

# COMMONWEALTH OF AUSTRALIA

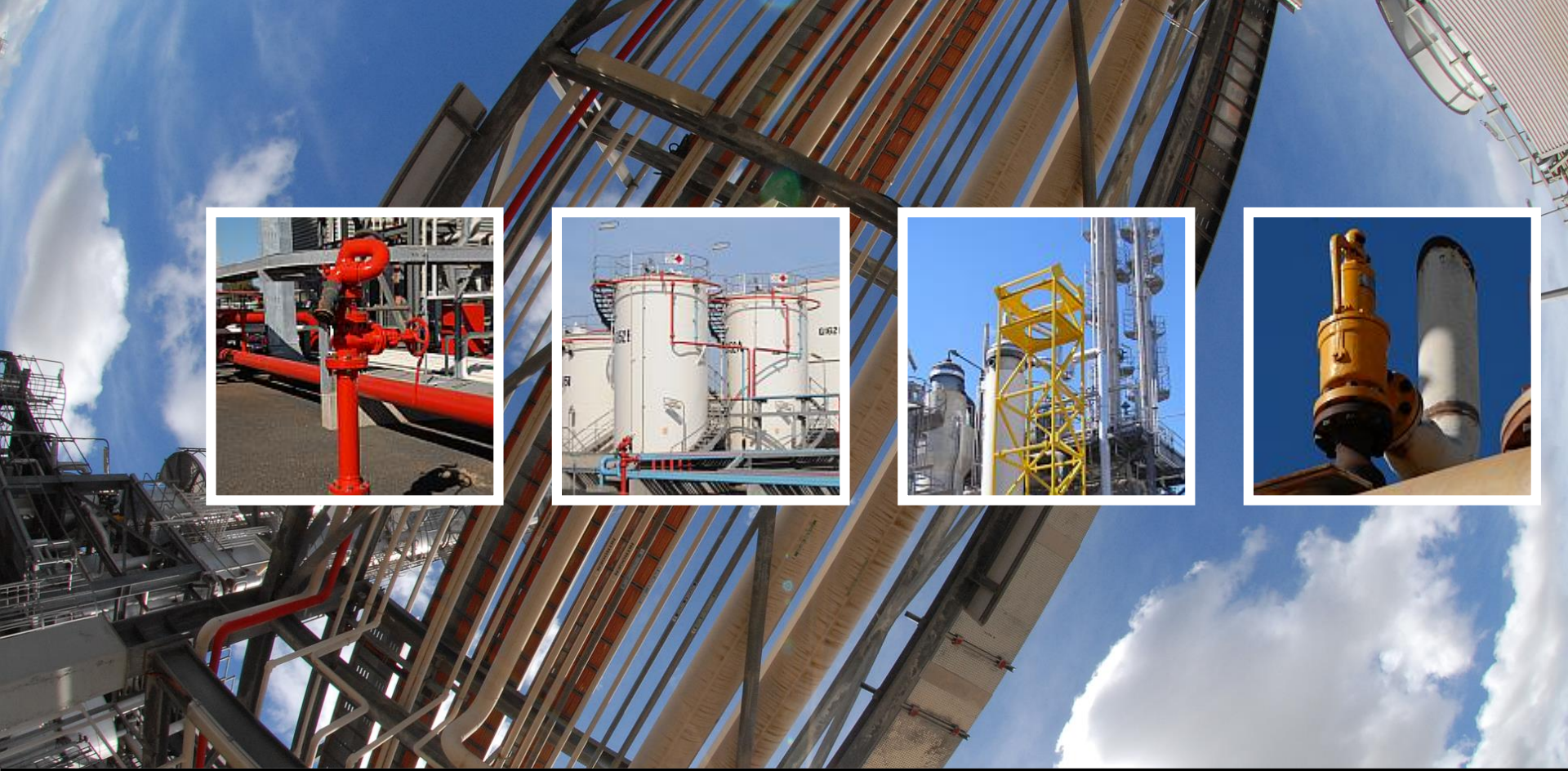
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**CHEN20010 Material and Energy Balances**

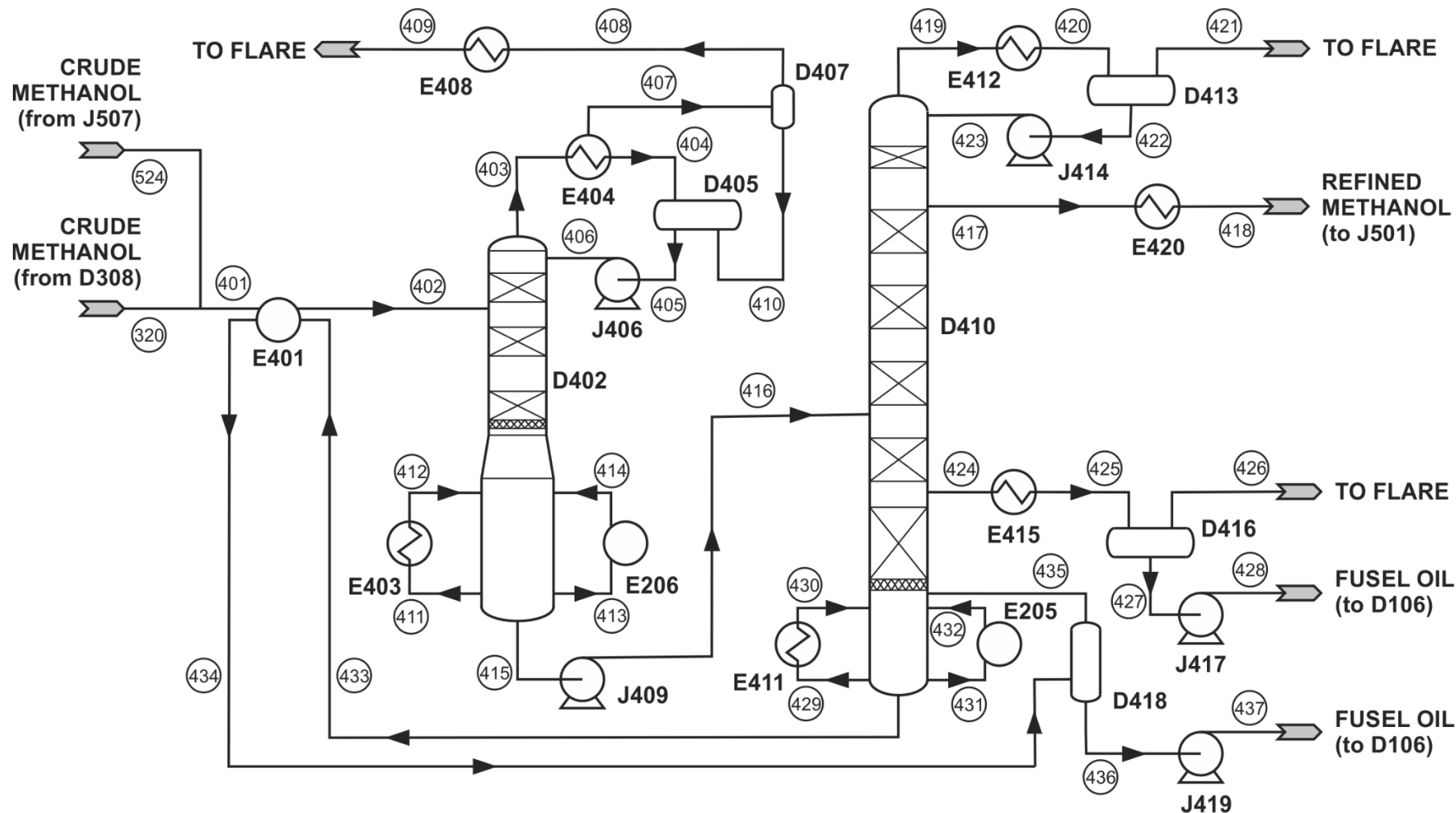
# **Block Flow Diagrams**



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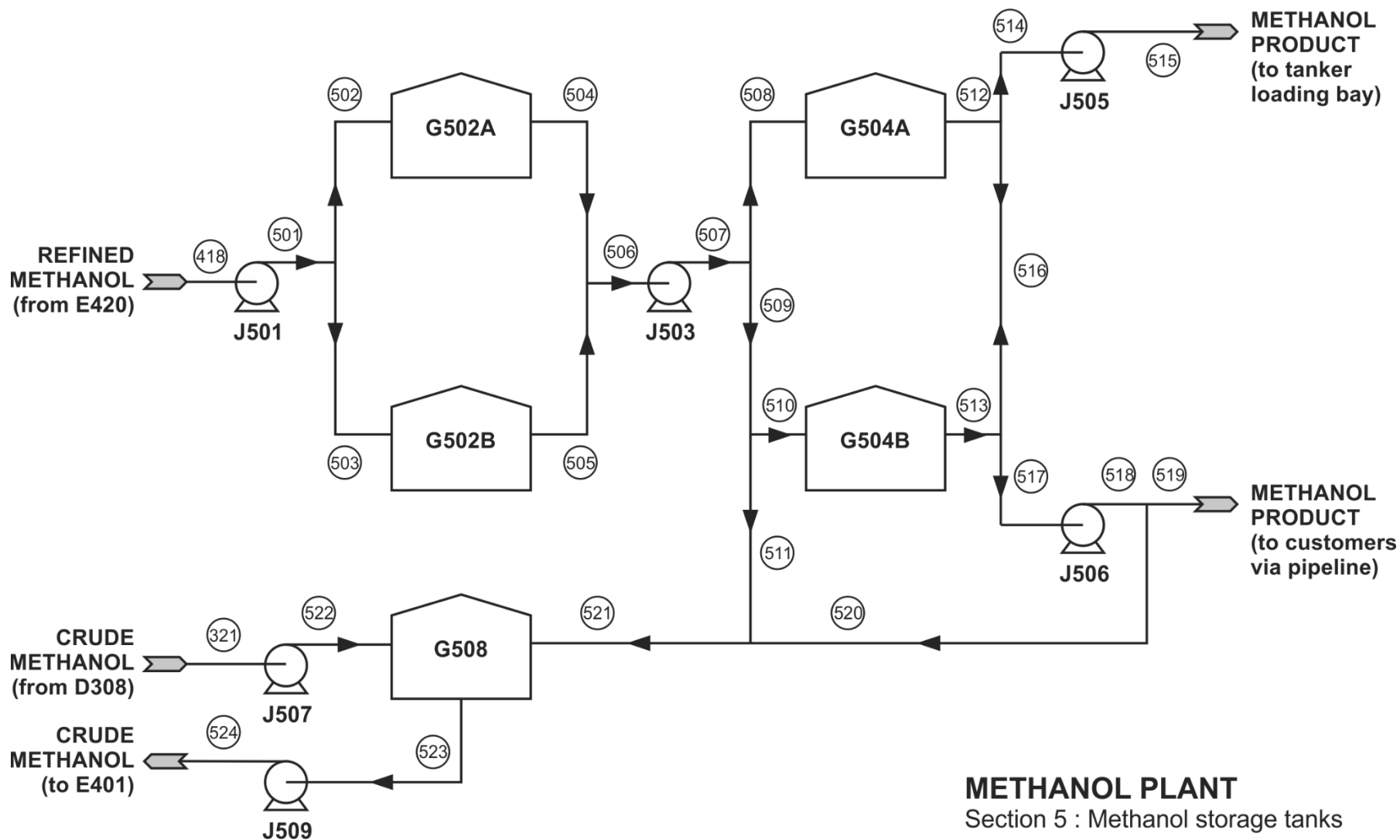






**METHANOL PLANT**  
Section 4 : Methanol purification



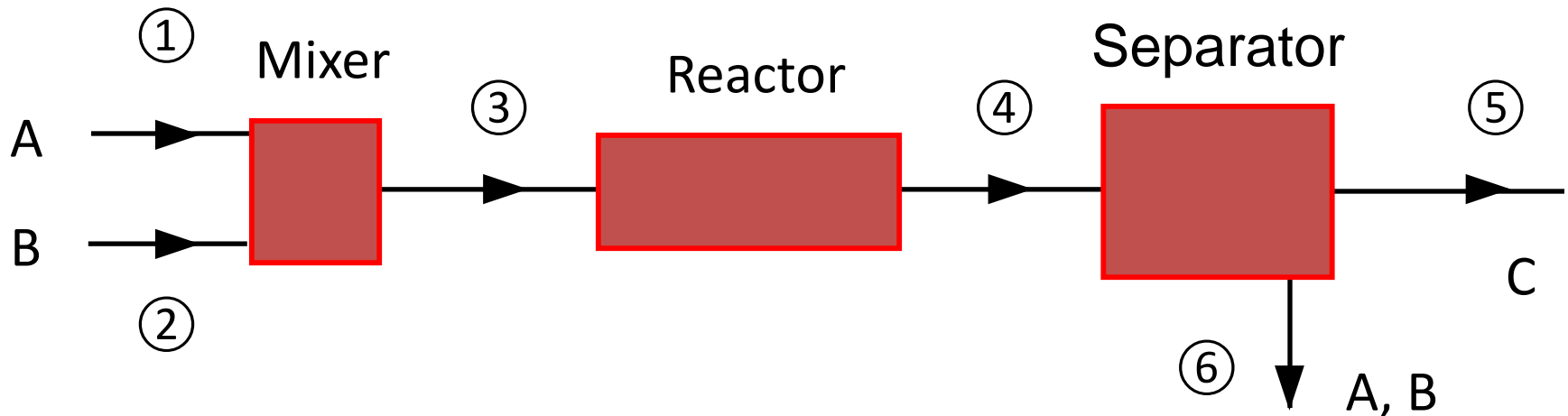


# Block Flow Diagrams

Separate streams containing A and B are mixed before being fed to a reactor. In the reactor C is produced by the reaction



The product from the reactor is fed to a separator which separates the unreacted reactants, A and B, from the product C. Draw and label a block flow diagram.



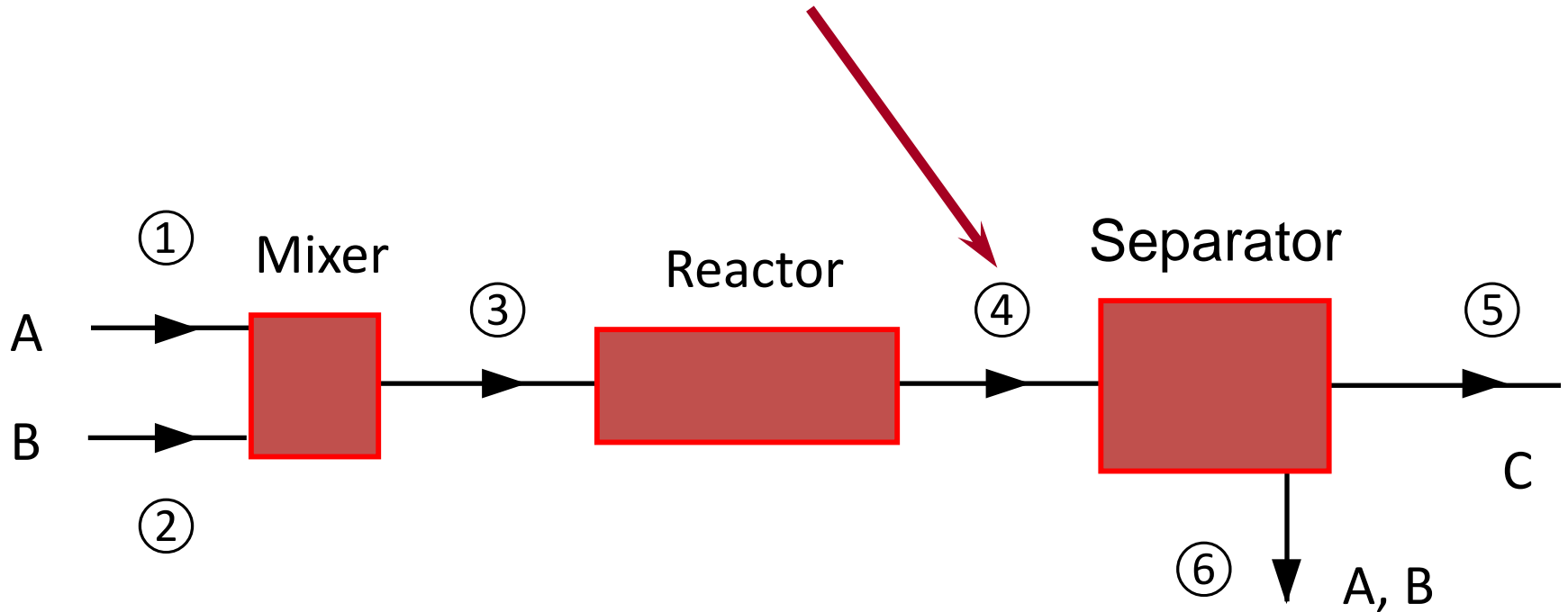
# Block Flow Diagrams Rules

- ❖ Unit operations such as mixers, separators, reactors and distillation columns are usually denoted by a block or rectangle.
- ❖ Groups of unit operations may be denoted by a single block or rectangle.
- ❖ Flow streams are represented by straight lines connecting the unit operations. Direction of flow must be indicated by arrows.
- ❖ Flow streams are straight lines, always either horizontal or vertical. Inclined lines are usually not permitted.
- ❖ Streams should be numbered sequentially.
- ❖ Units should be labeled.



# Block Flow Diagrams

Stream showing direction of flow



Unit operations indicated as blocks