



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: H-004

Product Name: HARMALOL HYDROCHLORIDE DIHYDRATE

CAS Number: [6028-00-8]

Lot Number: 1108162

Chemical Formula: $C_{12}H_{12}N_2O \cdot HCl \cdot H_2O$

Molecular Weight: 236.69

Melting Point: >250°C

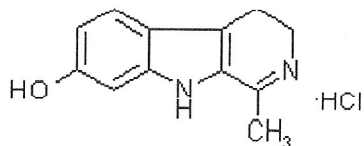
Appearance: Yellow powder

Solubility: Soluble in DMSO

TLC: Chloroform:Methanol (9:1)

Storage: Store at +2-8°C

Purity(HPLC): 99.94%



Prepared by:
Ramesh Mandadi
Ramesh Mandadi
Director of Operations

Reviewed and approved by:
Sujata Moton
S. Moton
VP



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

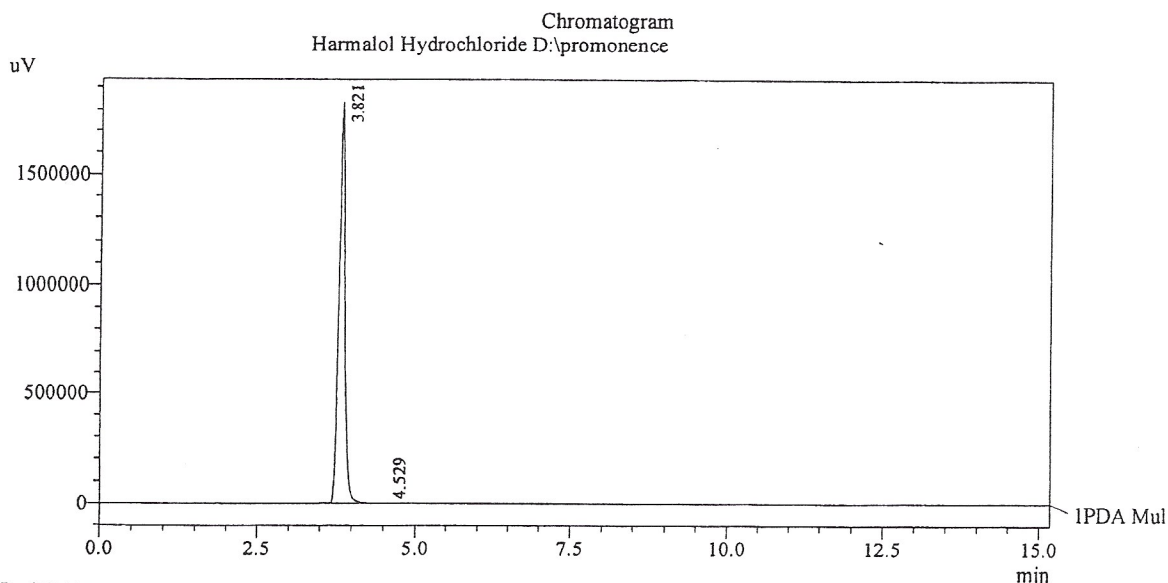
e-mail: chemical@indofinechemical.com

HPLC ANALYSIS

Acquired by : Madhuri
Sample Name : Harmalol Hydrochloride
Sample ID :
Injection Volume : 20 uL
Data Filename : 180511C.lcd
Method Filename : Linear Isocratic.M.lcm

Cat. No.: H-004
Product name: Harmalol hydrochloride dihydrate
Lot No.: 1108162

Description:
Column : Phenomenex C-18, 250X4.6mm 5.0µm
Flow : 0.5000ML/min.
Mobile Phase : A(20% of 0.05% of TFA) B(80% of Acetonitrile)



PeakTable

PDA Ch1 360nm 4nm

Peak#	Ret. Time	Area	Height	Area %
1	3.821	11767444	1835422	99.949
2	4.529	6027	908	0.051
Total		11773471	1836331	100.000

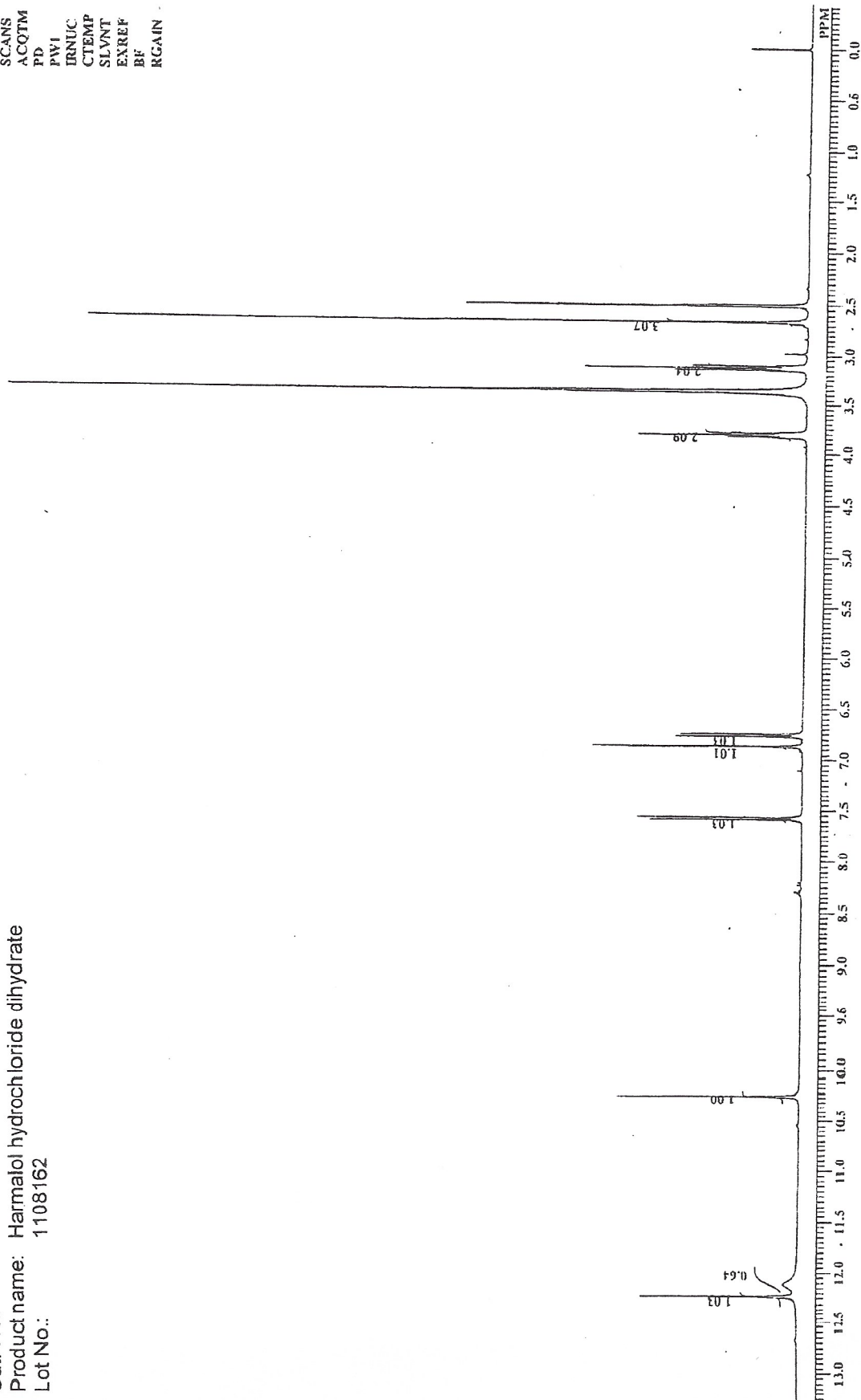


INDOFINE Chemical Company, Inc.
121 STRYKER LANE
BLDG. 30, SUITE 1
HILLSBOROUGH, NJ 08844

HHL-5 1H NMR DMSO-D6

Cat. No.: H-004
Product name: Harmalol hydrochloride dihydrate
Lot No.: 1108162

DFILE: HHL-5.nls
COMIN: HHL-5 1H NMR DMSO
OBNUC: 1H
EXMOD: NON
OBFRQ: 399.65 MHz
ORSET: 124.00 kHz
OBFIN: 10500.00 Hz
POINT: 65536
FREQU: 7992.01 Hz
SCANS: 8
ACQTM: 8.2002 sec
PD: 3.0000 sec
PWI: 5.60 usec
IRNUC: 1H
CTEMP: 24.0 c
SLVNT: DMSO
EXREF: 0.00 ppm
BF: 0.30 Hz
RGAIN: 17



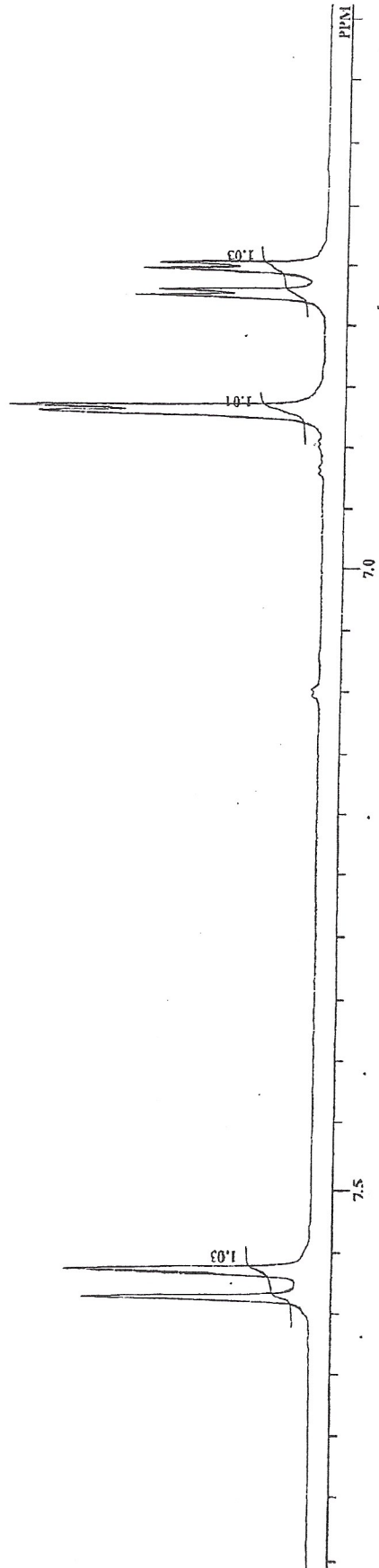


INDOFINE Chemical Company, Inc.
121 STRYKER LANE
BLDG. 30, SUITE 1
HILLSBOROUGH, NJ 08844

1H1H-5 1H1H NMR DMSO-D6

Cat. No.: H-004
Product name: Harmalol hydrochloride dihydrate
Lot No.: 1108162

DFILE 1H1H-5.als
COMNT 1H1H-5 1H NMR DMSO
OBNUC 1H
EXMOD NON
OBFRQ 399.65 MHz
OBSET 124.00 KHz
OBFIN 10500.00 Hz
POINT 65536
FREQU 7992.01 Hz
SCANS 8
ACQTM 8.2002 sec
PD 3.0000 sec
PW1 5.60 uscc
IRNUC 1H 24.0 c
CTEMP DMSO
SLVNT 0.00 ppm
EXREF 0.30 Hz
BF 17
RGAIN





INDOFINE Chemical Company, Inc.
121 STRYKER LANE
BLDG. 30, SUITE 1
HILLSBOROUGH, NJ 08844

IIHL-5 1H NMR DMSO-D6

Cat. No.: H-004
Product name: Harmalol hydrochloride dihydrate
Lot No.: 1108162

DPHLE IIHL-5als
COMNT IIHL-5 1H NMR DMSO

OBNUC 1H
EXMOD NON
OBFRQ 399.65 MHz
OBSET 124.00 KHz
OBFIN 10500.00 Hz
POINT 65536
FREQU 7992.01 Hz
SCANS 8
ACQTM 8.2002 sec
PD 3.0000 sec
PW1 5.60 usec
IRNUC 1H 24.0 c
CTEMP DMSO
SLVNT 0.00 ppm
EXREF BF 0.30 Hz
RGAIN 17

