

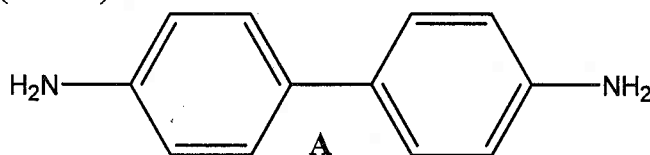
Σ 54.5

Grundpraktikum Organische Chemie

11.Klausur 19.07.05

Name:
Stockw

- 1.) Setzen Sie Benzidin (A) mit 2 Äquivalenten Sulfanilsäure (als Diazokomponente) in einer Azokupplung um (Mechanismus für alle Schritte!). Wie stellen Sie das benötigte Reagenz für die Diazotierung her? Welche optimalen Kupplungsbedingungen wählen Sie (warum)? (15 Pkt.)

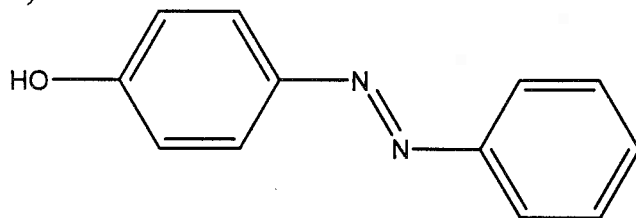


- 2.) Stellen Sie aus *N*-Methyl-*N*-nitroso-*p*-toluolsulfonsäureamid Diazomethan her. Setzen Sie das Diazomethan dann mit
- *p*-Nitrophenol
 - Essigsäureanhydrid
 - Wasser um.
- (Nur Reaktionsgleichungen!)
(10 Pkt.)

- 3.) Stellen Sie aus Benzol *p*-Bromphenylhydrazin her. Schlagen sie hierzu einen sinnvollen Syntheseweg vor (nur Reaktionsgleichungen und Reagenzien).
(11 Pkt.)

- 4.) Folgende Verbindungen werden (unter Eiskühlung) im wässrigen salzsauren Medium mit Natriumnitrit umgesetzt. Welche Produkte entstehen jeweils? (Kein Mechanismus, nur Reaktionsgleichungen)
- *n*-Propanol
 - *n*-Propylamin
 - Propionsäureamid
 - α -Amino-propionsäure-isopropylester
 - *N,N*-Diisopropylamin
 - Malonsäuredi-*n*-propylester
- (13 Pkt.)

- 5.) Stellen Sie in einer sinnvollen Synthesesequenz ausgehend von Benzol und anorganischen Reagenzien folgende Verbindung her (das ist z.B. in fünf Stufen möglich): (8Pkt.)



1.2.2.2

1.2.2.2.1

1.2.2.2.1.1

1.2.2.2.1.1.1

1.2.2.2.1.1.2

1.2.2.2.1.1.3

1.2.2.2.1.1.4

1.2.2.2.1.1.1.1

1.2.2.2.1.1.1.2

1.2.2.2.1.1.1.3

1.2.2.2.1.1.1.1.1

1.2.2.2.1.1.1.1.2

1.2.2.2.1.1.1.1.3

1.2.2.2.1.1.1.1.1.1

1.2.2.2.1.1.1.1.1.2

1.2.2.2.1.1.1.1.1.3

1.2.2.2.1.1.1.1.1.4

1.2.2.2.1.1.1.1.1.1.1

1.2.2.2.1.1.1.1.1.1.2

1.2.2.2.1.1.1.1.1.1.3

1.2.2.2.1.1.1.1.1.1.1.1

1.2.2.2.1.1.1.1.1.1.1.2

1.2.2.2.1.1.1.1.1.1.1.3

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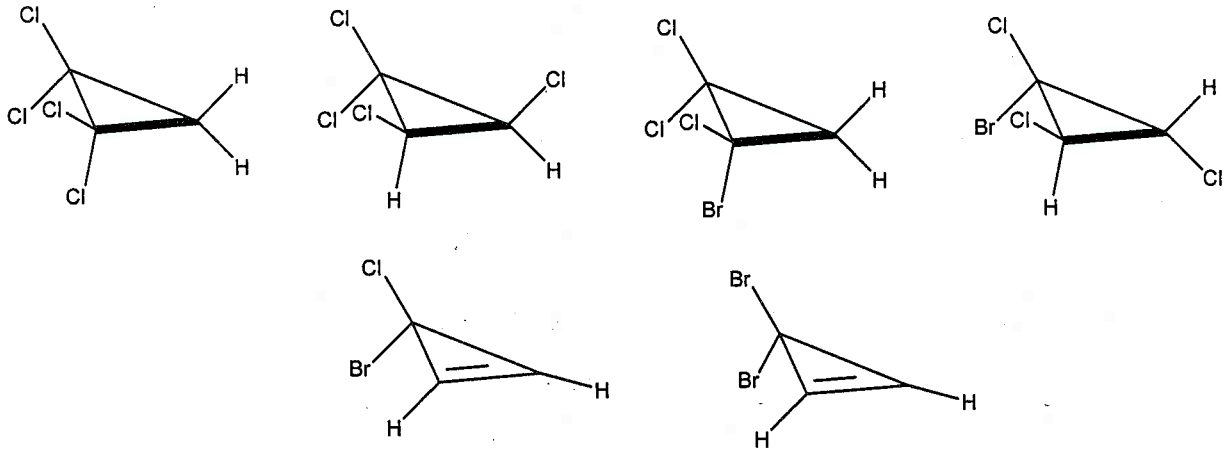
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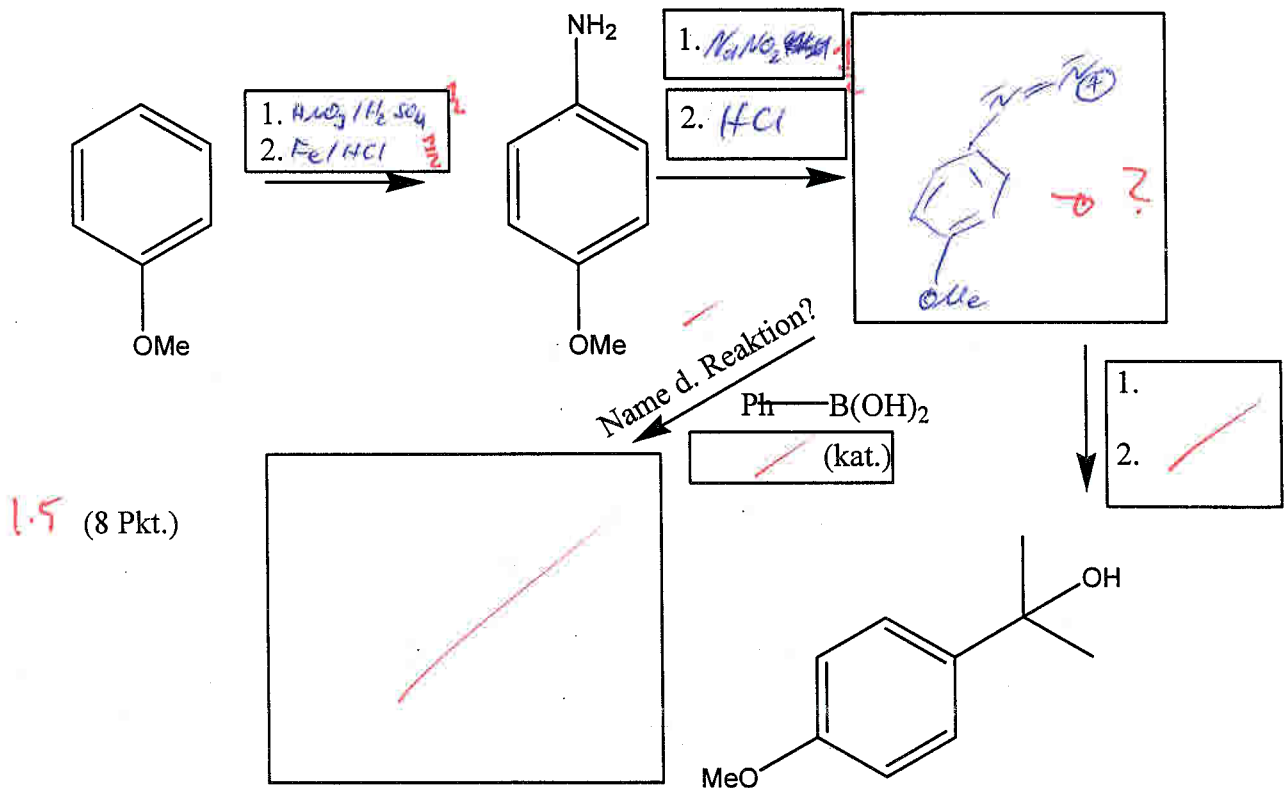
1.2.2.2.1.1.1.1.1.1.1.1.4

6.) Eine Mischung aus Ethylamin, Morpholin und Diisopropylethylamin soll nach Hinsberg getrennt werden. Erläutern Sie (kurz und knapp, Reaktionsgleichungen!) die Vorgehensweise. (8 Pkt.) (3.5)

7.) Stellen Sie fest, ob die Protonen in den folgenden Cyclopropanderivaten jeweils homotop, enantiotop oder diastereotop sind. Wieviele Signale würden Sie bei jedem Molekül im $^1\text{H-NMR}$ (unter Standardbedingungen) erwarten? (12 Pkt.) (3)



8.) Vervollständigen Sie die folgenden Reaktionsgleichungen: (7)



The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry, no matter how small, should be recorded to ensure the integrity of the financial statements. This includes not only sales and purchases but also expenses and income.

The second part of the document provides a detailed breakdown of the accounting cycle. It outlines the ten steps involved in the process, from identifying the accounting entity to preparing financial statements. Each step is explained in detail, with examples provided to illustrate the concepts.

The third part of the document focuses on the classification of accounts. It discusses the different types of accounts, such as assets, liabilities, equity, and income, and how they are used to record and summarize business transactions. It also explains the relationship between these accounts and the accounting equation.

The fourth part of the document covers the process of journalizing and posting. It describes how transactions are recorded in the journal and then transferred to the ledger. It also discusses the importance of double-entry bookkeeping and how it helps to ensure that the books are balanced.

The fifth part of the document discusses the preparation of financial statements. It explains how the information from the ledger is used to create the balance sheet, income statement, and statement of owner's equity. It also discusses the importance of these statements for the business and its stakeholders.

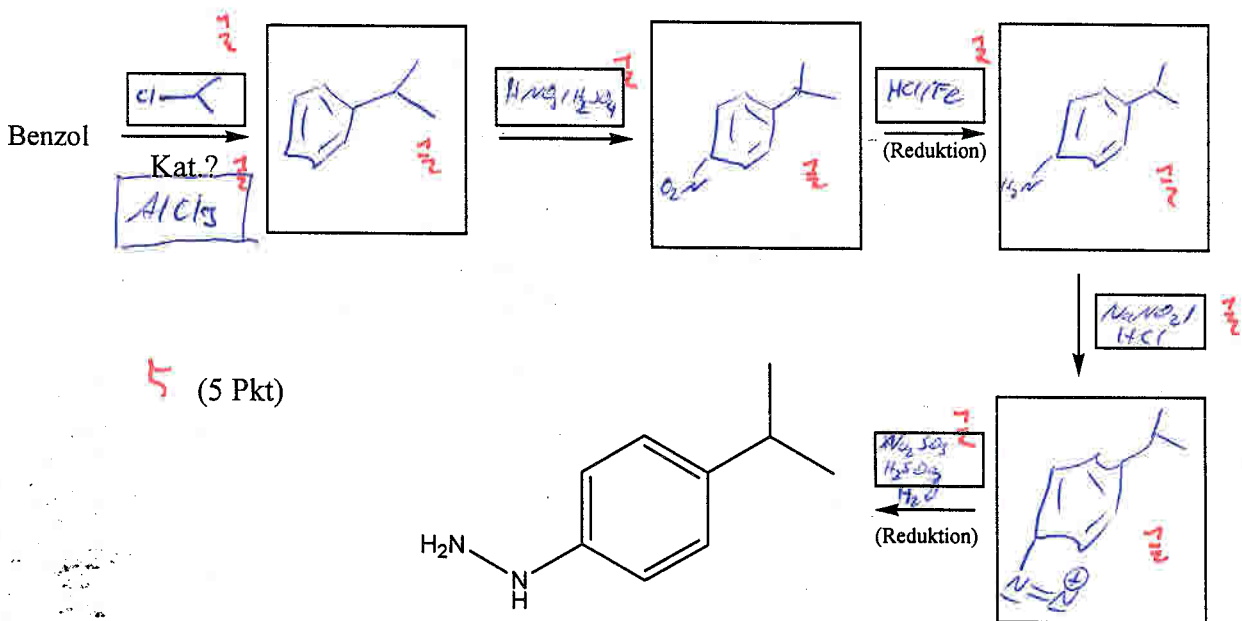
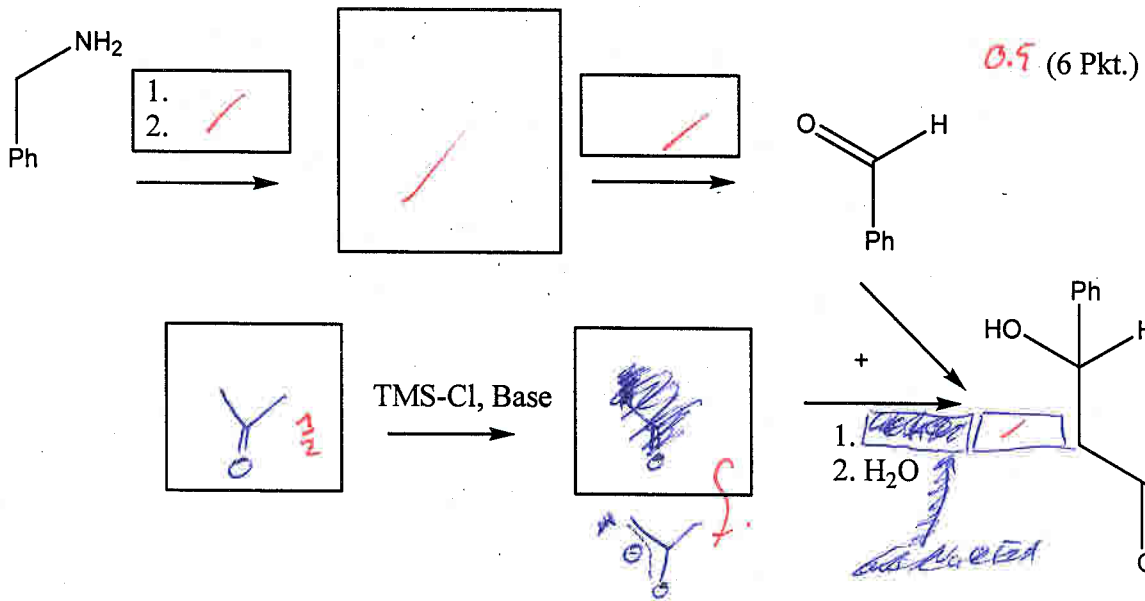
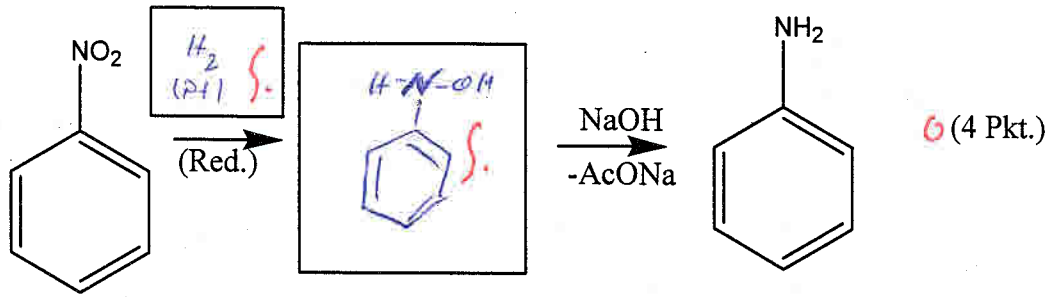
The sixth part of the document covers the closing process. It describes how the temporary accounts are closed to the permanent accounts at the end of the accounting period. It also discusses the importance of this process in preparing the books for the next period.

The seventh part of the document discusses the importance of internal controls. It explains how these controls help to prevent errors and fraud, and how they can be used to improve the efficiency of the business. It also discusses the different types of internal controls and how they are implemented.

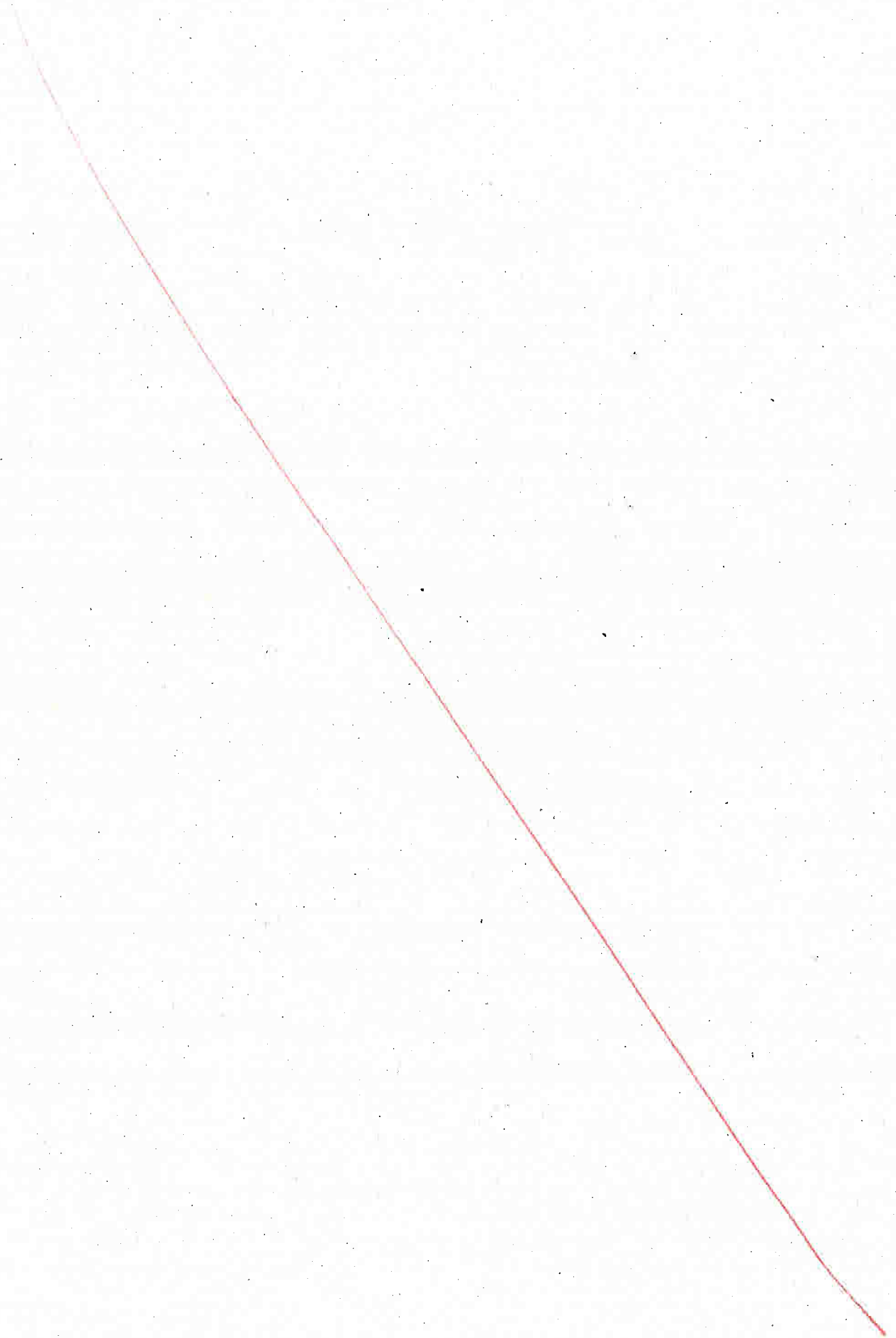
The eighth part of the document covers the use of accounting software. It discusses the benefits of using software to manage financial data, such as increased accuracy and efficiency. It also discusses the different types of accounting software and how to choose the right one for the business.

The ninth part of the document discusses the importance of ethics in accounting. It explains how accountants have a responsibility to provide accurate and honest information, and how they can be held accountable for their actions. It also discusses the different types of ethical issues that accountants may face and how to handle them.

The tenth part of the document covers the future of accounting. It discusses the impact of technology on the profession, such as the use of artificial intelligence and blockchain. It also discusses the importance of continuing education and staying up-to-date on the latest developments in the field.

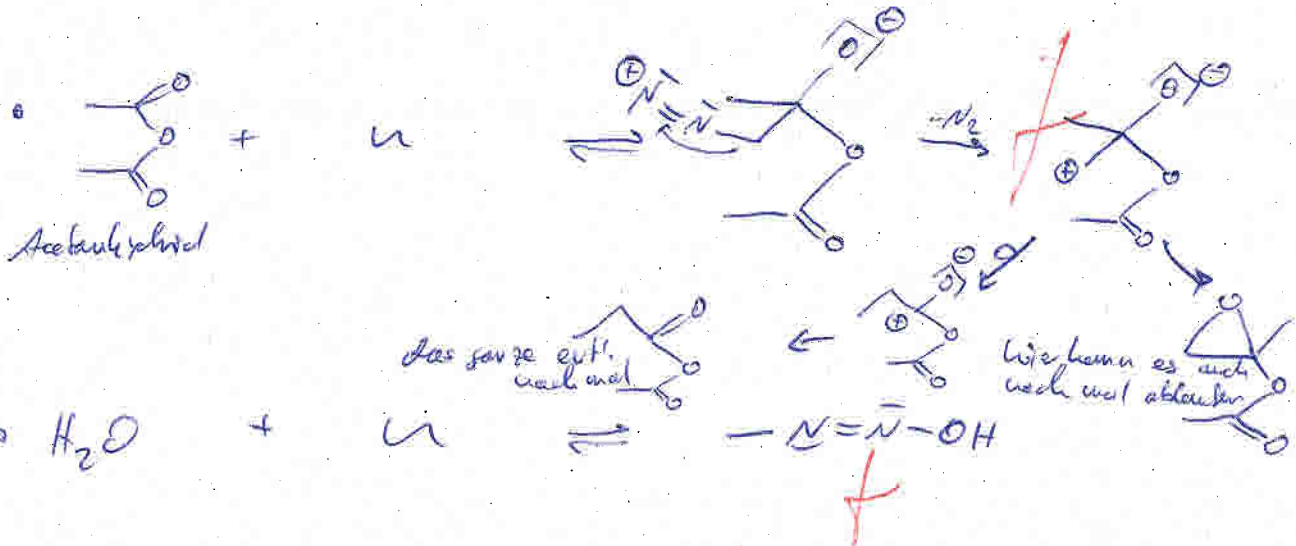
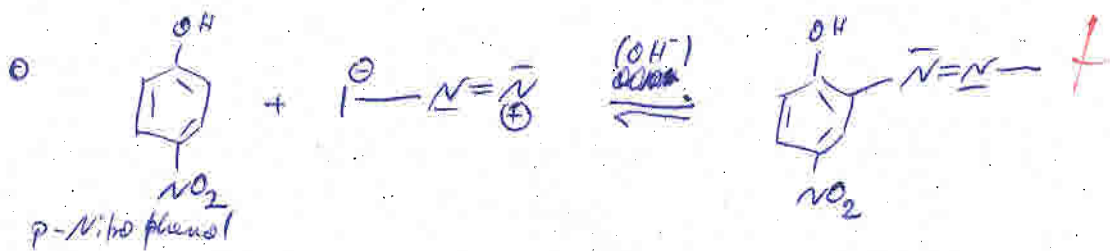
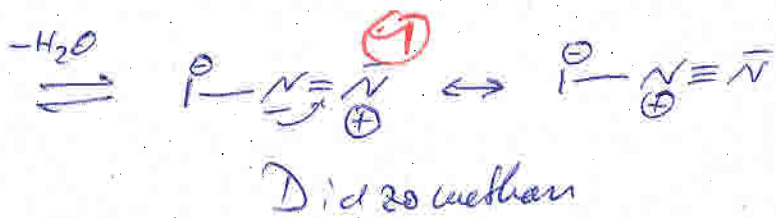
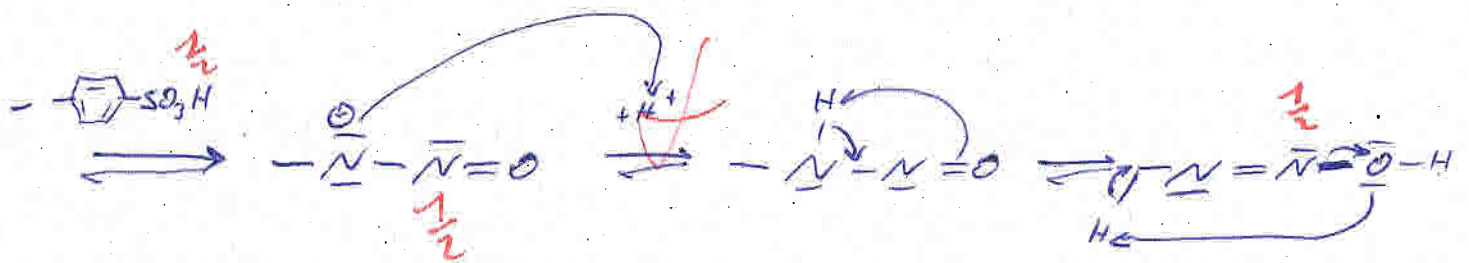
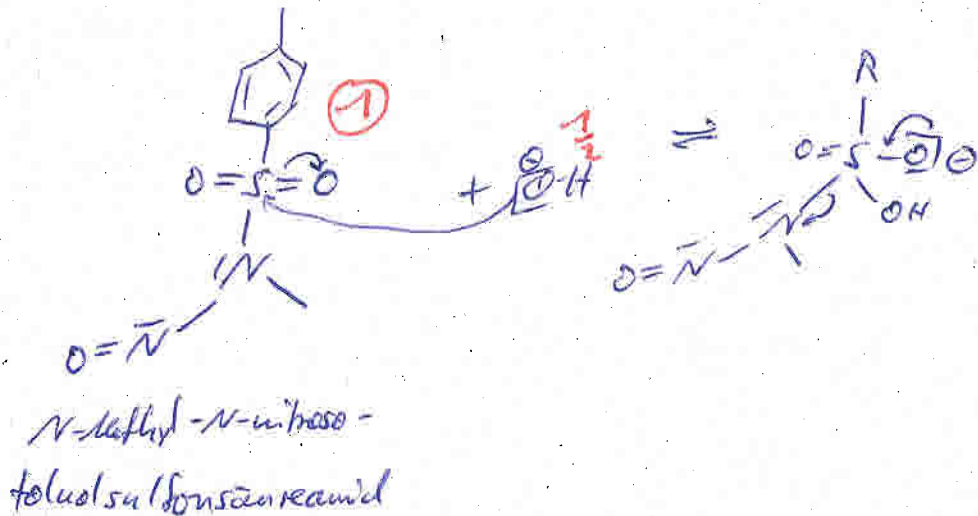






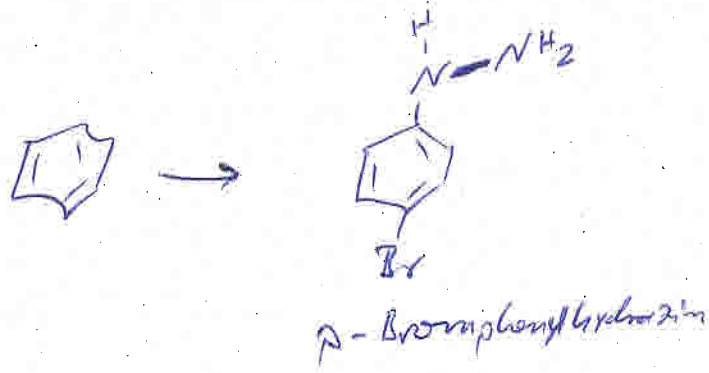
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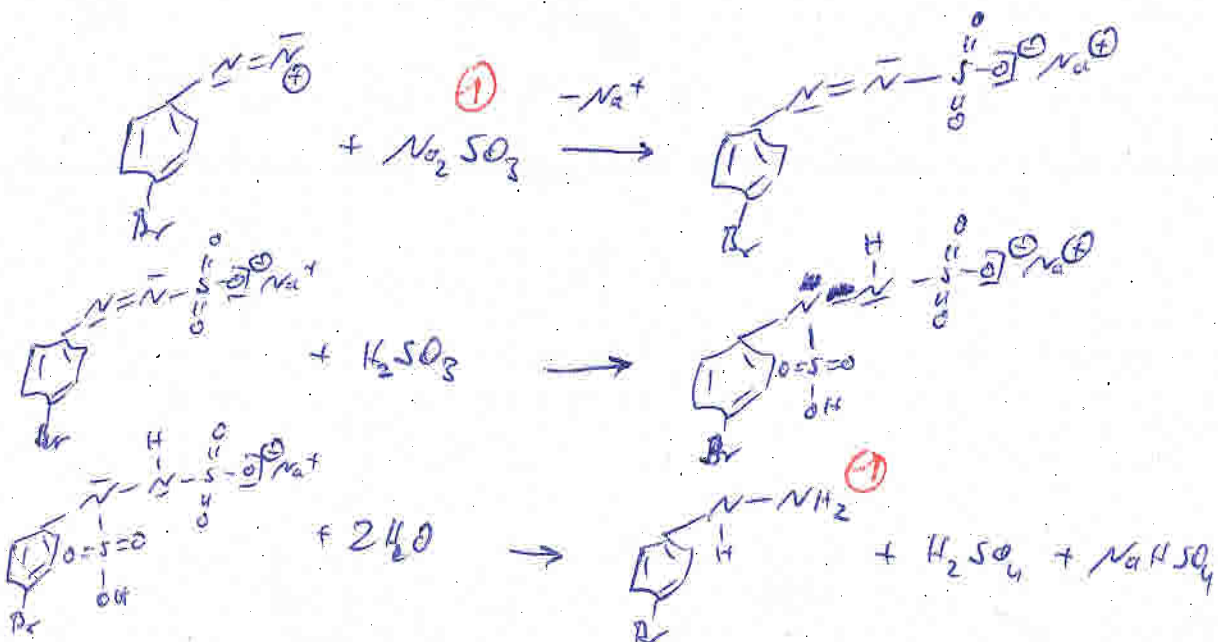
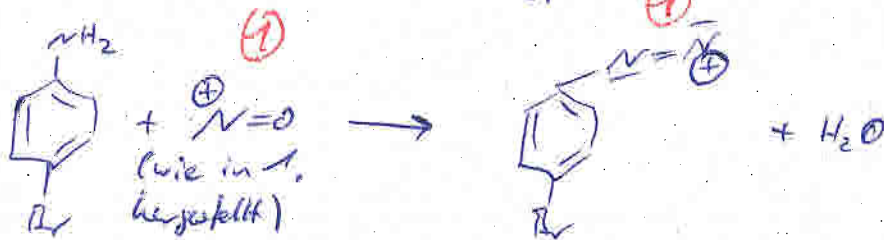
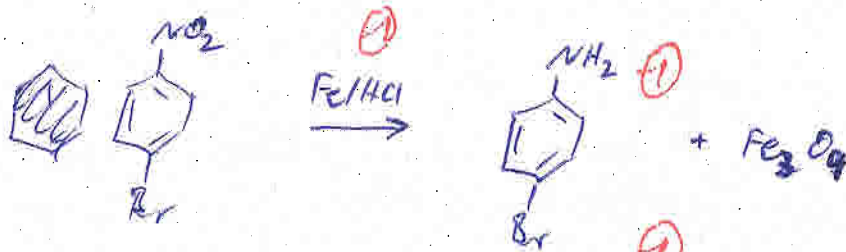
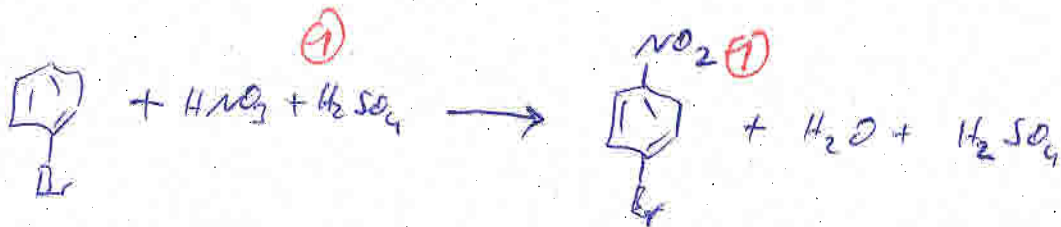


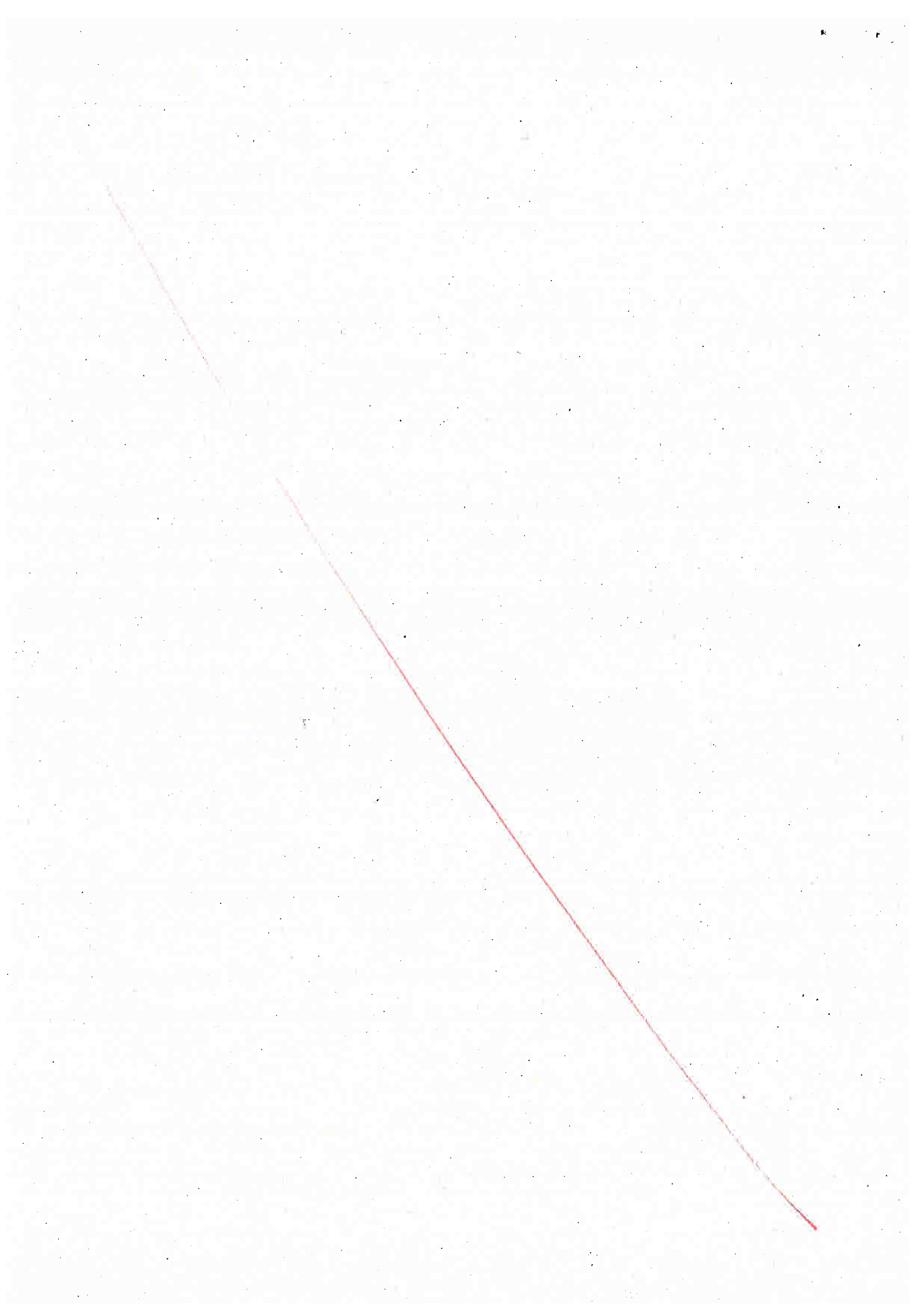


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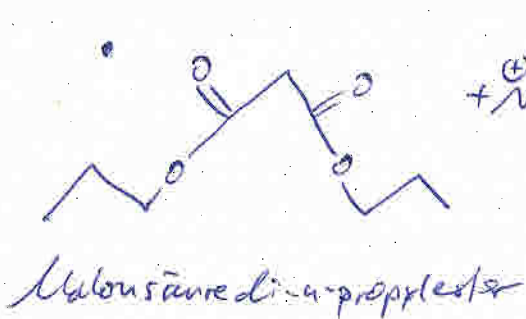
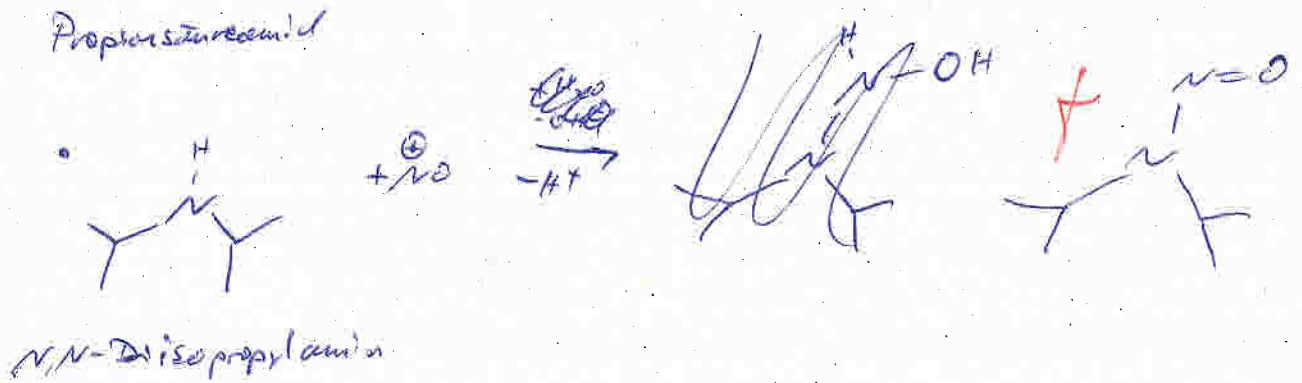
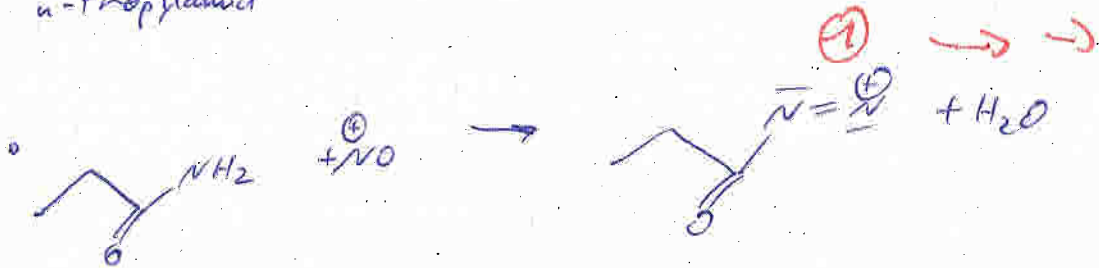
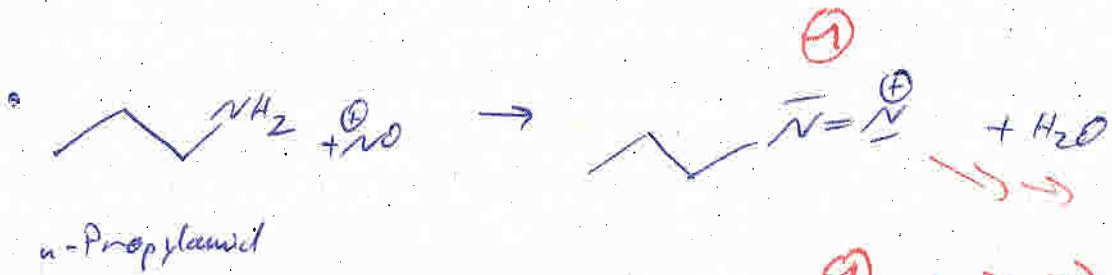
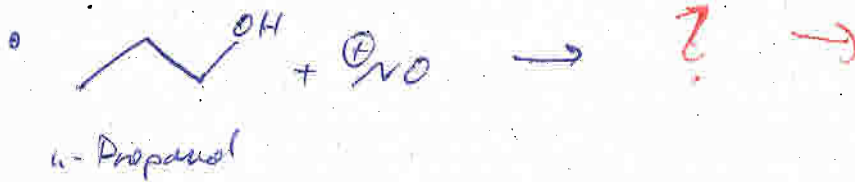
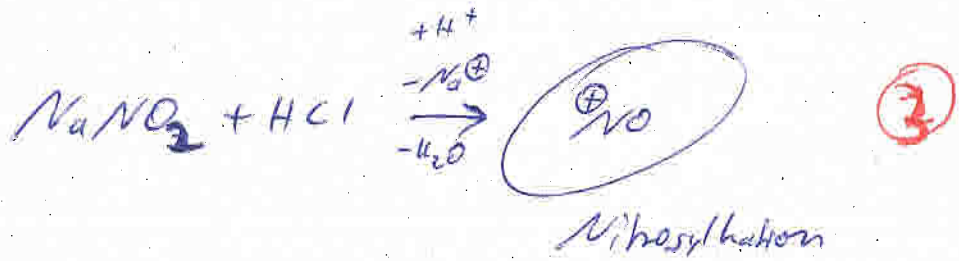


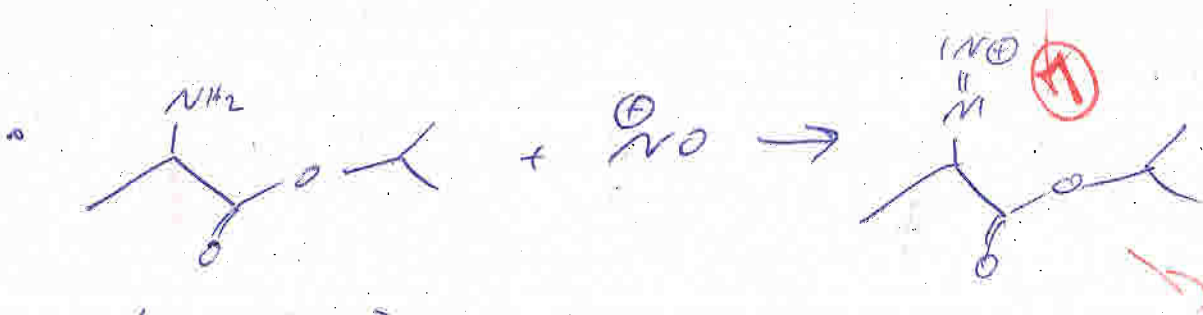
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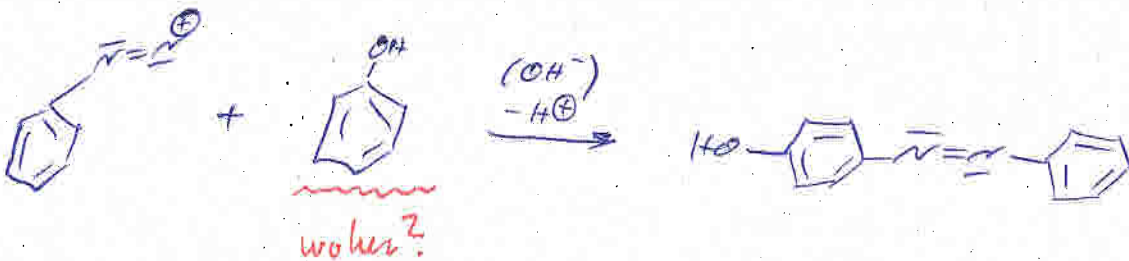
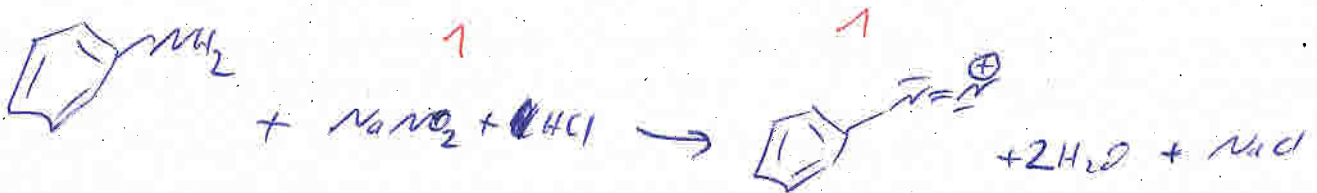
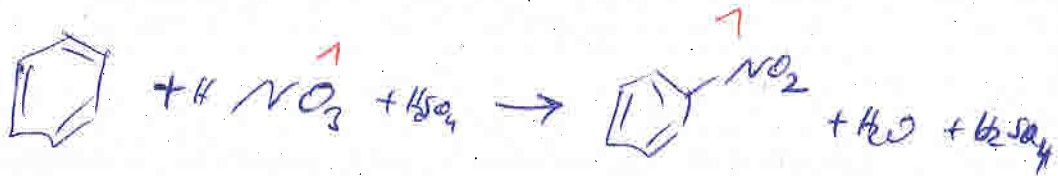
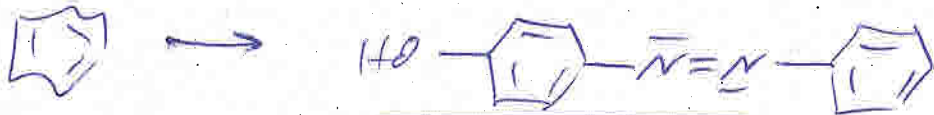


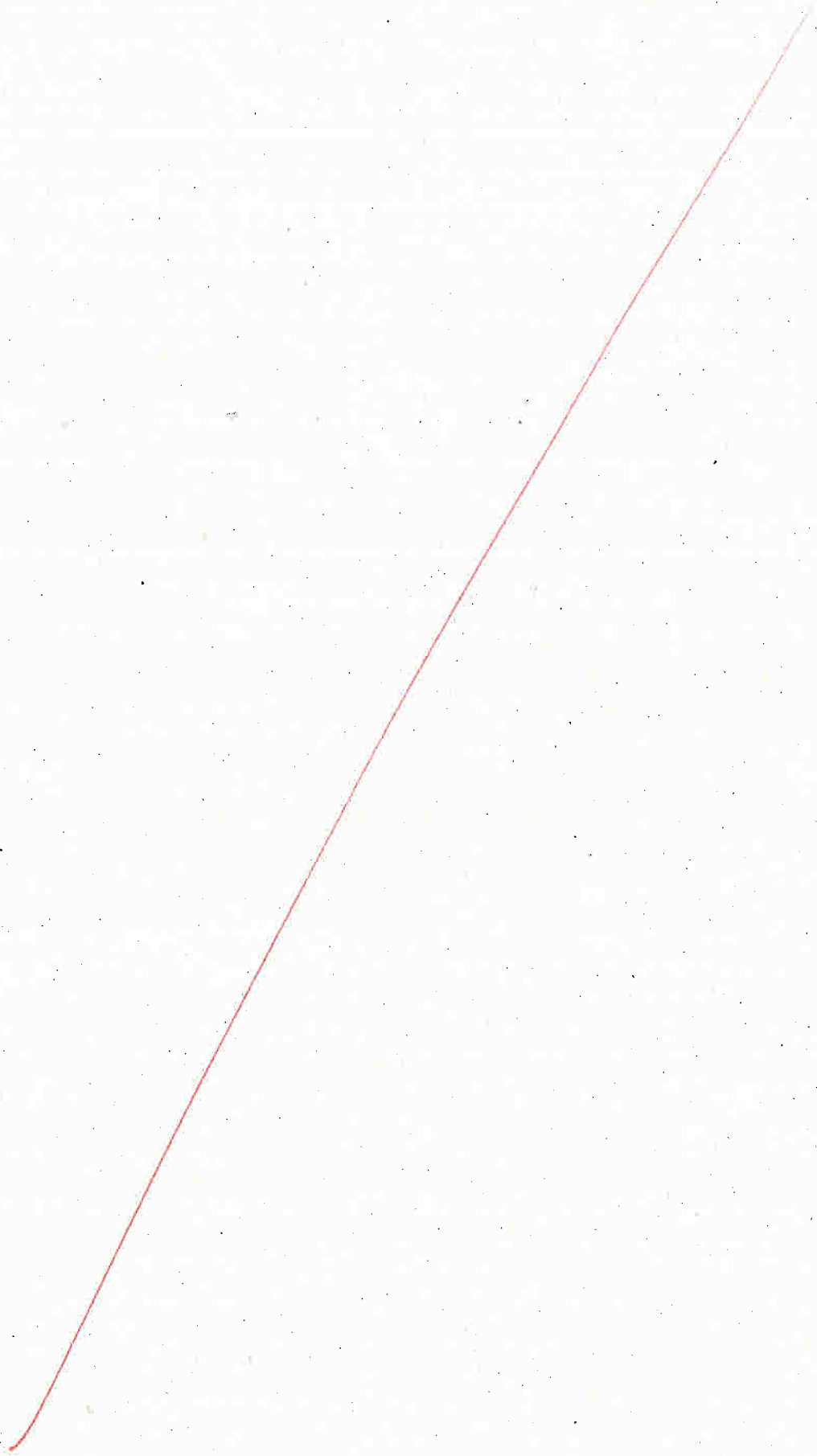


α -Amino propionsäure-
isopropyl ester

5.

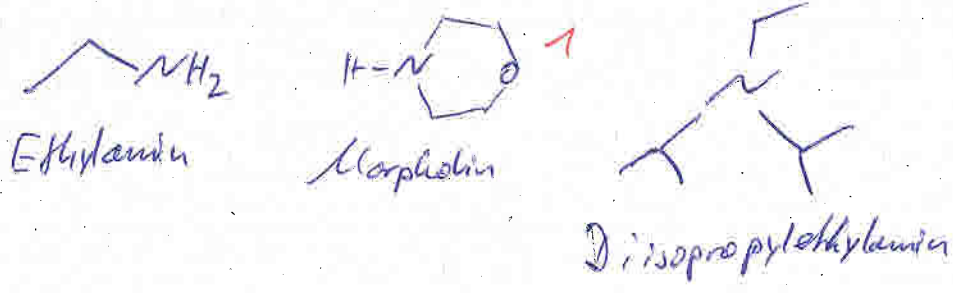
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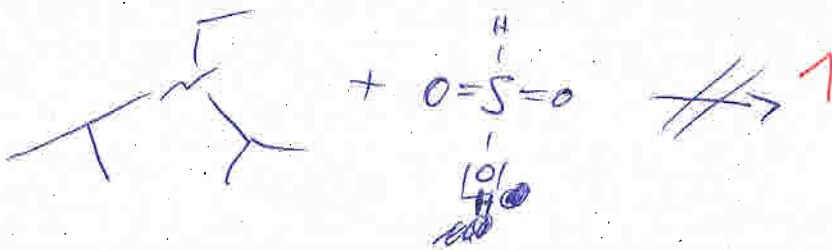
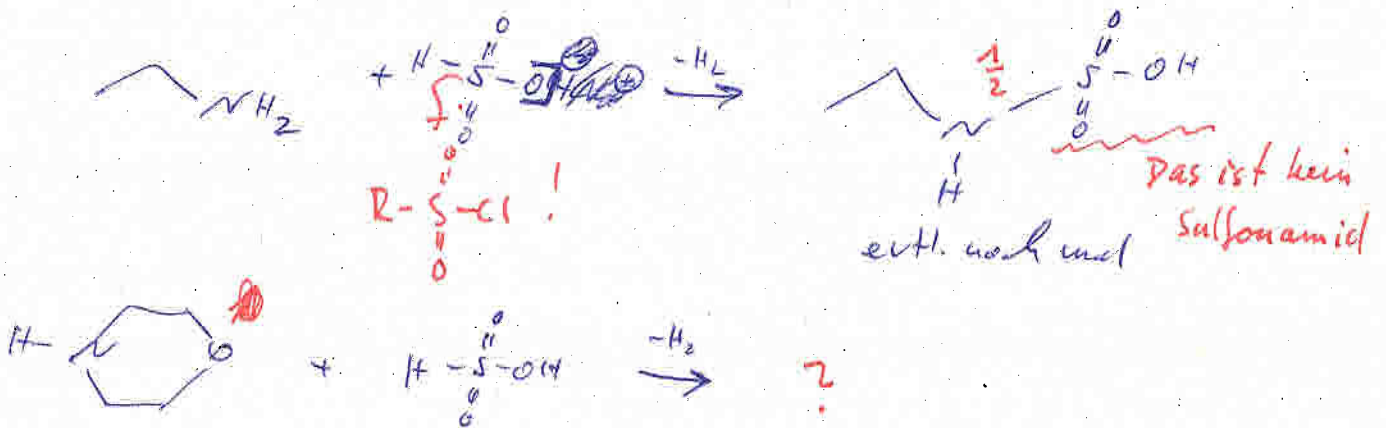


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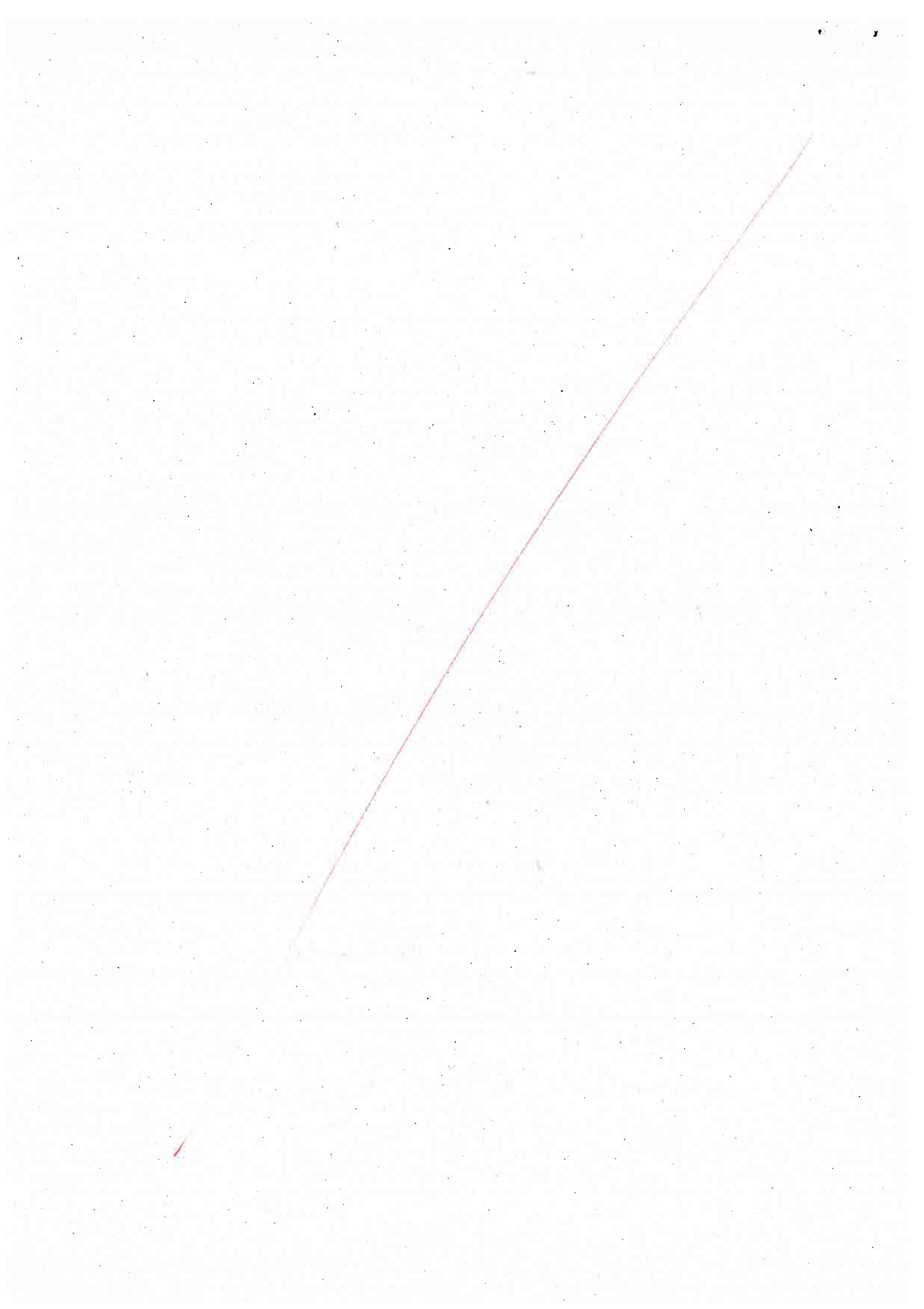


Es werden die entsprechenden Sulfonamide hergestellt.

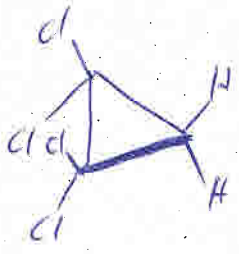


Ethylamin und Morpholin bilden ein Sulfonamid, das Diisopropylethylamin nicht.

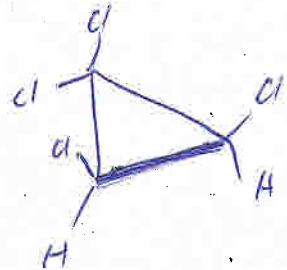
Das Ethylsulfonamid^{1/2} ist in Alkohol^{wasser} löslich, das Morpholin-^{1/2}sulfonamid bildet hier einen kristallinen Niederschlag. Das nicht umgesetzte Diisopropylethylamin kann man abdestillieren.



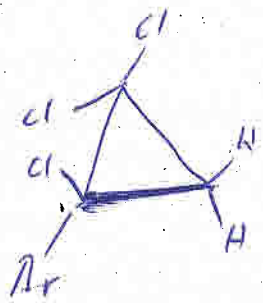
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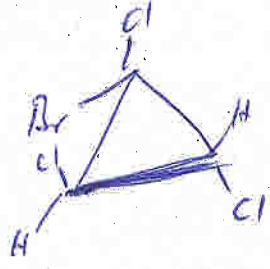
enantiotop
~~enantiotop~~ $\frac{1}{2}$ 1 signal



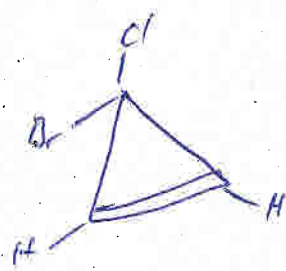
enantiotop \uparrow
~~diastereotop~~ 2 signale
 1 signal \uparrow



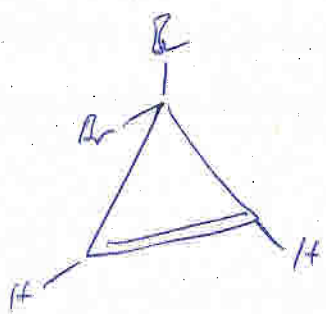
diastereotop \uparrow 2 signale \uparrow



diastereotop \uparrow 2 signale \uparrow



enantiotop \uparrow 1 signal \uparrow



enantiotop \uparrow
~~diastereotop~~ $\frac{1}{2}$ 1 signal

