

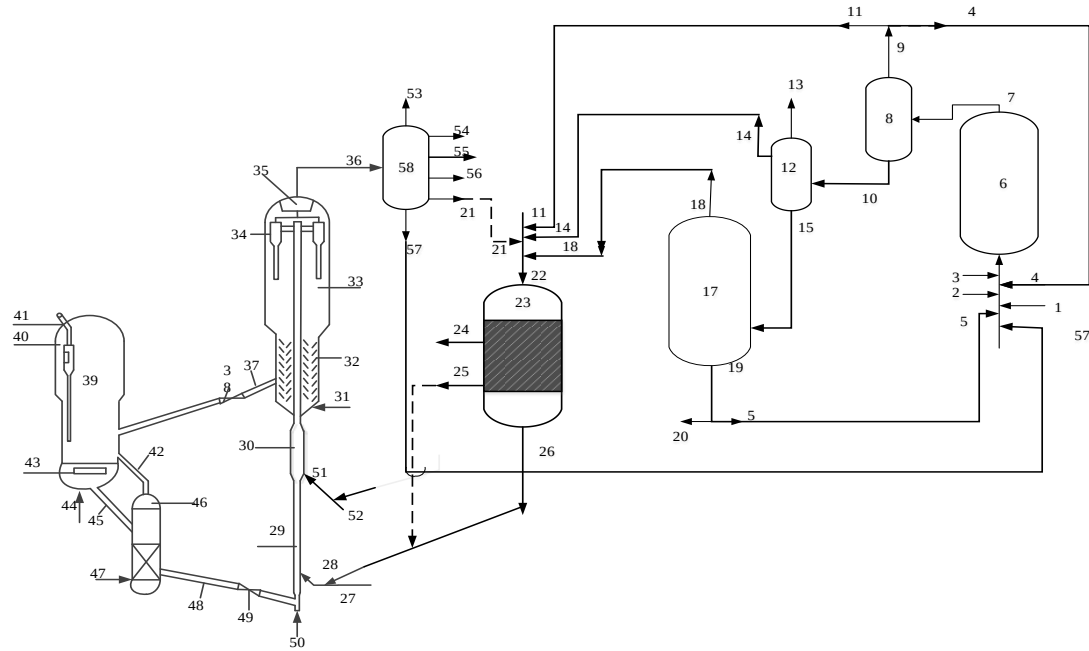


Fig. 1a

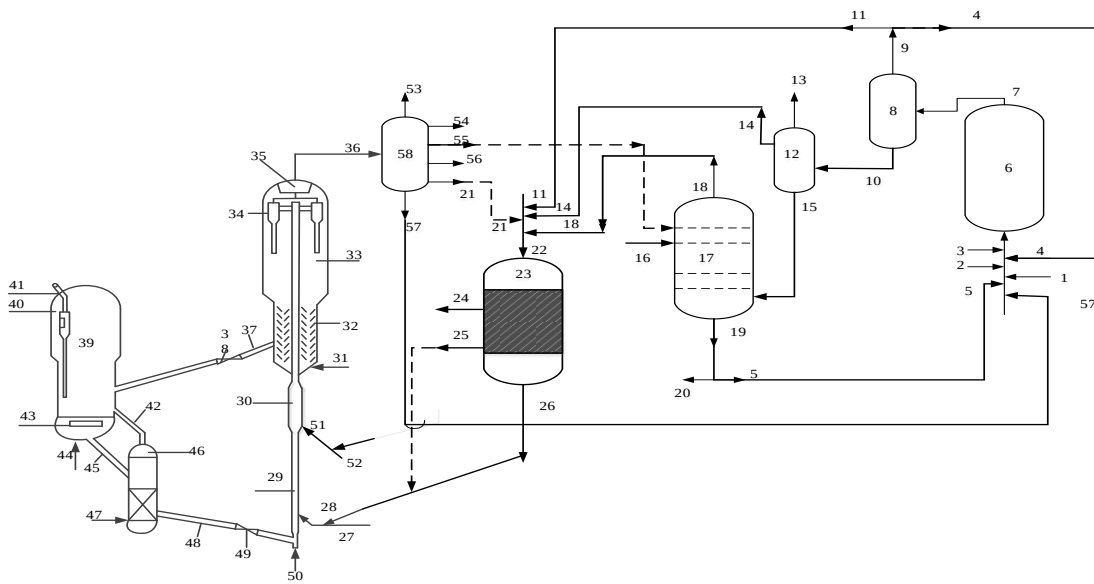


Fig. 1b

The diagram illustrates a complex chemical process system with 58 numbered components. The system includes several storage tanks (6, 8, 12, 17, 23, 58), distillation columns (12, 17), and a reactor (33). Key features include:

- Inputs:** Feed streams 1, 2, 3, 4, 5, 11, 14, 16, 18, 21, 22, 24, 25, 26, 27, 28, 29, 31, 32, 36, 41, 42, 43, 44, 45, 46, 47, 48, 49, and 50 enter the system at various points.
- Process Flow:** The system shows a series of interconnected vessels. Stream 11 enters from the top right and flows into a distillation column (12). Stream 14 enters from the top left and flows into a distillation column (17). Stream 16 enters from the top left and flows into a distillation column (17). Stream 18 enters from the top left and flows into a distillation column (17). Stream 21 enters from the top left and flows into a distillation column (17). Stream 22 enters from the top left and flows into a distillation column (17). Stream 24 enters from the top left and flows into a distillation column (17). Stream 25 enters from the top left and flows into a distillation column (17). Stream 26 enters from the top left and flows into a distillation column (17). Stream 27 enters from the top left and flows into a distillation column (17). Stream 28 enters from the top left and flows into a distillation column (17). Stream 29 enters from the top left and flows into a distillation column (17). Stream 31 enters from the top left and flows into a distillation column (17). Stream 32 enters from the top left and flows into a distillation column (17). Stream 36 enters from the top left and flows into a distillation column (17). Stream 41 enters from the top left and flows into a distillation column (17). Stream 42 enters from the top left and flows into a distillation column (17). Stream 43 enters from the top left and flows into a distillation column (17). Stream 44 enters from the top left and flows into a distillation column (17). Stream 45 enters from the top left and flows into a distillation column (17). Stream 46 enters from the top left and flows into a distillation column (17). Stream 47 enters from the top left and flows into a distillation column (17). Stream 48 enters from the top left and flows into a distillation column (17). Stream 49 enters from the top left and flows into a distillation column (17). Stream 50 enters from the top left and flows into a distillation column (17).
- Outputs:** Product streams 4, 5, 9, 10, 13, 15, 19, 20, 33, 34, 35, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, and 50 exit the system at various points.
- Reactor:** The reactor (33) is a vertical vessel with an internal heating/cooling coil (31) and a stirrer (32). It receives feed streams 1, 2, 3, 4, 5, 11, 14, 16, 18, 21, 22, 24, 25, 26, 27, 28, 29, 31, 32, 36, 41, 42, 43, 44, 45, 46, 47, 48, 49, and 50.
- Distillation Columns:** The distillation columns (12, 17) are vertical vessels with internal trays (13, 15, 19, 20) and reboilers (14, 16, 18, 21, 22, 24, 25, 26, 27, 28, 29, 31, 32, 36, 41, 42, 43, 44, 45, 46, 47, 48, 49, and 50).
- Storage Tanks:** The storage tanks (6, 8, 12, 17, 23, 58) are vertical vessels used for storing process materials. Tank 6 is a large storage tank at the bottom right. Tank 8 is a smaller storage tank at the top right. Tank 12 is a distillation column at the top right. Tank 17 is a distillation column at the top right. Tank 23 is a storage tank at the top right. Tank 58 is a storage tank at the top right.

Fig. 2b