

Extension Activity: Sugar vs Salt Lab

Identify the Bonding Type based on the data. Then answer the question that follows.

Formula / Structure	Melting Point (°C)	Conductivity (Solid)	Conductivity (Aqueous Solution)	Solubility in Water	Bonding Type
KNO ₃	~334	Very Low (Insulator)	High (Strong Electrolyte)	High	
I ₂	~114	Very Low (Insulator)	Very Low	Very Low (Almost Insoluble)	
CaO	~2572	Very Low (Insulator)	Low (Reacts, Low Solubility)	Low	
CH ₃ OH	~-98	Very Low (Insulator)	None (Non-electrolyte)	High	
LiCl	~605	Very Low (Insulator)	High (Strong Electrolyte)	High	
C ₁₀ H ₈	~80	Very Low (Insulator)	Insoluble	Low	
Na ₂ CO ₃	~851	Very Low (Insulator)	High (Strong Electrolyte)	High	
C ₃ H ₈ O ₃	~18	Very Low (Insulator)	None (Non-electrolyte)	High	

Which property helps you identify the microscopic bonding type the best? _____

Explain why you found it the most helpful: _____

Key

Formula / Structure	Melting Point (°C)	Conductivity (Solid)	Conductivity (Aqueous Solution)	Solubility in Water	Bonding Type
KNO ₃	~334	Very Low (Insulator)	High (Strong Electrolyte)	High	Ionic
I ₂	~114	Very Low (Insulator)	Very Low	Very Low (Almost Insoluble)	Covalent
CaO	~2572	Very Low (Insulator)	Low (Reacts, Low Solubility)	Low	Ionic
CH ₃ OH	~-98	Very Low (Insulator)	None (Non-electrolyte)	High	Covalent
LiCl	~605	Very Low (Insulator)	High (Strong Electrolyte)	High	Ionic
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