27

Appendix 30

Vital Statistics 35

Dedication 36

Summary 37

References 38

Index 40

Tables 45

Figures 50

Chemical Structures 55

Biographical Note 60

Author's Address 65

Reviewer's Comments 70

Final Remarks 75

Endorsement 80

Signature of Author 85

Signature of Advisor 90

Signature of Dean 95

Signature of President 100

Signature of Secretary 105

Signature of Treasurer 110

Signature of Librarian 115

Signature of Registrar 120

Signature of Student Union Representative 125

Signature of Faculty Representative 130

Signature of Board of Trustees Representative 135

Signature of Alumni Association Representative 140

Signature of Parents' Association Representative 145

Signature of Community Representative 150

Signature of Government Representative 155

Signature of Religious Representative 160

Signature of Labor Representative 165

Signature of Business Representative 170

Signature of Professional Representative 175

Signature of Academic Representative 180

Signature of Scientific Representative 185

Signature of Medical Representative 190

Signature of Legal Representative 195

Signature of Artistic Representative 200

Signature of Athletic Representative 205

Signature of Cultural Representative 210

Signature of Environmental Representative 215

Signature of Human Rights Representative 220

Signature of Peace Representative 225

Signature of Women's Representative 230

Signature of Gay/Lesbian Representative 235

Signature of Transgender Representative 240

Signature of Bisexual Representative 245

Signature of Queer Representative 250

Signature of Interfaith Representative 255

Signature of Multicultural Representative 260

Signature of Global Representative 265

Signature of Future Generations Representative 270

Signature of All Representatives 275

Back Matter 280

Glossary 285

Acronyms 290

Abbreviations 295

Units and Measurements 300

Mathematical Symbols 305

Chemical Symbols 310

Physical Constants 315

Conversion Factors 320

Periodic Table 325

Elemental Analysis Data 330

Molecular Weights 335

Purity Data 340

Yields 345

Reaction Conditions 350

Reagents and Materials 355

Equipment Used 360

Procedures 365

Calculations 370

Statistical Analysis 375

Quality Control 380

Safety Procedures 385

Environmental Impact 390

Ethical Considerations 395

Legal Issues 400

Financial Matters 405

Administrative Tasks 410

Communication 415

Record Keeping 420

Archiving 425

Disposal 430

Emergency Procedures 435

Incident Reporting 440

Investigation 445

Resolution 450

Prevention 455

Improvement 460

Conclusion 465

Appendices 470

Supplementary Material 475

Additional References 480

Further Reading 485

Resources 490

Contacts 495

Helpful Hints 500

Frequently Asked Questions 505

Answers 510

Index 515

Table of Contents 520

Front Matter 525

Back Matter 530

End Matter 535

Other Matter 540

Unlabeled Pages 545

Blank Pages 550

Pages with Errors 555

Pages Missing 560

Pages Damaged 565

Pages Not Found 570

Pages Not Readable 575

Pages Not Indexed 580

Pages Not Cited 585

Pages Not Reviewed 590

Pages Not Approved 595

Pages Not Accepted 600

Pages Not Published 605

Pages Not Distributed 610

Pages Not Available 615

Pages Not Accessible 620

Pages Not Usable 625

Pages Not Suitable 630

Pages Not Appropriate 635

Pages Not Recommended 640

Pages Not Suggested 645

Pages Not Advised 650

Pages Not Warned 655

Pages Not Cautioned 660

Pages Not Alerted 665

Pages Not Informed 670

Pages Not Notified 675

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Pages Not Disclosed 690

Pages Not Released 695

Pages Not Withheld 700

Pages Not Retained 705

Pages Not Preserved 710

Pages Not Protected 715

Pages Not Secured 720

Pages Not Encrypted 725

Pages Not Signed 730

Pages Not Verified 735

Pages Not Validated 740

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