

### Lampiran 1. Perhitungan Pembuatan ZnO-PILS dan ZnO--PCH

#### 1. Larutan Saponit ZnO-PILS dan ZnO-PCH

$$\text{mol saponit} = \frac{\text{massa saponit}}{\text{Mr saponit}} = \frac{5 \text{ gram}}{480,19 \text{ g/mol}} = 0,01 \text{ mol} = 10 \text{ mmol}$$

$$\text{mol CTAB} = \frac{\text{massa CTAB}}{\text{Mr CTAB}} = \frac{3 \text{ gram}}{364,46 \text{ g/mol}} = 0,008 \text{ mol} = 8 \text{ mmol}$$

$$\text{mol TMAOH} = \frac{\text{massa TMAOH}}{\text{Mr TMAOH}} = \frac{1,015 \text{ gram}}{91,154 \text{ g/mol}} = 0,01 \text{ mol} = 10 \text{ mmol}$$

#### 2. Larutan Penilar

$$\begin{aligned} \text{mol Zn - asetat} &= \frac{\text{massa Zn - asetat}}{\text{Mr Zn - asetat}} = \frac{4,43 \text{ gram}}{219,50 \text{ g/mol}} \\ &= 0,02 \text{ mol} = 20 \text{ mmol} = 4 \text{ mmol/g} \end{aligned}$$

$$\begin{aligned} \text{massa Zn} &= \text{Ar Zn} \times \text{mol Zn - asetat} \\ &= 65,39 \text{ g/mol} \times 0,004 \text{ mol} = 0,261 \text{ gram} \end{aligned}$$

$$\begin{aligned} \%b/b \text{ Zn} &= \frac{\text{massa Zn}}{\text{massa saponit}} \times 100\% \\ &= \frac{0,261 \text{ gram}}{5 \text{ gram}} \times 100\% = 5,2 \% b/b \end{aligned}$$

$$\begin{aligned} \text{mol TEOS} &= \frac{\text{massa TEOS}}{\text{Mr TEOS}} = \frac{4,7 \text{ gram}}{208,33 \text{ g/mol}} \\ &= 0,02 \text{ mol} = 20 \text{ mmol} = 4 \text{ mmol/g} \end{aligned}$$

$$\begin{aligned} \text{massa Si} &= \text{Ar Si} \times \text{mol TEOS} \\ &= 28,085 \text{ g/mol} \times 0,004 \text{ mol} = 0,126 \text{ gram} \end{aligned}$$

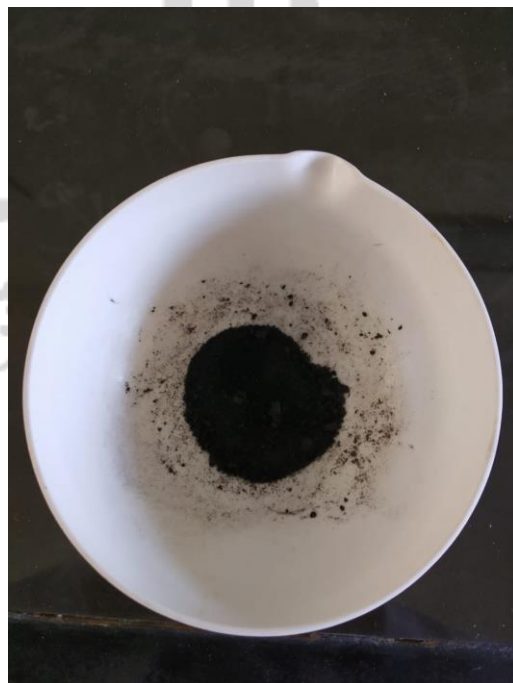
$$\begin{aligned} \%b/b \text{ Si} &= \frac{\text{massa Si}}{\text{massa saponit}} \times 100\% \\ &= \frac{0,126 \text{ gram}}{5 \text{ gram}} \times 100\% = 2,5 \% b/b \end{aligned}$$

**Lampiran 2. Pembuatan Katalis ZnO-PILS dan ZnO-PCH**

a. Hasil katalis ZnO-PILS yang telah dikalsinasi



b. Hasil katalis ZnO-PCH yang telah dikalsinasi



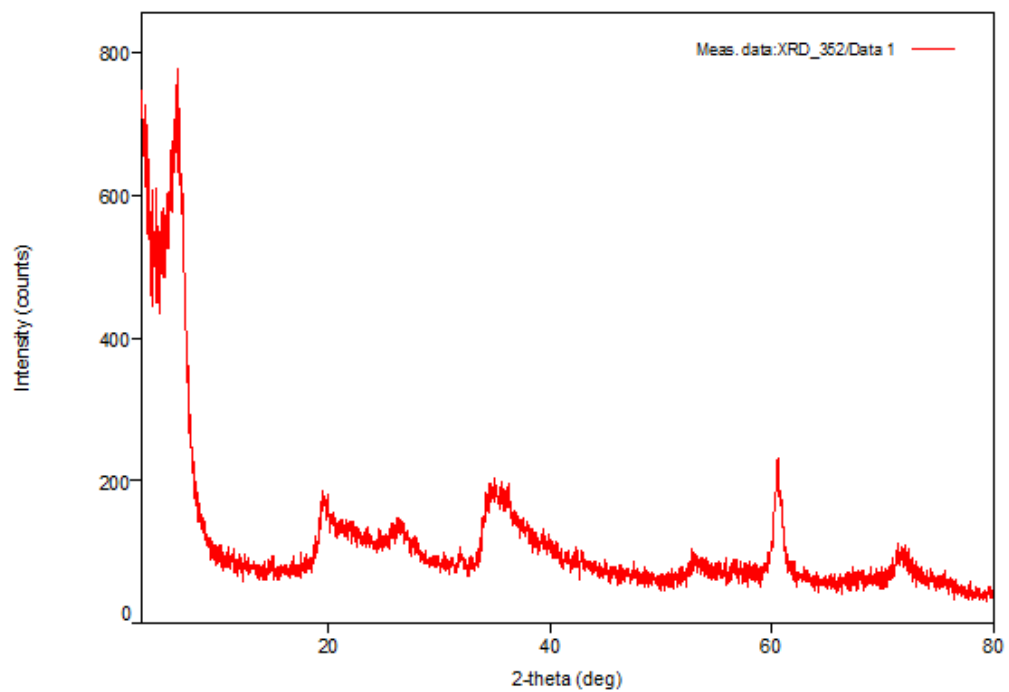
### Lampiran 3. Hasil Analisis XRD

#### a. Hasil XRD katalis ZnO-PILS

##### General information

Analysis date	2019/05/06 11:06:19	Measurement date	2019/05/06 10:54:48
Sample name	XRD/Zn-PILS B	Operator	
File name	XRD_352.raw		
Comment			

##### Measurement profile



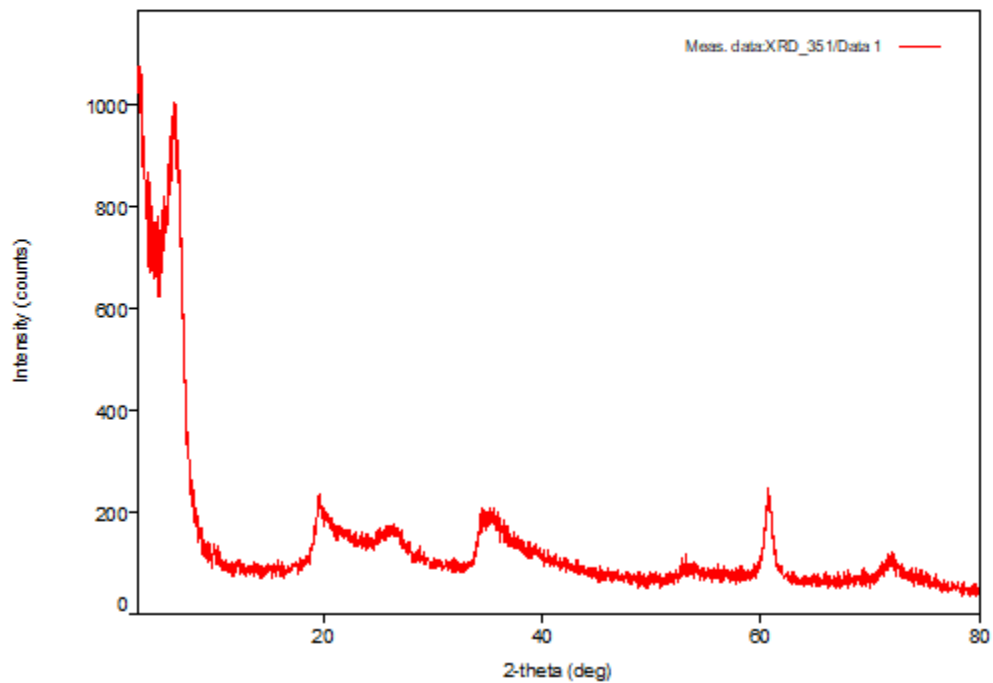
الجمهورية العربية السورية  
الجامعة اللبنانية  
الكلية الهندسية  
الهندسة المدنية

## b. Hasil XRD katalis ZNO-PCH

## General information

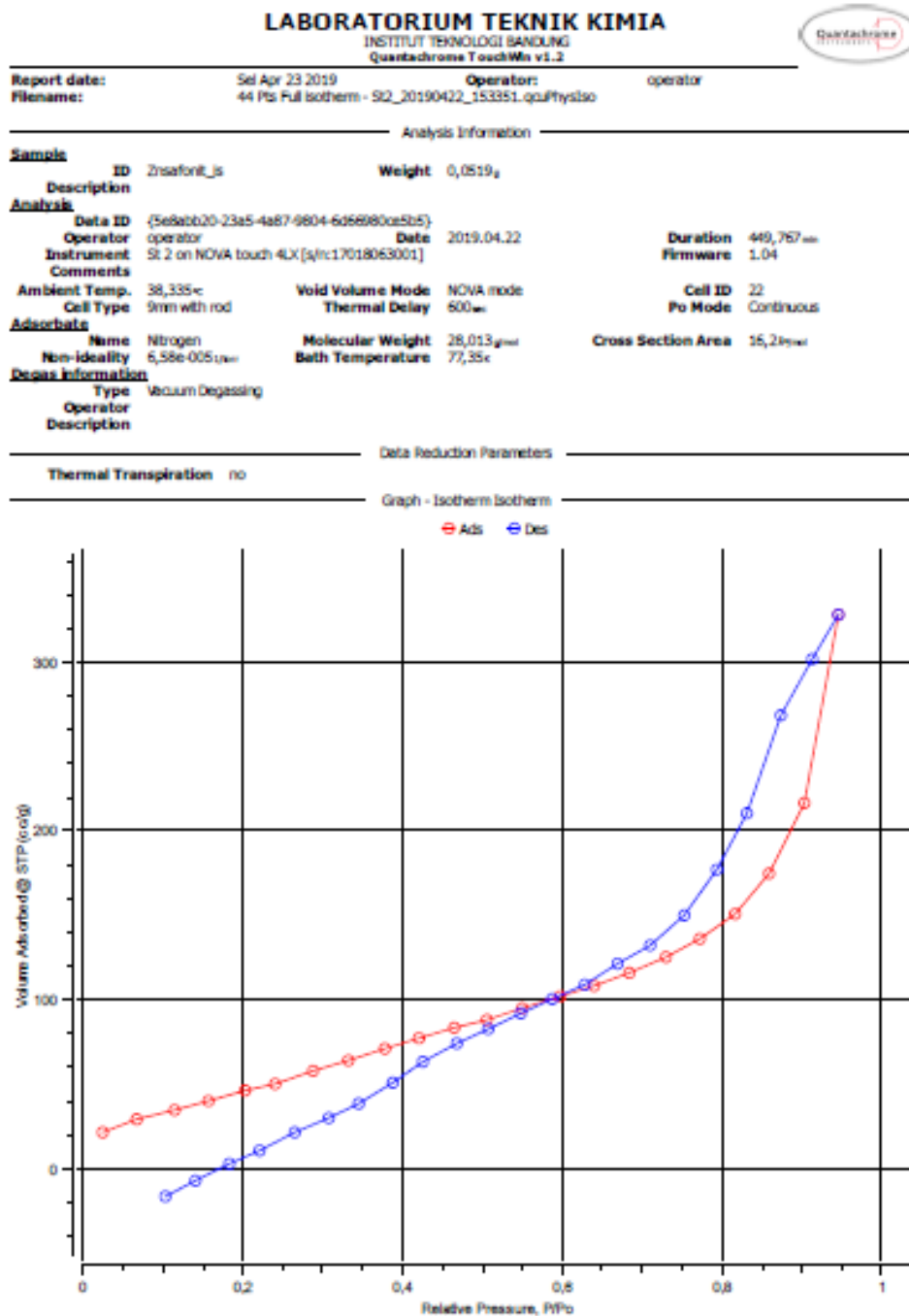
Analysis date	2019/05/06 11:05:04	Measurement date	2019/05/06 10:43:25
Sample name	XRD/Zn-PCH	Operator	
File name	XRD_351.raw		
Comment			

## Measurement profile

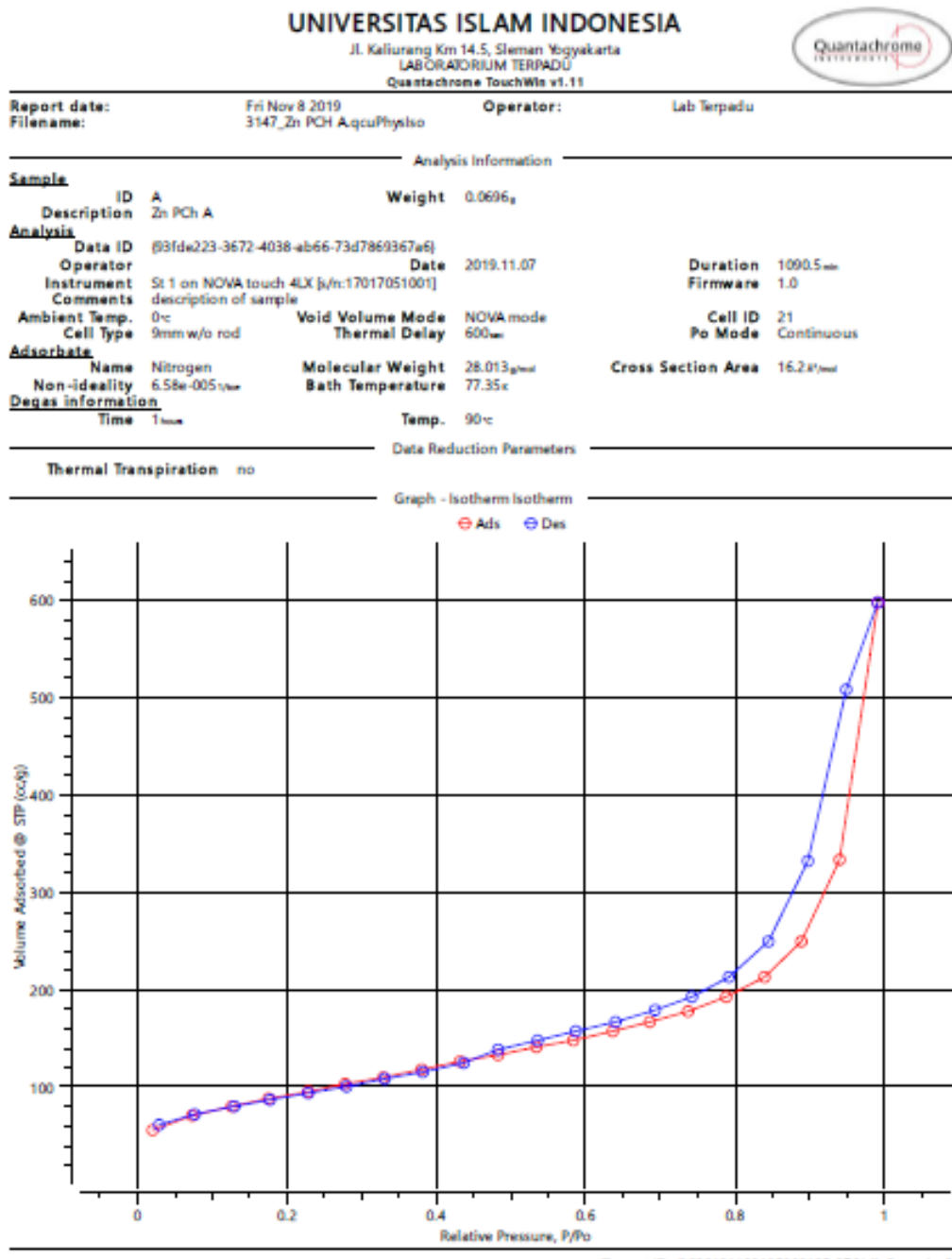


## Lampiran 4. Hasil Analisis GSA

### a. Grafik isotherm ZnO-PILS



## b. Grafik isotherm ZnO-PCH



## c. Summary ZnO-PILS

LABORATORIUM TEKNIK KIMIA				INSTITUT TEKNOLOGI BANDUNG		Quantachrome TouchWin v1.2	
Report date:	Sel Apr 23 2019	Operator:	operator				
Filename:	44 Pts Full Isotherm - St2_20190422_153351.qcuPhysIso						
Analysis Information							
<b>Sample</b>	ID	Znsafonit_is	Weight	0,0519 <sub>g</sub>			
Description							
<b>Analysis</b>	Data ID	{Se8abb20-23a5-4a87-9804-6d66980ce5b5}	Date	2019.04.22		Duration	449,767 <sub>min</sub>
Operator	operator					Firmware	1.04
Instrument	St 2 on NOVA touch 4LX [s/n:17018063001]						
Comments	St 2 on NOVA touch 4LX [s/n:17018063001]						
Ambient Temp.	38,335 <sub>°C</sub>	Void Volume Mode	NOVA mode		Cell ID	22	
Cell Type	9mm with rod	Thermal Delay	600 <sub>sec</sub>		Po Mode	Continuous	
<b>Adsorbate</b>	Name	Nitrogen	Molecular Weight	28,013 <sub>g/mol</sub>		Cross Section Area	16,24 <sub>mm<sup>2</sup>/mol</sub>
Non-ideality	6,58e-005 <sub>1/ Torr</sub>	Bath Temperature	77,35 <sub>K</sub>				
<b>Degas information</b>	Type	Vacuum Degassing					
Operator							
Description							
Data Reduction Parameters							
Thermal Transpiration	no	Temp. Comp	yes				
Thickness Method	deBoer						
<b>Adsorbate Model</b>	Name	Nitrogen	Molecular Weight	28,0134 <sub>g</sub>		Cross Section Area	16,24 <sub>mm<sup>2</sup>/mol</sub>
Bath Temperature	77,35 <sub>K</sub>						
Total Pore Volume results							
			Total Pore Volume	5,0926e-001 <sub>cc/g</sub>			
			for pores smaller than	18,64 <sub>nm (radius)</sub>			
			at relative pressure	0,94557			

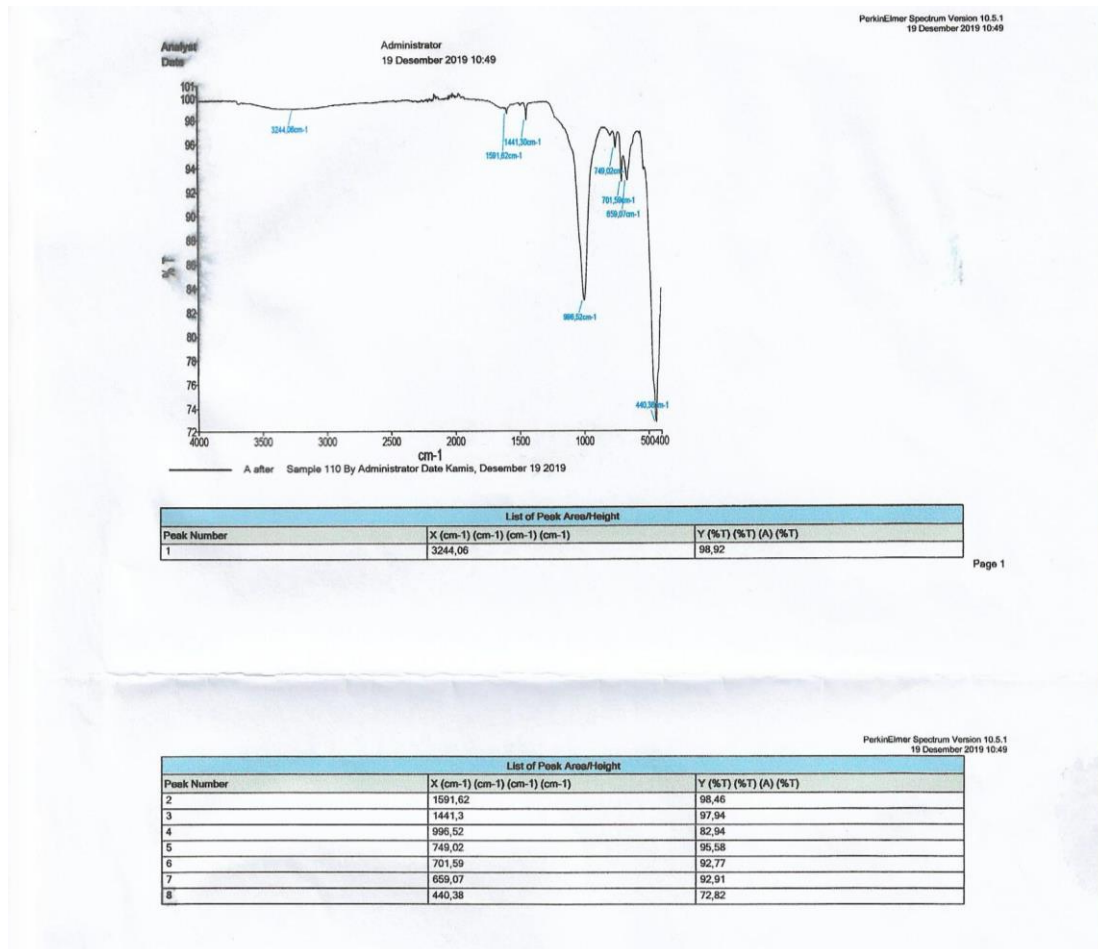
## d. Summary ZnO-PCH

UNIVERSITAS ISLAM INDONESIA				Jl. Kaliurang Km 14,5, Sleman Yogyakarta		LABORATORIUM TERPADU		Quantachrome TouchWin v1.11	
Report date:	Fri Nov 8 2019	Operator:	Lab Terpadu						
Filename:	3147_Zn PCH A.qcuPhysIso								
Analysis Information									
<b>Sample</b>	ID	A	Weight	0,0696 <sub>g</sub>					
Description	Zn PCH A								
<b>Analysis</b>	Data ID	{93fde223-3672-4038-ab66-73d7869367a6}	Date	2019.11.07		Duration	1090,5 <sub>min</sub>		
Operator	operator					Firmware	1.0		
Instrument	St 1 on NOVA touch 4LX [s/n:17017051001]								
Comments	description of sample								
Ambient Temp.	0 <sub>°C</sub>	Void Volume Mode	NOVA mode		Cell ID	21			
Cell Type	9mm w/o rod	Thermal Delay	600 <sub>sec</sub>		Po Mode	Continuous			
<b>Adsorbate</b>	Name	Nitrogen	Molecular Weight	28,013 <sub>g/mol</sub>		Cross Section Area	16,24 <sub>mm<sup>2</sup>/mol</sub>		
Non-ideality	6,58e-005 <sub>1/ Torr</sub>	Bath Temperature	77,35 <sub>K</sub>						
<b>Degas information</b>	Time	1 <sub>hour</sub>							
Temp.	90 <sub>°C</sub>								
Data Reduction Parameters									
Thermal Transpiration	no	Temp. Comp	no						
Thickness Method	deBoer								
P-tags below 0.35	ignored								
<b>Adsorbate Model</b>	Name	Nitrogen	Molecular Weight	28,0134 <sub>g</sub>		Cross Section Area	16,24 <sub>mm<sup>2</sup>/mol</sub>		
Bath Temperature	77,35 <sub>K</sub>								
Area-Volume Summary results									
<b>Surface Area Results</b>									
Multipoint BET									
BJH adsorption									
BJH desorption									
<b>Pore Volume Results</b>									
BJH adsorption cumulative micropore volume									
BJH desorption cumulative micropore volume									
Total Pore Volume									
<b>Pore Size Results</b>									
BJH adsorption pore radius									
BJH desorption pore radius									
Average Pore Size									





## b. Hasil uji keasaman ZnO-PCH



البحر العربي  
البحر العربي  
البحر العربي

### Lampiran 8. Perhitungan Total Konversi dan Selektivitas Isopulegol

a. Konversi menggunakan ZnO-PILS

$$\text{Total konversi} = 100\% - \left( \frac{\text{luas area sitronelal hasil}}{\text{luas area sitronelal standar}} \times 100\% \right)$$

$$= 100\% - \left( \frac{8831426}{23155656} \times 100\% \right) = 61,86 \%$$

$$\text{Selektivitas isopulegol} = \frac{\text{luas area isopulegol}}{\text{luas area hasil}} \times 100$$

$$= \frac{130315}{1099101} \times 100\% = 11,85\%$$

b. Konversi menggunakan ZnO-PCH

$$\text{Total konversi} = 100\% - \left( \frac{\text{luas area sitronelal hasil}}{\text{luas area sitronelal standar}} \times 100\% \right)$$

$$= 100\% - \left( \frac{0}{23155656} \times 100\% \right) = 100 \%$$

$$\text{Selektivitas isopulegol} = \frac{\text{luas area isopulegol}}{\text{luas area hasil}} \times 100\%$$

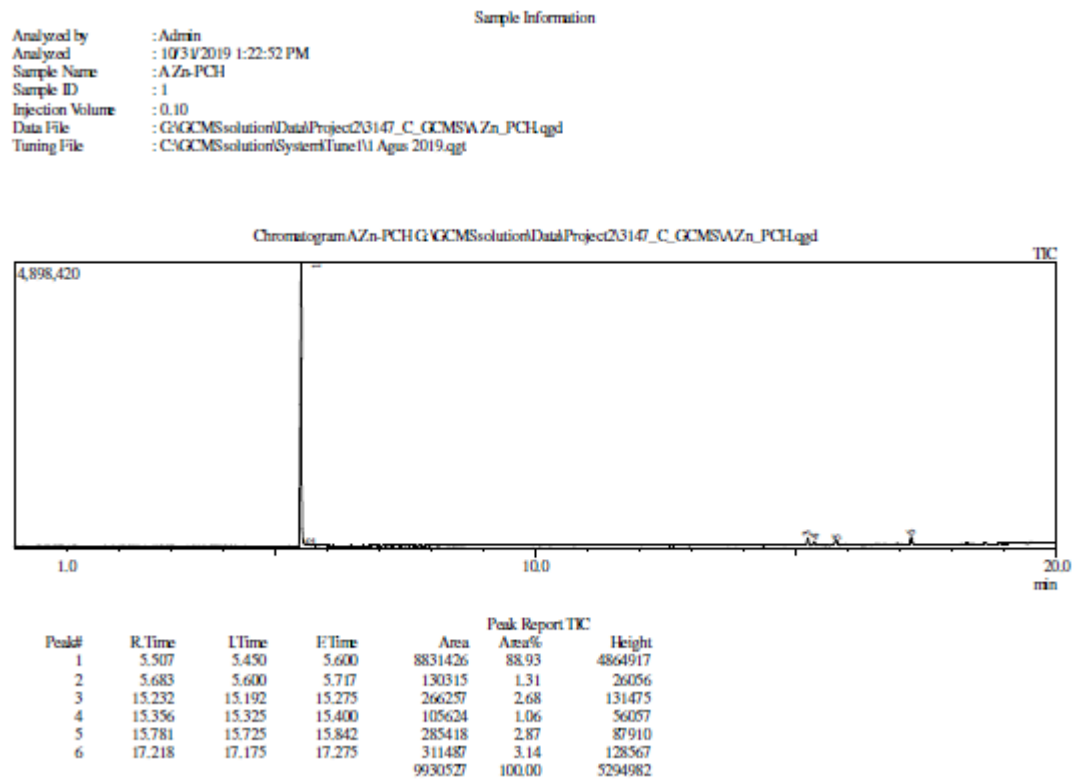
$$= \frac{74951058}{75783481} \times 100\% = 98,9 \%$$

**Lampiran 6. Proses Konversi Sitronelal Menjadi Isopulegol**

الجامعة الإسلامية  
UNIVERSITAS AL-AZHAR

## Lampiran 7. Hasil Analisis GCMS

### a. Kromatogram hasil konversi dengan katalis ZnO-PILS



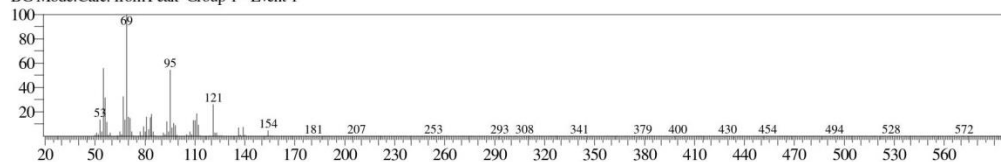
## Library

&lt;&lt; Target &gt;&gt;

Line#:1 R.Time:5.508(Scan#:662) MassPeaks:340

RawMode:Averaged 5.500-5.517(661-663) BasePeak:69.05(671242)

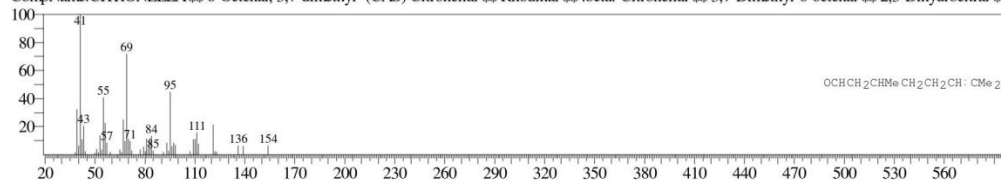
BG Mode:Calc. from Peak Group 1 - Event 1



Hit#:1 Entry:43606 Library:WILEY7.LIB

SI:97 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

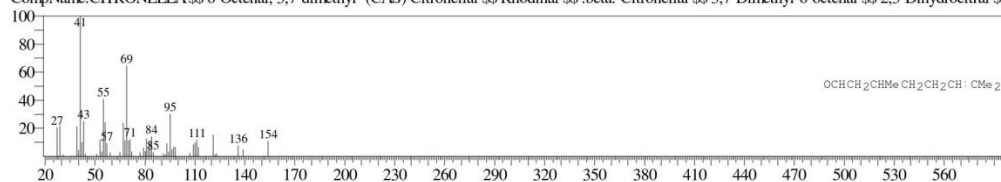
CompName: CITRONELLA \$\$ 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$ Rhodinall \$\$ .beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitraal \$\$



Hit#:2 Entry:43605 Library:WILEY7.LIB

SI:96 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

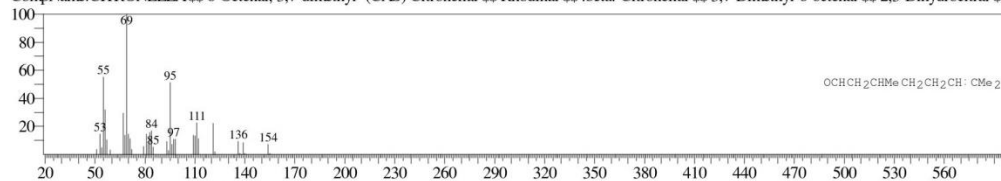
CompName: CITRONELLA \$\$ 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$ Rhodinall \$\$ .beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitraal \$\$



Hit#:3 Entry:43615 Library:WILEY7.LIB

SI:96 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

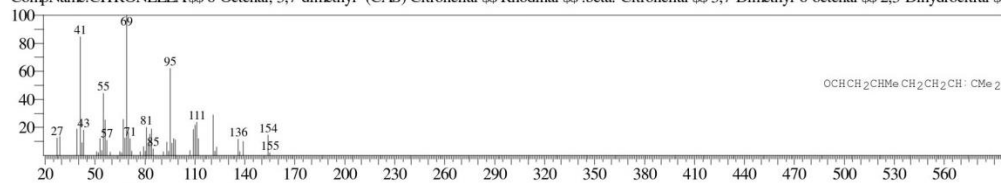
CompName: CITRONELLA \$\$ 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$ Rhodinall \$\$ .beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitraal \$\$



Hit#:4 Entry:43607 Library:WILEY7.LIB

SI:95 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

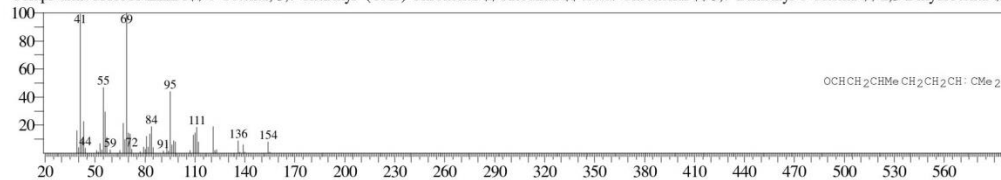
CompName: CITRONELLA \$\$ 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$ Rhodinall \$\$ .beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitraal \$\$



Hit#:5 Entry:43609 Library:WILEY7.LIB

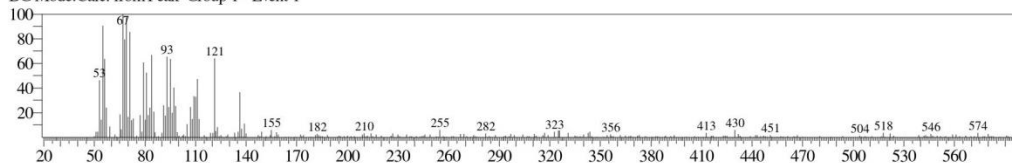
SI:95 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

CompName: CITRONELLA \$\$ 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$ Rhodinall \$\$ .beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitraal \$\$

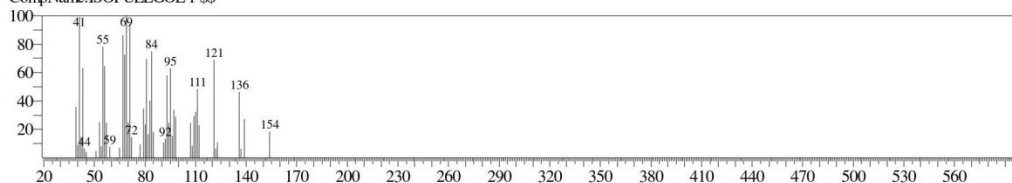


&lt;&lt; Target &gt;&gt;

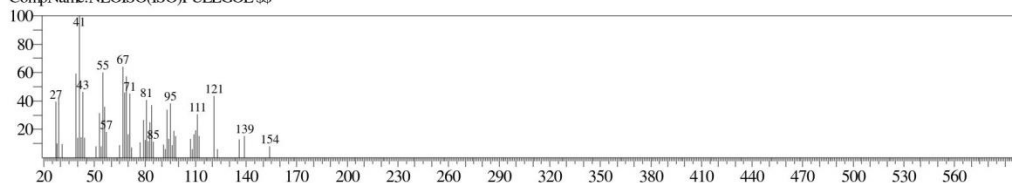
Line#:2 R.Time:5.683(Scan#:683) MassPeaks:290  
 RawMode:Averaged 5.675-5.692(682-684) BasePeak:67.05(1139)  
 BG Mode:Calc. from Peak Group 1 - Event 1



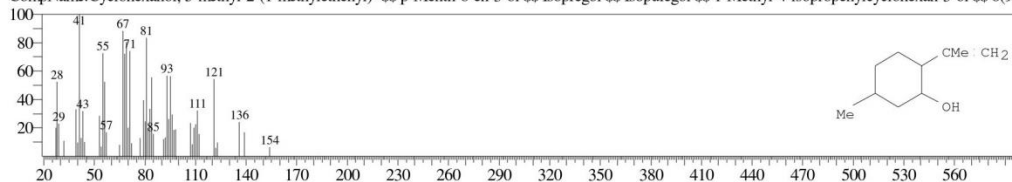
Hit#:1 Entry:44088 Library:WILEY7.LIB  
 SI:93 Formula:C10 H18 O CAS:0-00-0 MolWeight:154 RetIndex:0  
 CompName:ISOPULEGOL I \$\$



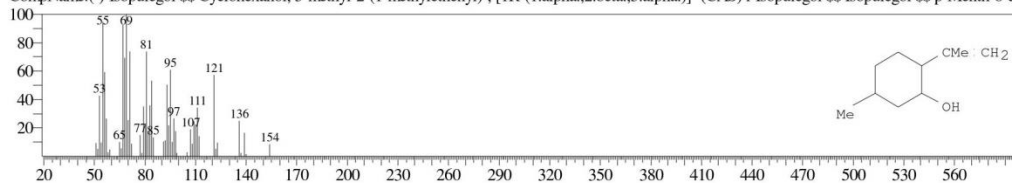
Hit#:2 Entry:42947 Library:WILEY7.LIB  
 SI:93 Formula:C10 H18 O CAS:21290-09-5 MolWeight:154 RetIndex:0  
 CompName:NEOISO(ISO)PULEGOL \$\$



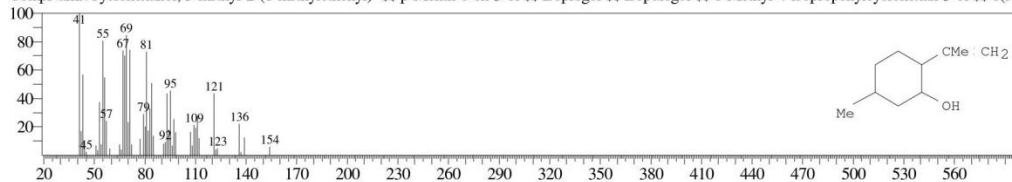
Hit#:3 Entry:43877 Library:WILEY7.LIB  
 SI:92 Formula:C10 H18 O CAS:7786-67-6 MolWeight:154 RetIndex:0  
 CompName:Cyclohexanol, 5-methyl-2-(1-methylethyl)- \$\$ p-Menth-8-en-3-ol \$\$ Isopregol \$\$ Isopulegol \$\$ 1-Methyl-4-isopropenylcyclohexan-3-ol \$\$ 8(9)-



Hit#:4 Entry:43858 Library:WILEY7.LIB  
 SI:92 Formula:C10 H18 O CAS:89-79-2 MolWeight:154 RetIndex:0  
 CompName:(-)-Isopulegol \$\$ Cyclohexanol, 5-methyl-2-(1-methylethyl)-, [1R-(1.alpha.,2.beta.,5.alpha.)]- (CAS) l-Isopulegol \$\$ Isopulegol \$\$ p-Menth-8-en

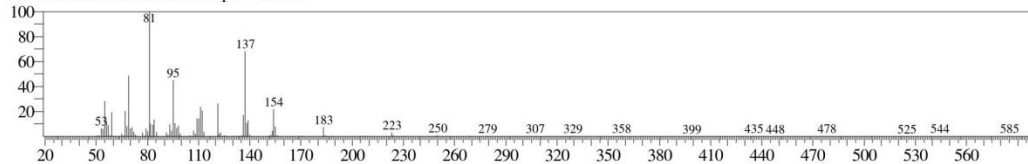


Hit#:5 Entry:43878 Library:WILEY7.LIB  
 SI:92 Formula:C10 H18 O CAS:7786-67-6 MolWeight:154 RetIndex:0  
 CompName:Cyclohexanol, 5-methyl-2-(1-methylethyl)- \$\$ p-Menth-8-en-3-ol \$\$ Isopregol \$\$ Isopulegol \$\$ 1-Methyl-4-isopropenylcyclohexan-3-ol \$\$ 8(9)-



&lt;&lt; Target &gt;&gt;

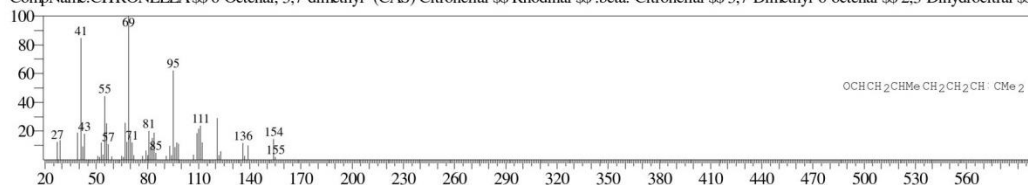
Line#:3 R.Time:15.233(Scan#:1829) MassPeaks:326  
 RawMode:Averaged 15.225-15.242(1828-1830) BasePeak:81.05(16244)  
 BG Mode:Calc. from Peak Group 1 - Event 1



Hit#:1 Entry:43607 Library:WILEY7.LIB

SI:83 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

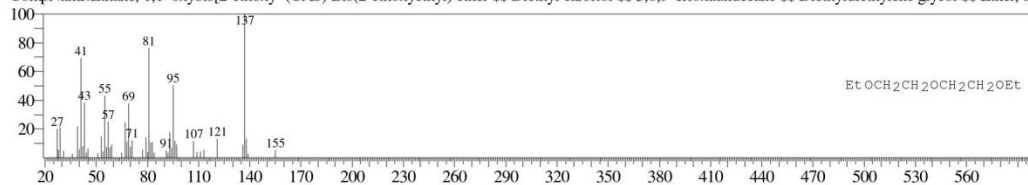
CompName: CITRONELLA 6-Octenal, 3,7-dimethyl- (CAS) Citronellal Rhodinal .beta.-Citronellal 3,7-Dimethyl-6-octenal 2,3-Dihydrocitra



Hit#:2 Entry:138305 Library:WILEY7.LIB

SI:82 Formula:C10 H19 BR O CAS:112-36-7 MolWeight:234 RetIndex:0

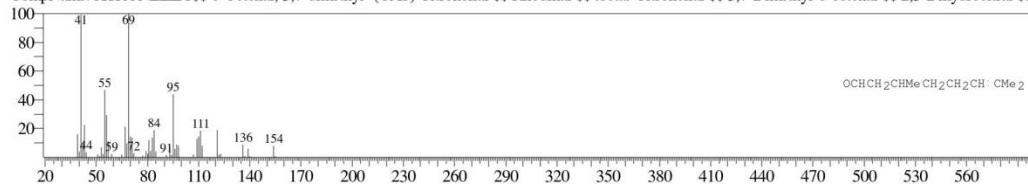
CompName: Ethane, 1,1'-oxybis[2-ethoxy- (CAS) Bis(2-ethoxyethyl) ether Diethyl carbitol 3,6,9-Trixaundecane Diethyl diethylene glycol Ether, bi



Hit#:3 Entry:43609 Library:WILEY7.LIB

SI:81 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

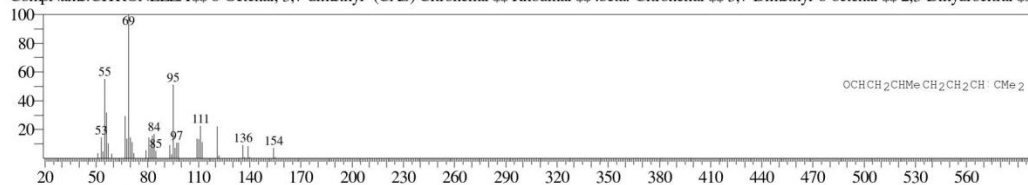
CompName: CITRONELLA 6-Octenal, 3,7-dimethyl- (CAS) Citronellal Rhodinal .beta.-Citronellal 3,7-Dimethyl-6-octenal 2,3-Dihydrocitra



Hit#:4 Entry:43615 Library:WILEY7.LIB

SI:80 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

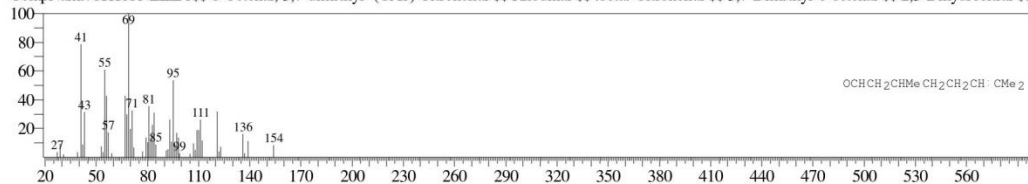
CompName: CITRONELLA 6-Octenal, 3,7-dimethyl- (CAS) Citronellal Rhodinal .beta.-Citronellal 3,7-Dimethyl-6-octenal 2,3-Dihydrocitra



Hit#:5 Entry:43617 Library:WILEY7.LIB

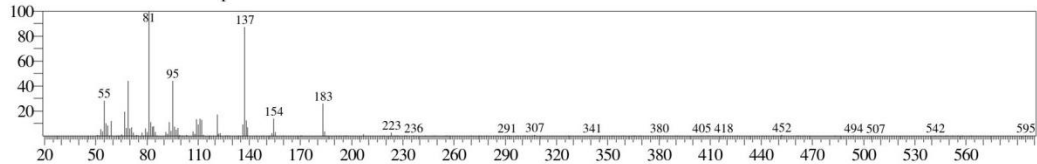
SI:80 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

CompName: CITRONELLA 6-Octenal, 3,7-dimethyl- (CAS) Citronellal Rhodinal .beta.-Citronellal 3,7-Dimethyl-6-octenal 2,3-Dihydrocitra



&lt;&lt; Target &gt;&gt;

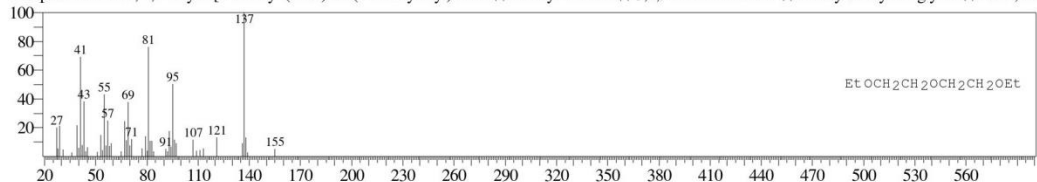
Line#:4 R.Time:15.358(Scan#:1844) MassPeaks:285  
 RawMode:Averaged 15.350-15.367(1843-1845) BasePeak:81.05(7955)  
 BG Mode:Calc. from Peak Group 1 - Event 1



Hit#1 Entry:138305 Library:WILEY7.LIB

SI:84 Formula:C10H19BR O CAS:112-36-7 MolWeight:234 RetIndex:0

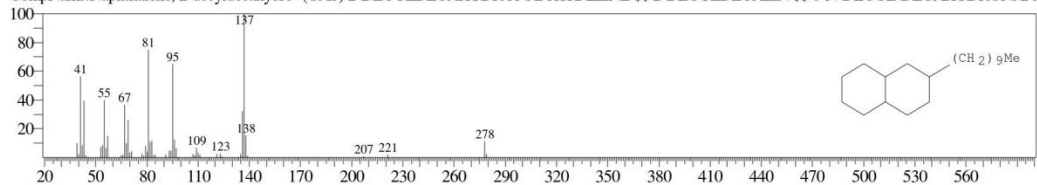
CompName:Ethane, 1,1'-oxybis[2-ethoxy- (CAS) Bis(2-ethoxyethyl) ether \$\$\$\$ Diethyl carbitol \$\$\$\$ 3,6,9-Trioxaundecane \$\$\$\$ Diethyldiethylene glycol \$\$\$\$ Ether, bi



Hit#2 Entry:189034 Library:WILEY7.LIB

SI:81 Formula:C20H38 CAS:54964-84-0 MolWeight:278 RetIndex:0

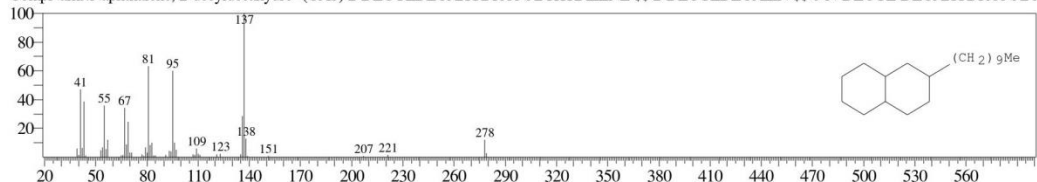
CompName:Naphthalene, 2-decyldcahydro- (CAS) 2-DECYLDECAHYDRONAPHTHALENE \$\$\$\$ 2-DECYLDECALIN \$\$\$\$ 6-N-DECYL-DECAHYDRONAPI



Hit#3 Entry:189035 Library:WILEY7.LIB

SI:80 Formula:C20H38 CAS:54964-84-0 MolWeight:278 RetIndex:0

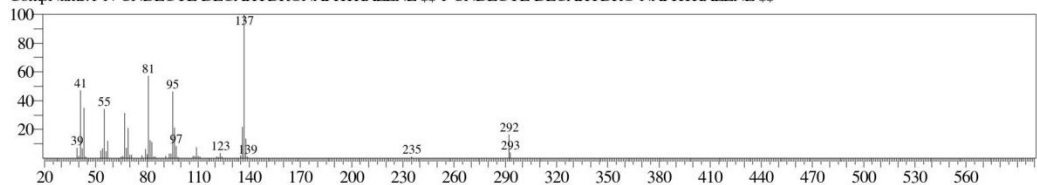
CompName:Naphthalene, 2-decyldcahydro- (CAS) 2-DECYLDECAHYDRONAPHTHALENE \$\$\$\$ 2-DECYLDECALIN \$\$\$\$ 6-N-DECYL-DECAHYDRONAPI



Hit#4 Entry:203825 Library:WILEY7.LIB

SI:80 Formula:C21H40 CAS:0-00-0 MolWeight:292 RetIndex:0

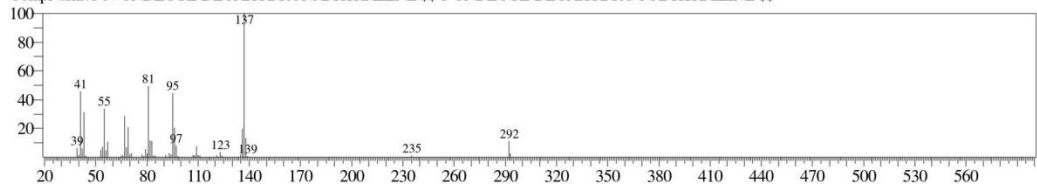
CompName:1-N-UNDECYL-DECAHYDRONAPHTHALENE \$\$\$\$ 1-UNDECYL-DECAHYDRO-NAPHTHALENE \$\$\$\$



Hit#5 Entry:203826 Library:WILEY7.LIB

SI:80 Formula:C21H40 CAS:0-00-0 MolWeight:292 RetIndex:0

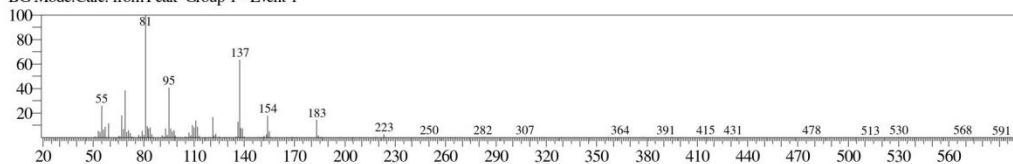
CompName:1-N-UNDECYL-DECAHYDRONAPHTHALENE \$\$\$\$ 1-UNDECYL-DECAHYDRO-NAPHTHALENE \$\$\$\$





&lt;&lt; Target &gt;&gt;

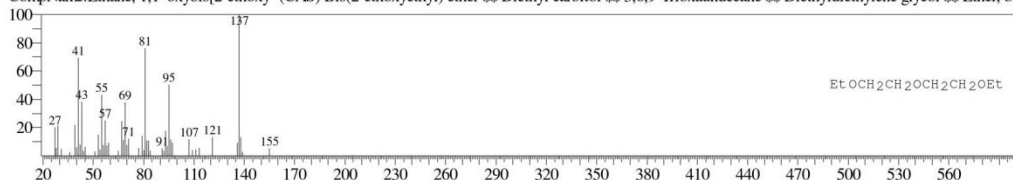
Line#:5 R.Time:15.783(Scan#:1895) MassPeaks:349  
 RawMode:Averaged 15.775-15.792(1894-1896) BasePeak:81.05(14015)  
 BG Mode:Calc. from Peak Group 1 - Event 1



Hit#:1 Entry:138305 Library:WILEY7.LIB

SI:83 Formula:C10 H19 BR O CAS:112-36-7 MolWeight:234 RetIndex:0

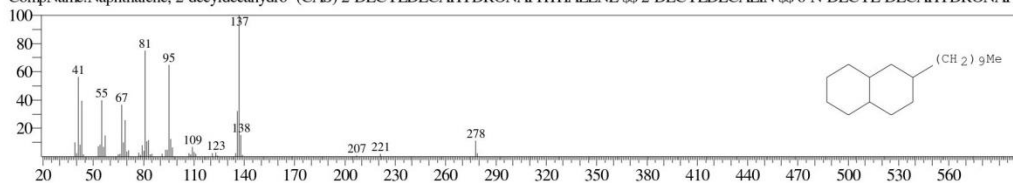
CompName:Ethane, 1,1'-oxybis[2-ethoxy- (CAS) Bis(2-ethoxyethyl) ether \$\$ Diethyl carbitol \$\$ 3,6,9-Trioxaundecane \$\$ Diethyldiethylene glycol \$\$ Ether, bi



Hit#:2 Entry:189034 Library:WILEY7.LIB

SI:80 Formula:C20 H38 CAS:54964-84-0 MolWeight:278 RetIndex:0

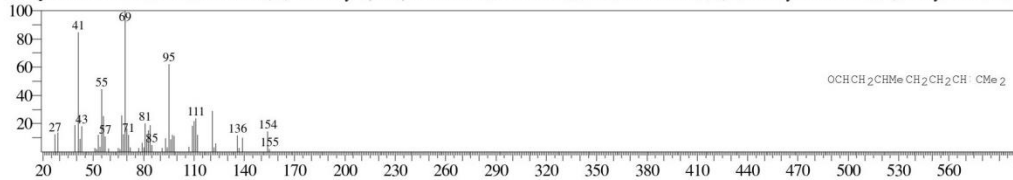
CompName:Naphthalene, 2-decyldcahydro- (CAS) 2-DECYLDECAHYDRONAPHTHALENE \$\$ 2-DECYLDECALIN \$\$ 6-N-DECYL-DECAHYDRONAPI



Hit#:3 Entry:43607 Library:WILEY7.LIB

SI:79 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

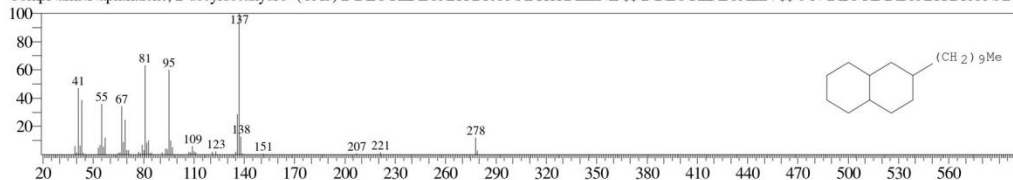
CompName:CITRONELLA \$\$ 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$ Rhodinal \$\$ .beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitra



Hit#:4 Entry:189035 Library:WILEY7.LIB

SI:79 Formula:C20 H38 CAS:54964-84-0 MolWeight:278 RetIndex:0

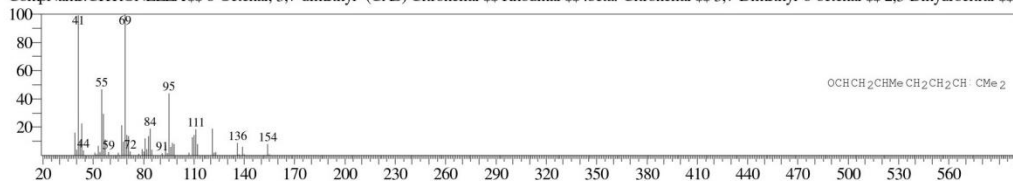
CompName:Naphthalene, 2-decyldcahydro- (CAS) 2-DECYLDECAHYDRONAPHTHALENE \$\$ 2-DECYLDECALIN \$\$ 6-N-DECYL-DECAHYDRONAPI



Hit#:5 Entry:43609 Library:WILEY7.LIB

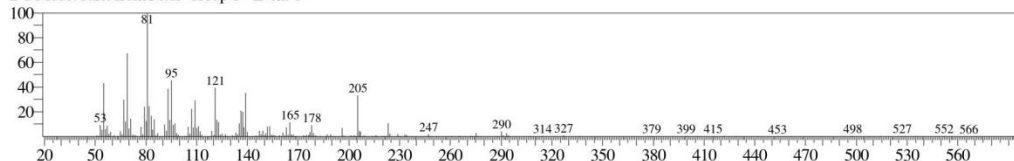
SI:79 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

CompName:CITRONELLA \$\$ 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$ Rhodinal \$\$ .beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitra



&lt;&lt; Target &gt;&gt;

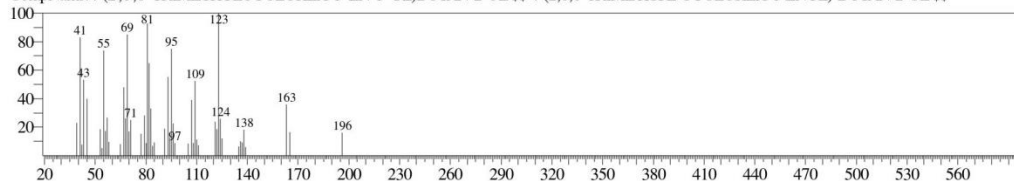
Line#:6 R.Time:17.217(Scan#:2067) MassPeaks:328  
 RawMode:Averaged 17.208-17.225(2066-2068) BasePeak:81.00(11509)  
 BG Mode:Calc. from Peak Group 1 - Event 1



Hit#:1 Entry:91174 Library:WILEY7.LIB

SI:80 Formula:C13 H24 O CAS:0-00-0 MolWeight:196 RetIndex:0

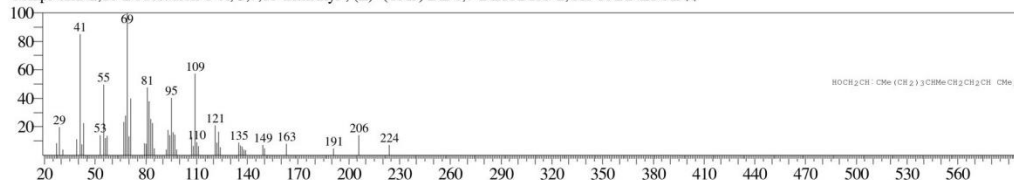
CompName:4-(2',6',6'-TRIMETHYLCYCLOHEX-1'-EN-1'-YL)BUTAN-2-OL \$\$ 4-(2,6,6-TRIMETHYL-CYCLOHEX-1-ENYL)-BUTAN-2-OL \$\$



Hit#:2 Entry:126228 Library:WILEY7.LIB

SI:79 Formula:C15 H28 O CAS:20576-57-2 MolWeight:224 RetIndex:0

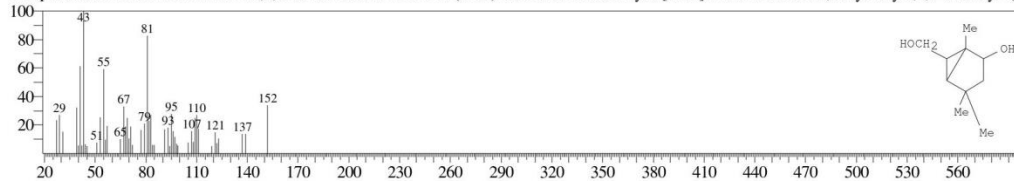
CompName:2,10-Dodecadien-1-ol, 3,7,11-trimethyl-, (Z)- (CAS) DL-6,7-DIHYDRO-2-CIS-FARNESOL \$\$



Hit#:3 Entry:61167 Library:WILEY7.LIB

SI:78 Formula:C10 H18 O2 CAS:58795-41-8 MolWeight:170 RetIndex:0

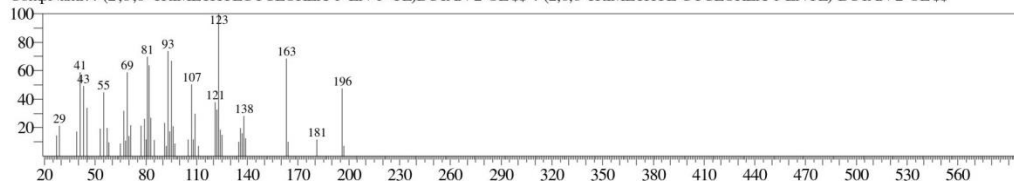
CompName:6-HYDROXYMETHYL-1,4,4-TRIMETHYL-BICYCLO(3.1.0)HEXAN-2-OL \$\$ Bicyclo[3.1.0]hexane-6-methanol, 2-hydroxy-1,4,4-trimethyl- (C



Hit#:4 Entry:91175 Library:WILEY7.LIB

SI:78 Formula:C13 H24 O CAS:0-00-0 MolWeight:196 RetIndex:0

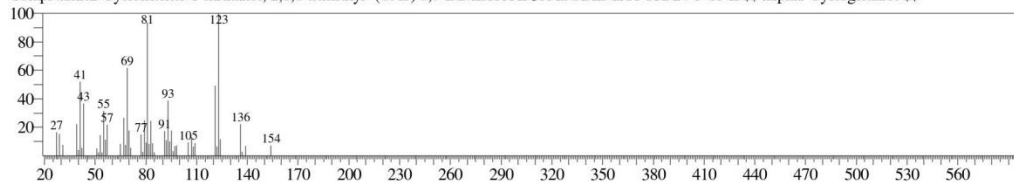
CompName:4-(2',6',6'-TRIMETHYLCYCLOHEX-1'-EN-1'-YL)BUTAN-2-OL \$\$ 4-(2,6,6-TRIMETHYL-CYCLOHEX-1-ENYL)-BUTAN-2-OL \$\$



Hit#:5 Entry:44098 Library:WILEY7.LIB

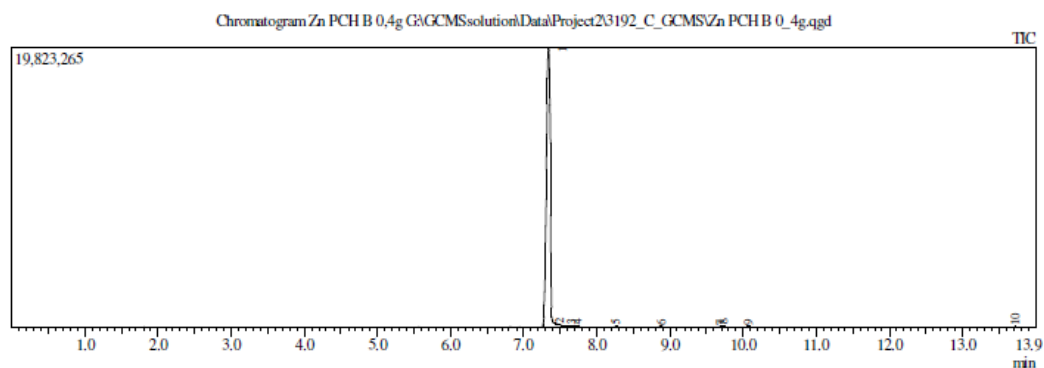
SI:78 Formula:C10 H18 O CAS:6627-74-3 MolWeight:154 RetIndex:0

CompName:2-Cyclohexene-1-methanol, 2,6,6-trimethyl- (CAS) 6,7-DIMETHYL-3H-ISOBENZOFURAN-1-ONE \$\$ .alpha.-Cyclogeraniol \$\$



## b. Kromatogram hasil konversi dengan katalis ZnO-PCH

Sample Information  
 Analyzed by : Admin  
 Analyzed : 11/8/2019 11:39:14 AM  
 Sample Name : Zn PCH B 0,4g  
 Sample ID : 2  
 Injection Volume : 0.10  
 Data File : G:\GCMSsolution\Data\Project2\3192\_C\_GCMS\Zn PCH B 0\_4g.qgd  
 Tuning File : C:\GCMSsolution\System1\Tune\1 Agas 2019.qgt



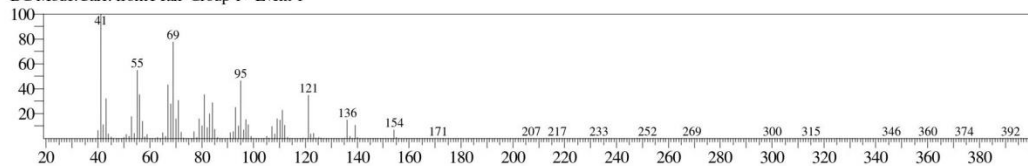
Peak#	R.Time	I.Time	F.Time	Area	Area%	Height
1	7.339	7.245	7.785	74951058	98.90	19781852
2	7.492	7.470	7.530	73156	0.10	49728
3	7.662	7.620	7.700	47730	0.06	24004
4	7.736	7.700	7.775	78991	0.10	40551
5	8.268	8.230	8.315	86589	0.11	41458
6	8.874	8.830	8.935	130825	0.17	50507
7	9.690	9.655	9.720	129631	0.17	49289
8	9.738	9.720	9.800	137331	0.18	60374
9	10.075	10.040	10.125	88749	0.12	37386
10	13.729	13.690	13.770	59421	0.08	26491
				75783481	100.00	20161640



## Library

&lt;&lt; Target &gt;&gt;

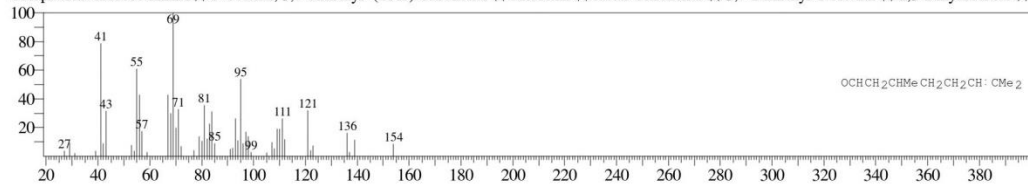
Line# 1 R.Time: 7.340(Scan#: 1469) MassPeaks: 247  
 RawMode: Averaged 7.335-7.345(1468-1470) BasePeak: 41.00(2126431)  
 BG Mode: Calc. from Peak Group 1 - Event 1



Hit#: 1 Entry: 43617 Library: WILEY7.LIB

SI: 95 Formula: C<sub>10</sub>H<sub>18</sub>O CAS: 106-23-0 MolWeight: 154 RetIndex: 0

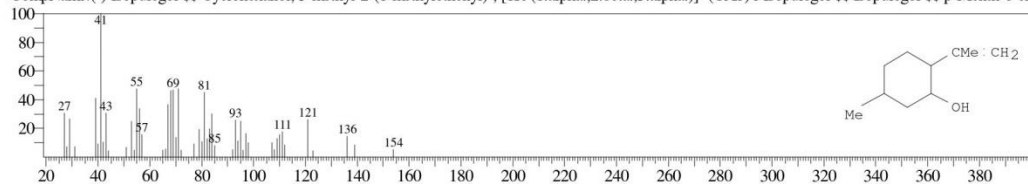
CompName: CITRONELLA 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$.beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitra



Hit#: 2 Entry: 43852 Library: WILEY7.LIB

SI: 94 Formula: C<sub>10</sub>H<sub>18</sub>O CAS: 89-79-2 MolWeight: 154 RetIndex: 0

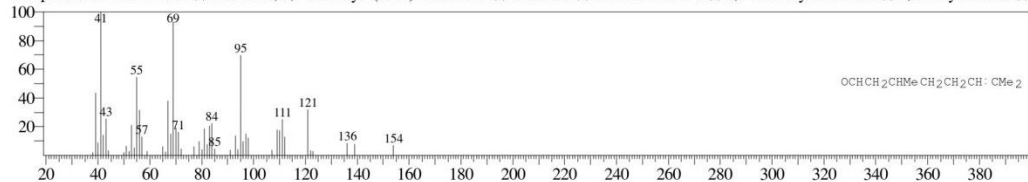
CompName: (-)-Isopulegol \$\$ Cyclohexanol, 5-methyl-2-(1-methylethenyl)-, [1R-(1.alpha.,2.beta.,5.alpha.)]- (CAS) l-Isopulegol \$\$ Isopulegol \$\$ p-Menth-8-en



Hit#: 3 Entry: 43604 Library: WILEY7.LIB

SI: 94 Formula: C<sub>10</sub>H<sub>18</sub>O CAS: 106-23-0 MolWeight: 154 RetIndex: 0

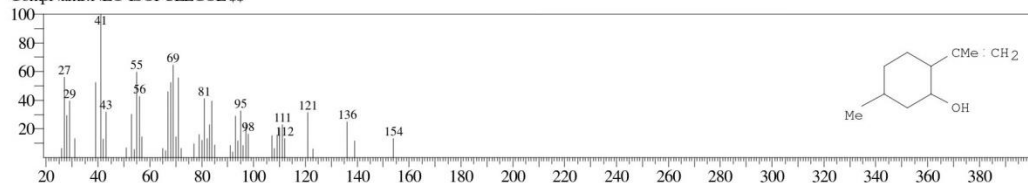
CompName: CITRONELLA 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$.beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitra



Hit#: 4 Entry: 42836 Library: WILEY7.LIB

SI: 94 Formula: C<sub>10</sub>H<sub>18</sub>O CAS: 89-79-2 MolWeight: 154 RetIndex: 0

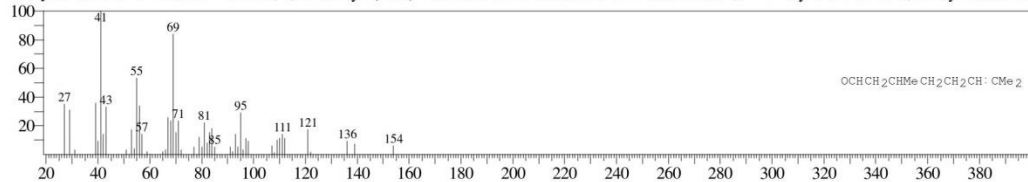
CompName: NEO-ISOPULEGOL



Hit#: 5 Entry: 43603 Library: WILEY7.LIB

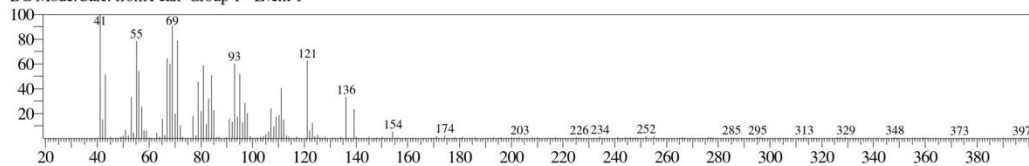
SI: 93 Formula: C<sub>10</sub>H<sub>18</sub>O CAS: 106-23-0 MolWeight: 154 RetIndex: 0

CompName: CITRONELLA 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$.beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitra



&lt;&lt; Target &gt;&gt;

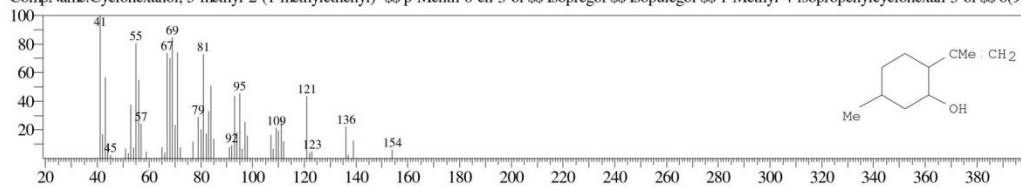
Line#:2 R.Time:7.490(Scan#:1499) MassPeaks:208  
 RawMode:Averaged 7.485-7.495(1498-1500) BasePeak:41.05(2986)  
 BG Mode:Calc. from Peak Group 1 - Event 1



Hit#:1 Entry:43878 Library:WILEY7.LIB

SI:94 Formula:C10 H18 O CAS:7786-67-6 MolWeight:154 RetIndex:0

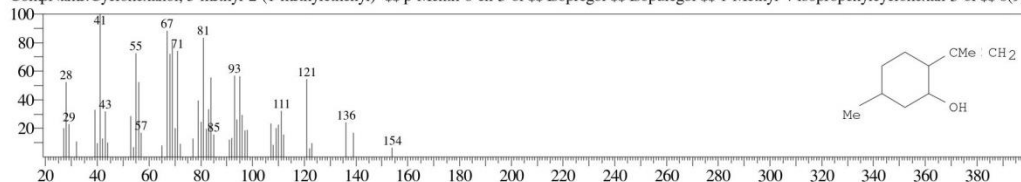
CompName:Cyclohexanol, 5-methyl-2-(1-methylethenyl)- \$\$ p-Menth-8-en-3-ol \$\$ Isopulegol \$\$ Isopulegol \$\$ 1-Methyl-4-isopropenylcyclohexan-3-ol \$\$ 8(9)-



Hit#:2 Entry:43877 Library:WILEY7.LIB

SI:94 Formula:C10 H18 O CAS:7786-67-6 MolWeight:154 RetIndex:0

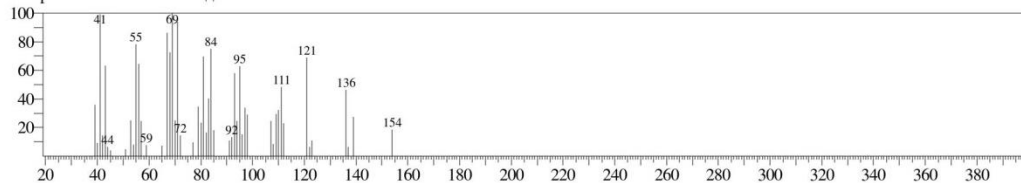
CompName:Cyclohexanol, 5-methyl-2-(1-methylethenyl)- \$\$ p-Menth-8-en-3-ol \$\$ Isopulegol \$\$ Isopulegol \$\$ 1-Methyl-4-isopropenylcyclohexan-3-ol \$\$ 8(9)-



Hit#:3 Entry:44088 Library:WILEY7.LIB

SI:94 Formula:C10 H18 O CAS:0-00-0 MolWeight:154 RetIndex:0

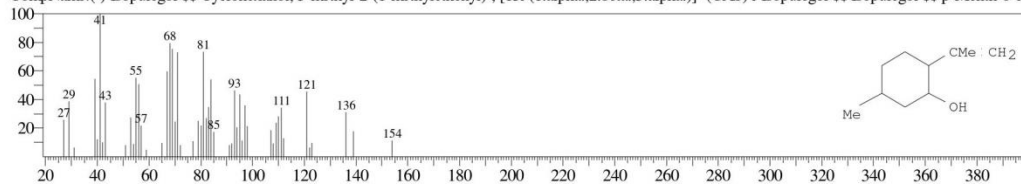
CompName:ISOPULEGOL 1 \$\$



Hit#:4 Entry:43853 Library:WILEY7.LIB

SI:94 Formula:C10 H18 O CAS:89-79-2 MolWeight:154 RetIndex:0

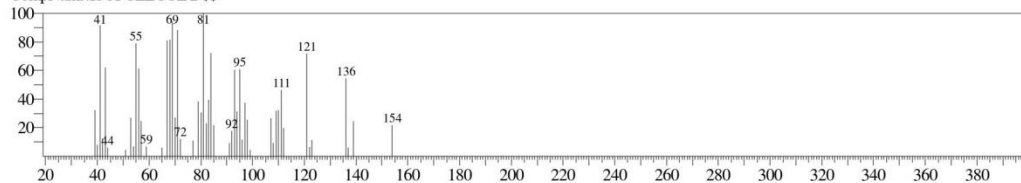
CompName:(-)-Isopulegol \$\$ Cyclohexanol, 5-methyl-2-(1-methylethenyl)-, [1R-(1.alpha.,2.beta.,5.alpha.)]- (CAS) l-Isopulegol \$\$ Isopulegol \$\$ p-Menth-8-en



Hit#:5 Entry:44091 Library:WILEY7.LIB

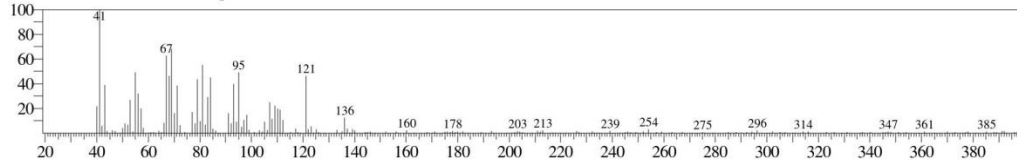
SI:93 Formula:C10 H18 O CAS:0-00-0 MolWeight:154 RetIndex:0

CompName:ISOPULEGOL 2 \$\$



&lt;&lt; Target &gt;&gt;

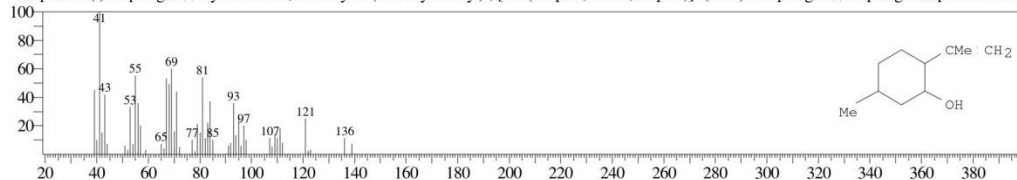
Line# 3 R.Time: 7.660(Scan#: 1533) MassPeaks: 227  
 RawMode: Averaged 7.655-7.665(1532-1534) BasePeak: 41.05(1874)  
 BG Mode: Calc. from Peak Group 1 - Event 1



Hit#: 1 Entry: 43851 Library: WILEY7.LIB

SI: 91 Formula: C<sub>10</sub>H<sub>18</sub>O CAS: 89-79-2 MolWeight: 154 RetIndex: 0

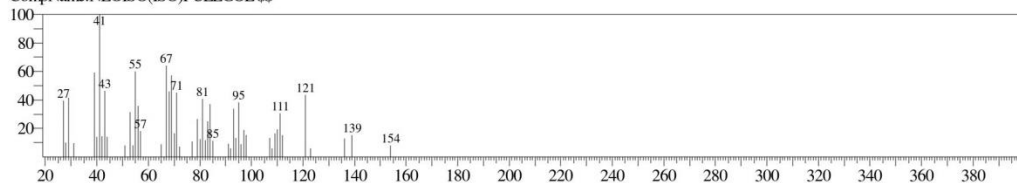
CompName: (-)-Isopulegol \$\$ Cyclohexanol, 5-methyl-2-(1-methylethenyl)-, [1R-(1.alpha.,2.beta.,5.alpha.)]- (CAS) 1-Isopulegol \$\$ Isopulegol \$\$ p-Menth-8-en



Hit#: 2 Entry: 42947 Library: WILEY7.LIB

SI: 91 Formula: C<sub>10</sub>H<sub>18</sub>O CAS: 21290-09-5 MolWeight: 154 RetIndex: 0

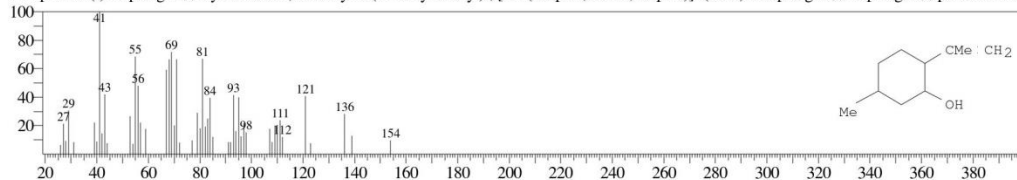
CompName: NEOISO(ISO)PULEGOL \$\$



Hit#: 3 Entry: 43855 Library: WILEY7.LIB

SI: 90 Formula: C<sub>10</sub>H<sub>18</sub>O CAS: 89-79-2 MolWeight: 154 RetIndex: 0

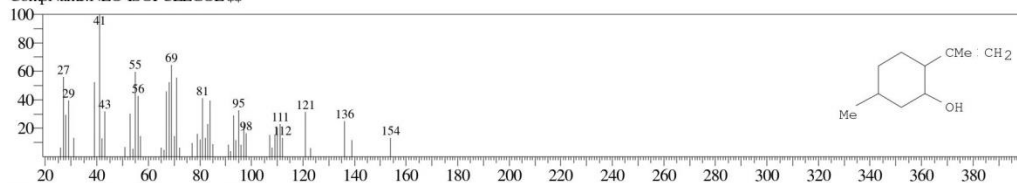
CompName: (-)-Isopulegol \$\$ Cyclohexanol, 5-methyl-2-(1-methylethenyl)-, [1R-(1.alpha.,2.beta.,5.alpha.)]- (CAS) 1-Isopulegol \$\$ Isopulegol \$\$ p-Menth-8-en



Hit#: 4 Entry: 42836 Library: WILEY7.LIB

SI: 89 Formula: C<sub>10</sub>H<sub>18</sub>O CAS: 89-79-2 MolWeight: 154 RetIndex: 0

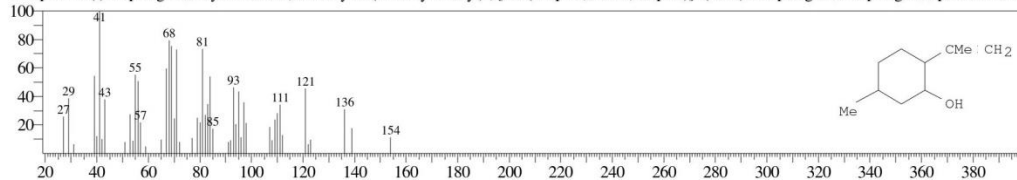
CompName: NEO-ISOPULEGOL \$\$



Hit#: 5 Entry: 43853 Library: WILEY7.LIB

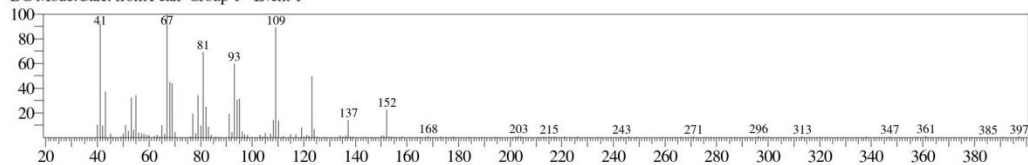
SI: 89 Formula: C<sub>10</sub>H<sub>18</sub>O CAS: 89-79-2 MolWeight: 154 RetIndex: 0

CompName: (-)-Isopulegol \$\$ Cyclohexanol, 5-methyl-2-(1-methylethenyl)-, [1R-(1.alpha.,2.beta.,5.alpha.)]- (CAS) 1-Isopulegol \$\$ Isopulegol \$\$ p-Menth-8-en



&lt;&lt; Target &gt;&gt;

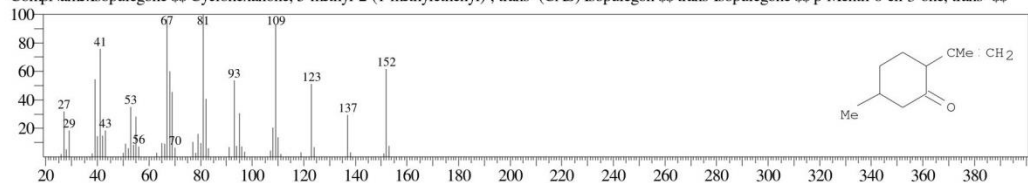
Line#:4 R.Time:7.735(Scan#:1548) MassPeaks:194  
 RawMode:Averaged 7.730-7.740(1547-1549) BasePeak:67.05(3585)  
 BG Mode:Calc. from Peak Group 1 - Event 1



Hit#:1 Entry:41092 Library:WILEY7.LIB

SI:91 Formula:C10 H16 O CAS:29606-79-9 MolWeight:152 RetIndex:0

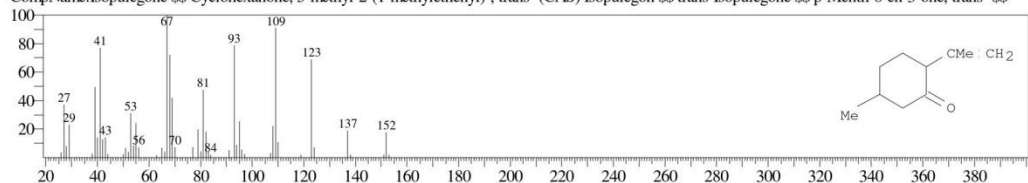
CompName:Isopulegone \$\$ Cyclohexanone, 5-methyl-2-(1-methylethenyl)-, trans- (CAS) Isopulegon \$\$ trans-Isopulegone \$\$ p-Menth-8-en-3-one, trans- \$\$



Hit#:2 Entry:41093 Library:WILEY7.LIB

SI:91 Formula:C10 H16 O CAS:29606-79-9 MolWeight:152 RetIndex:0

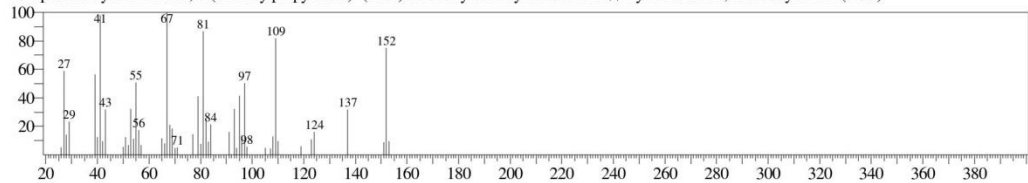
CompName:Isopulegone \$\$ Cyclohexanone, 5-methyl-2-(1-methylethenyl)-, trans- (CAS) Isopulegon \$\$ trans-Isopulegone \$\$ p-Menth-8-en-3-one, trans- \$\$



Hit#:3 Entry:40356 Library:WILEY7.LIB

SI:87 Formula:C10 H16 O CAS:43108-69-6 MolWeight:152 RetIndex:0

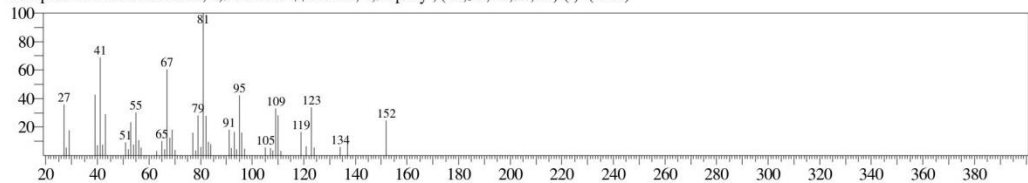
CompName:Cyclohexanone, 2-(2-methylpropylidene)- (CAS) 2-Isobutylidencyclohexanone \$\$ Cyclohexanone, 2-isobutylidene- (CAS)



Hit#:4 Entry:40345 Library:WILEY7.LIB

SI:87 Formula:C10 H16 O CAS:6909-20-2 MolWeight:152 RetIndex:0

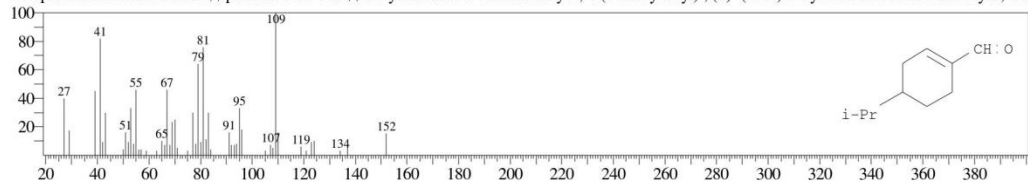
CompName:TRANS-CARAN, 4,5-EPOXI- \$\$ Carane, 4,5-epoxy-, (1S,3R,4R,5S,6R)-(-) (CAS)



Hit#:5 Entry:41027 Library:WILEY7.LIB

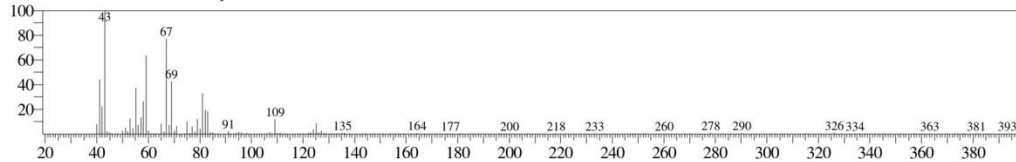
SI:86 Formula:C10 H16 O CAS:23963-70-4 MolWeight:152 RetIndex:0

CompName:PELLANDRAL \$\$ p-menth-1-en-7-al \$\$ 1-Cyclohexene-1-carboxaldehyde, 4-(1-methylethyl)-, (S)- (CAS) 1-Cyclohexene-1-carboxaldehyde, 4-i-

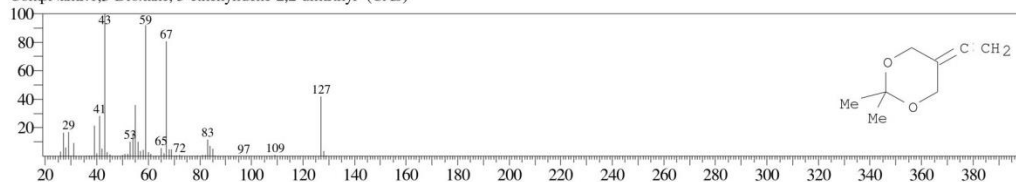


&lt;&lt; Target &gt;&gt;

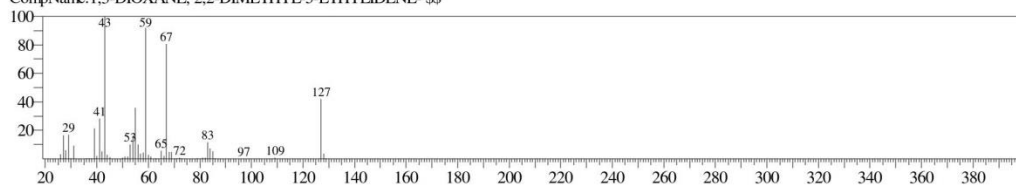
Line#:5 R.Time:8.270(Scan#:1655) MassPeaks:232  
 RawMode:Averaged 8.265-8.275(1654-1656) BasePeak:43.00(5755)  
 BG Mode:Calc. from Peak Group 1 - Event 1



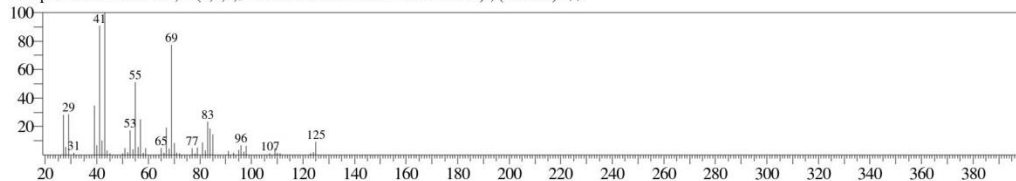
Hit#:1 Entry:28870 Library:WILEY7.LIB  
 SI:82 Formula:C8 H12 O2 CAS:74685-78-2 MolWeight:140 RetIndex:0  
 CompName:1,3-Dioxane, 5-ethenylidene-2,2-dimethyl- (CAS)



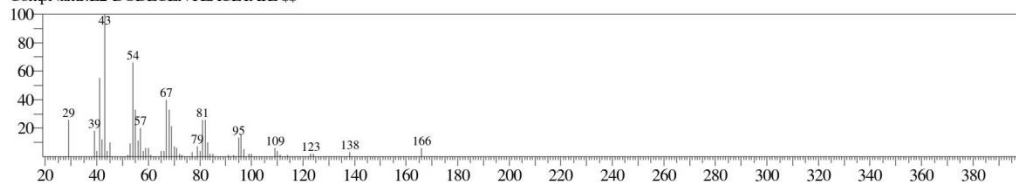
Hit#:2 Entry:30856 Library:WILEY7.LIB  
 SI:82 Formula:C8 H14 O2 CAS:0-00-0 MolWeight:142 RetIndex:0  
 CompName:1,3-DIOXANE, 2,2-DIMETHYL-5-ETHYLIDENE- \$\$



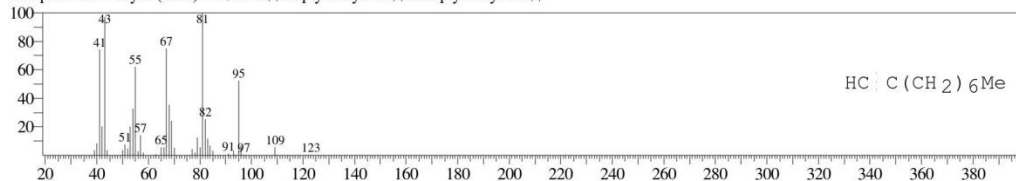
Hit#:3 Entry:58872 Library:WILEY7.LIB  
 SI:81 Formula:C11 H20 O CAS:59642-07-8 MolWeight:168 RetIndex:0  
 CompName:ETHANONE, 1-(1,2,2,3-TETRAMETHYLCYCLOPENTYL)-, (1R-CIS)- \$\$



Hit#:4 Entry:128510 Library:WILEY7.LIB  
 SI:80 Formula:C14 H26 O2 CAS:38363-23-4 MolWeight:226 RetIndex:0  
 CompName:E2-DODECENYLACETATE \$\$



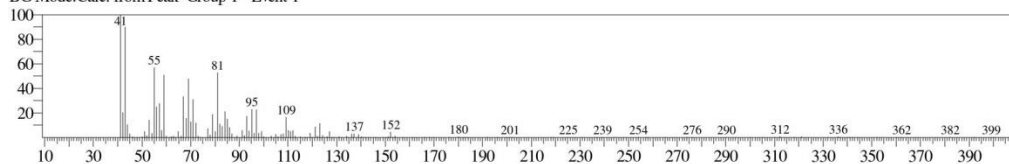
Hit#:5 Entry:17687 Library:WILEY7.LIB  
 SI:80 Formula:C9 H16 CAS:3452-09-3 MolWeight:124 RetIndex:0  
 CompName:1-Nonyne (CAS) 1-C9H16 \$\$ Heptylacetylene \$\$ n-Heptylacetylene \$\$



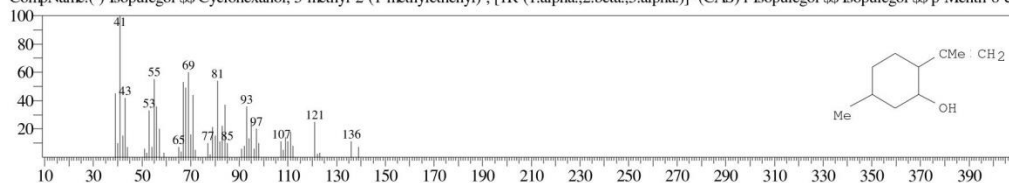


&lt;&lt; Target &gt;&gt;

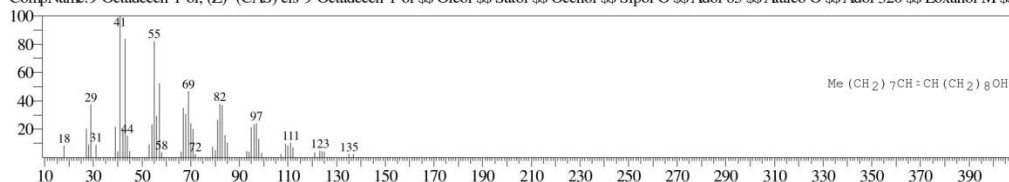
Line#6 R.Time:8.875(Scan#:1776) MassPeaks:206  
 RawMode:Averaged 8.870-8.880(1775-1777) BasePeak:41.05(5141)  
 BG Mode:Calc. from Peak Group 1 - Event 1



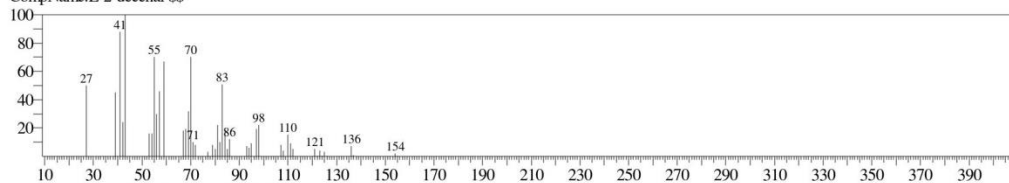
Hit#1 Entry:43851 Library:WILEY7.LIB  
 SI:86 Formula:C10 H18 O CAS:89-79-2 MolWeight:154 RetIndex:0  
 CompName:(-)-Isopulegol \$\$ Cyclohexanol, 5-methyl-2-(1-methylethenyl)-, [1R-(1.alpha.,2.beta.,5.alpha.)]- (CAS) l-Isopulegol \$\$ Isopulegol \$\$ p-Menth-8-en



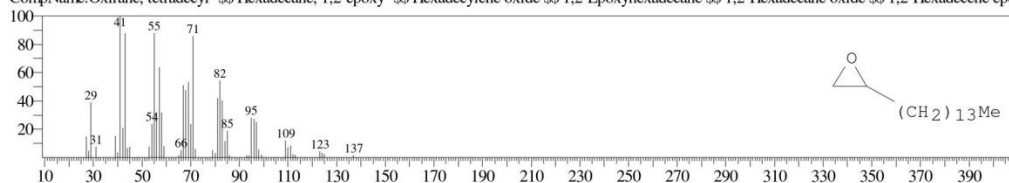
Hit#2 Entry:178160 Library:WILEY7.LIB  
 SI:84 Formula:C18 H36 O CAS:143-28-2 MolWeight:268 RetIndex:0  
 CompName:9-Octadecen-1-ol, (Z)- (CAS) cis-9-Octadecen-1-ol \$\$ Oleol \$\$ Satol \$\$ Ocenol \$\$ Sipol O \$\$ Adol 85 \$\$ Atalco O \$\$ Adol 320 \$\$ Loxanol M \$\$



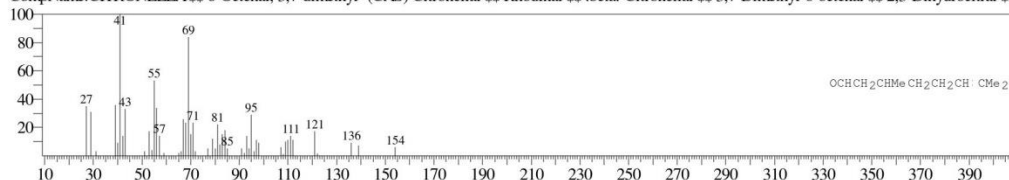
Hit#3 Entry:44031 Library:WILEY7.LIB  
 SI:84 Formula:C10 H18 O CAS:0-00-0 MolWeight:154 RetIndex:0  
 CompName:E-2-decenal \$\$



Hit#4 Entry:146219 Library:WILEY7.LIB  
 SI:84 Formula:C16 H32 O CAS:7320-37-8 MolWeight:240 RetIndex:0  
 CompName:Oxirane, tetradecyl- \$\$ Hexadecane, 1,2-epoxy- \$\$ Hexadecylene oxide \$\$ 1,2-Epoxyhexadecane \$\$ 1,2-Hexadecane oxide \$\$ 1,2-Hexadecene epo

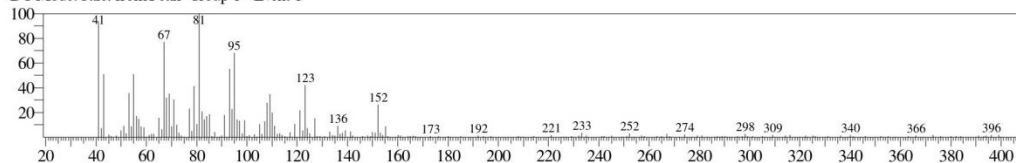


Hit#5 Entry:43603 Library:WILEY7.LIB  
 SI:84 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0  
 CompName:CITRONELLA \$\$ 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$ Rhodinall \$\$ .beta.-Citronella \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitral \$\$

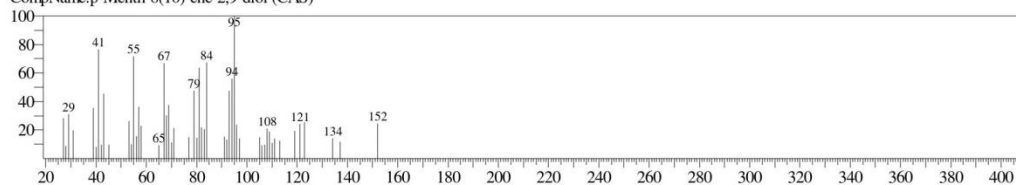


&lt;&lt; Target &gt;&gt;

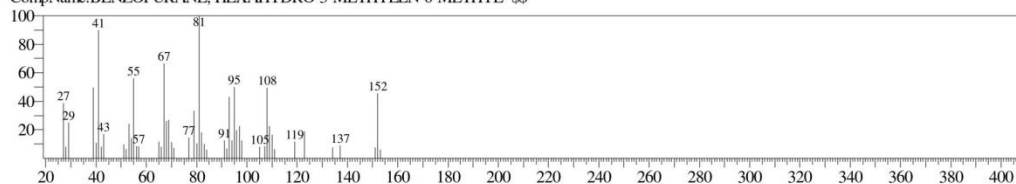
Line#:7 R.Time:9.690(Scan#:1939) MassPeaks:222  
 RawMode:Averaged 9.685-9.695(1938-1940) BasePeak:81.05(1845)  
 BG Mode:Calc. from Peak Group 1 - Event 1



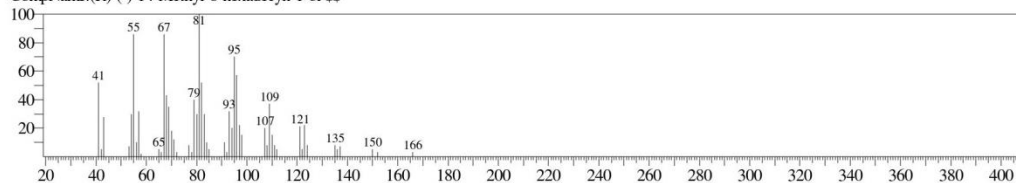
Hit#:1 Entry:60482 Library:WILEY7.LIB  
 SI:85 Formula:C10 H18 O2 CAS:91139-97-8 MolWeight:170 RetIndex:0  
 CompName:p-Menth-8(10)-ene-2,9-diol (CAS)



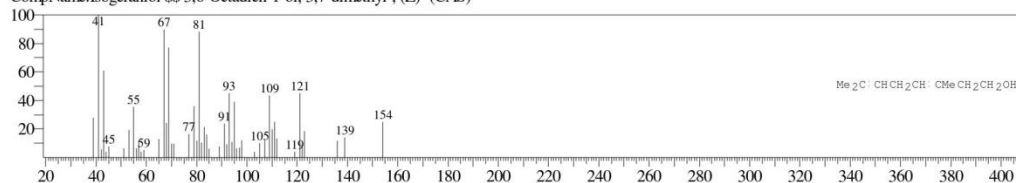
Hit#:2 Entry:40107 Library:WILEY7.LIB  
 SI:84 Formula:C10 H16 O CAS:77954-13-3 MolWeight:152 RetIndex:0  
 CompName:BENZOFURANE, HEXAHYDRO-3-METHYLEN-6-METHYL- \$\$



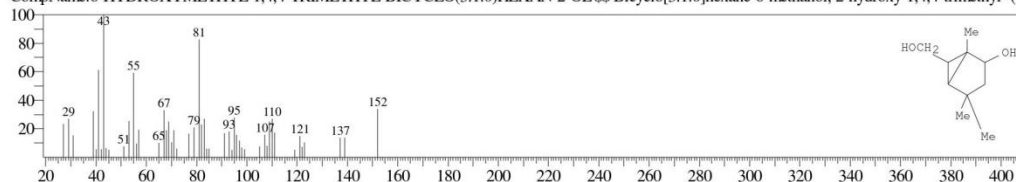
Hit#:3 Entry:160130 Library:WILEY7.LIB  
 SI:84 Formula:C17 H32 O CAS:64566-18-3 MolWeight:252 RetIndex:0  
 CompName:(R)-(-)-14-Methyl-8-hexadecyn-1-ol \$\$



Hit#:4 Entry:43684 Library:WILEY7.LIB  
 SI:83 Formula:C10 H18 O CAS:5944-20-7 MolWeight:154 RetIndex:0  
 CompName:Isogeraniol \$\$ 3,6-Octadien-1-ol, 3,7-dimethyl-, (Z)- (CAS)

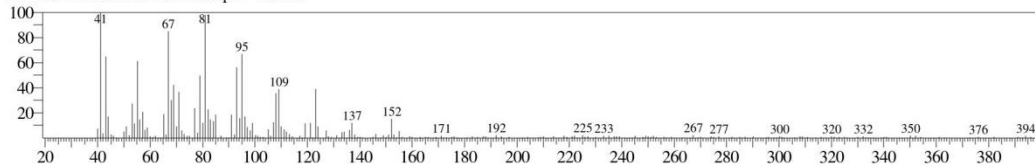


Hit#:5 Entry:61167 Library:WILEY7.LIB  
 SI:83 Formula:C10 H18 O2 CAS:58795-41-8 MolWeight:170 RetIndex:0  
 CompName:6-HYDROXYMETHYL-1,4,4-TRIMETHYL-BICYCLO(3.1.0)HEXAN-2-OL \$\$ Bicyclo[3.1.0]hexane-6-methanol, 2-hydroxy-1,4,4-trimethyl- (C-

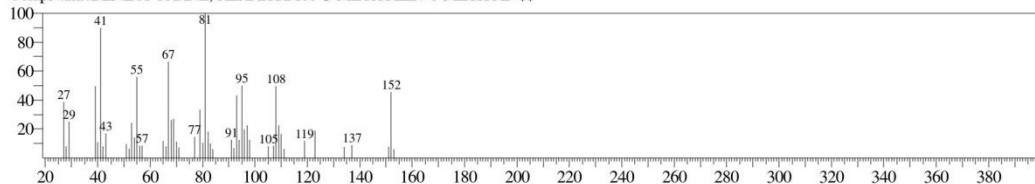


&lt;&lt; Target &gt;&gt;

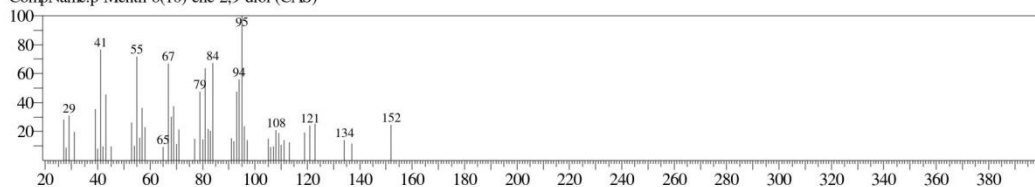
Line#:8 R.Time:9.740(Scan#:1949) MassPeaks:242  
 RawMode:Averaged 9.735-9.745(1948-1950) BasePeak:41.00(2004)  
 BG Mode:Calc. from Peak Group 1 - Event 1



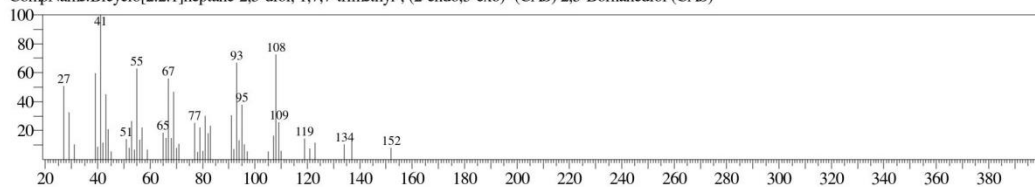
Hit#:1 Entry:40107 Library:WILEY7.LIB  
 SI:85 Formula:C10 H16 O CAS:77954-13-3 MolWeight:152 RetIndex:0  
 CompName:BENZOFURANE, HEXAHYDRO-3-METHYLEN-6-METHYL- \$\$



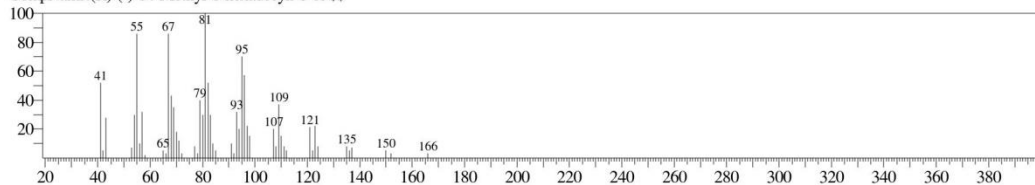
Hit#:2 Entry:60482 Library:WILEY7.LIB  
 SI:85 Formula:C10 H18 O2 CAS:91139-97-8 MolWeight:170 RetIndex:0  
 CompName:p-Menth-8(10)-ene-2,9-diol (CAS)



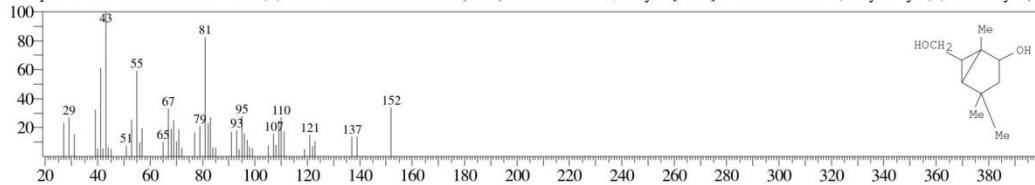
Hit#:3 Entry:60480 Library:WILEY7.LIB  
 SI:84 Formula:C10 H18 O2 CAS:10359-41-8 MolWeight:170 RetIndex:0  
 CompName:Bicyclo[2.2.1]heptane-2,5-diol, 1,7,7-trimethyl-, (2-endo,5-exo)- (CAS) 2,5-Bornanediol (CAS)



Hit#:4 Entry:160130 Library:WILEY7.LIB  
 SI:84 Formula:C17 H32 O CAS:64566-18-3 MolWeight:252 RetIndex:0  
 CompName:(R)-(-)-14-Methyl-8-hexadecyn-1-ol \$\$

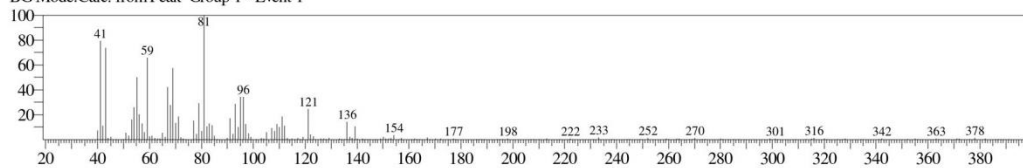


Hit#:5 Entry:61167 Library:WILEY7.LIB  
 SI:84 Formula:C10 H18 O2 CAS:58795-41-8 MolWeight:170 RetIndex:0  
 CompName:6-HYDROXYMETHYL-1,4,4-TRIMETHYL-BICYCLO(3.1.0)HEXAN-2-OL \$\$ Bicyclo[3.1.0]hexane-6-methanol, 2-hydroxy-1,4,4-trimethyl-(C-



&lt;&lt; Target &gt;&gt;

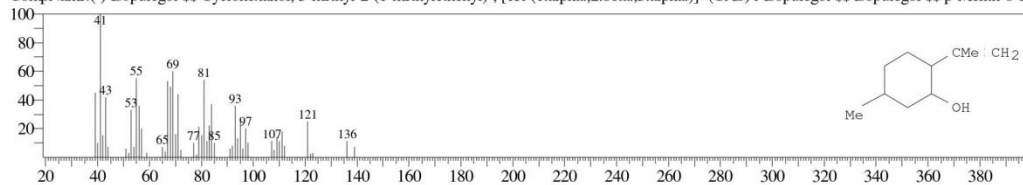
Line#:9 R.Time:10.075(Scan#:2016) MassPeaks:219  
 RawMode:Averaged 10.070-10.080(2015-2017) BasePeak:81.05(3291)  
 BG Mode:Calc. from Peak Group 1 - Event 1



Hit#1 Entry:43851 Library:WILEY7.LIB

SI:87 Formula:C10 H18 O CAS:89-79-2 MolWeight:154 RetIndex:0

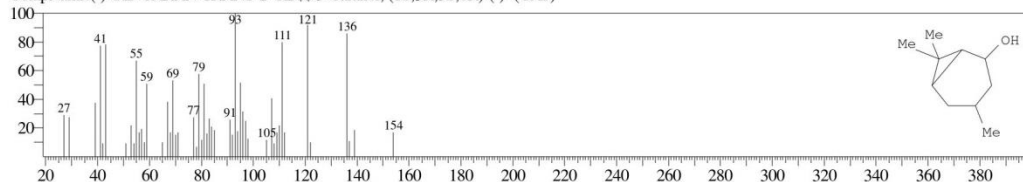
CompName:(-)-Isopulegol \$\$ Cyclohexanol, 5-methyl-2-(1-methylethenyl)-, [1R-(1.alpha.,2.beta.,5.alpha.)]- (CAS) l-Isopulegol \$\$ Isopulegol \$\$ p-Menth-8-en



Hit#2 Entry:43921 Library:WILEY7.LIB

SI:85 Formula:C10 H18 O CAS:6909-21-3 MolWeight:154 RetIndex:0

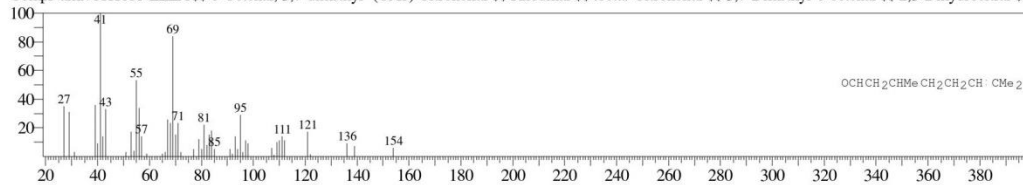
CompName:(-)-CIS-CARAN-TRANS-2-OL \$\$ 5-Caranol, (1S,3R,5S,6R)-(-) (CAS)



Hit#3 Entry:43603 Library:WILEY7.LIB

SI:85 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

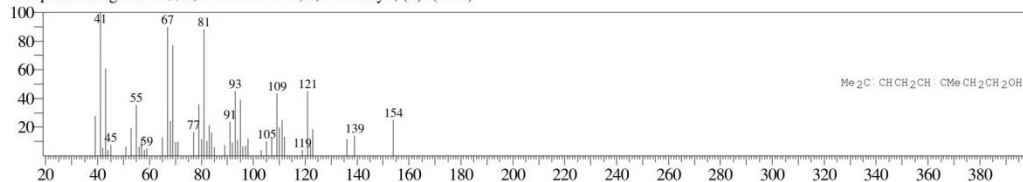
CompName:CITRONELLA \$\$ 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$ Rhodinall \$\$ .beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitra



Hit#4 Entry:43684 Library:WILEY7.LIB

SI:85 Formula:C10 H18 O CAS:5944-20-7 MolWeight:154 RetIndex:0

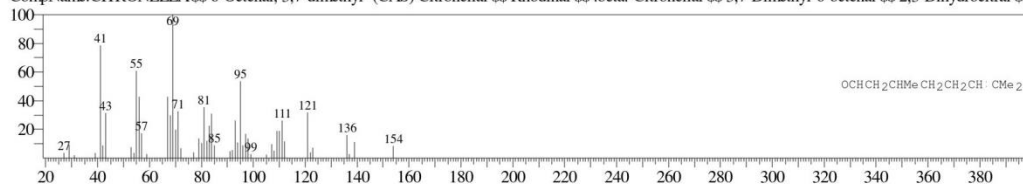
CompName:Isogeraniol \$\$ 3,6-Octadien-1-ol, 3,7-dimethyl-, (Z)- (CAS)



Hit#5 Entry:43617 Library:WILEY7.LIB

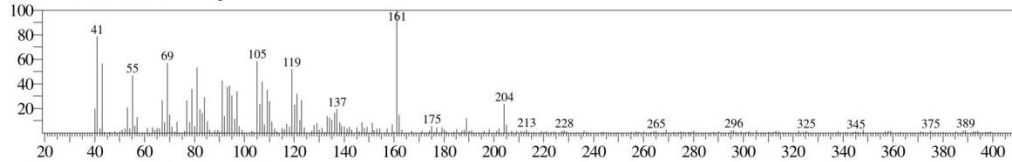
SI:85 Formula:C10 H18 O CAS:106-23-0 MolWeight:154 RetIndex:0

CompName:CITRONELLA \$\$ 6-Octenal, 3,7-dimethyl- (CAS) Citronellal \$\$ Rhodinall \$\$ .beta.-Citronellal \$\$ 3,7-Dimethyl-6-octenal \$\$ 2,3-Dihydrocitra



&lt;&lt; Target &gt;&gt;

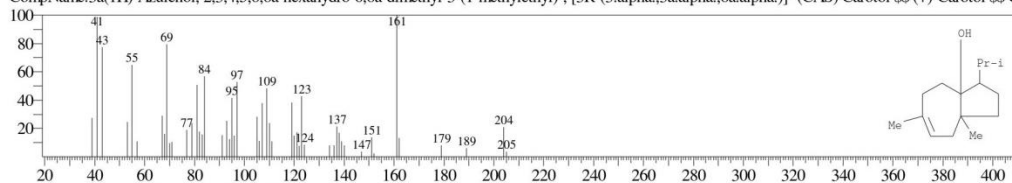
Line#:10 R.Time:13.730(Scan#:2747) MassPeaks:258  
 RawMode:Averaged 13.725-13.735(2746-2748) BasePeak:161.10(1504)  
 BG Mode:Calc. from Peak Group 1 - Event 1



Hit#:1 Entry:123990 Library:WILEY7.LIB

SI:87 Formula:C15 H26 O CAS:465-28-1 MolWeight:222 RetIndex:0

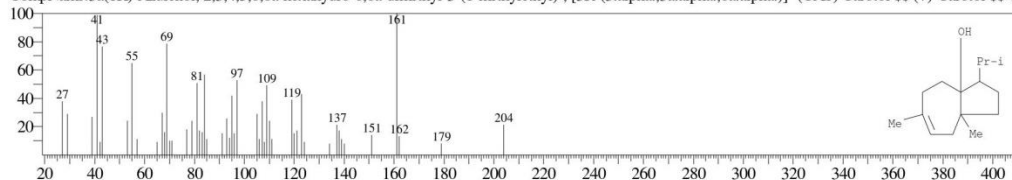
CompName:3a(1H)-Azulenol, 2,3,4,5,8,8a-hexahydro-6,8a-dimethyl-3-(1-methylethyl)-, [3R-(3.alpha.,3a.alpha.,8a.alpha.)]- (CAS) Carotol \$\$ (+)-Carotol \$\$ C



Hit#:2 Entry:123988 Library:WILEY7.LIB

SI:85 Formula:C15 H26 O CAS:465-28-1 MolWeight:222 RetIndex:0

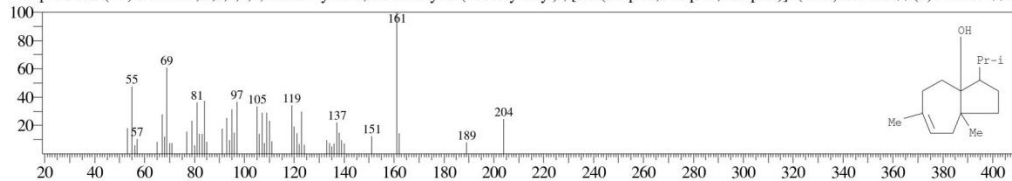
CompName:3a(1H)-Azulenol, 2,3,4,5,8,8a-hexahydro-6,8a-dimethyl-3-(1-methylethyl)-, [3R-(3.alpha.,3a.alpha.,8a.alpha.)]- (CAS) Carotol \$\$ (+)-Carotol \$\$ C



Hit#:3 Entry:123989 Library:WILEY7.LIB

SI:83 Formula:C15 H26 O CAS:465-28-1 MolWeight:222 RetIndex:0

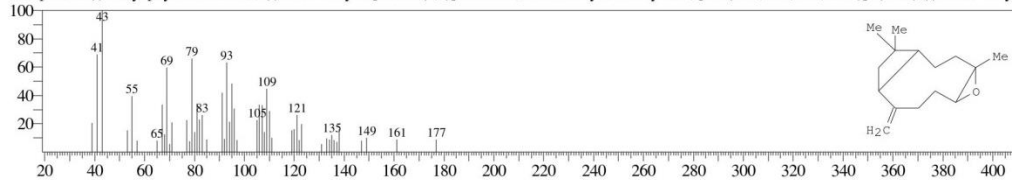
CompName:3a(1H)-Azulenol, 2,3,4,5,8,8a-hexahydro-6,8a-dimethyl-3-(1-methylethyl)-, [3R-(3.alpha.,3a.alpha.,8a.alpha.)]- (CAS) Carotol \$\$ (+)-Carotol \$\$ C



Hit#:4 Entry:121059 Library:WILEY7.LIB

SI:81 Formula:C15 H24 O CAS:1139-30-6 MolWeight:220 RetIndex:0

CompName:(-)-Caryophyllene oxide \$\$ (-)-5-Oxatricyclo[8.2.0.0(4,6)]dodecane-, 12-trimethyl-9-methylene-, [1R-(1R\*,4R\*,6R\*,10S\*)]- (CAS) (-)-.beta.-Caryo



Hit#:5 Entry:123984 Library:WILEY7.LIB

SI:81 Formula:C15 H26 O CAS:465-24-7 MolWeight:222 RetIndex:0

CompName:LONGIBORNEOL \$\$ 1,4-METHANOAZULEN-9-OL, DECAHYDRO-1,5,5,8A-TETRAMETHYL-, [1R-(1.ALPHA.,3A.BETA.,

