

The Refrigeration Cycle

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The refrigerator in your kitchen uses a cycle that is continuous. In the following example, we will assume that the refrigerant being used is pure ammonia, which boils at -27 degrees F. This is what happens to keep the refrigerator cool:

- The compressor compresses the ammonia gas. The compressed gas heats up as it is pressurized.
- The coils on the back of the refrigerator let the hot ammonia gas dissipate its heat. The ammonia gas condenses into ammonia liquid at high pressure.
- The high-pressure ammonia liquid flows through the expansion valve. You can think of the expansion valve as a small hole. On one side of the hole is high-pressure ammonia liquid. On the other side of the hole is a low-pressure area (because the compressor is sucking gas out of that side).
- The liquid ammonia immediately boils and vaporizes, its temperature dropping to -27 F. This makes the inside of the refrigerator cold.
- The cold ammonia gas is sucked up by the compressor, and the cycle repeats.