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remains at a certain value, without returning to the original value, and for these conditions (Figure-2a, curve 4), the violation of the stoichiometry of the reaction (1) is observed.
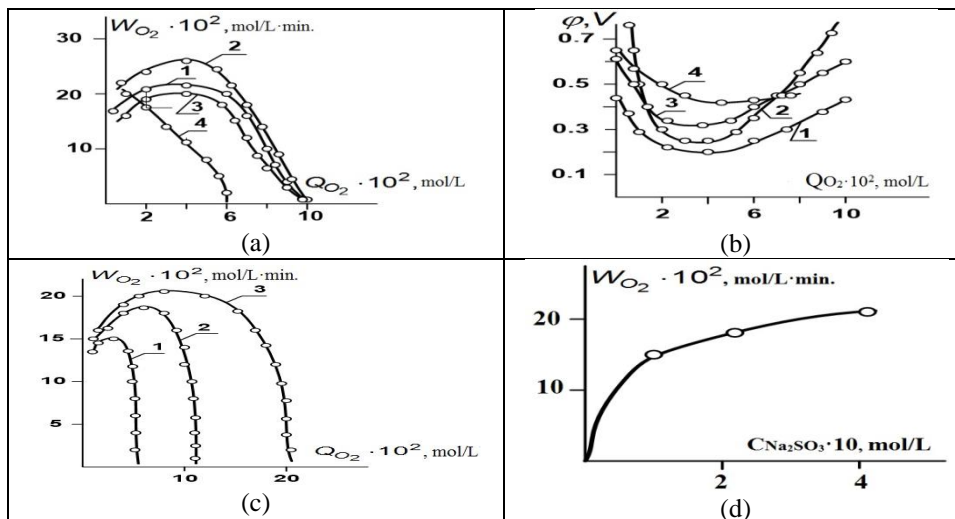
Table-3. Oxidation of sodium sulfite by oxygen in the presence of a microspherical catalyst at T=40ºC.

No of a test	Ash, g	Concentration, mol/l			Na_2SO_3 conversion degree, %	W_{O2}, max, ml/min
		Na_2SO_3	$FeSO_4$	H_2SO_4		
1	0	0.4	-	-	100.0	0.6
2	0.1	0.4	-	-	100.0	5.4
3	0.5	0.4	-	-	100.0	4.4
4	1.0	0.4	-	-	100.0	4.0
5	2.0	0.4	-	-	-	3.4
6	0.1	0.2	-	-	100.0	4.8
7	0.1	0.1	-	-	100.0	3.6
8	0.1	0.2	$1\cdot10^{-4}$	-	100.0	4.0
9	0.1	0.2	$0.5\cdot10^{-5}$	-	100.0	4.6
10	0.1	0.2	$1\cdot10^{-5}$	-	100.0	6.8
11	0.1	0.2	$1\cdot10^{-2}$	-	79.0	3.8
12	0.1	0.2	-	-	100.0	4.8
13	0.1	0.2	-	$1.75\cdot10^{-2}$	100.0	5.2
14	0.1	0.2	-	$5.2\cdot10^{-2}$	100.0	3.8
15	0.1	0.2	-	$8.75\cdot10^{-2}$	100.0	3.0

The conversion curves obtained by varying in the range from 0.11 to 0.4 mol/L are presented in the Figure-2c. The correlation $C_{Na2SO3}/Q_{O2}=2$ and the correspondence of the stoichiometry of the reaction (1) are preserved throughout the studied interval. The dependence (Figure 2d) of the oxygen absorption rate (Q_{O2} at $Q_{O2} = 1/2$ from ΣQ_{O2}) is described by the equation (2):

$$W_{O2}=(k_1\cdot\beta_1\cdot C_{Na2SO3})/(1+ \beta_1\cdot C_{Na2SO3}) \qquad (2)$$

where β is the constant of Na_2SO_3 adsorption on the surface of aluminosilicate microspheres. The data of the Table-3 also indicate on the Na_2SO_3 sorption.

Figure-2. Oxidation of sodium sulfite by oxygen in the pre sence of microspherical aluminosilicates at T=40ºC, $P_{O2}= 0.1$ MPa; a, b: $C_{Na2SO3}= 0.2$ mol/l, $C_{H2SO4}=10^2$ mol/l: 1 - 1.75; 2 - 3.50; 3 - 5.25; 4 - 7,0; c, d: C_{Na2SO3}: 1 - 0.1; 2 - 0.2; 3 - 0.4 mol/L.