Can the chiral C₄H₆O starting material be either of the enantiomers or does it need to be one of them and the other one is incorrect? Explain.

(i) In theory, there is a chiral C₄H₆O molecule that can undergo electrophilic addition of water (H₂O/H₂SO₄ catalyst) to give four possible products (two regioisomers, each representing a pair of diastereomers). Three of the four products are achiral, and other product is among the five molecules shown above. Complete the following reaction scheme according to this information.

**ORIGINAL:**

- C₄H₆O (chiral)
- H₂O
- H₂SO₄ catalyst
- C₄H₆O₂ (from above)
- C₄H₆O₂ (achiral)

**POD:**

- C₄H₆O (chiral)
- H₂O
- H₂SO₄ catalyst
- C₄H₆O₂ (from above)
- C₄H₆O₂ (achiral)

**Conclusion:** using the enantiomer does not give the same set of products, particularly none of them matches the (S,S) isomer that was given.