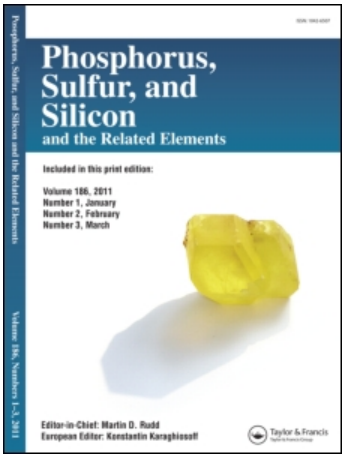

Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

SULPHUR ORGANIC COMPOUNS AS PROTECTORS FOR RADIATION

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To cite this Article Nanobashili, Helen M. , Gvilava, S. E. and Panchvidze, M. V.(1979) 'SULPHUR ORGANIC COMPOUNS AS PROTECTORS FOR RADIATION', Phosphorus, Sulfur, and Silicon and the Related Elements, 6: 1, 357
To link to this Article: DOI: 10.1080/03086647908080452
URL: http://dx.doi.org/10.1080/03086647908080452

Phosphorus and Sulfur
1979, Vol. 6, p. 357

SULPHUR ORGANIC COMPOUNDS AS PROTECTORS FOR RADIATION

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The development of the scientific principles of the protective action of various compounds and in particular sulphur organic compounds for irradiation is one of the most actual problem in the modern radiation chemistry and radiobiology. With that in view the radiolysis of the various sulphur organic compounds in stationary and pulse conditions both in pure state and in model systems has been studied and the main regularities of their radiolytic behaviour are established. The primary processes of the radiolysis of sulphurorganic compounds containing SH, -S-, NH_2, COOH, C_6H_5 functional groups are investigated and the radical products of the radiolysis - anion- and cation-radicals, thiyl and alkyl radicals are identified and their reactivity is studied in irradiation field.

It is shown that the protective action of sulphurorganic compounds on the various organic substances - alcanes, alkohols, acids, ethers is due to the energy transfer from the matrix molecules to the molecules of sulphur compounds. Frequently the intramolecular energy transfer in the polyfunctional sulphur organic compounds is observed, moreover the mutual influence of the corresponding functional groups takes place in all cases. The mechanism of the protective action of the sulphurorganic compounds is proposed and discussed.

Based on the received results the possibility of the directed conducting of the radiolysis of the multicimponent systems is shown with regard for the share of the corresponding functional groups in the occurring radiation-chemical and radiobiological processes.