NAMING ACIDS

Acids dissolve in water (H_2O) and form ions. The following table consists of a list of binary acids. Complete the anion and the cation columns and answer the given questions.

Acid	Name of the Acid in Aqueous Solution	Cation	Anion
HF	Hydrofluoric acid		F^-
HCl	Hydrochloric acid	H_3O^+	
HBr	Hydrobromic acid		Br^-
HI	Hydroiodic acid	H_3O^+	
H_2S	Hydrosulfuric acid		S^{2-}
HCN	Hydrocyanic acid	H_3O^+	
H_3P	Hydrophosphoric acid		P^{3-}

a) Why does hydrosulfuric acid contain two hydrogens?

b) What prefix is used at the beginning of the name for all binary acids?

c) What suffix is used at the end of the name for all binary acids?

d) Why are the above acids called binary acids?

e) Write a rule for naming binary acid.

f) Circle the acid(s) that would be named with the prefix “hydro-“.

H_2SO_3 HF H_2S H_2CO_3 HNO_2

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Answers

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HI	Hydroiodic acid	H_3O^+	I^-
H_2S	Hydrosulfuric acid	$2H_3O^+$	S^{2-}
HCN	Hydrocyanic acid	H_3O^+	CN^-
H_3P	Hydrophosphoric acid	$3H_3O^+$	P^{3-}

a) Why does hydrosulfuric acid contain two hydrogens?

Because sulfur (S) has a charge of 2-

b) What prefix is used at the beginning of the name for all binary acids?

Hydro-

c) What suffix is used at the end of the name for all binary acids?

-ic

d) Why are the above acids called binary acids?

Because they contain two different types of elements

e) Write a rule for naming binary acid.

They must contain hydrogen and another type of element.

f) Circle the acid(s) that would be named with the prefix "hydro-".

H_2SO_3 (HF) (H_2S) H_2CO_3 HNO_2