

**Online supporting information for:**

**First principles molecular dynamics simulations of  $\text{UCl}_n\text{-MgCl}_2$   
( $n=3, 4$ ) molten salts**

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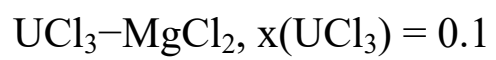
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<sup>4</sup>Department of Chemical and Biomolecular Engineering, Vanderbilt University, Nashville,  
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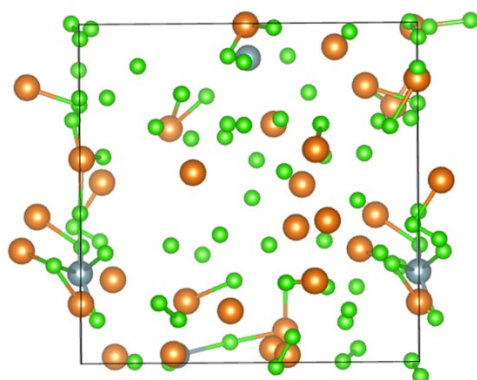
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**Initial structures from Packmol and final snapshots from FPMD.  
Color code: U, gray; Mg, brown, Cl, green.**

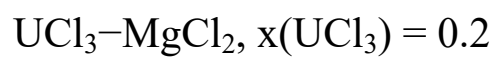
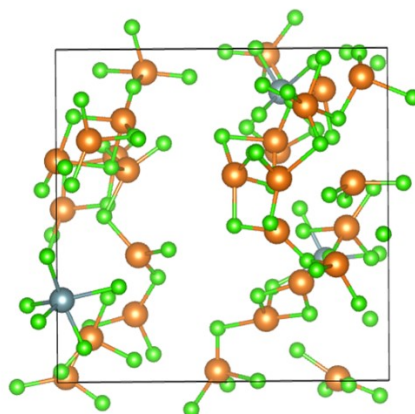
$\text{UCl}_3\text{-MgCl}_2$ , $x(\text{UCl}_3) = 0.1$ .....	2
$\text{UCl}_3\text{-MgCl}_2$ , $x(\text{UCl}_3) = 0.2$ .....	2
$\text{UCl}_3\text{-MgCl}_2$ , $x(\text{UCl}_3) = 0.3$ .....	3
$\text{UCl}_3\text{-MgCl}_2$ , $x(\text{UCl}_3) = 0.4$ .....	3
$\text{UCl}_3\text{-MgCl}_2$ , $x(\text{UCl}_3) = 0.5$ .....	4
$\text{UCl}_3\text{-MgCl}_2$ , $x(\text{UCl}_3) = 0.75$ .....	4
$\text{UCl}_3\text{-MgCl}_2$ , $x(\text{UCl}_3) = 1.0$ .....	5
$\text{UCl}_4\text{-MgCl}_2$ , $x(\text{UCl}_4) = 0.1$ .....	5
$\text{UCl}_4\text{-MgCl}_2$ , $x(\text{UCl}_4) = 0.2$ .....	6
$\text{UCl}_4\text{-MgCl}_2$ , $x(\text{UCl}_4) = 0.3$ .....	6
$\text{UCl}_4\text{-MgCl}_2$ , $x(\text{UCl}_4) = 0.4$ .....	7
$\text{UCl}_4\text{-MgCl}_2$ , $x(\text{UCl}_4) = 0.5$ .....	7
$\text{UCl}_4\text{-MgCl}_2$ , $x(\text{UCl}_4) = 0.75$ .....	8
$\text{UCl}_4\text{-MgCl}_2$ , $x(\text{UCl}_4) = 1.0$ .....	8



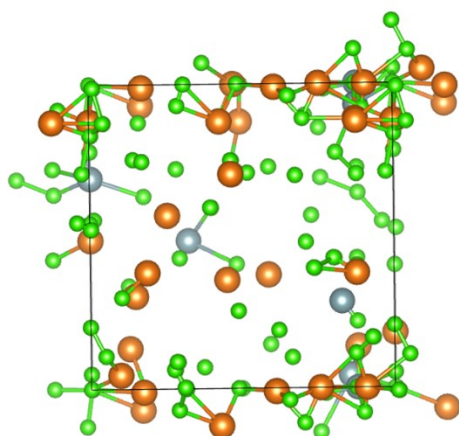
Initial structure



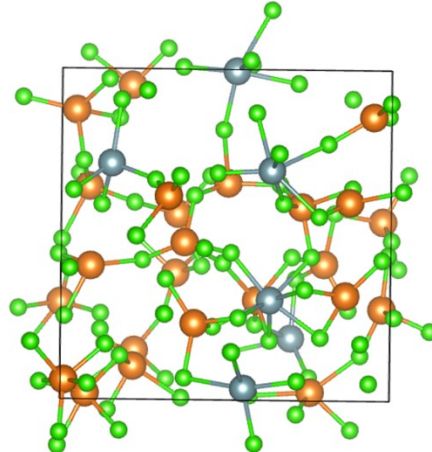
Final snapshot

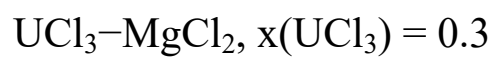


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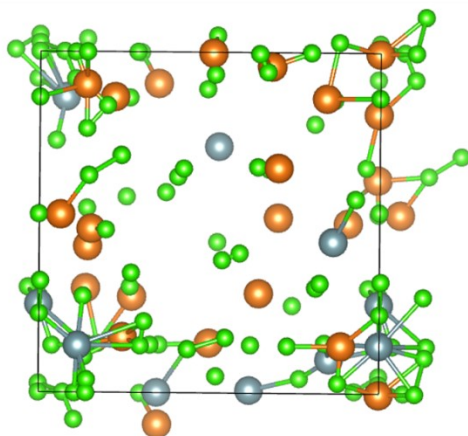


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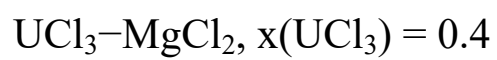
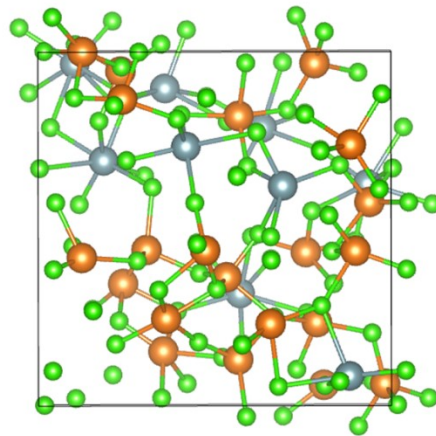




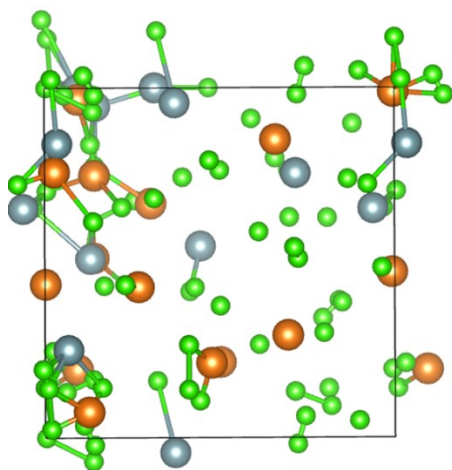
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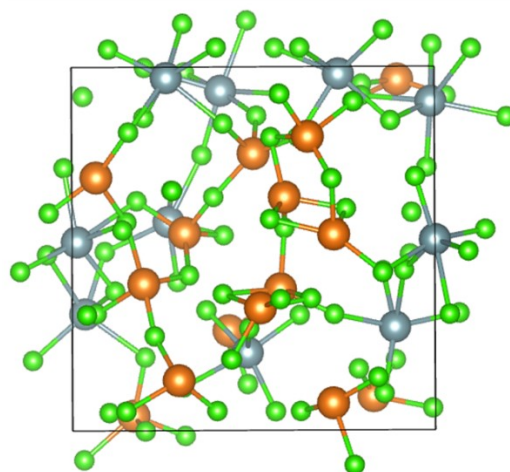
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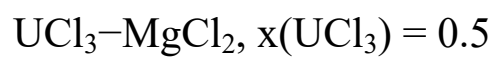


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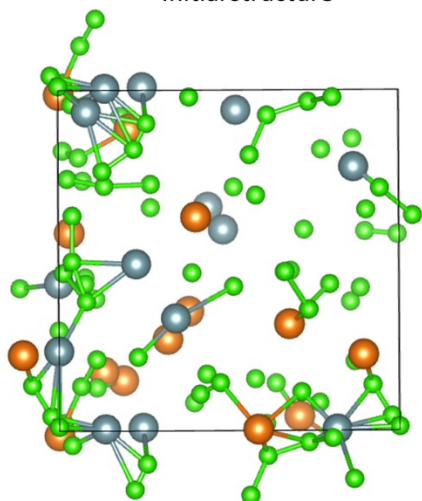


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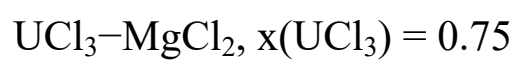
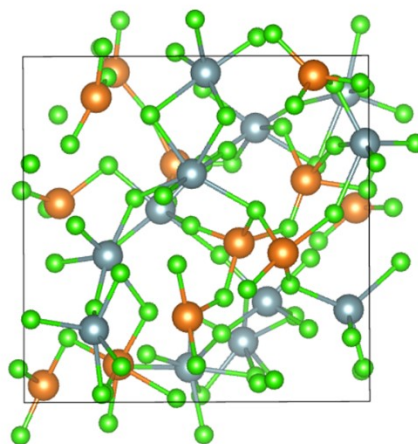




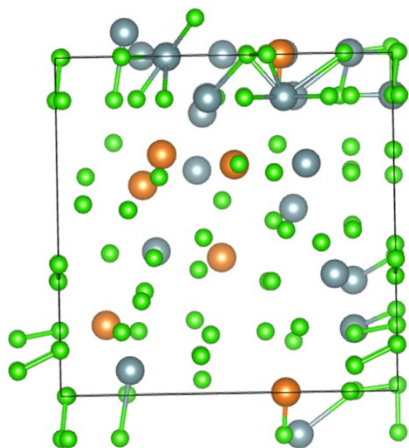
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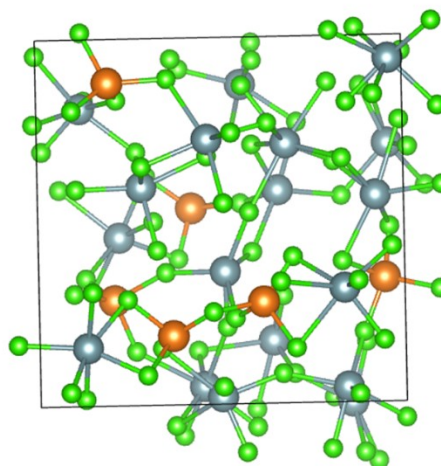
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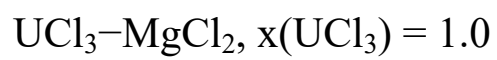


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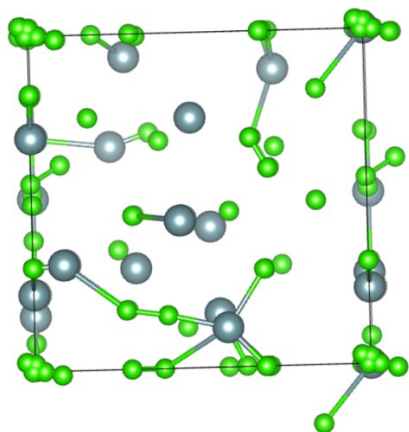


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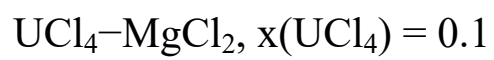
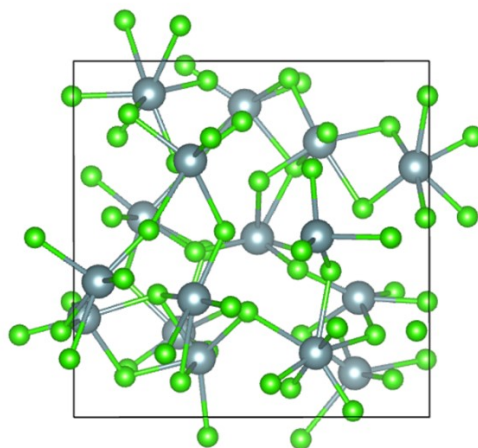




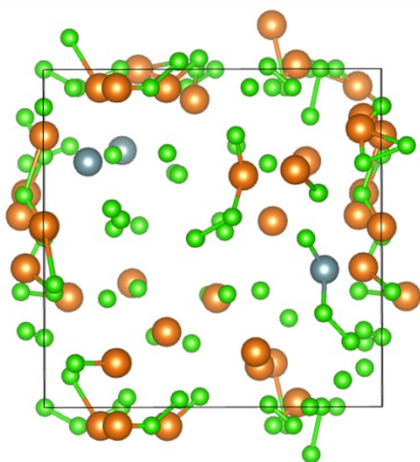
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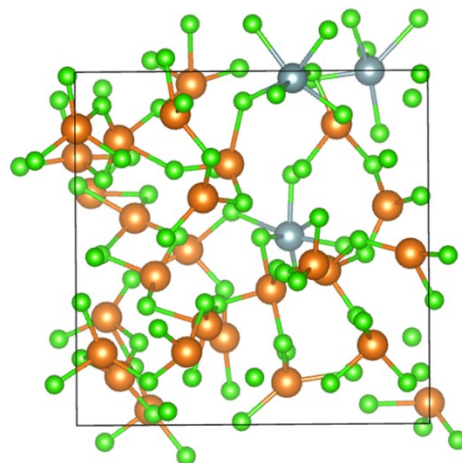
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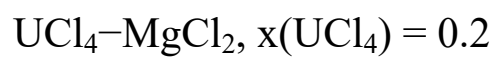
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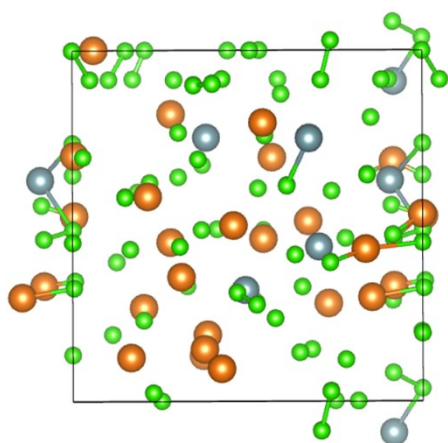
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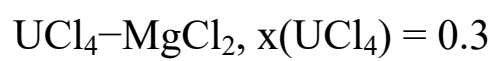
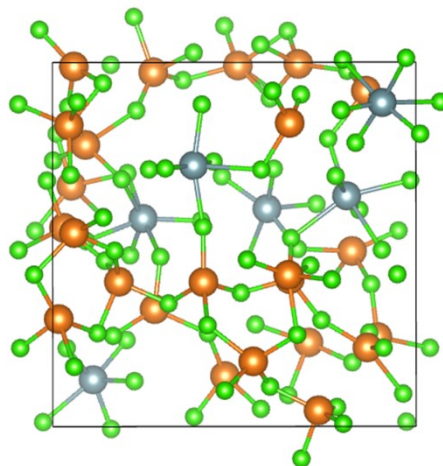




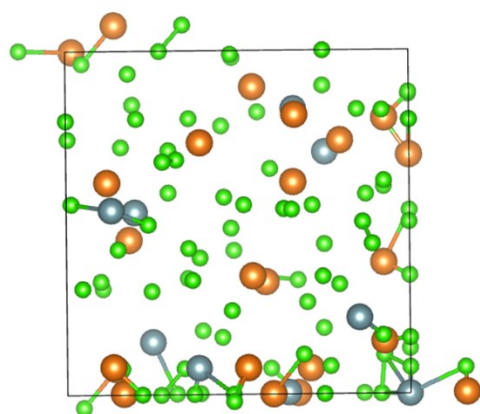
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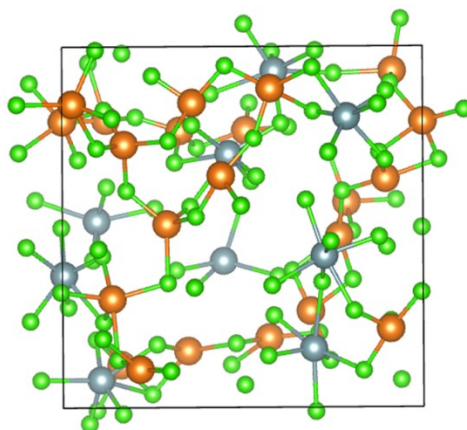
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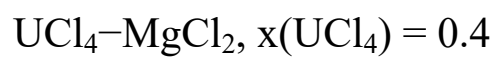


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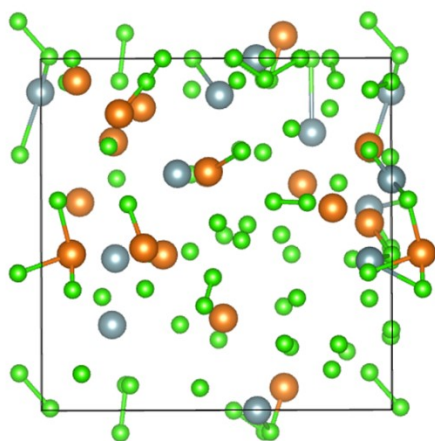


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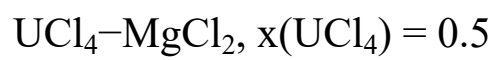
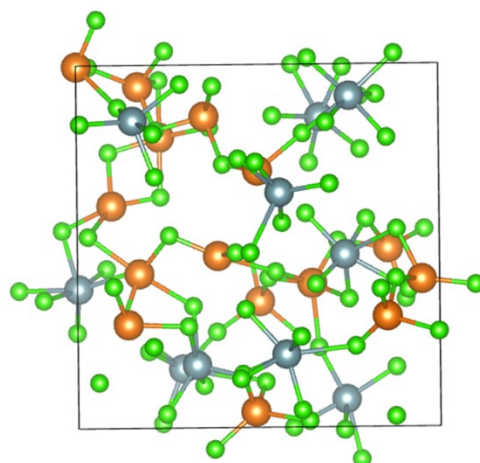




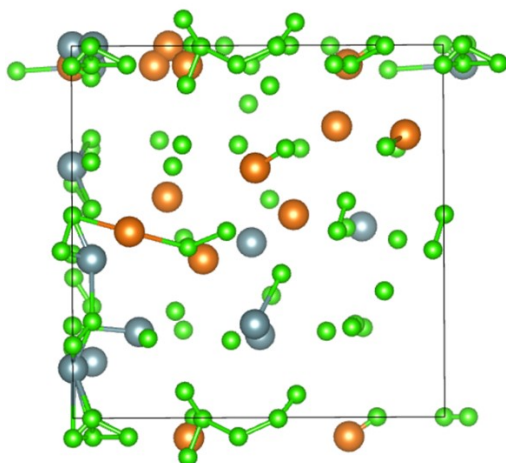
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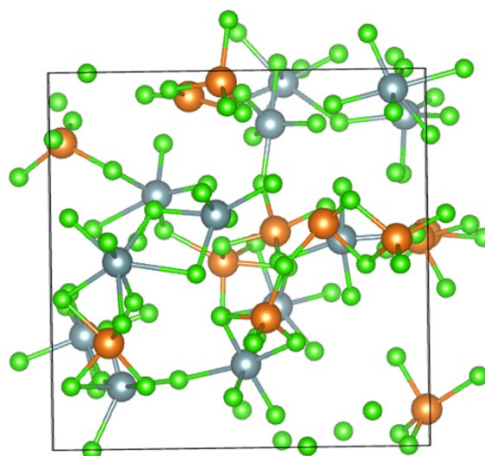
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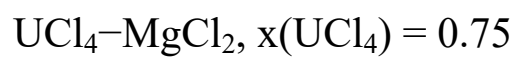


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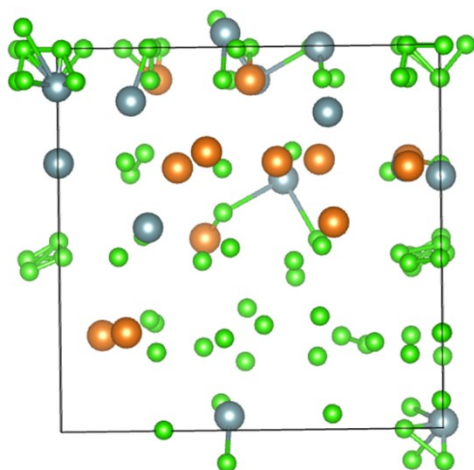


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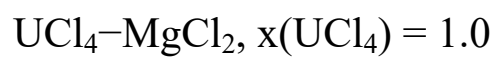
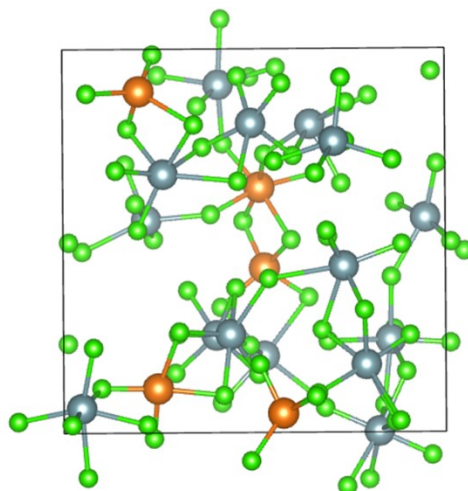




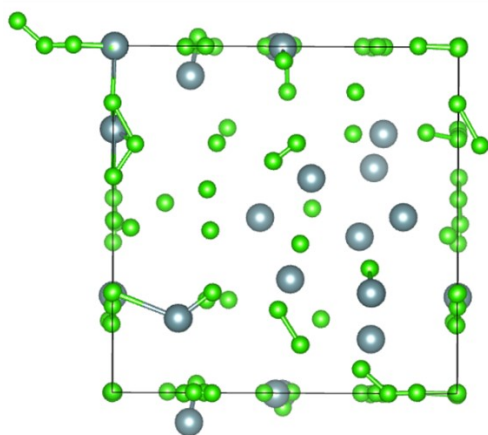
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