**Phase Diagrams**

* Chemical change - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Physical change - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	+ Example - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Phase changes (NEED TO KNOW!)**

|  |  |
| --- | --- |
| Solid 🡪 Liquid |  |
| Liquid 🡪 Solid |  |
| Liquid 🡪 Gas |  |

|  |  |
| --- | --- |
| Gas 🡪 Liquid |  |
| Solid 🡪 Gas |  |
| Gas 🡪 Solid |  |

**Phase Diagram**

* Triple Point - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Critical Point - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Lines - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*\*A Phase Diagram is unique for each substance.

\*\*Normal melting point and Normal boiling point occur at standard pressure. Standard pressure = 1 atm.



**Phase Diagram Worksheet**

Refer to the phase diagram below when answering the questions on this worksheet:



1) What is the normal melting point of this substance? \_\_\_\_\_\_\_\_

2) What is the normal boiling point of this substance? \_\_\_\_\_\_\_\_

3) What is the normal freezing point of this substance? \_\_\_\_\_\_\_\_

4) What is the pressure and temperature of the triple point?

Temp \_\_\_\_\_\_\_\_ Pres \_\_\_\_\_\_\_

5) What is the pressure and temperature of the critical point?

Temp \_\_\_\_\_\_\_\_ Pres \_\_\_\_\_\_\_

6) If I had a quantity of this substance at a pressure of 1.25 atm and a temperature of 3000 C and lowered the pressure to 0.25 atm, what phase transition(s) would occur?

7) Above what temperature is it impossible to compress a gas into a liquid?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8) If I had a quantity of this substance at a pressure of 0.75 atm and a temperature of -1000 C, what phase change(s) would occur if I increased the temperature to 6000 C? At what temperature(s) would they occur?