

Answer on Question #55263 - Chemistry - General chemistry

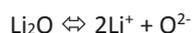
Question:

When lithium oxide (Li_2O) is dissolved in water, the solution turns basic from the reaction of the oxide ion (O^{2-}) with water. Write the equation for this reaction and, identify the conjugate acid-base pairs.

Answer:

If we consider the formation of oxide ion we will have the following two reactions:

1. Dissociation of Li_2O



2. Reaction between formed anion and water:



In this case for two reagents we will have to conjugated pairs:

1. O^{2-} (base) and OH^- (acid)
2. H_2O (acid) and OH^- (base)

	ACID	BASE		
100% ionized in H_2O	Strong	Cl^-	Negligible	
	H_2SO_4	HSO_4^-		
	HNO_3	NO_3^-		
	$\text{H}_3\text{O}^+(\text{aq})$	H_2O		
Acid strength increases ↑	Weak	HSO_4^-	SO_4^{2-}	Weak ↓ Base strength increases
		H_3PO_4	H_2PO_4^-	
		HF	F^-	
		$\text{HC}_2\text{H}_3\text{O}_2$	$\text{C}_2\text{H}_3\text{O}_2^-$	
		H_2CO_3	HCO_3^-	
		H_2S	HS^-	
		H_2PO_4^-	HPO_4^{2-}	
		NH_4^+	NH_3	
		HCO_3^-	CO_3^{2-}	
		HPO_4^{2-}	PO_4^{3-}	
			H_2O	
Negligible	OH^-	O^{2-}	Strong	
	H_2	H^-		
	CH_4	CH_3^-		
			100% protonated in H_2O	