

Cyclic dodeca-(4- β -methyl)thiazoline 23: $[\alpha]_D^{25} = -283$ (*c* 0.22, CHCl₃); IR (film, cm⁻¹) 2975, 2927, 2860, 1624, 1432, 1366, 1247, 1178, 1010, 907; ¹H-NMR (400 MHz, CDCl₃, 25 °C, TMS) $\delta = 3.76$ (d, *J* = 10.8 Hz, 12 H), 3.01 (d, *J* = 10.8 Hz, 12 H), 1.76 (s, 36 H); ¹³C-NMR (100 MHz, CDCl₃, 25 °C) $\delta = 176.6, 83.4, 43.0, 25.9$; FABMS: [M]: 1188; HRMS Calcd. for C₄₈H₆₀N₁₂S₁₂: 1188.1712; Found: 1188.1730.

Cyclic nona-(4- β -methyl)thiazoline 25: $[\alpha]_D^{25} = -223$ (*c* 0.50, CHCl₃); IR (film, cm⁻¹) 2975, 2927, 2861, 1622, 1431, 1366, 1264, 1179, 1009, 907; ¹H-NMR (400 MHz, CDCl₃, 25 °C, TMS) $\delta = 3.75$ (d, *J* = 11.2 Hz, 9 H), 3.22 (d, *J* = 11.2 Hz, 9 H), 1.62 (s, 27 H); ¹³C-NMR (100 MHz, CDCl₃, 25 °C) $\delta = 175.7, 83.5, 43.3, 25.7$; FABMS: [M⁺]: 892; HRMS Calcd. for C₃₆H₄₆N₉S₉: 892.1362; Found: 892.1318.

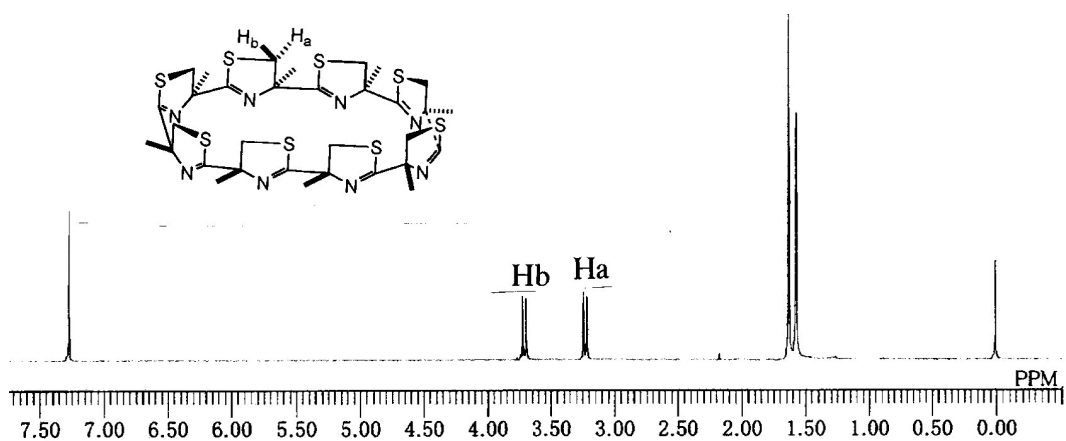


Figure 1. $^1\text{H-NMR}$ of octathiazoline **22**

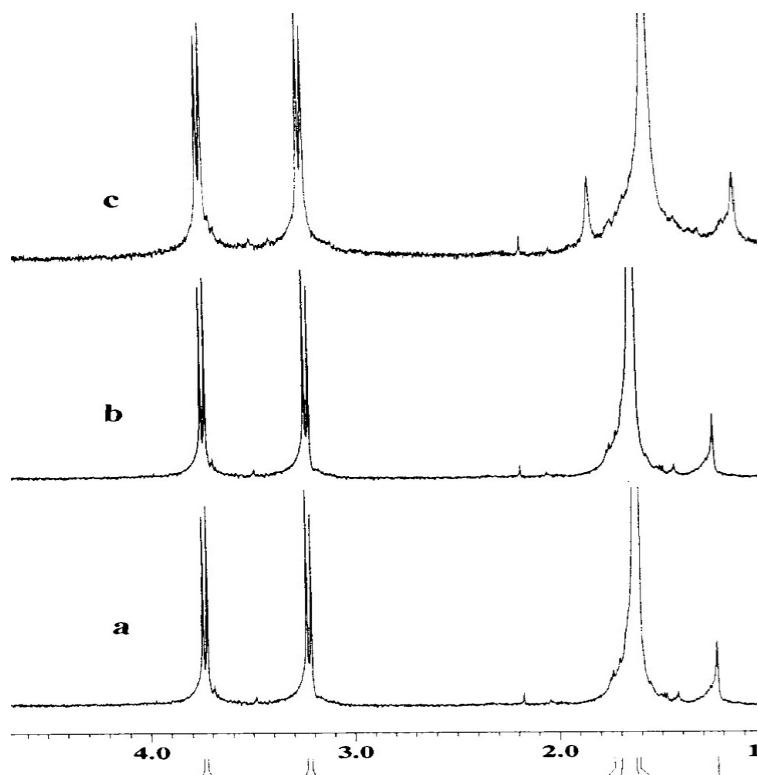


Figure 2. Variable-temperature $^1\text{H-NMR}$ of dodecathiazoline **23** at : a) $0\text{ }^\circ\text{C}$; b) $-30\text{ }^\circ\text{C}$; and c) $-60\text{ }^\circ\text{C}$.

C:\Users\han\his02170aa.4
his02170aa

DFILE
COMNT
DATIM
OBNUC
EXMOD
OBFRQ
OBSET
OBFIN
POINT
FREQU
SCANS
ACQTM
PD
PW1
IRNUC
CTEMP
SLVNT
EXREF
BF
RGAIN

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5.35 KHz
5.86 Hz
8192
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1.5000 sec
3.07 usec
IH
25.1 c
CDCL3
77.00 ppm
0.12 Hz
60

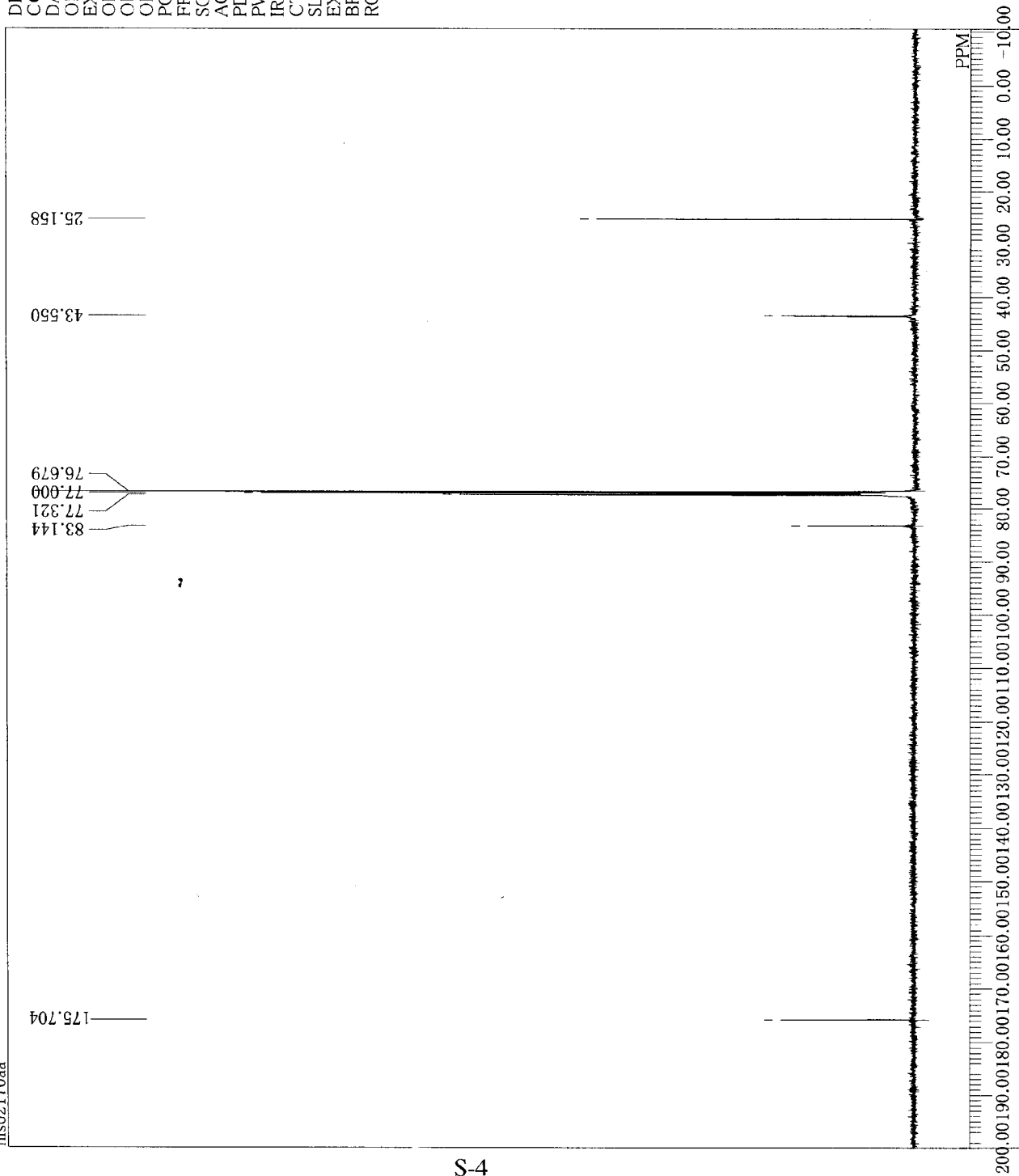


Figure 3. ¹³C-NMR of octathiazoline 22

hfs02052c

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OBSET 4.19 KHz
OBFIN 7.29 Hz
POINT 8192
FREQU 7503.00 Hz
SCANS 16
ACQTM 1.0918 sec
PD 30.0000 sec
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CTEMP 24.4 c
SLVNT C6D6
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BF 0.12 Hz
RGAIN 44

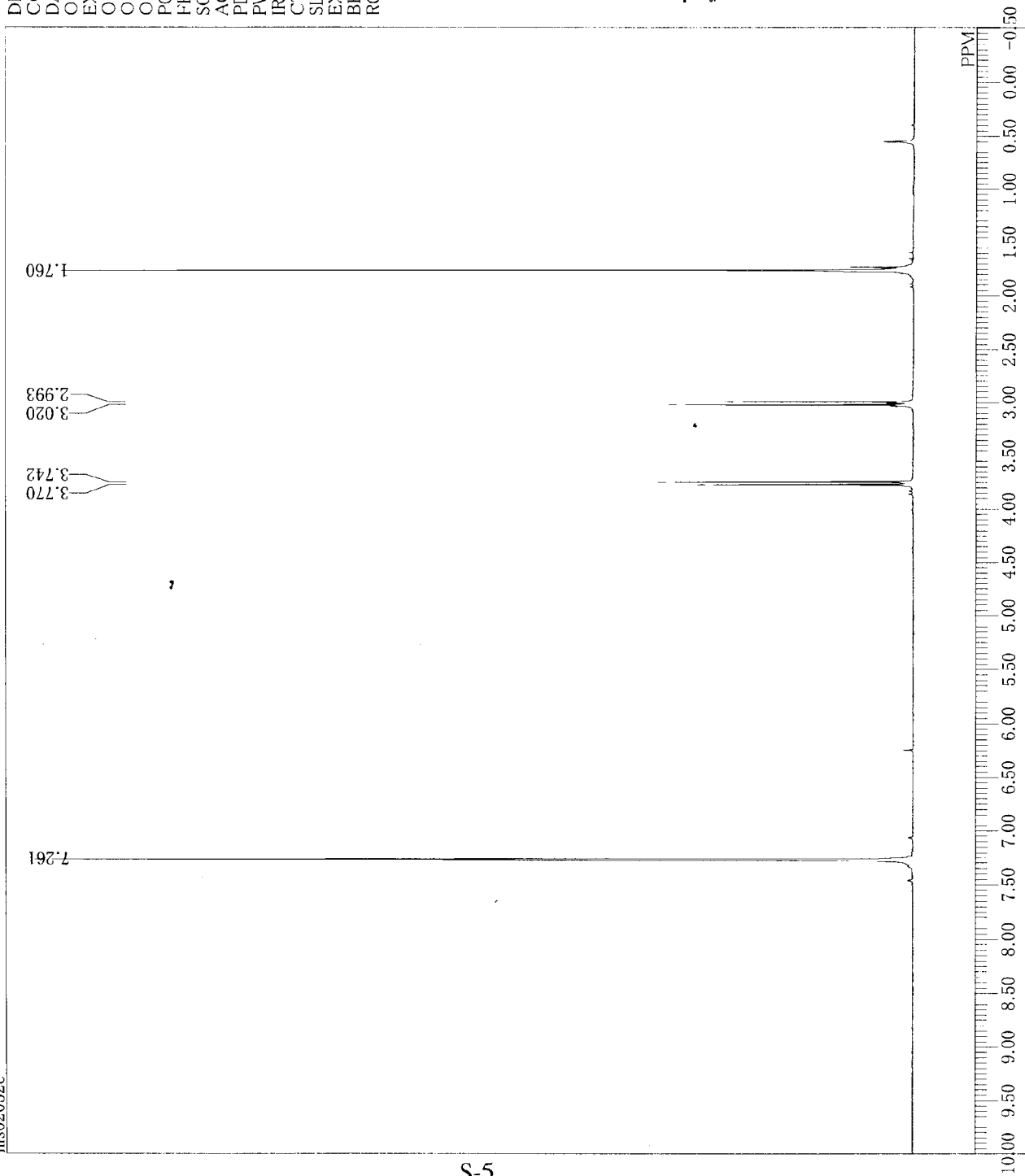


Figure 4. ¹H-NMR of dodecathiazoline 23

hfs02052b-bcm

C:\Users\Yhan\hfs02052b-bcm.1

DFILE
COMNT
DATIM
OBNUC
EXMOD
OBFRQ
OBSET
OBFIN
POINT
FREQU
SCANS
ACQTM
PD
PW1
IRNUC
CTEMP
SLVNT
EXREF
BF
RGAIN

hfs02052b-bcm
02-03-2005 07:53:14
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single_pulse_dec
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5.35 KHz
5.86 Hz
32768
32938.08 Hz
11200
0.9948 sec
1.5000 sec
3.13 usec
1H
18.0 c
CDCL3
77.00 ppm
0.12 Hz
60

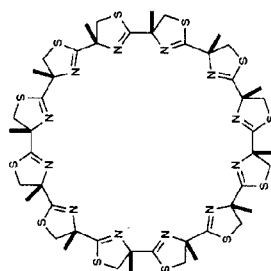
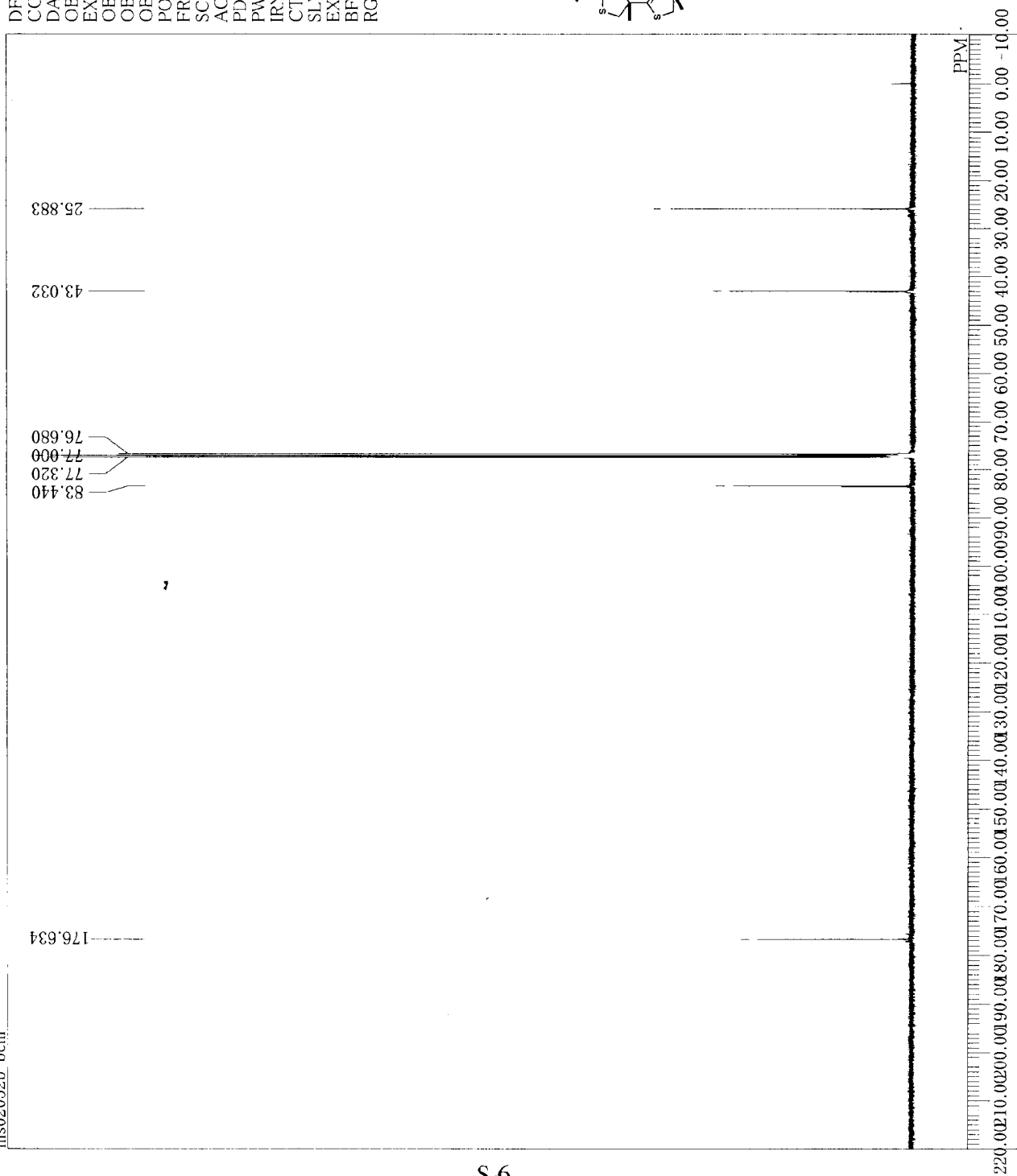


Figure 5. ¹³C-NMR of dodecathiazoline 23

hfs02047b

DFILE
COMNT
DATIM
OBNUC
EXMOD
OBFRQ
OBSET
OBFIN
POINT
FREQU
SCANS
ACQTM
PD
PWI
IRNUC
CTEMP
SIVNT
EXREF
BF
RGAIN

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1H
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4.19 KHz
7.29 Hz
8192
7503.00 Hz
8
1.0918 sec
30.0000 sec
6.00 usec
1H
24.3 c
CDCL3
7.26 ppm
0.12 Hz
42

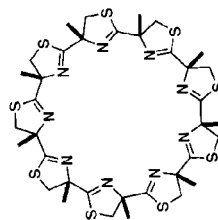
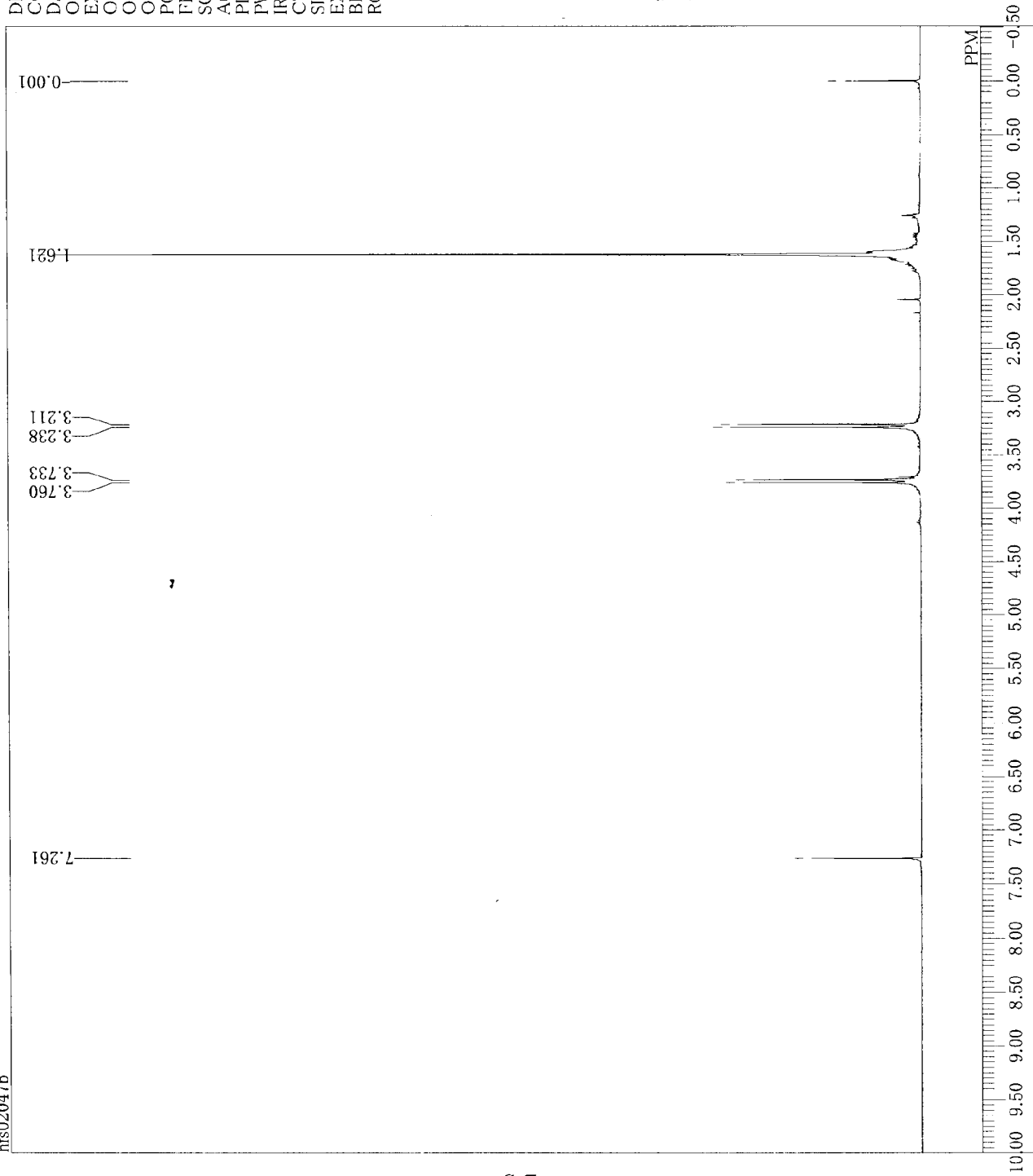


Figure 6. ¹H-NMR of nonathiazoline 25

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 DEADT 10.0 usec
 INVT 29.5 usec
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 CUMVY 1 times
 PD 2.0333 sec
 ACQTM 966.6560 msec
 PRD 20.00000 msec
 INWT 10.0000 msec
 RESOL 1.03 Hz
 PW1 6.15 usec
 13C 13C
 OBNUC 125.40 MHz
 OBFRQ 143041.00 Hz
 OBSET 29
 PGAIN 14
 IRNUC 499.10 MHz
 IRFRQ 128250.00 Hz
 IRSET 50.0 usec
 IRPW 0
 IRNS 0

SCANS 10000 times
 SOLVT CDCL3
 SPINNING 10 Hz
 TEMP 24.6 C

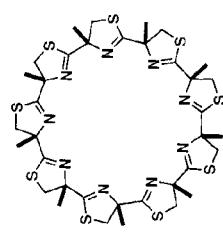
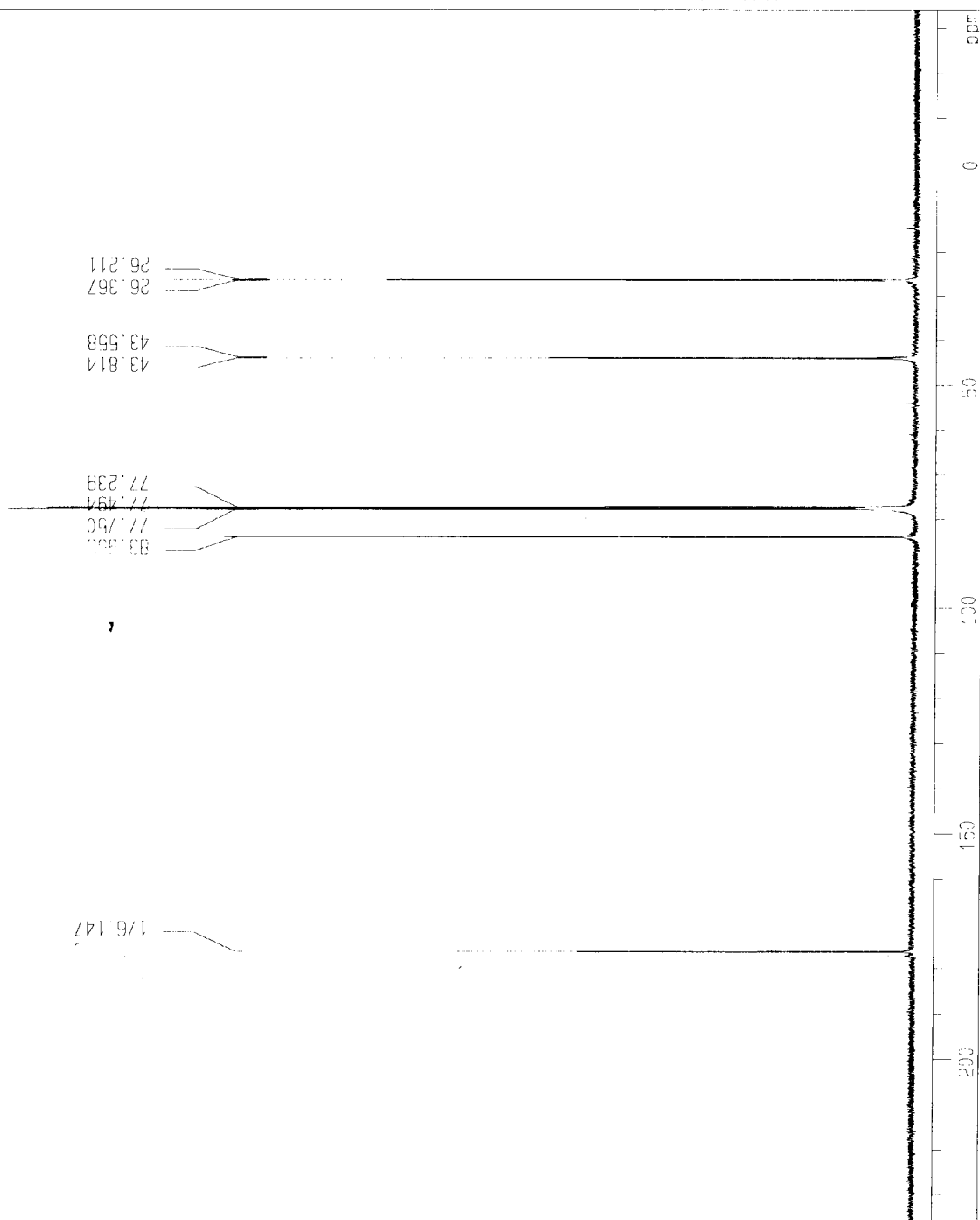


Figure 7. ¹³C-NMR of nonathiazoline 25