

# Matter HW 1 both sides name

Define these important words, use examples too. Be complete, stay off of the internet (use the BASICS)

matter	
element	
compound	
substance	
mixture	
homogeneous	
heterogeneous	
What are elements "Hg" and "W" and why aren't they M & T instead?	
List substances you have experienced in at least 2 phases	
List substances you have experienced in ALL 3 PHASES	

Use Table S to determine phases of elements at any temperature. If your temp is BELOW the melting point, you are frozen SOLID. If your temp is between melting and boiling, then you are in the LIQUID phase. If your temp is ABOVE the boiling point, you are in the GAS phase. Put the “S”, “L”, and “G” on your table now. Boron at 4033 Kelvin is in the LIQUID phase.

**Table S**  
**Properties of Selected Elements**

Atomic Number	Symbol	Name	First Ionization Energy (kJ/mol)	Electro-negativity	S	Melting Point (K)	L	Boiling* Point (K)	G
1	H	hydrogen	1312	2.2	↓	14	↓	20.	↓
2	He	helium	2372	—		—		4	
3	Li	lithium	520.	1.0		454		1615	
4	Be	beryllium	900.	1.6		1560.		2744	
5	B	boron	801	2.0	↓	2348	↓	4273	↓

Fill in all the open boxes. Use table S to help you through this.

name	symbol	Is this an element, compound, or mixture?	Phase at 298 K, room temp solid, liquid, gas, or aqueous
Gold			
Carbon dioxide	CO <sub>2(G)</sub>		
	Ga		
	C		
Iron			
Salty water	NaCl <sub>(AQ)</sub>		
Table Sugar	C <sub>12</sub> H <sub>22</sub> O <sub>11(S)</sub>		
Iodine	I <sub>2(S)</sub>		
	Br <sub>2(L)</sub>		
Mercury			
Helium			

Matter HW #2 both sides name

Memorize this chart; you will not be able to move ahead in chem unless you understand all the vocabulary and remember how these properties exist. The important Properties of the States of Matter

Property	SOLIDS	LIQUIDS	GASES
volume	Definite	Definite	Indefinite
shape	Definite	Indefinite	Indefinite
compressibility	Almost zero	Almost zero	Easily
heat expansion	Slight	Slight	Greatly

What phase are these substances at 22°C. (convert to Kelvin)	
formula	solid, liquid or gas?
Co	
H <sub>2</sub> O	
Mg	
Cl <sub>2</sub>	
Br <sub>2</sub>	
CO <sub>2</sub>	
I <sub>2</sub>	
Xe	
Hg	
Ti	

Write the symbols of the substances at left that answer these questions.	
Which <u>element</u> has the highest BP	
Which <u>compound</u> has the highest BP	
Which are easily compressed?	
Which has definite volume and indefinite volume?	
Which always fills any container you put them into?	
Which fills only the bottom of any container?	
Which always retains its shape no matter what container it's in?	
Which has indefinite shape and indefinite volume?	
Which of these is a noble gas?	

How many atoms are in one unit of each of these formulas?

$\text{H}_2\text{SO}_4$	$\text{MgSO}_3$	$\text{Al}(\text{C}_2\text{H}_3\text{O}_2)_3$	$\text{C}_5\text{H}_{10}\text{O}_5$
$\text{CH}_4$	$\text{C}_{10}\text{H}_{22}$	$\text{KCl}$	$\text{NaBr}$
$\text{CF}_4$	$\text{H}_3\text{PO}_4$	$\text{NaOH}$	$\text{MgO}$
$\text{Sn}(\text{MnO}_4)_2$	$(\text{NH}_4)_2\text{Cr}_2\text{O}_7$	$\text{C}_6\text{H}_{12}\text{O}_6$	$\text{Ba}(\text{OH})_2$
$\text{NaClO}$	$\text{N}_2$	$\text{CH}_3\text{CH}_2\text{COOCH}_3$	$\text{Co}(\text{BrO}_4)_3$
$\text{C}_8\text{H}_{18}$	$\text{KCl}$	$\text{Ti}(\text{C}_2\text{H}_3\text{O}_2)_4$	$\text{W}(\text{Cr}_2\text{O}_7)_6$