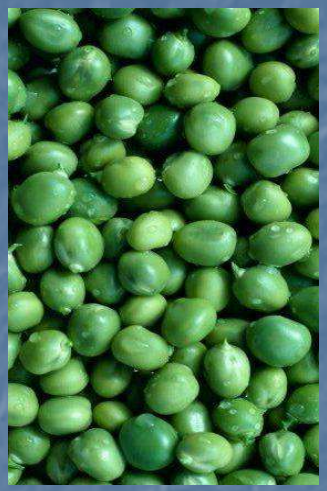
Refrigeration

Process of reducing and maintaining the temperature of space or material below the temperature of surrounding

Food Processing Industry

Vegetables, fruit storage/cooling, freezing




Beverage Industry
Beer-Wine industry

Slaughter houses poultry industry

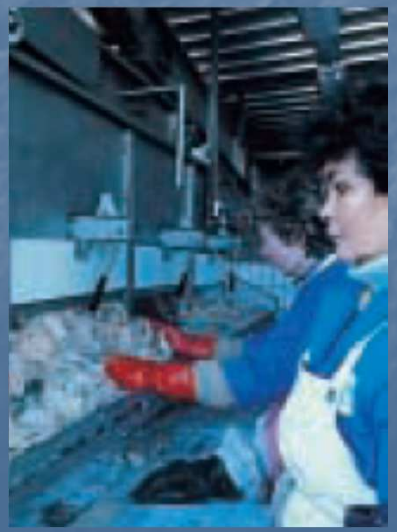
Meat Products

Milk industry
Cheese industry

Ice cream/ Ice manufacture

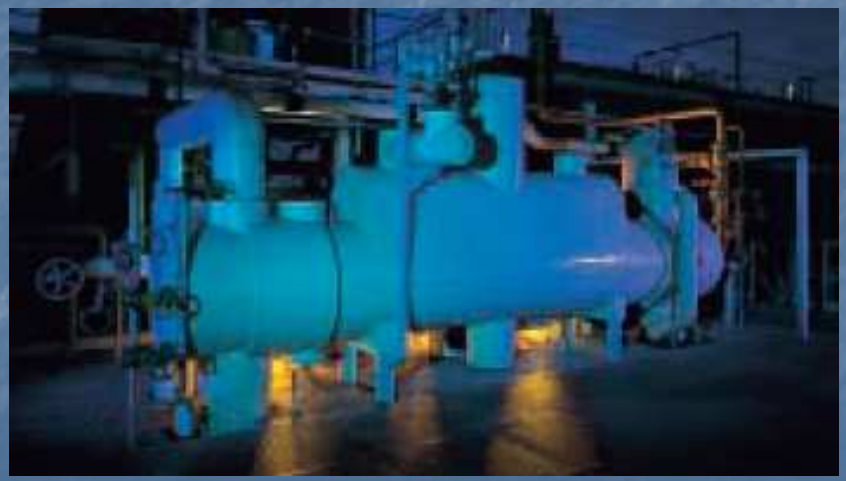
Ice manufacture

Marine Refrigeration



Sport: Ice rinks

Air-conditionnig



Heating: Heat pumps

References:

1. Refrigeration and air-conditioning
Mc Graw-Hill International Editions, 2. Edition

W. F. Stoecker, J. W. Jones

2. ASHRAE Handbook
Amer. Socity of Heating, Refrigerating and Air-Conditioning Engineers:
-HVAC Application
-HVAC System and Equipment
-Fundamental
-Refrigeration

Sort of Cooling:

direction of the heat (spontaneous-required)

- **Natural cooling** $t_c > t_a$

t_c cooled medium, t_a natural coolant(surrounding)

heat exchanger

- **Artificial cooling** (Refrigerating) $t_c < t_a$

heat exchangers, energy input, third medium refrigerant

Sort of energy input: mechanical, heat, elect.
Sort of refrigerant: vapor-type, gas-type(air)

The Second Law of Thermodynamics states that heat will not pass from a cold region to a warm one without the aid of an “external agent”.
Therefore, a refrigerator will require this “external agent”, or energy input, for its operation.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