

Concentration and Molarity

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

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Learning Objectives



Learning Objectives

We will learn,



Learning Objectives

We will learn,

- ▶ **How change in concentration changes the color of the solution**



Learning Objectives

We will learn,

- ▶ **How change in concentration changes the color of the solution**
- ▶ **How change in volume changes the concentration of the solution**



Learning Objectives

We will learn,

- ▶ **How change in concentration changes the color of the solution**
- ▶ **How change in volume changes the concentration of the solution**
- ▶ **To identify when the solution reaches the saturation point**



System Requirement



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► macOS Catalina version 10.15.7



System Requirement

- ▶ **macOS Catalina version 10.15.7**
- ▶ **Google Chrome version 101.0.49**



Prerequisites



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- ▶ Learners should be familiar with topics in basic chemistry



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- ▶ Learners should be familiar with topics in basic chemistry
- ▶ Please use the link below to access the tutorials on PhET Simulations
<https://spoken-tutorial.org>



Link for PhET Simulation



Link for PhET Simulation

- ▶ Please use the given links to download the PhET simulations

<https://phet.colorado.edu/en/simulations/concentration>

<https://phet.colorado.edu/en/simulations/molarity>



PhET Simulation



PhET Simulation

In this tutorial we will use,



PhET Simulation

In this tutorial we will use,

► **Concentration** and **Molarity** PhET simulations



Assignment

Table 1: Saturation Point

Solute	Molarity at saturation point (mol/L)
Drink mix	
Cobalt nitrate	
Cobalt chloride	4.330
Potassium dichromate	
Potassium chromate	
Nickel chloride	
Copper sulfate	1.380
Potassium permanganate	
Sodium chloride	



Assignment

Table 2: Concentration in mol/L

Solute	Solute amount (moles)	Solution volume (litres)	Concentration (moles/litres)
Drink mix	0.447	0.662	
Cobalt nitrate	0.854	0.426	
Cobalt chloride	0.926	0.748	
Potassium dichromate	0.251	0.919	
Gold chloride	0.892	0.396	
Potassium chromate	0.112	0.255	
Nickel chloride	0.671	0.570	
Copper sulfate	0.385	0.841	
Potassium permanganate	0.502	0.991	



Summary

We have learnt,

- ▶ **How change in concentration changes the color of the solution**
- ▶ **How change in volume changes the concentration of the solution**
- ▶ **To identify when the solution reaches the saturation point**



About the Spoken Tutorial Project

- ▶ Watch the video available at https://spoken-tutorial.org/What_is_a_Spoken_Tutorial
- ▶ It summarises the Spoken Tutorial project



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Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- ▶ Conducts workshops using spoken tutorials
- ▶ Gives certificates to those who pass an online test
- ▶ For more details, please write to contact@spoken-tutorial.org



Answers for THIS Spoken Tutorial

- ▶ Questions in THIS Spoken Tutorial?
- ▶ Visit <https://forums.spoken-tutorial.org>
- ▶ Choose the minute and second where you have the question
- ▶ Explain your question briefly
- ▶ The Spoken Tutorial project will ensure an answer



Acknowledgements

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Thank you

- ▶ This is Radhika Yadav, a FOSSEE summer fellow 2022, IIT Bombay signing off
- ▶ Thanks for joining

