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IMPROVEMENT OF TEACHING METHODOLOGY OF THE TOPIC IN THE SCHOOL CHEMISTRY COURSE

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Abstract
This article provides information about oxides, one of the most important classes of inorganic chemistry. It covers the types and classification of oxides, in particular, the specific chemical properties of basic, acidic, amphoteric and salt-free groups. Also, methods for obtaining oxides on a laboratory and industrial scale are analyzed. The article provides methodological recommendations on the use of modern pedagogical technologies in the process of teaching the topic of oxides.

Keywords: Oxides, thermal decomposition, binary compounds, acid anhydrides, amphotericity, oxidation, laboratory synthesis, mineral raw materials.

Introduction

Oxides are the most common class of compounds in the Earth's crust and the universe. Due to the high reactivity of oxygen, it combines with almost all chemical elements to form oxide layers. In this article, we will consider not only the theoretical definition of oxides, but also the fundamental aspects of how they are formed and into which types they are divided. Oxides are called:

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Historical naming

- Previously used name.
- CaO – quicklime,
- H_2O – water ,
- SiO_2- sand (quartz),
- CO_2 – carbon dioxide (dry ice).

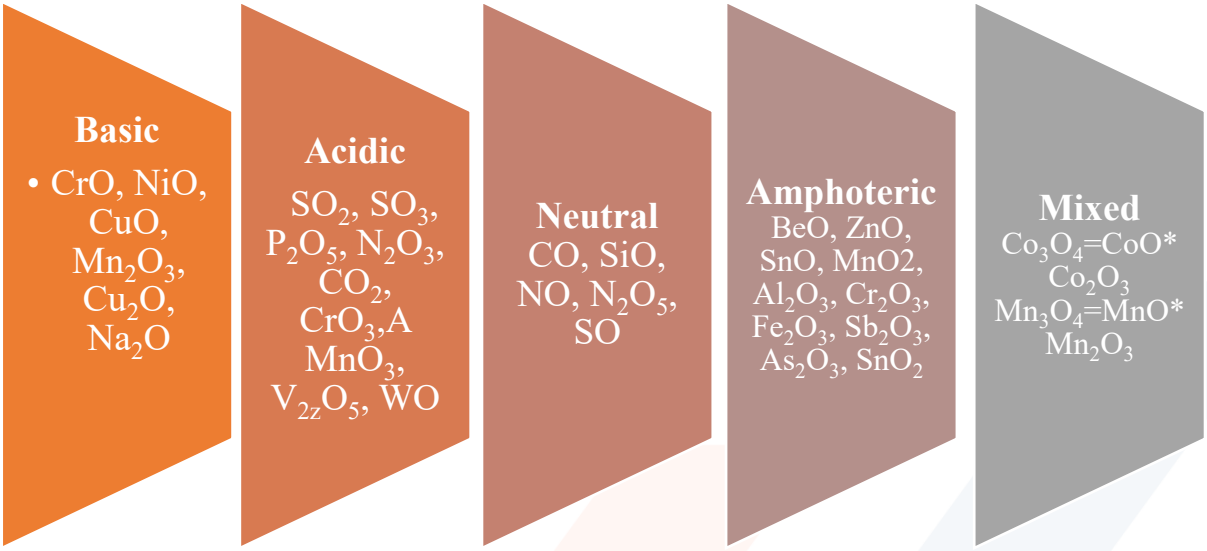
Systematic naming

- First, the name of the element is given, if it is variable, its valence (in parentheses), then the word oxide.
- Li_2O – lithium oxide, MnO_2 – manganese (IV) oxide, H_2O – hydrogen oxide, CO_2 – carbon (IV) oxide

Greek naming

- Using Greek numerals, 1-mono, 2-di, 3-tri...
- CO – carbon monoxide
- CO_2 – carbon dioxide
- Fe_2O_3 – ferric trioxide
- N_2O_5 – dinitrogen pentoxide

The types of oxides can be explained to students using the following table.



Types of Oxides (Classification)

Oxides are divided into the following main types according to their chemical nature:

It is recommended to use the Fish Skeleton method when teaching students about the formation of oxides in school chemistry courses:

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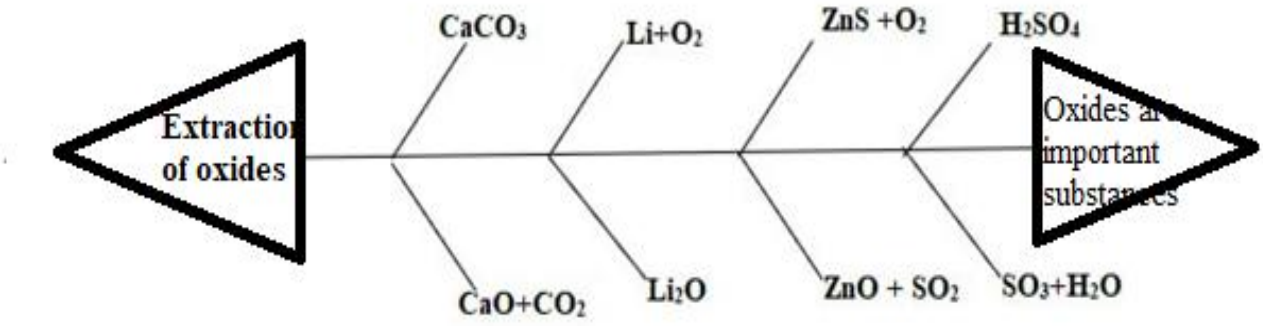
FISH SKELETON



In order for students to independently consolidate their knowledge on the topic of oxides, it is recommended that they complete the following schemes based on modern pedagogical technology.

"Assessment" technology

"Assessment" technology is a set of tasks that allows students to comprehensively assess the level of knowledge, skills and qualifications acquired. This method can be used in different parts of the lesson. It comes from the English word "assessment" - "assessment", "evaluation". It can be used at the beginning of the lesson to determine the level of students' mastery of the topic, to consolidate the topic, to summarize their knowledge on the topic. The application of the "Assessment" method to the lesson process is based on a certain technology. Tasks in the form of a table prepared by the teacher are given as assignments that must be completed by students in a short time. After completing the assignment, the answers are announced by the teacher, and students perform self-assessment based on the answers and evaluate them based on previously announced criteria. In this case, students draw conclusions about the level of mastery of the topic through self-assessment and evaluation.

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"Assessment method"

Test	Explanatory dictionary
1. Find the row with the given oxides. A) CO_2, SO_2, BeO,MnO_2 B) $HMnO_4$, HNO_3 , H_2SO_4 C) NaCl, $MnSO_2$, $Fe_2(SO_4)_3$ D) KOH, $Al(OH)_3$, $Ca(OH)_2$ 2. Among the oxides given below, find and combine the following: a)basic and B)amphoteric oxides 1.Na_2O 2.ZnO 3. CaO 4.Al_2O_3 5.BaO 6.BeO A) a-1,5,6 b-2,3,4 B) a-1,3,5 b-2,4,6 C) a-2,3,4 b- 2,5,6 D) a-5,6 b-2,4	Basic oxide- Acidic oxide- Neutral oxide- Amphoteric oxide- Double oxide- Peroxides – Mixed oxide-
Problematic situation Why don't all oxides react with water?	**Creative work** "Make a small infographic aboaut 5 types of oxides in our daily lives ang their beneficial/harmful aspects"

"Summary" (Resume) method

The summary method is considered one of the complex methods and is aimed at covering topics of a multidisciplinary, problematic nature. The essence of the method is that it provides the same information on different branches of the topic and discusses each of them in separate aspects. The problem is studied in terms of its positive and negative sides, advantages, virtues and disadvantages, benefits and harms. This interactive method provides an opportunity to successfully develop critical, analytical, clear logical thinking and to systematically express and defend students' independent ideas and opinions in written and oral form. The "Summary" method can be used in classes to consolidate, analyze and compare knowledge on the topic in the form of individual and small group work.

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Application of the **"Summary" (Resume) method** to chemistry

Oxides ang their importance							
CO_2		**CO**		**SO_2**		**NO_2**	
Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Conclution:							

Classification table: In this, students are divided into different groups and given a task. Classify the following oxides into categories.

Oxides	**Basic**	**Acidic**	**Amphoteric**
SO_2			
NiO			
ZnO			
BeO			
P_2O_5			
SnO_2			
CuO			
Na_2O			
Al_2O_3			
Sb_2O_3			
Fe_2O_3			
CO_2			
PbO_2			
K_2O			
GeO_2			

CONCLUSION

This article provides information about oxides and their classification into types. This article covers the theoretical foundations of oxides, their classification according to their chemical nature, and various methods of obtaining them.

Various recommendations are given for the effective use of various modern pedagogical technologies in teaching the topic of oxides. The use of the above modern pedagogical technologies in teaching the topic of oxides in the school chemistry course has a positive effect on the effectiveness of teaching.

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