

Applications of short path evaporators in the oils & fats and oleochemical industry



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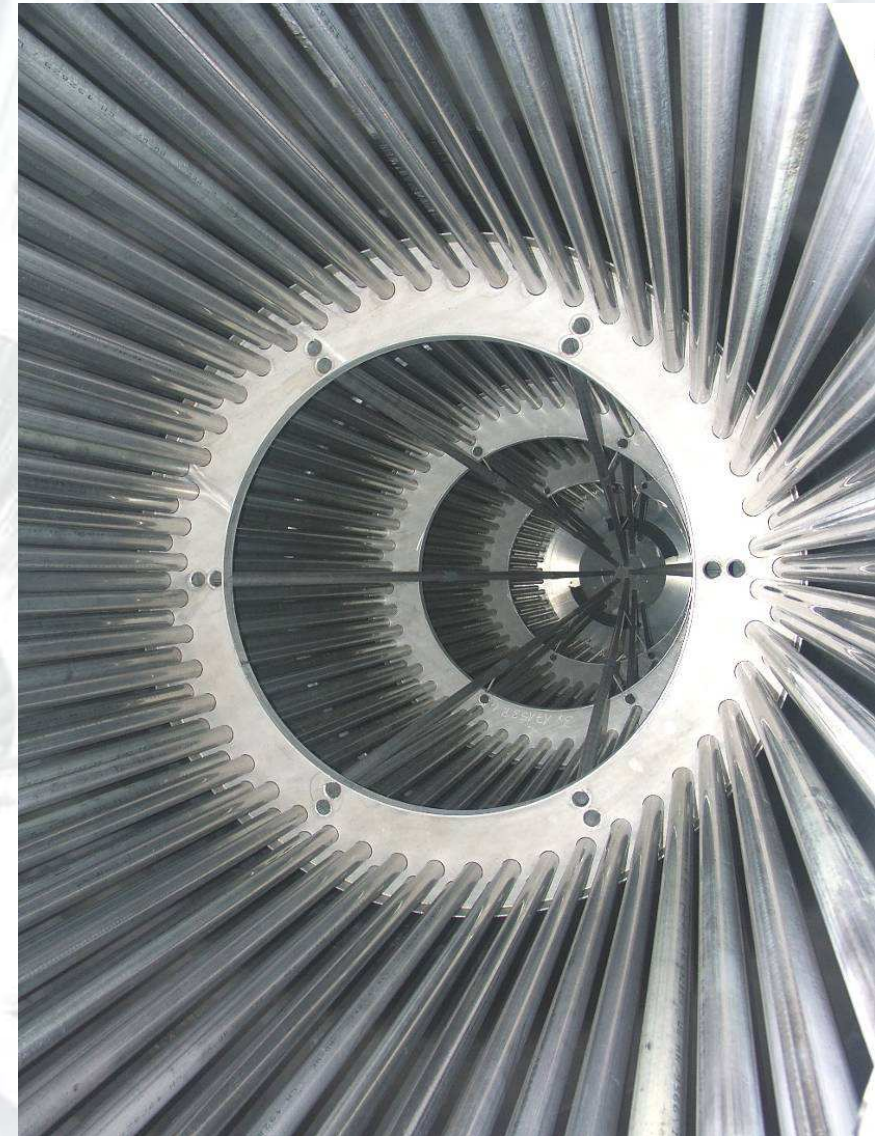
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Short Path Evaporator

- Short path evaporators are wiped film evaporators with an internal condenser.
- The internal condenser drastically reduces the distance between evaporation and condensation thus minimises pressure drop and enables operating pressures of min. **0.001 mbar (a)**



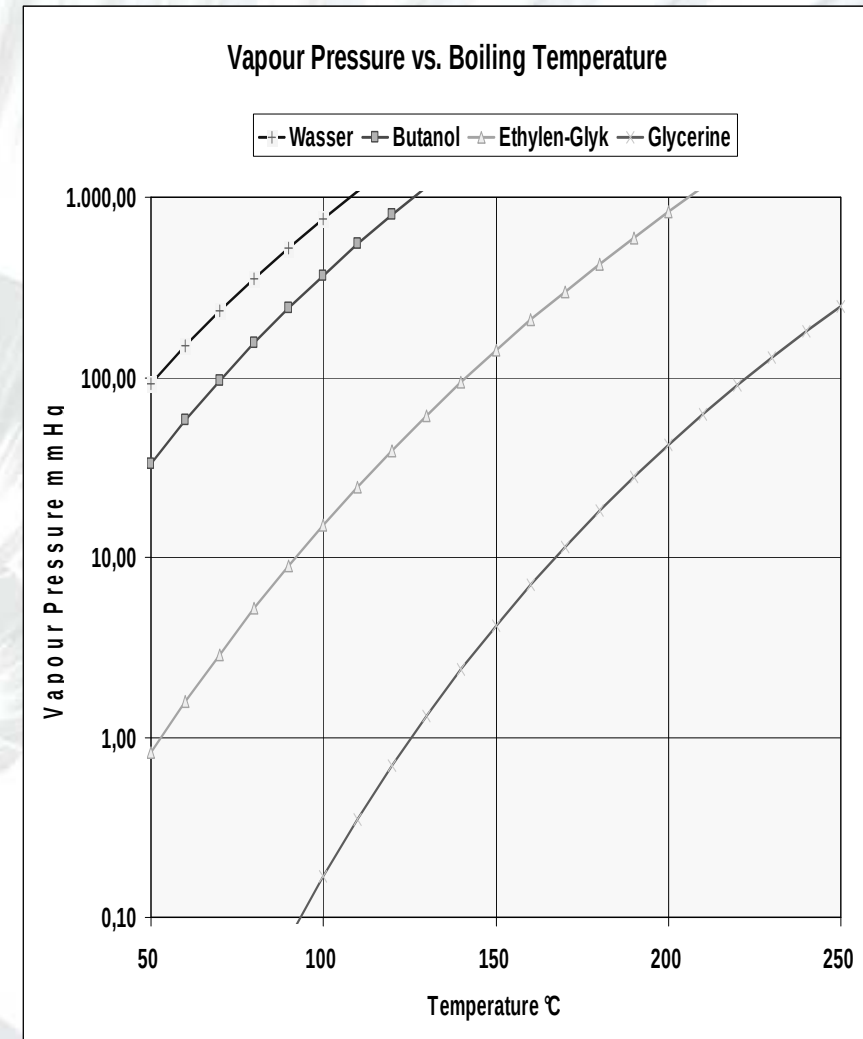
Why to operate under vacuum?

Effect of Vacuum:

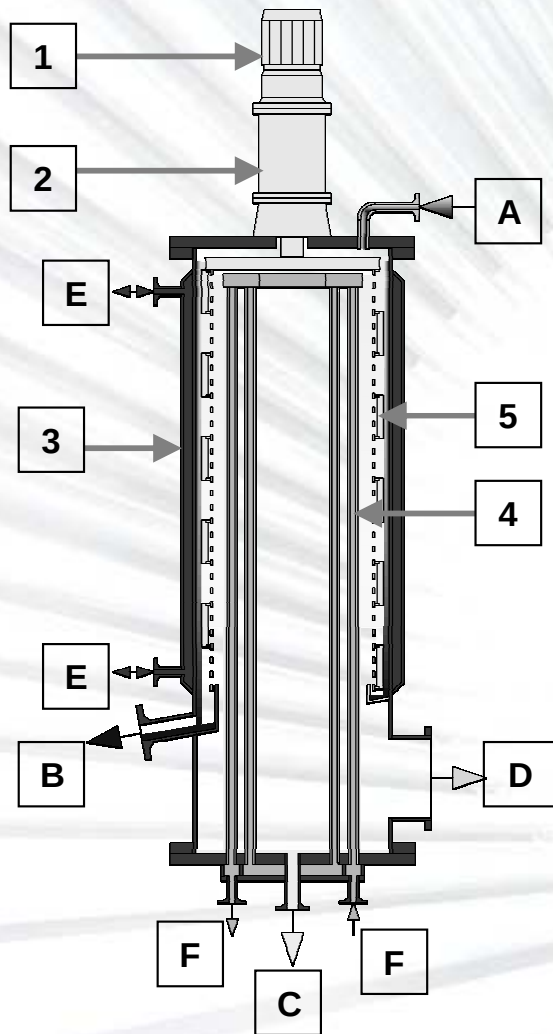
- Boiling temperature decreases with lower operating vacuum
- Heat sensitive liquids can be processed without product damage!

Example: Stearic Acid

- Boiling point at 85 mbar (a) is 276 °C
- At 0,0013 mbar (a) boiling point is at 96 °C
- 180 K temperature difference!!!

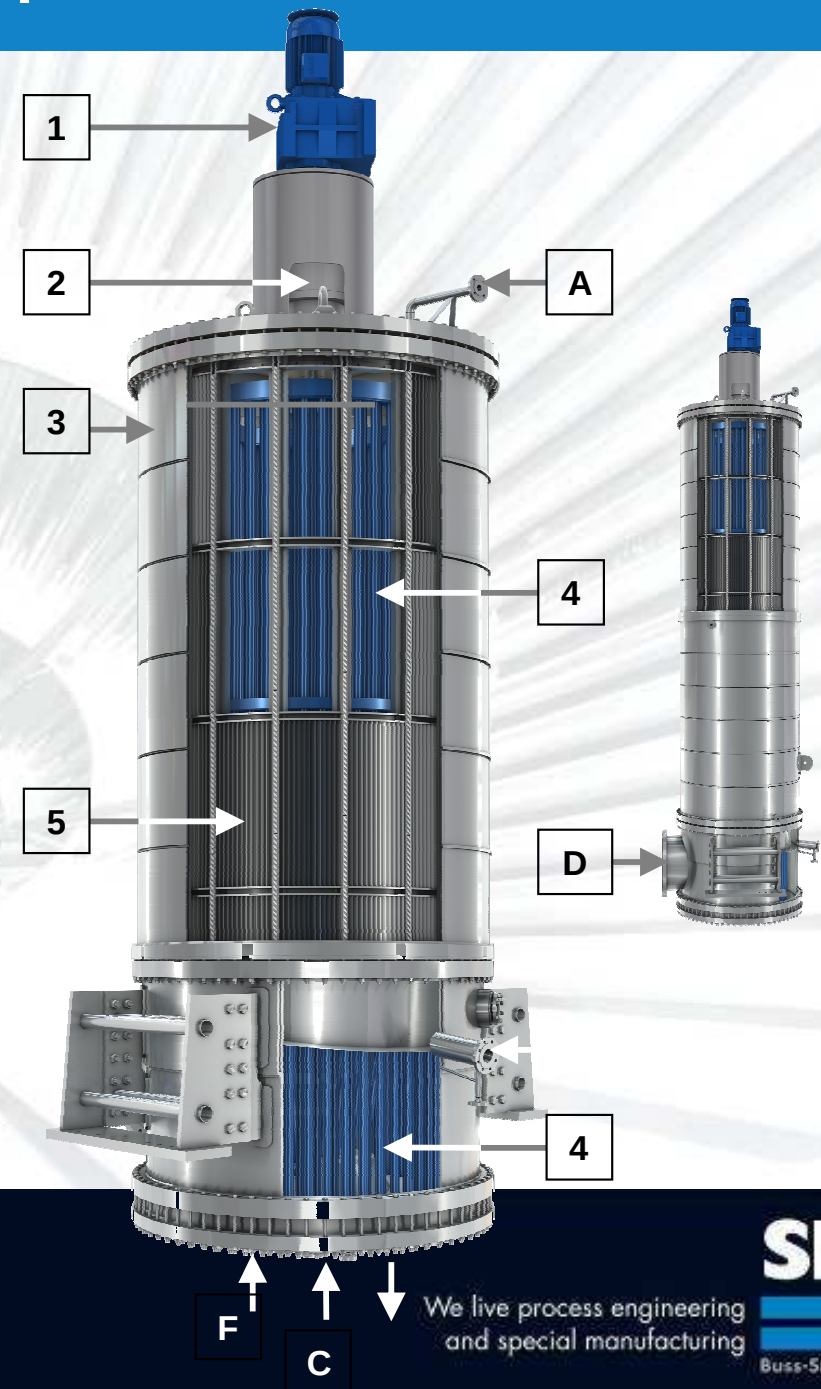


Short Path Evaporator



- 1 - Motor
- 2 - Top part with mechanical seal
- 3 - Heating jacket
- 4 - Internal condenser
- 5 - Rotor

- A - Feed product
- B - Residue, Concentrate
- C - Distillate
- D - Vacuum
- E - Heating medium
- F - Cooling water



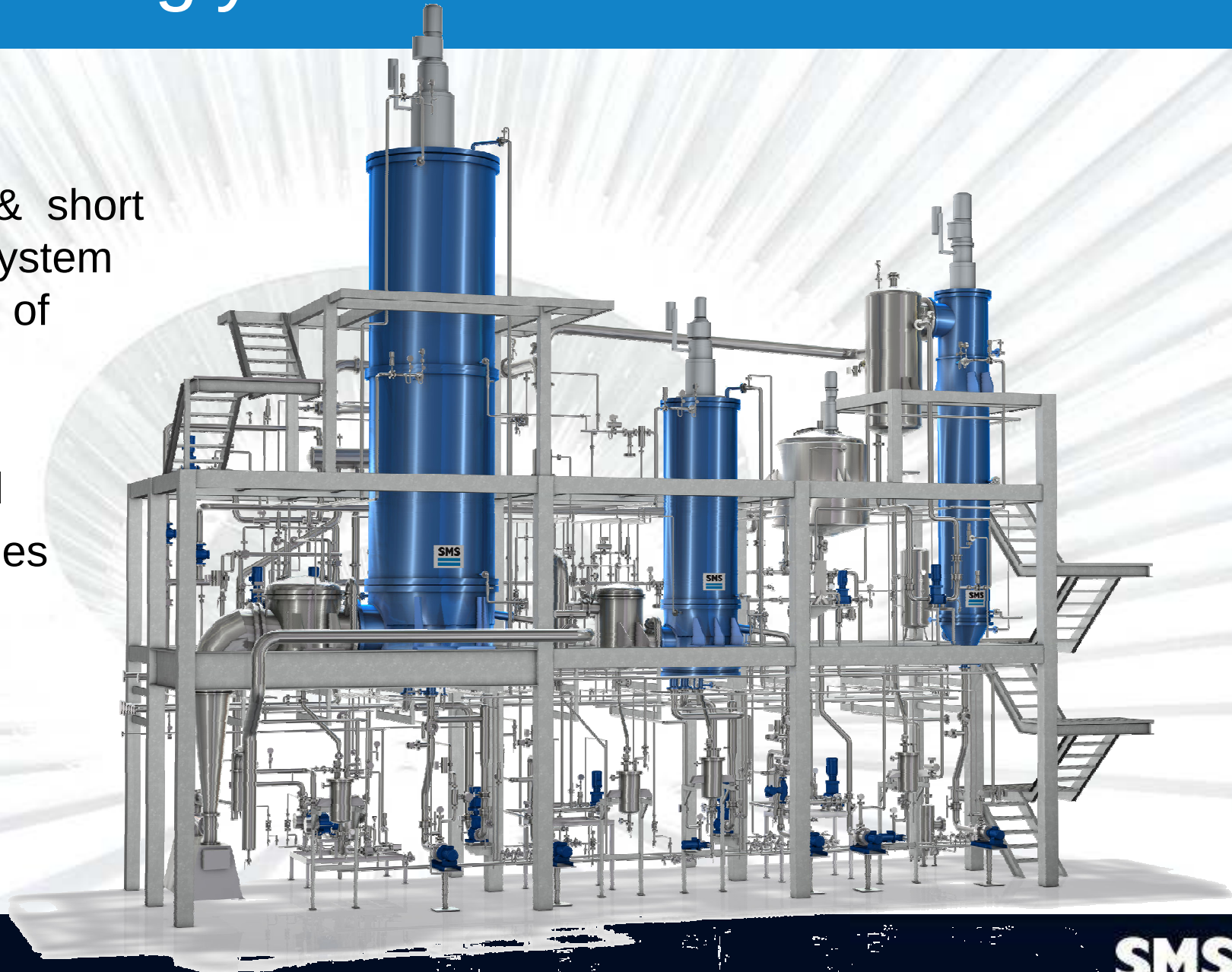
Characteristics & Advantages

- Operating pressure 0.001 mbar (a)
- Reduced distillation temperatures
- Short residence time
- Minimum product hold-up
- Best suited for heat sensitive products
- Handles viscous and fouling products
- Several rotor designs

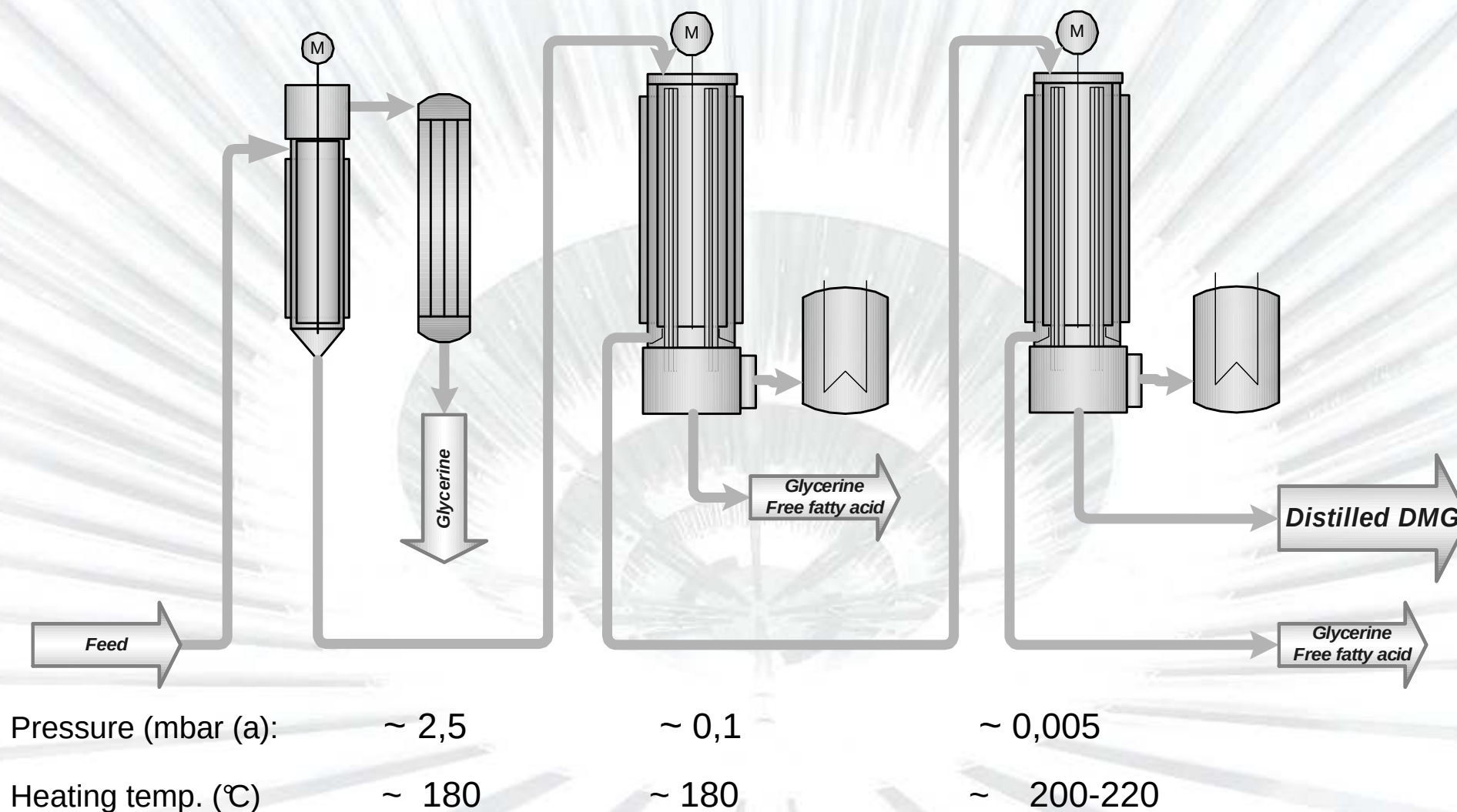


Monoglyceride Distillation

- 3-stage thin film & short path distillation system for the distillation of
 - glycerine
 - free fatty acid
 - monoglycerides



Monoglyceride Distillation

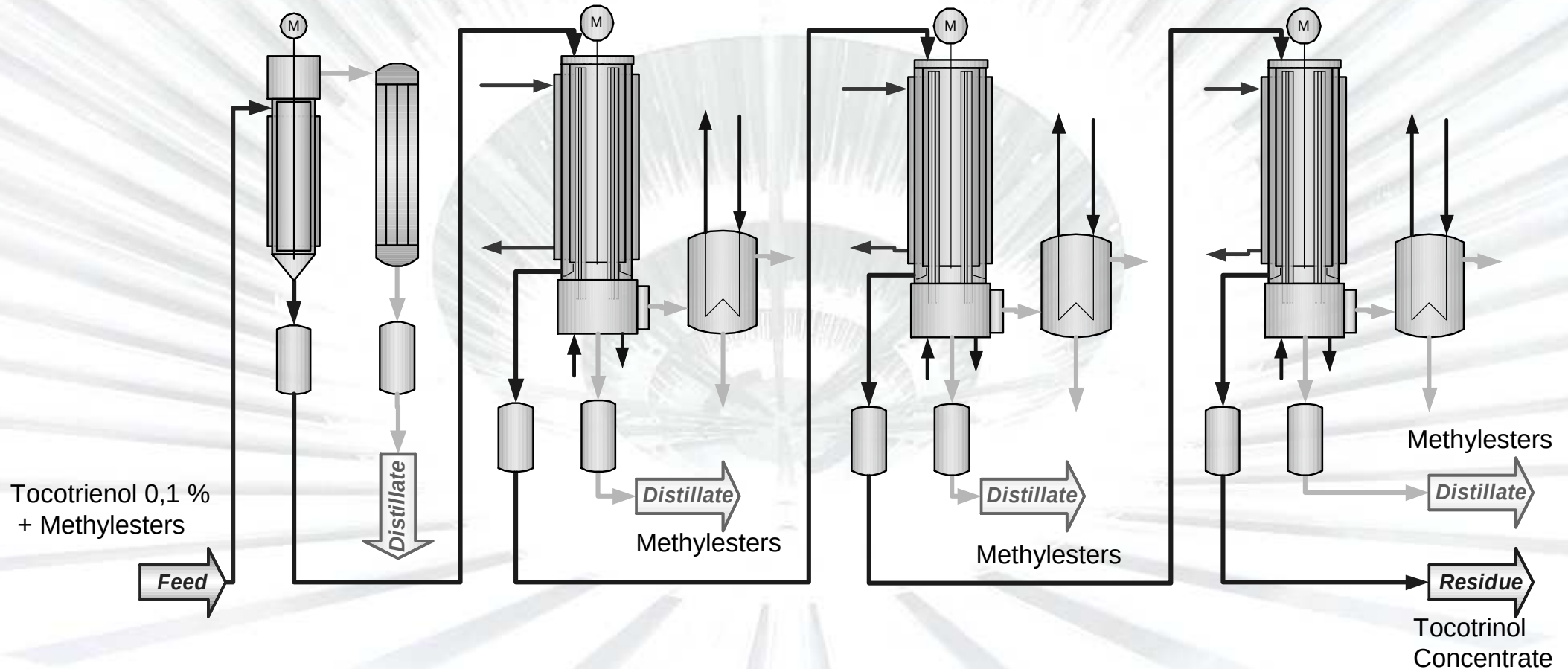


Monoglyceride Distillation



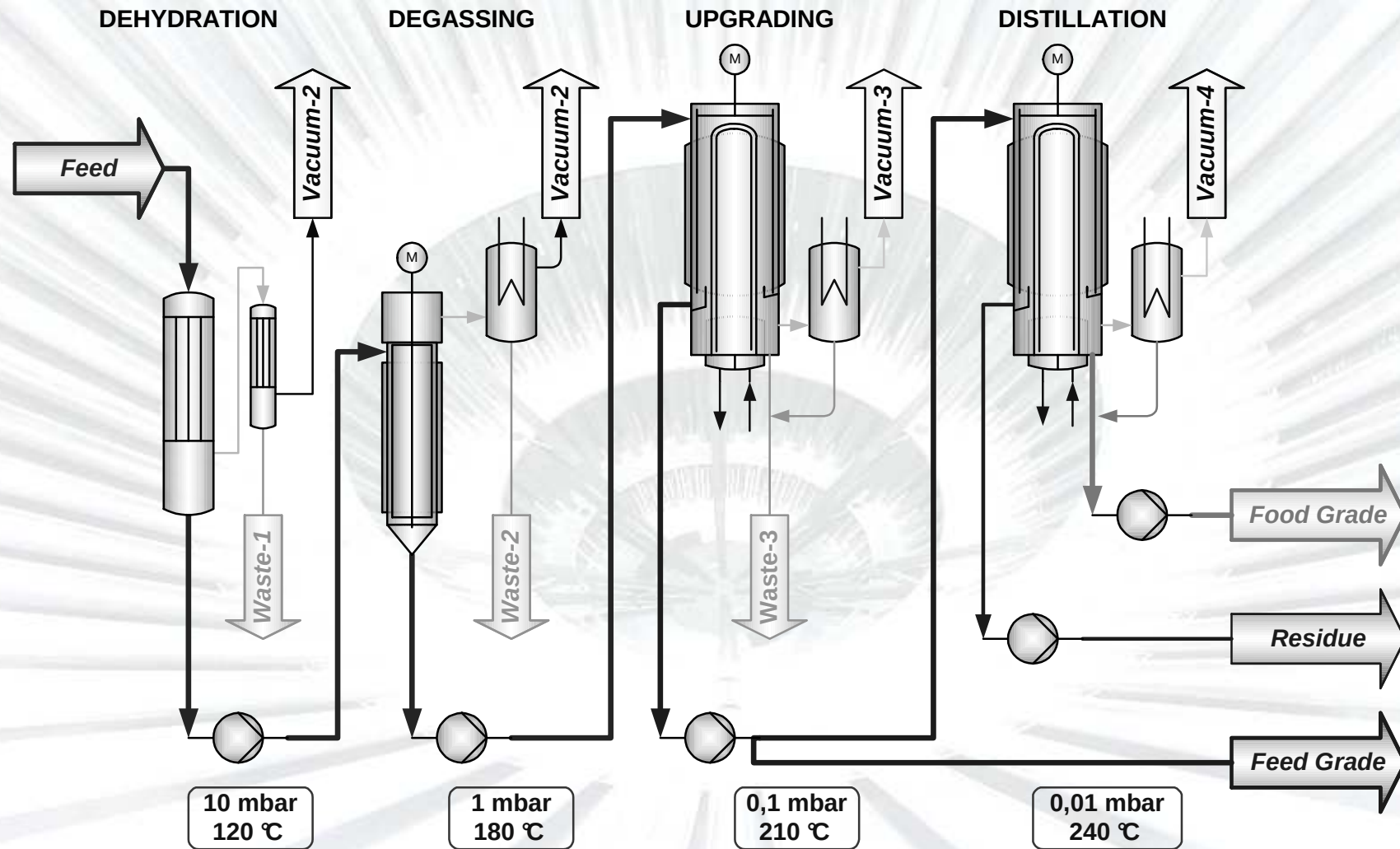
Tocotrienol Concentration

- Multistage evaporation of methylesters to concentrate Tocotrienol



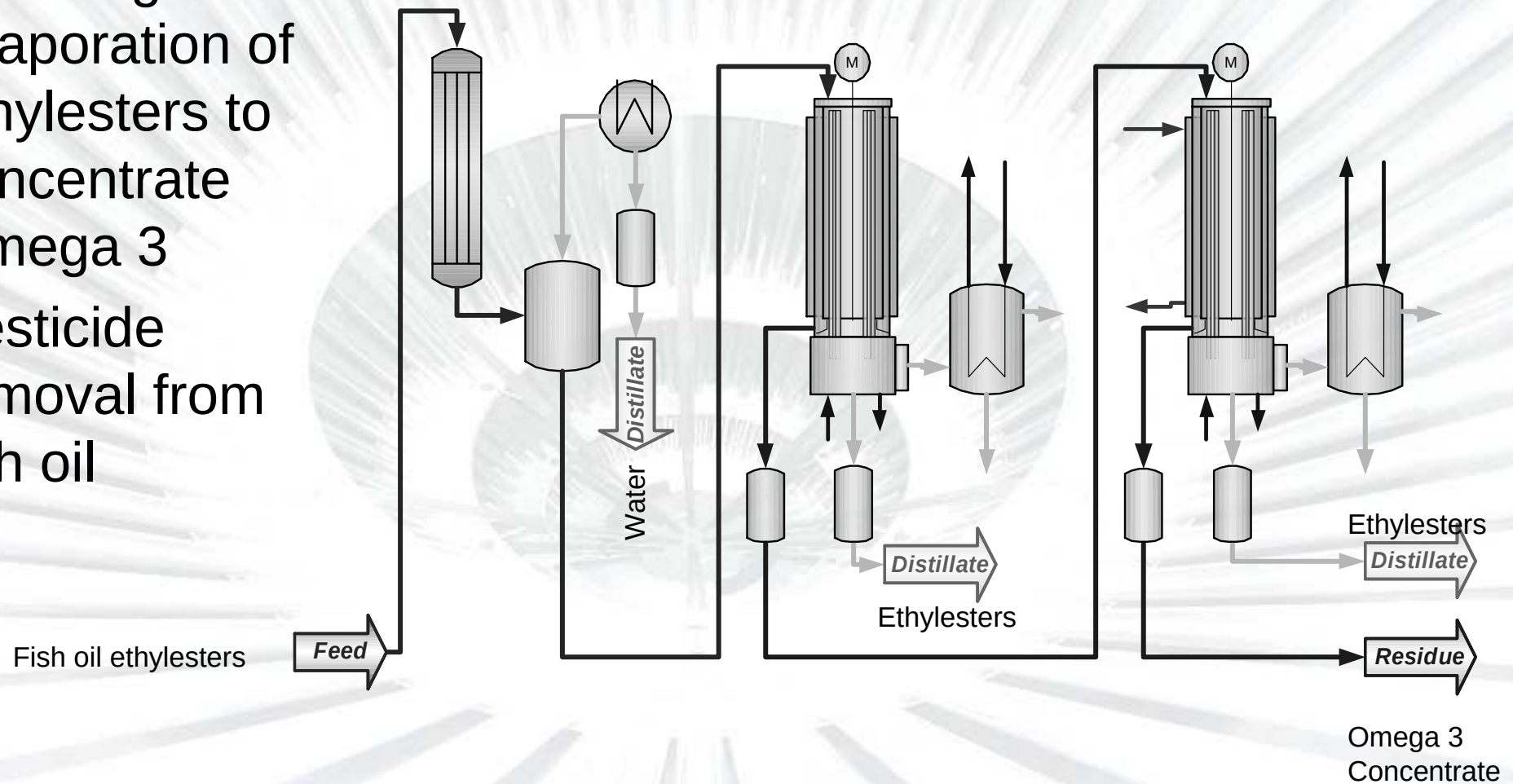
Tocopherol Concentration

4-stage Vitamin E Distillation Plant



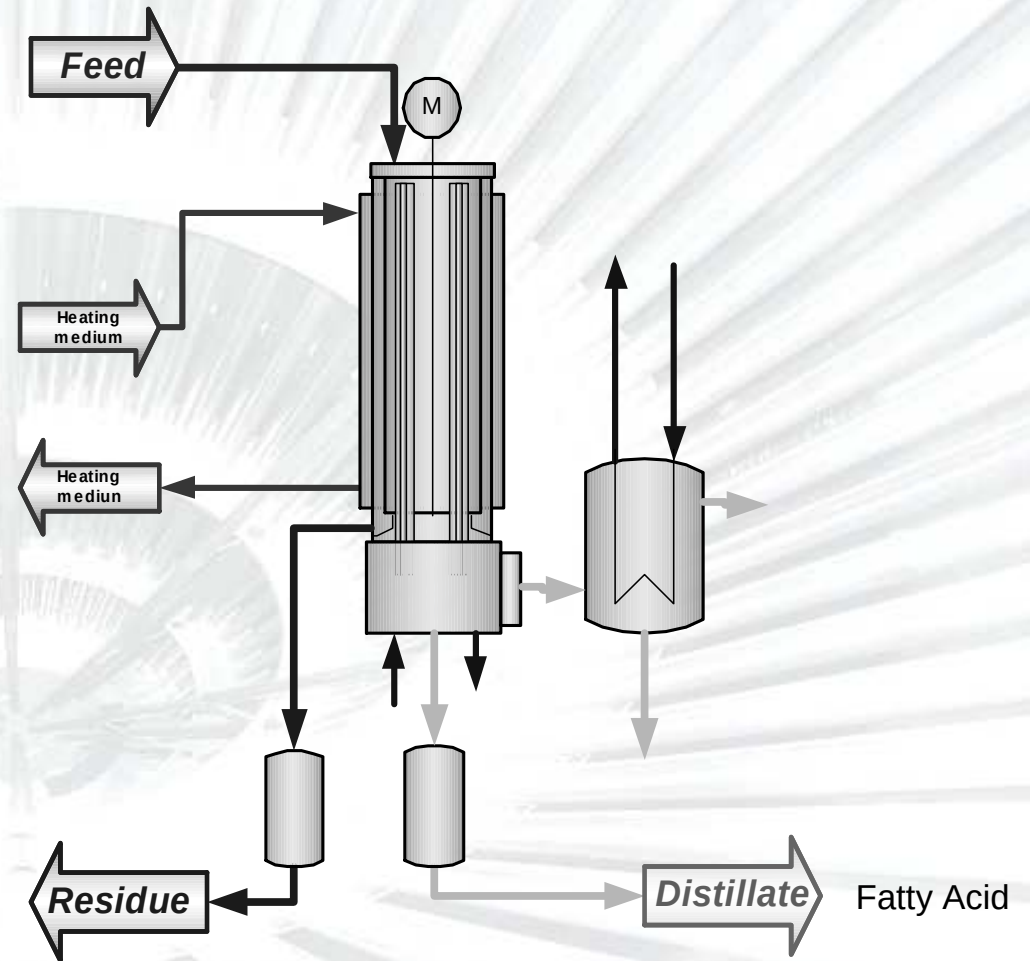
Fish Oil Omega 3 Concentration

- Multistage evaporation of ethylesters to concentrate Omega 3
- Pesticide removal from fish oil



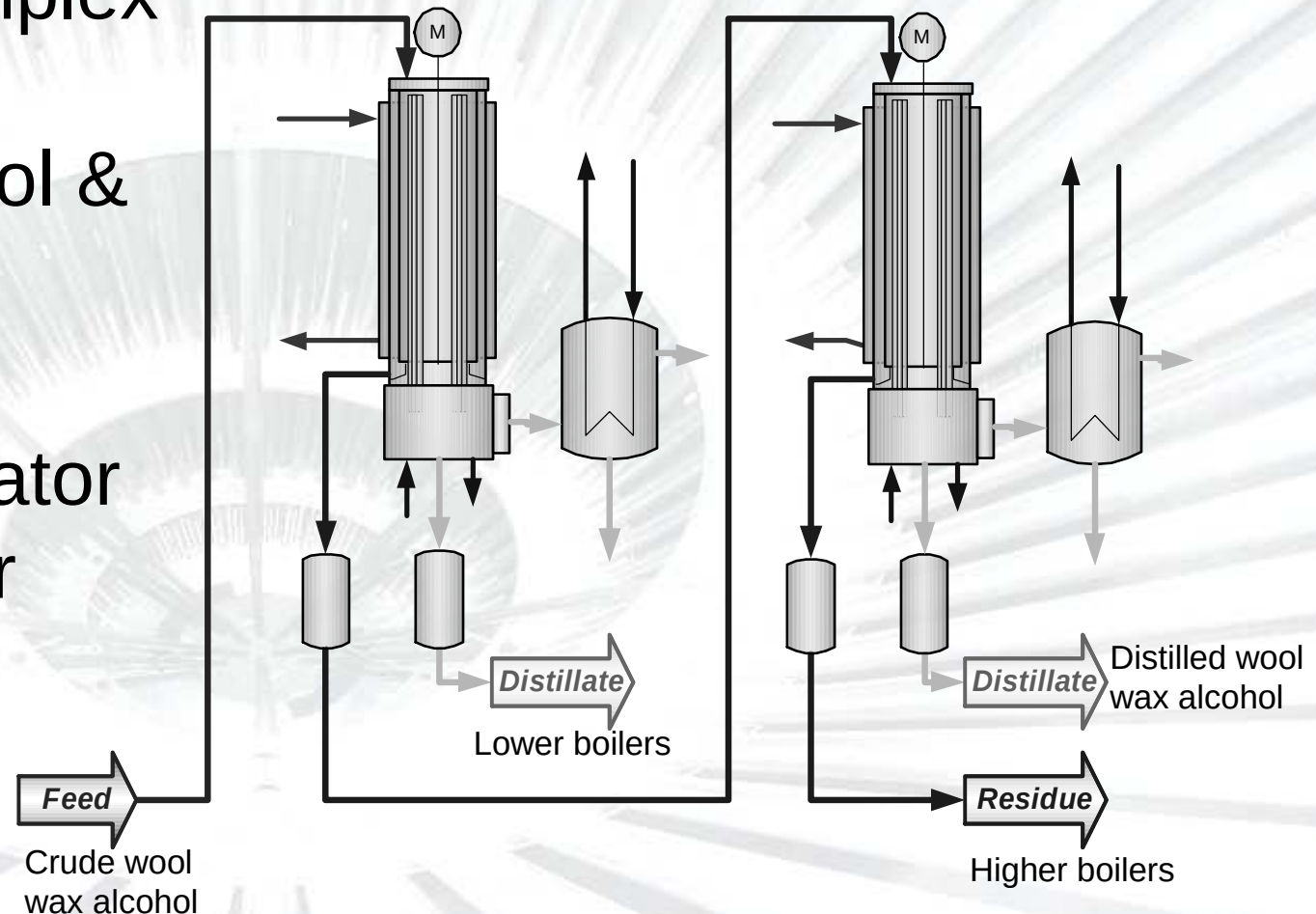
Fatty acid evaporation

- Gentle fatty acid removal from e.g. red palm oil
- Dimeric fatty acid distillation



Lanolin / Wool wax

- Wool wax is a complex mixture of esters, sterols, fatty alcohol & fatty acids.
- Short path evaporator e.g. are applied for
 - Wool wax alcohol evaporation
 - Pesticide removal



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- We thank you for your kind attention!

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