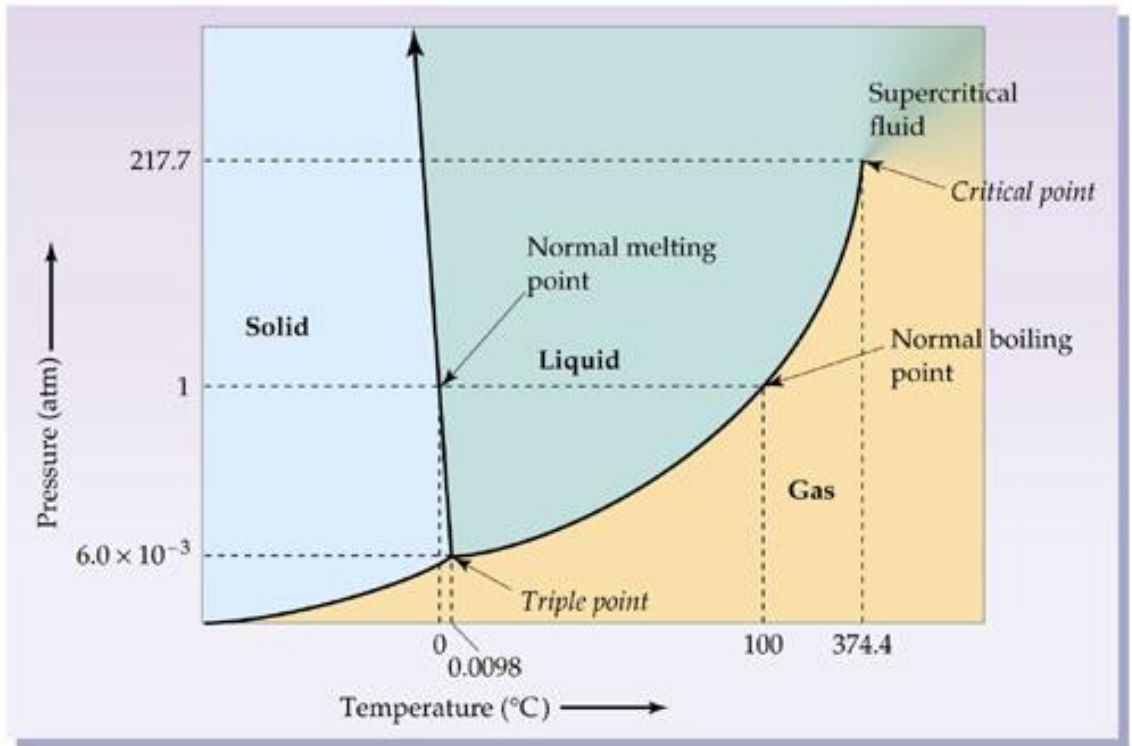


Phase Diagrams- Water / Carbon Dioxide



Schematic p-T phase diagram reflects the region, where fluid can exist in supercritical state.

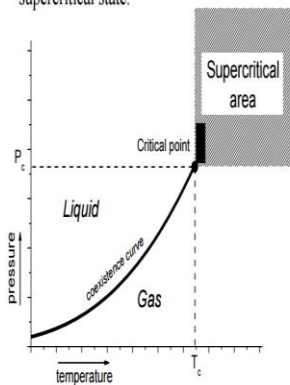


Fig. 1

If the temperature and pressure of a substance are both higher than T_c and P_c for that substance, the substance is defined as **supercritical fluid**.

Table 1. Critical points for typical solvents

Compounds	Critical Temperature (°C)	Critical Pressure (atm)	Critical Density (g/ml)
Carbon Dioxide	31.3	72.9	0.448
Ammonia	132.4	112.5	0.235
Water	374.15	218.3	0.315
Nitrous Oxide	36.5	71.7	0.45
Xenon	16.6	57.6	0.118
Krypton	-63.8	54.3	0.091
Methane	-82.1	45.8	0.2
Ethane	32.28	48.1	0.203
Ethylene	9.21	49.7	0.218
Propane	96.67	41.9	0.217
Pentane	196.6	33.3	0.232
Methanol	240.5	78.9	0.272

Table 2. Order of density, viscosity and diffusivity of gases, liquids and supercritical fluids.

Physical state	Density (g/ml)	Viscosity (g/cm x s)	Diffusivity (cm ² /s)
Gas	10^0	10^4	10^6
Liquid	1	10^3	10^4
Supercritical fluid	0.2-0.9	10^4	10^5

