

Ionic Compounds vs Molecular Compounds

Property	Ionic Compounds	Molecular Compounds
General Description	<ul style="list-style-type: none"> • Solid at room temperature • Forms crystal structures • Usually they are hard but very brittle (break vs bend) 	<ul style="list-style-type: none"> • Solid, liquid or gas at room temperature • Usually soft at room temperature (liquid)
Melting Point	<ul style="list-style-type: none"> • Generally quite high (ie: NaCl \rightarrow 801°C) 	<ul style="list-style-type: none"> • Generally low (compared to ionic)
Solubility	<ul style="list-style-type: none"> • Highly Soluble in water or other polar solvents 	<ul style="list-style-type: none"> • Insoluble in water or other polar solvents
Conductivity in Solid State	<ul style="list-style-type: none"> • Very poor conductors in the solid state 	<ul style="list-style-type: none"> • Generally they are poor conductors in any state
Conductivity in Molten State (or dissolved)	<ul style="list-style-type: none"> • Excellent conductors when dissolved (or molten state) • Electrolyte when dissolved 	<ul style="list-style-type: none"> • Generally they are poor conductors in any state
Odour	<ul style="list-style-type: none"> • Usually does not emit an odour in the solid state (or has a very weak odour) 	<ul style="list-style-type: none"> • Many covalent substances emit a strong/distinctive odour at room temperature.

Electrolyte: a substance that dissolves in water producing a solution that is able to conduct electricity (reasonably well).

Ionic compounds are good electrolytes because the ions (when dissolved in water) can easily move electrons.