31 Making halogenoarenes – Part 1

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	Write it 3 times (English)		
halogenoarene			
arene			
catalyst			

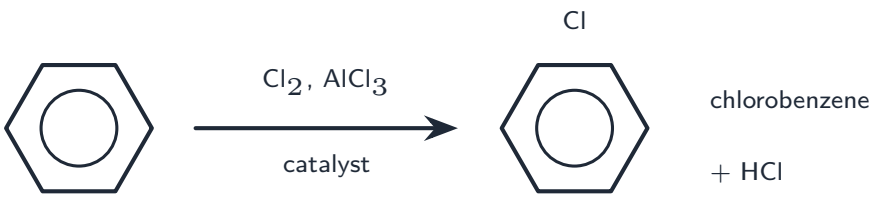
Recall

A **halogenoarene** is an aryl halide – a halogen joined directly to a benzene ring.

New ideas

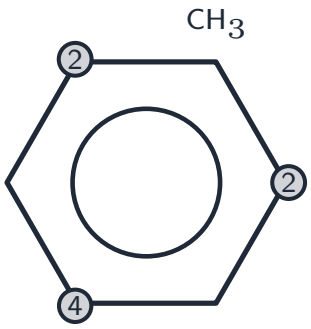
Read these first, then do the Practice.

■ 1 Making one



An **arene** reacts with Cl_2 or Br_2, using $AlCl_3$ or $AlBr_3$ as a **catalyst** . The halogen replaces a hydrogen on the ring.

■ **2 Directing**



CH_3 directs to positions 2 and 4

A group already on the ring affects where the next one goes. A methyl group directs the chlorine to positions 2 and 4.

Watch out: the $AlCl_3$ is a *halogen carrier* (catalyst) that makes the electrophile; the halogen then substitutes a ring hydrogen. A group already on the ring *directs* where the next group adds.

Practice

Try these in order.

31.1 What is a *halogenoarene*? [1]

31.2 What reagents make a halogenoarene from benzene? [1]

31.3 What is the role of the $AlCl_3$? [1]

31.4 What does the halogen replace on the ring? [1]

31.5 To which positions does a methyl group direct the chlorine? [1]

31.6 Challenge. Methylbenzene reacts *faster* than benzene with chlorine, and the chlorine goes to positions 2 and 4. What does this tell you about the methyl group's effect on the ring? [2]