

Level 3

Additional Mathematics

6993/01: Qualification: Additional Mathematics

Free Standing Mathematics Qualification

Mark Scheme for June 2019

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Iseb Iseb

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for the nitration 4 01 ml of nitric acid 4 00 ml of sulfuric acid and 4 56 ml bromobenzene were used to complete the reaction with these measurements bromobenzene was found to be the limiting reagent since only 4 56 ml of bromobenzene was used the amount of product predicted to be recovered was 8 7533 g

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the aim of the experiment is to determine and study electrophilic aromatic substitution reaction eas particularly nitration of methyl benzoate go give methyl m nitrobenzoate thus determine the weight melting point and percentage yield of the pure methyl m nitrobenzoate abstract

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in this experiment we will carry out the nitration of bromobenzene bromine substituted on an aromatic ring is an ortho para directing group it will direct an incoming electrophile to the ortho and para positions it is also deactivating meaning that its reactions will be slower than the identical reactions of benzene

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in the nitration of bromobenzene a mixture of sulfuric acid and nitric acid react with one another nitric acid the weaker of the two acids will serve as base to form nitronium ion bromobenzene will attack the nitronium ion by nucleophilic attack

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then actual is your actual findings yield actual theoretical $\times 100$ what are the possible side reactions of nitration of bromobenzene dinitration can occur at ortho para or at both ortho positions occurs in overheating meta product happens very rarely because bromine is an ortho para director

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the soap in the lab is not suitable for this purpose 2 return to the lab and apply mineral oil to the affected area theory and explanation of the nitration of bromobenzene if the temperature of the reaction mixture exceeds 60 o

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the bromine substituent in bromobenzene is an ortho para director the para position is favored due to steric effects in the reaction that takes place in this lab a nitro group is substituted onto bromobenzene at the para position to form 1 bromo 4 nitrobenzene

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study with quizlet and memorize flashcards containing terms like reacting sulfuric and nitric acid together produces the nitronium ion alone nitric acid is not a strong enough electrophile to react with bromobenzene sulfuric acid is added to the nitric acid the reverse rxn can overheat and boil easily includes a claisen adaptor and

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over 5 minutes slowly pipet this bromobenzene into the icy cold nitration mixture hno 3 h 2 so 4 in the 125 ml flask and stir continue to stir the reaction mixture in the ice bath for 30 minutes do not heat in a new 250 ml erlenmeyer

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on the right the arenium cation has a nitro set with incredibly small 0.6 angstrom bond distances this will result in an

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the purpose of this lab was to observe where substituents are added on a benzene ring by way of electrophilic aromatic substitution the electrophilic source in the nitration of bromobenzene comes from a nitronium ion NO_2^+ which acts as the electrophilic species

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nitration of bromobenzene is an electrophilic aromatic substitution reaction the electrophile will be formed from 4 0ml of nitric acid and 4 0ml of sulfuric acid and will then react with 4 5ml of bromobenzene this will produce o bromonitrobenzene and p bromonitrobenzene

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