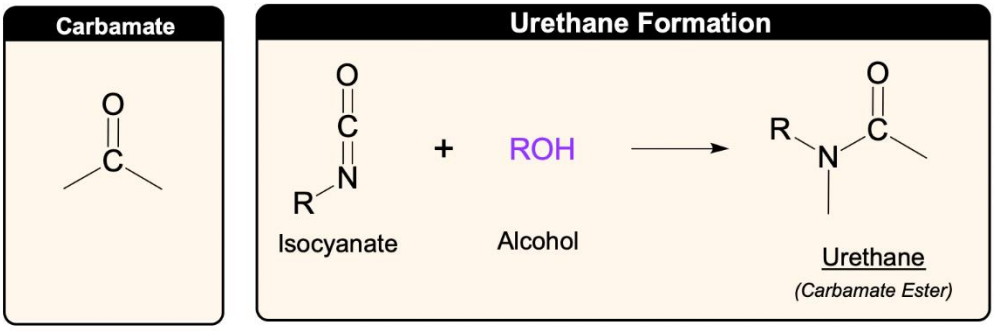
CONCEPT: STEP-GROWTH POLYMERS: URETHANE

Urethane Formation

● Urethane is a *carbamate ester* created from the _____ _____ of an alcohol to an isocyanate molecule.

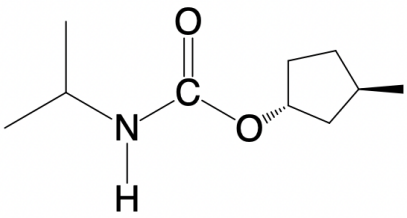
□ **Carbamate ester:** a carbonyl group connected to an amino group (_____) + alkoxy group (_____).



EXAMPLE: Provide the structure of the product created from the reaction of isocyanate and sec-butyl alcohol.

PRACTICE: Provide the structure of the urethane molecule created from the reaction between phenyl isocyanate and ethylene diol.

PRACTICE: Name the alcohol that was used to create the following urethane molecule.



a) (1S,3S)-3-methyl-1-cyclopentanol

b) (1S,3R)-3-methyl-1-cyclopentanol

c) (1R,3S)-3-methyl-1-cyclopentanol

d) (1R,3R)-3-methyl-1-cyclopentanol