



INDOFINE Chemical Company, Inc.

121 Stryker Lane, Bldg. 30, Suite 1 • Hillsborough, NJ 08844 • U.S.A.

Phone: (908) 359-6778 • FAX: (908) 359-1179

website: www.indofinechemical.com

e-mail: chemical@indofinechemical.com

CERTIFICATE OF ANALYSIS

Catalog Number: 19-113

Product Name: **6-CHLORO-4(4'-CHLOROPHENYL)-3(2',4'
DICHLOROPHENYL)COUMARIN**

Lot Number: 99090

Chemical Formula: $C_{21}H_{10}Cl_4O_2$

Molecular Weight: 436.12

Melting Point: 222-224°C

Appearance: White powder

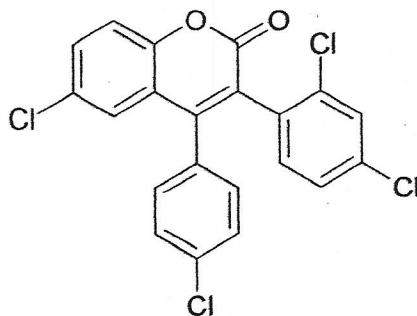
Solubility: Soluble in Chloroform

TLC: Hexane:Ethyl acetate (9:1)

NMR Spectrum: Enclosed (Confirms to the structure)

Storage: Cool dry place

Purity (HPLC): 99.28%





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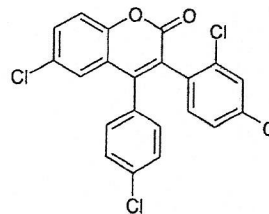
e-mail: chemical@indofinechemical.com

HPLC ANALYSIS

Acquired by : Sanjeev
Sample Name : 6-Chloro-4(4'-chlorophenyl)-3(2',4'-dichlorophenyl)coumarin
Sample ID : Lot No: 99090
Injection Volume : 20 uL
Data Filename : 290813K.lcd
Method Filename : Linear Isocratic.M.lcm

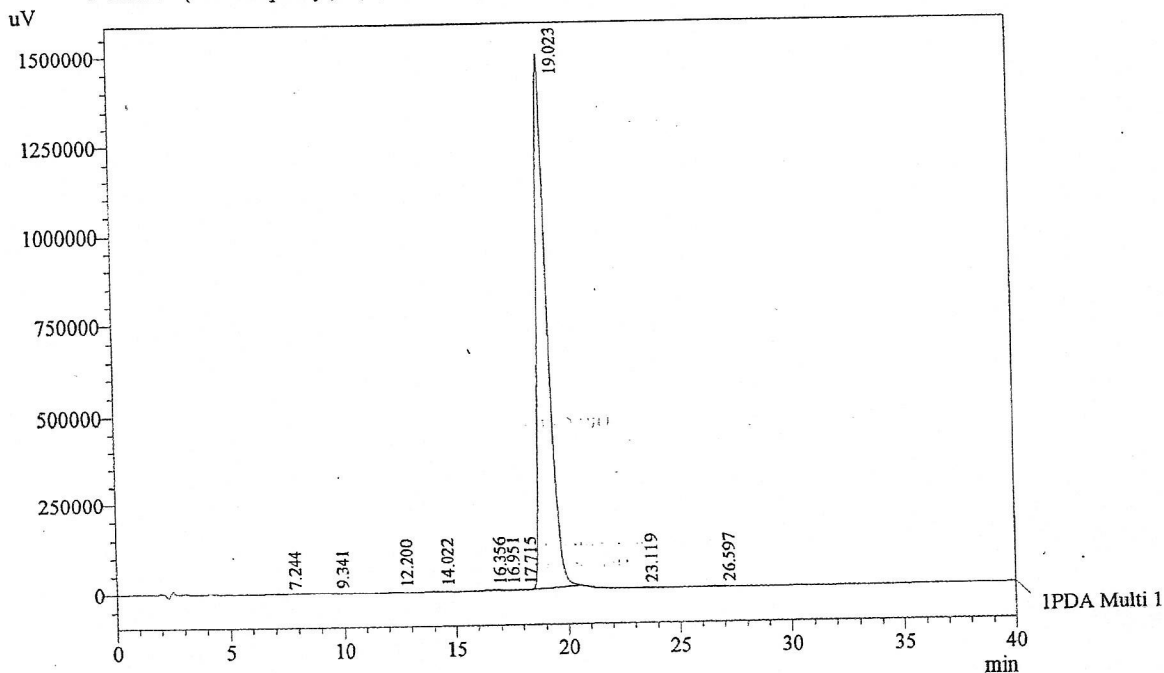
Catalog No.: 19-113
Product Name: 6-Chloro-4(4'-chlorophenyl)-3(2',4'-dichlorophenyl)coumarin
Lot No.: 99090

Column : LUNA C-18(2), (250mm x4.6mm 5.0µ)
Flow : 1.000 mL/min.
Mobile Phase : A(20% of 0.05% TFA in water) B(80% of Acetonitrile)
Diluent : Acetonitrile



Chromatogram

6-Chloro-4(4'-chlorophenyl)-3(2',4'-dichlorophenyl)coumarin D:\promonence\Data\2013\AUG-2013\290813K.lcd



1 PDA Multi 1 / 220nm 4nm

PeakTable

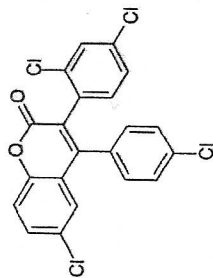
PDA Ch1 220nm 4nm

Peak#	Name	Ret. Time	Area	Area %	Relative Retention Time
1	RT:7.244	7.244	8533	0.02	0.38
2	RT:9.341	9.341	12296	0.03	0.49
3	RT:12.200	12.200	24486	0.05	0.64
4	RT:14.022	14.022	44974	0.09	0.74
5	RT:16.356	16.356	61899	0.13	0.86
6	RT:16.951	16.951	56404	0.12	0.89
7	RT:17.715	17.715	13118	0.03	0.93
8	RT:19.023	19.023	48237315	99.28	1.00
9	RT:23.119	23.119	61908	0.13	1.22
10	RT:26.597	26.597	65753	0.14	1.40
Total			48586685	100.00	



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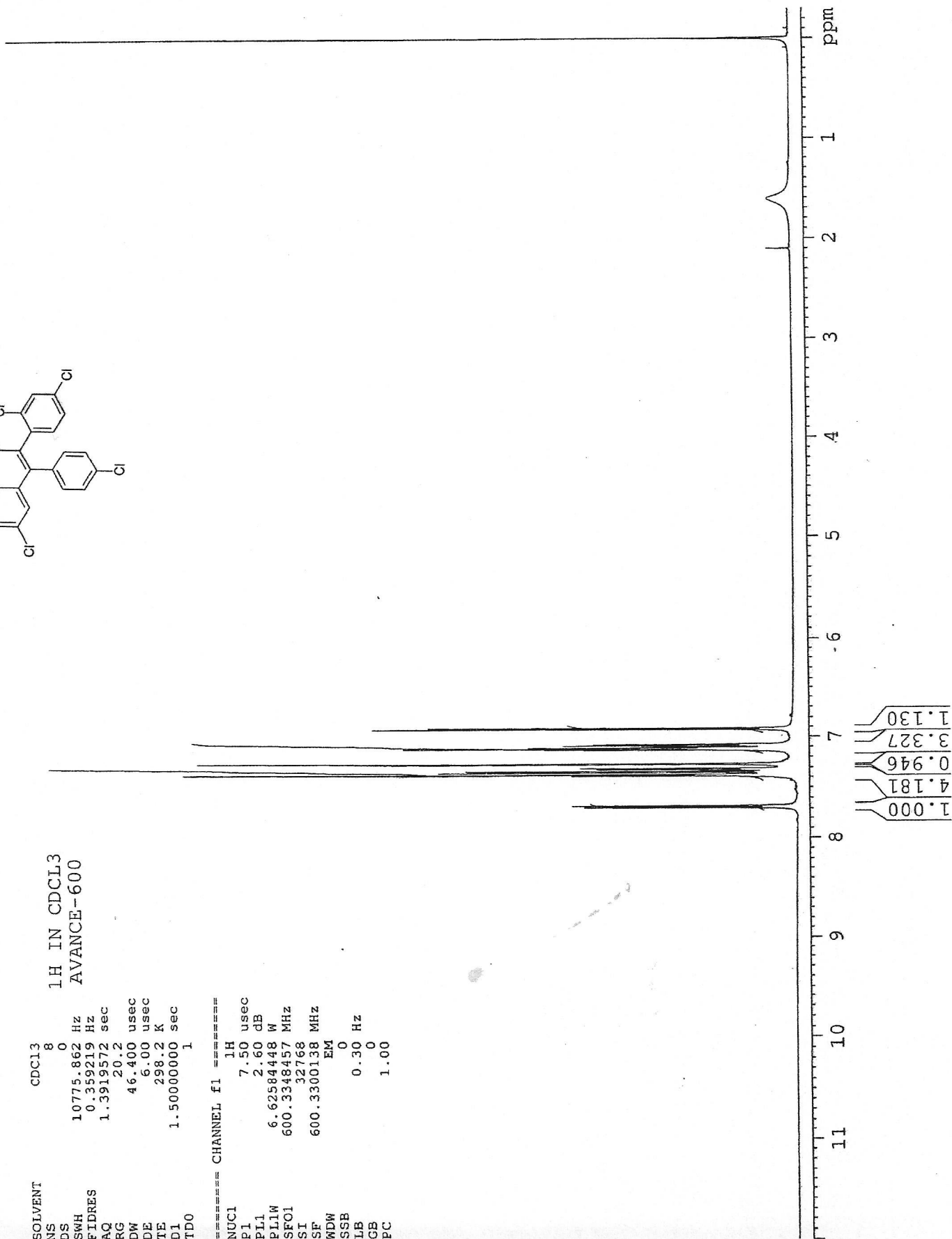
Catalog No.: 19-113
Product Name: 6-Chloro-4(4'-chlorophenyl)-3(2',4'-
dichlorophenyl)coumarin
Lot No.: 99090



SOLVENT CDCL3
NS 8
DS 0
SWH 10775.862 Hz
FIDRES 0.359219 Hz
AQ 1.3919572 sec
RG 20.2
DW 46.400 usec
DE 6.00 usec
TE 298.2 K
D1 1.50000000 sec
TD0 1

1H IN CDCL3
AVANCE-600

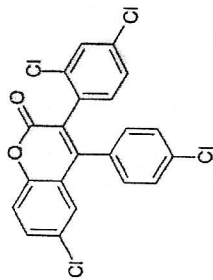
==== CHANNEL f1 =====
NUC1 1H
P1 7.50 usec
PL1 2.60 dB
PL1W 6.62584448 W
SF01 600.3348457 MHz
SI 32768
SF 600.3300138 MHz
WDW EM
SSB 0
LB 0.30 HZ
GB 0
PC 1.00





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 Lot No.: 99090



SOLVENT CDC13
 NS 8
 DS 0
 SWH 10775.862 Hz
 FIDRES 0.359219 Hz
 AQ 1.3919572 sec
 RG 20.2
 DW 46.400 usec
 DE 6.00 usec
 TE 298.2 K
 DI 1.50000000 sec
 TDO 1

7.692
 7.689
 7.677
 7.674

===== CHANNEL f1 =====
 NUC1 1H
 P1 7.50 usec
 PL1 2.60 dB
 PL1W 6.62584448 W
 SFO1 600.3348457-MHZ
 SI 32766
 SF 600.3300138 MHz
 WDW EM
 SSB 0
 LB 0.30 Hz
 GB 0
 PC 1.00

7.70 7.65 ppm

7.137
 7.134
 7.124
 7.113
 7.110
 7.092
 7.089
 7.079
 7.075

7.392
 7.389
 7.378
 7.357
 7.342
 7.326
 7.323
 7.312
 7.309
 7.271
 7.267
 7.262

6.929
 6.915

7.40 7.35 7.30 7.25 7.20 7.15 7.10 7.05 7.00 6.95 ppm

