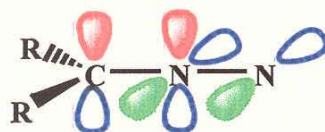


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## ELECTRON-IMPACT-INDUCED FRAGMENTATION OF CYCLIC 2-DIAZO-1,3-DIKETONES

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The electron-impact-induced fragmentation (the mass spectra, 15-70 eV) of cyclic 2-diazo-1,3-diketones (2-diazo-1,3-cyklohexadione, **Ia**; 2-diazo-4,4-dimetyl-1,3-cyklohexadione, **Ib**; 2-diazo-5,5-dimetyl-1,3-cyklohexadione, **Ic**; 2-diazo-4,6-dioxa-5,5-dimetyl-1,3-cyklohexadione, **Id**; 2-diazo-5-fenyl-1,3-cyklohexadione, **Ie**) was studied.<sup>1,2</sup> Used cyclic 2-diazo-1,3-diketones were synthesised by conventional methods.<sup>3</sup> The mass spectra were measured using Varian MAT 111 instrument with direct introduction of samples, with a source temperature of 120°C, energy of ionising electrons in the range 15-70 eV and 150 µA and sample reservoir laboratory temperature.

The elimination of diazogroup is typical reaction for fragmentation of diazocompounds<sup>4</sup> and diazoketones<sup>5,6</sup> after ionisation of molecules with electron impact. All investigated cyclic diazo-1,3-diketones show molecular ion with 0.7-86.4 % of relative abundance. A typical ions are  $[M]^+$ ,  $[M-N_2]^+$ ,  $[M-N_2-CO]^+$ ,  $[M-N_2-CO-CH_2]^+$  and  $[M-N_2-CO-CH_3]^+$ . The Wolff rearrangement was observed for all investigated cyclic diazo-1,3-diketones (without **Id**). The schemes of fragmentation of investigated cyclic diazo-1,3-diketones were proposed.

*Table 1.* The per cent from total ionic current (numerator) and relative abundance (% , denominator) of molecular ions and ionic fragments of cyclic diazo-1,3-diketones at 70 eV and 20 eV

No.	eV	$[M]^+$	$[M-N_2]^+$	$[M-N_2-CO]^+$	$[M-N_2-CO-CH_2]^+$	$[M-N_2-CO-CH_3]^+$
<b>Ia</b>	70	10,98/86,4	3,9/30,8	0,99/7,8	1,7/13,4	-
	20	15,75/37	11,02/26	2,36/5,6	-	-
<b>Ib</b>	70	5,94/29,1	2,71/13,3	0,89/4,4	0,78/3,8	12,24/60
	20	2,67/13,5	8,53/43,2	1,6/8,1	1,53/6,8	19,73/100
<b>Ic</b>	70	2,18/13,4	3,9/24	0,94/5,8	1,4/8,6	2,6/16
	20	6,82/42,1	14,79/91,2	2,96/18,3	-	14,79/91,2
<b>Id</b>	70	2,58/5,1	0,28/0,5	-	-	-
	20	3,85/8,4	9,78/21,4	-	-	-
<b>Ie</b>	70	0,21/0,7	3,07/31	1,45/5	0,37/1,3	-
	20	2,48/10,6	23,36/100	10,36/44,4	2,34/10	-

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