

---



---

**LIST OF MATERIALS**


---

<b>Sr. No.</b>	<b>Material</b>	<b>Source</b>
1	Paclitaxel	Alembic Pharmaceuticals Ltd., India
2	Cyclophosphamide	Alembic Pharmaceuticals Ltd., India
3	Water for Injection/ Purified water	Alembic Pharmaceuticals Ltd., India
4	Acetonitrile	Merck, India
5	Glacial acetic acid	Merck, India
6	Methanol	Merck, India
7	0.45 $\mu$ PTFE Syringe filter	MDI, India
8	Glyceryl Monostearate (Non Self-emulsifying)	Mohini Organics, India
9	Glyceryl Monostearate (Self-emulsifying)	Mohini Organics, India
10	PEG-32 Hydrogenated Palm Glycerides	Gattefosse, France
11	Stearic acid	BASF, USA
12	PEG-100 Stearate/ Softemul 165	Mohini Organics, India
13	Glyceryl distearate	Mohini Organics, India
14	Capmul MCM	Abitec, USA
15	Castor Oil	Croda, USA
16	Clove Oil	Sigma Aldrich, India
17	Sorbitan Monolaurate	Mohini Organics, India
18	PEG-8 Caprylic/ Capric Glycerides	Abitec, USA
19	Propylene glycol Monocaprylate	Abitec, USA
20	Propylene glycol Dicaprylate	Abitec, USA
21	Glycerol Monocaprate	Abitec, USA
22	Polyethylene Glycol-400 (PEG-400)	Croda, USA
23	Propylene Glycol	Merck, India
24	Glycerol	Merck, India
25	Cremophor EL/ Cremophor ELP	BASF, USA
26	Soluplus	BASF, USA
27	0.2 $\mu$ PES Filter	Sartorius, Germany
28	Polysorbate 20 (Tween 20)	Croda, USA
29	Polysorbate 80 (Tween 80)	Croda, USA
30	Poloxamer 188	BASF, USA

---



---

<b>Sr. No.</b>	<b>Material</b>	<b>Source</b>
31	Acetone	Merck, India
32	Mannitol	Roquette, India
33	Lactose monohydrate	Avantor, India
34	Dextrose monohydrate	Roquette, India
35	Monobasic sodium phosphate monohydrate	Merck, India
36	Dibasic sodium phosphate dihydrate	Merck, India
37	Fluid Thioglycolate Medium (FTM)	Merck, India
38	Soybean casein digest medium (SCDM)	Merck, India
39	0.45µm PES membrane filter	Pall, India
40	Dehydrated Alcohol	Haymankimia, UK
41	MCF-7 Human breast cancer cell line	NCCS, India
42	DMEM medium supplemented with 10% Foetal Bovine Serum	MP Biomedicals, Germany
43	1X Dulbecco's Phosphate Buffered Saline	MP Biomedicals, Germany
44	0.25% Trypsin-EDTA solution	MP Biomedicals, Germany
45	MTT reagent	MP Biomedicals, Germany
46	Dimethyl Sulfoxide (DMSO)	Merck, India
47	Cell culture treated T-25 flasks from Biolite	Thermo Fisher Scientific Inc., USA
48	10mL serological pipettes	Thermo Fisher Scientific Inc., USA
49	96-well plates from Nunc	Thermo Fisher Scientific Inc., USA
50	5mL, 2mL and 1.5mL tubes	Tarsons, India
51	Fluorescein Isothiocyanate Isomer I (FITC)	Sisco Research Lab., India
52	PI/RNase staining solution	BD Biosciences, India

**LIST OF INSTRUMENTS/ EQUIPMENTS**

<b>Sr. No.</b>	<b>Instrument/ Equipment Name</b>	<b>Source</b>
1	Semi-micro Weighing Balance	Mettler Toledo, USA
2	Prominence-i LC-2030C plus HPLC	Shimadzu, Japan
3	Sonicator Bath	PCI Analytics, India
4	Spectrum –II FTIR spectrometer	PerkinElmer, USA
5	UV Visible spectrophotometer 1900	Shimadzu, Japan
6	Magnetic stirrer	IKA, India
7	Refrigerated circulating bath	Equibath, India
8	Lyostar-III Lyophilizer	SP Scientific, India
9	LYOSTAT5 Freeze drying Microscope	SP Scientific, India
10	pH Meter	Thermoscientific, India
11	Zetasizer (Nano ZS)	Malvern, Netherlands
12	Centrifuge model 2-16P	Sigma, Germany
13	Karl Fisher Coulometer	Metrohm, India
14	Discovery DSC Trios V4.2.1.36612	TA Instruments, USA
15	XRD Nano-viewer	Rigaku, Japan
16	JEM-2100 Transmission Electron Microscope	Tokyo, Japan
17	Portable Vacuum Pump	Merck, India
18	Vacuum filtration holder	Merck, India
19	Biosafety Cabinet/ Laminar Air Flow Cabinet	Labconco, India
20	Rheometer, Model: MCR 102	Anton Paar, USA
21	Stability Chamber (2 to 8°C)	Newtronic, India
22	Stability Chamber (25±2°C/60±5%RH)	Newtronic, India
23	Microscope - XDFL series	Sunny Instruments, China
24	Cytomics FC500 Flow cytometer	Beckman Coulter, USA

---



---

**ABBREVIATIONS**


---

<b>Sr. No.</b>	<b>Abbreviation Used</b>	<b>Full Form</b>
1	WHO	World Health Organization
2	%	Percent
3	PAC / PTX	Paclitaxel
4	CYC / CP	Cyclophosphamide
5	°C	Degree Celsius
6	NLCs	Nanostructured Lipid Carriers
7	MEs	Microemulsion
8	nm	Nanometers
9	nab-PTX	Albumin-bound paclitaxel
10	SLNs	solid lipid nanoparticles
11	PIT	Phase inversion temperature
12	ZP	Zeta Potential
13	EE	Entrapment efficiency
14	O/W	Oil-in-water
15	W/O	Water-in-oil
16	CrEL / CEL / CELP	Cremophor EL/ Cremophor ELP
17	mL	Millilitres
18	μL	Microlitres
19	mg	Milligram
20	PPM or ppm	Parts per Million
21	g	Gram
22	PTFE	Polytetrafluoroethylene
23	HPLC	High Performance Liquid Chromatography
24	RP-HPLC	Reverse Phase High Performance Liquid Chromatography
25	μ	Micron
26	Å	Angstrom
27	ID	Internal Diameter
28	mcg	Microgram
29	R <sup>2</sup>	linearity coefficient
30	LOD	Limit of Detection

---



---

<b>Sr. No.</b>	<b>Abbreviation Used</b>	<b>Full Form</b>
31	LOQ	Limit of Quantification
32	S.D.	Standard Deviation
33	RSD	Relative Standard Deviation
34	FTIR	Fourier-transform infrared spectroscopy
35	KBr	Potassium Bromide
36	UV	Ultraviolet Visible
37	%RH	Percent Relative Humidity
38	IR	Infra-Red
39	API	Active Pharmaceutical Ingredient
40	DMF	Drug Master File
41	PEG	Polyethylene Glycol
42	QbD	Quality by Design
43	QTPP	Quality Target Product Profile
44	CQA	Critical Quality Attribute
45	ICH	International Council for Harmonisation
46	PDI	Polydispersity Index
47	OFAT	One Factor At a Time
48	i.v.	Intravenous
49	RPM	Rotations per minute
50	w/v	Weight by volume
51	w/w	Weight by weight
52	FDM	Freeze Drying Microscopy
53	T <sub>c</sub>	Collapse Temperature
54	T <sub>g</sub> '	Glass transition temperature
55	Teu	Eutectic Temperature
56	g/g	Gram per gram
57	MTM	Manometric temperature measurements
58	PBS	pH 7.4 phosphate buffer
59	DSC	Differential Scanning Calorimetry
60	XRD	X-ray diffraction
61	FTM	Fluid Thioglycolate Medium

<b>Sr. No.</b>	<b>Abbreviation Used</b>	<b>Full Form</b>
62	SCDM	Soybean casein digest medium
63	CMC	critical micelle concentration
64	mg/m <sup>2</sup>	Milligram per square meter
65	Nos.	Number
66	cm <sup>2</sup>	Square centimetre
67	cm <sup>3</sup>	Centimetre cube
68	mTorr	Milli Torr
69	mins.	minutes
70	w/o	without
71	>	Greater than
72	<	Lesser than
73	Θ	Theta
74	TEM	Transmission Electron Microscope
75	mV	Milli Volt
76	HLB	Hydrophilic Lyophilic Balance
77	Conc.	Concentration
78	S <sub>mix</sub>	Surfactant: Co-surfactant ratio
79	mm	Millimetre
80	USP	United States Pharmacopoeia
81	NF	National Formulary
82	cps	Centipoise
83	DLS	Dynamic light scattering
84	MTT	3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide
85	MCF-7	Michigan Cancer Foundation-7
86	IC <sub>50</sub>	Half maximal inhibitory concentration
87	FITC	Fluorescein isothiocyanate
88	IAEC	Institutional Animal Ethics Committee
89	DMBA	7, 12-dimethylbenzanthracene