

36 A map of A-Level reactions – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary 词汇

Write each word three times. 把每个单词抄写三遍。

English	中文	Write it 3 times (English)
arene	芳烃	_____
electrophilic sub-stitution	亲电取代	_____
reduce	还原	_____
ester	酯	_____

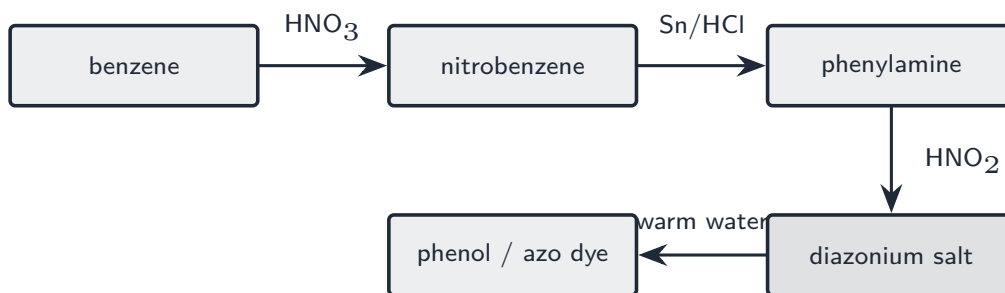
Recall

Knowing the A-Level reactions as a *map* lets you plan a route from one molecule to another.

New ideas

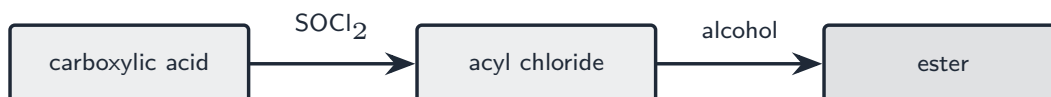
Read these first, then do the Practice.

■ 1 The aromatic route



From an **arene** 芳烃: nitrate (**electrophilic substitution** 亲电取代) → **reduce** 还原 to phenylamine → make a diazonium salt → phenol or an azo dye.

■ 2 The acyl route



A carboxylic acid → an acyl chloride (with SOCl_2) → an **ester** 酯 (with an alcohol).

Watch out: learn the two main routes — *aromatic*: benzene → nitrobenzene → phenylamine → diazonium salt → phenol/azo dye; *acyl*: acid → acyl chloride → ester. Each arrow is one reaction with its own reagent.

Practice

Try these in order.

36.6 What does nitrating benzene give? [1]

36.7 What does *reducing* nitrobenzene give? [1]

36.8 A carboxylic acid reacts with SOCl_2 to give what? [1]

36.9 An acyl chloride plus an alcohol gives what? [1]

36.10 What kind of mechanism is the nitration step?

[1]

36.11 Challenge. Outline how to make phenylamine from benzene, naming the reagent for each of the two steps.

[2]