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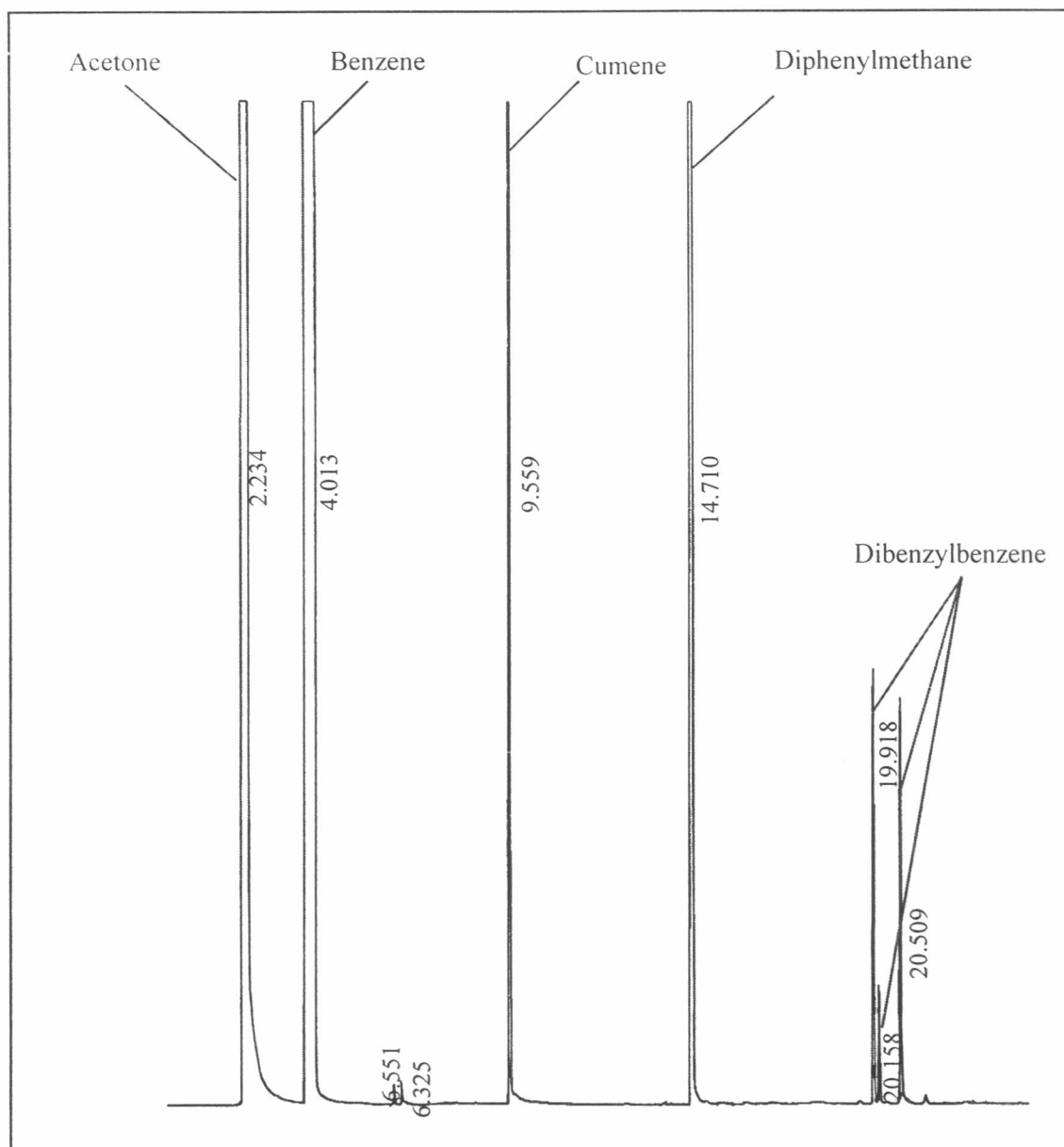


## APPENDICES

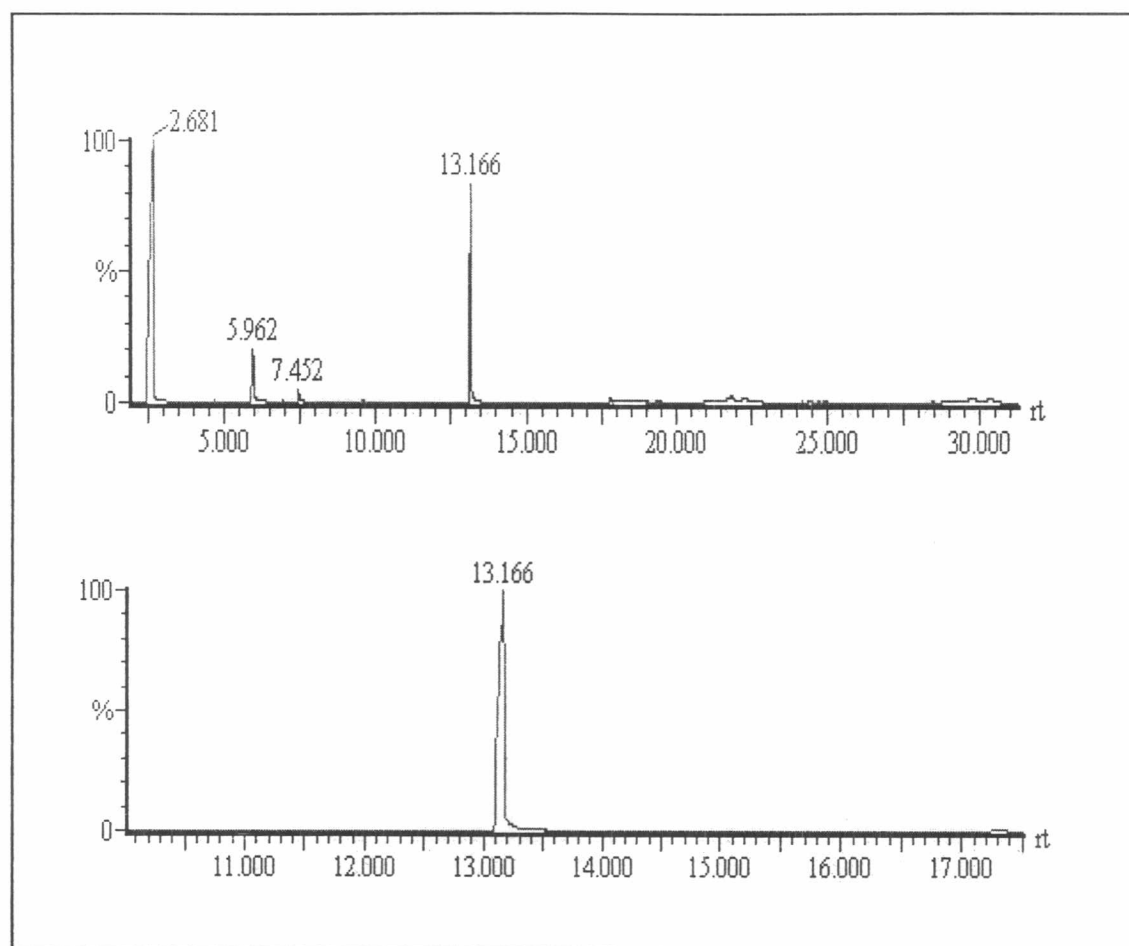
## APPENDICES

**Table A-1** Iron content and other elements in iron waste solution

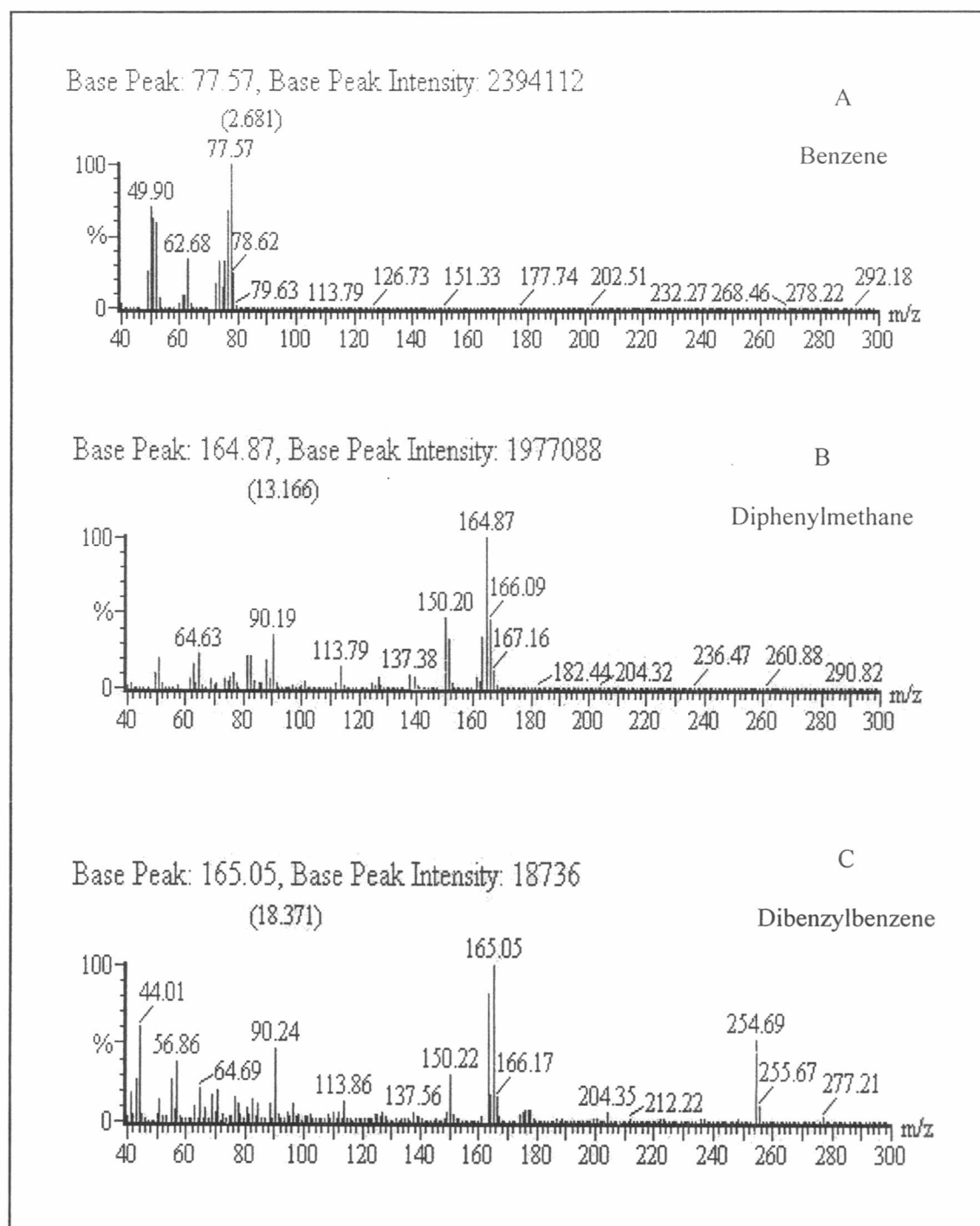
Elements	Quantity (g/L)
$\text{Cd}^{2+}$	0.02
$\text{Cr}^{3+}$	0.14
$\text{Cu}^{2+}$	0.04
$\text{Fe}^{3+}$	221.2
$\text{Na}^{+}$	0.06
$\text{Ni}^{2+}$	0.04
$\text{Pb}^{2+}$	0.02
$\text{Zn}^{2+}$	0.44
$\text{PO}_4^{3-}$	0.84
$\text{SO}_4^{2-}$	0.02



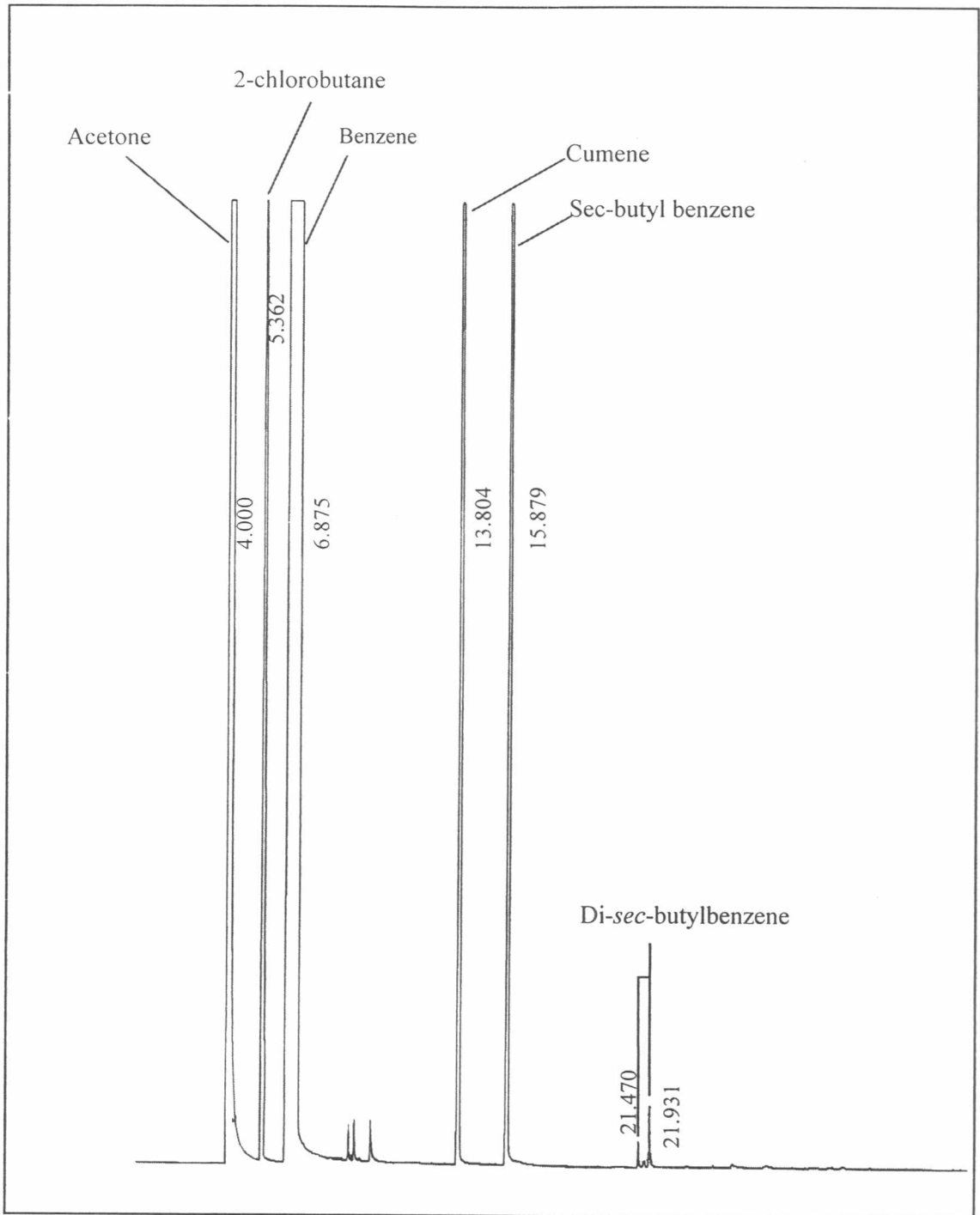
**Figure A-1** A gas chromatogram of liquid products from arylation of benzene with benzyl chloride



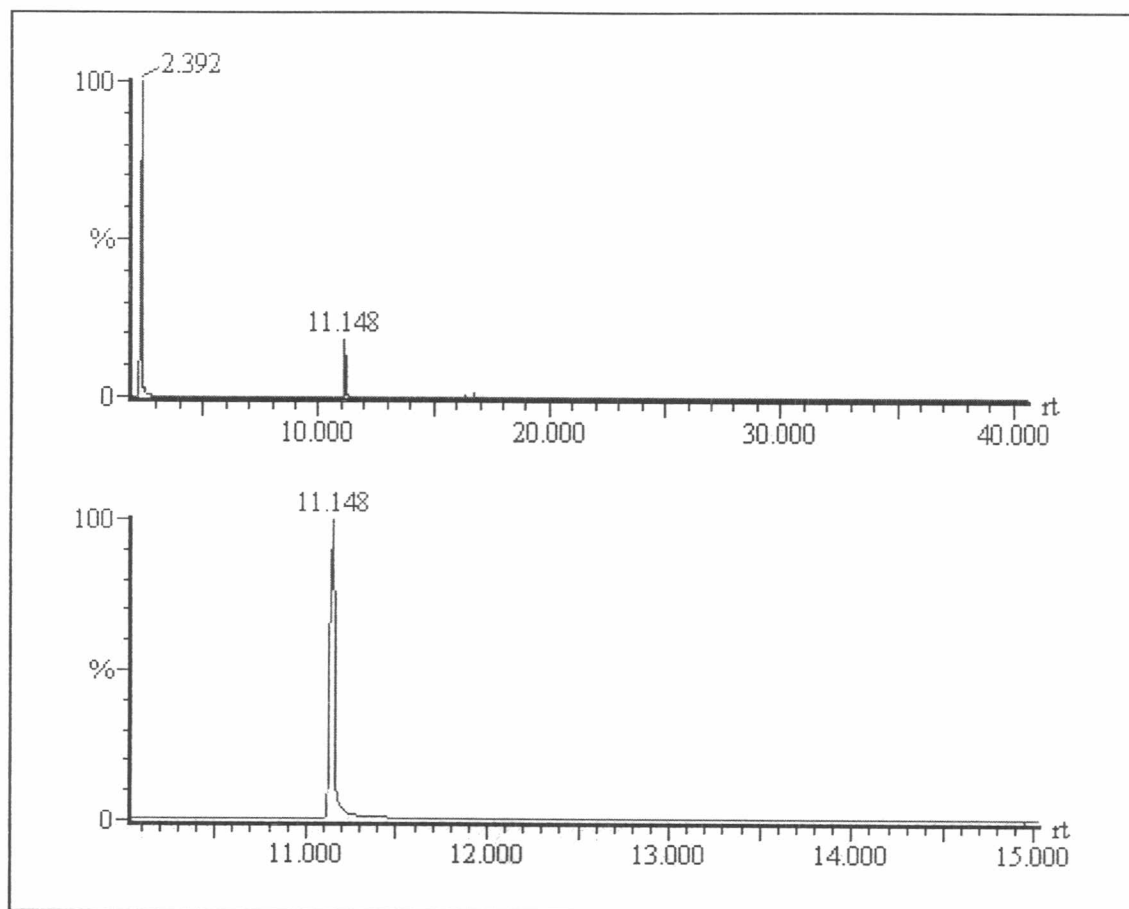
**Figure A-2** A gas chromatogram from GC-MS of liquid products from arylation of benzene with benzyl chloride



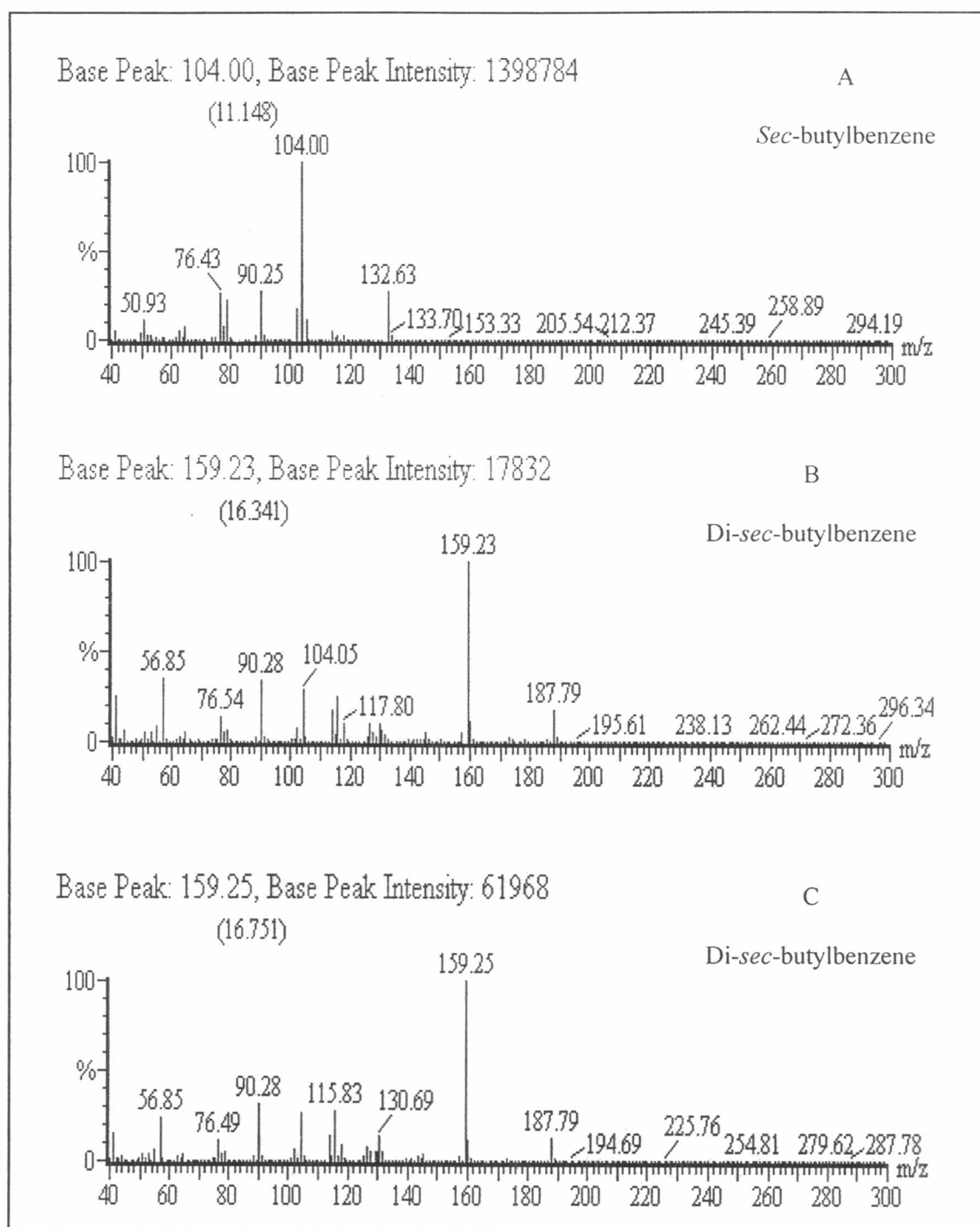
**Figure A-3** A mass spectrum of liquid products from arylation of benzene with benzyl chloride; (A) Benzene, (B) Main product, diphenylmethane, and (C) By product, dibenzylbenzene



**Figure A-4** A gas chromatogram of liquid products from alkylation of benzene with 2-chlorobutane



**Figure A-5** A gas chromatogram from GC-MS of liquid products from alkylation of benzene with 2-chlorobutane



**Figure A-6** A mass spectrum of liquid products from alkylation of benzene with 2-chlorobutane, (A) Main product, *sec*-butylbenzene, (B), and (C) By products, di-*sec*-butylbenzene isomers



## VITAE

Mr. Tanaphon Sabaijit was born on June 12, 1978 in Phuket Province. He received a B.Sc. Degree in Chemistry-Biology from Faculty of Science and Technology, Prince of Songkhla University, Pattani Campus in 2000. Since then, he has been a graduate student in the major of Inorganic Chemistry, Department of Chemistry, Faculty of Science, Chulalongkorn University. During he studies toward the Master's degree, he was awarded a teacher assistant ship by Faculty of Science during 2002-2003 and was supported by a research grant for his Master degree's thesis from Graduate School, Chulalongkorn University.