

**GC RETENTION INDICES AND MASS SPECTRA OF THE TERT-BUTYLDIMETHYLSILYL
DERIVATIVE OF A SERIES OF 28 ALKYL METHYLPHOSPHONIC ACIDS**

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The United Nations Chemical Weapons Convention (CWC) prohibits the development, production, stockpiling and use of chemical weapons. Nerve agents, such as Sarin (isopropylmethyl phosphonofluoridate) and VX (O-ethyl-S-[2-(diisopropylamino)ethyl] methylphosphorothiolate), have been weaponised and pose a high risk to the CWC.

Recent GC-MS studies have been limited to detecting the degradation products of ethyl methylphosphonofluoridate, Sarin, Soman, GF (Cyclohexyl methylphosphonofluoridate), Tabun (O-ethyl N,N-dimethyl phosphoroamidocyanidate) and VX. In environmental samples, Sarin is hydrolysed to isopropyl methylphosphonic acid and subsequently to methyl phosphonic acid.

In this study the tert-butyldimethylsilyl derivative of the alkyl methylphosphonic acid degradation product of a series of 28 Sarin homologues relevant to the CWC were characterised by GC-MS. Their GC retention indices and mass spectral data are presented. A pattern classifier for the alkyl methylphosphonic acid class of chemical and also for individual groups of related isomers is also presented.