

29 Aromatic compounds and naming

– Part 1

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)
aromatic	芳香	_____
benzene	苯	_____
functional group	官能团	_____
benzene ring	苯环	_____
electrophilic substitution	亲电取代	_____
addition–elimination	加成消去	_____

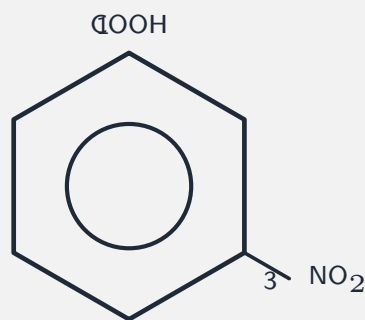
Recall

At A Level you meet **aromatic** 芳香 compounds —those built on a **benzene** 苯 ring. The **functional group** 官能团 still decides the properties.

New ideas

Read these first, then do the Practice.

■ 1 Naming aromatic compounds



number from the main group (C1)

Use the **benzene ring** 苯环 as the parent and number the positions of the substituents, starting from the main group (carbon 1).

■ 2 Two new mechanisms

electrophilic substitution
an electrophile replaces an H
on a benzene ring

addition–elimination
a molecule adds on, then
a small molecule is removed

- **electrophilic substitution** 亲电取代—an electrophile replaces a hydrogen on a benzene ring;
- **addition–elimination** 加成消去—a molecule adds on, then a small molecule is removed.

Watch out: benzene's delocalised ring is electron-rich, so it attracts *electrophiles* — and it reacts by *substitution* (keeping the stable ring intact) rather than addition.

Practice

Try these in order.

29.1 What is an *aromatic* compound built on? [1]

29.2 What do you use as the parent when naming an aromatic compound? [1]

29.3 Where do you start numbering the ring? [1]

29.4 In *electrophilic substitution*, what replaces a hydrogen? [1]

29.5 What two steps happen in *addition–elimination*? [1]

29.6 Challenge. Alkenes react with bromine by *addition*, but benzene reacts by *substitution* instead. Suggest why benzene resists addition. [2]
