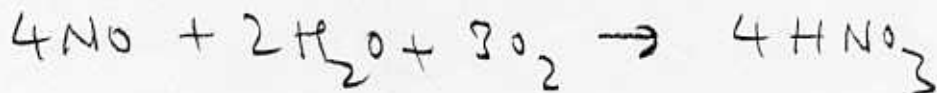


1. Nitrogen monoxide (NO) reacts with oxygen (O₂) and water to form nitric acid. Show a balanced equation for this reaction! (5 pts)



2. Consider our starting material, benzoin. (3 pts)

a. How many chiral centers does this compound have?

1

b. How many stereoisomers are there of benzoin?

2

c. Do these stereoisomers have the same melting points?

yes

3. Circle all acids, which can form esters! (4 pts)

HF

HClO₄HNO₃HNO₂

4. Let's assume that you use 3.5 milliliters of 65% nitric acid, density 1.4. How many grams of HNO₃ do they contain? (3 pts)

$$3.5 \times 1.4 \times 0.65 = 3.19 \text{ g HNO}_3$$