

Materials List for:

Fabricating Superhydrophobic Polymeric Materials for Biomedical Applications

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Materials

Name	Company	Catalog Number	Comments
Silicone oil	Sigma-Aldrich	85409	
Cis-2-Phenyl-1,3-dioxan-5-ol	Sigma-Aldrich	13468	
Benzyl bromide	Sigma-Aldrich	B17905	Toxic, lacrymator/eye irritant, use in chemical fume hood
Potassium hydroxide	Sigma-Aldrich	221473	Corrosive
Rotary evaporator	Buchi	R-124	
High-vacuum pump	Welch	8907	
Nitrogen, ultra high purity	Airgas	NI UHP300	Compressed gas
Tetrahydrofuran, stabilized with BHT	Pharmaco-Aaper	346000	Flammable. Dried through column of XXX
Dichloromethane	Pharmaco-Aaper	313000	Flammable, toxic.
Separatory funnel (1 L)	Fisher Scientific	13-678-606	
Sodium sulfate	Sigma-Aldrich	239313	
Ethanol, absolute	Pharmaco-Aaper	111USP200	Flammable, toxic.
Buchner funnel	Fisher Scientific	FB-966-F	
Methanol	Pharmaco-Aaper	339000ACS	Flammable, toxic.
Hydrochloric acid	Sigma-Aldrich	320331	Corrosive. Diluted to 2N in distilled water.
Ethyl chloroformate, 97%	Sigma-Aldrich	185892	Toxic, flammable, harmful to environment
Triethylamine (anhydrous)	Sigma-Aldrich	471283	Toxic, flammable, harmful to environment
Diethyl ether	Pharmaco-Aaper	373ANHACS	Highly flammable. Purified through XXX column.
3,6-Dimethyl-1,4-dioxane-2,5-dione (D,L-lactide)	Sigma-Aldrich	303143	
Tin (II) ethylhexanoate	Sigma-Aldrich	S3252	Toxic.
ϵ -caprolactone (97%)	Sigma-Aldrich	704067	
Toluene, anhydrous	Sigma-Aldrich	244511	Flammable, toxic.
Glass syringe	Hamilton Company	1700-series	
Deuterated chloroform	Cambridge Isotopes Laboratories, Inc.	DLM-29-10	Toxic
Nuclear magnetic resonance instrument	Varian	V400	
Palladium on carbon catalyst	Strem Chemicals, Inc.	46-1707	
Hydrogenator unit	Parr	3911	

Hydrogenator shaker vessel	Parr	66CA	
Hydrogen	Airgas	HY HP300	Highly flammable.
Diatomaceous earth	Sigma-Aldrich	22140	
2H,2H,3H,3H-perflurononanoic acid	Oakwood Products, Inc.	10519	Toxic.
Stearic acid	Sigma-Aldrich	S4751	
N,N'-dicyclohexylcarbodiimide	Sigma-Aldrich	D80002	Toxic, irritant.
4-(dimethylamino) pyridine	Sigma-Aldrich	107700	Toxic.
Hexanes	Pharmaco-Aaper	359000ACS	Toxic, flammable.
Gel permeation chromatography (GPC) system	Rainin		
GPC column	Waters	WAT044228	
Differential scanning calorimeter	TA Instruments	Q100	
Chloroform	Pharmaco-Aaper	309000ACS	Toxic.
N,N-dimethylformamide	Sigma-Aldrich	227056	Toxic, flammable.
Polycaprolactone, MW 70-90 kg/mol	Sigma-Aldrich	440744	
Poly(lactide-co-glycolide), MW 136 kg/mol	Evonik Industries	LP-712	
10 ml glass syringe	Hamilton Company	81620	
18 AWG blunt needle	BRICO Medical Supplies	BN1815	
Electrospinner enclosure box	Custom-built	N/A	Made of acrylic panels
High voltage DC supply	Glassman High Voltage, Inc.	PS/EL30R01.5	High voltages, electrocution hazard
Linear (translating) stage	Servo Systems Co.	LPS-12-20-0.2	Optional
Programmable motor & power supply	Intelligent Motion Systems, Inc.	MDrive23 Plus	Optional
24V DC motor & power supply	McMaster-Carr	6331K32	Optional
Aluminum collector drum	Custom-built		Optional
Syringe pump	Fisher Scientific	78-0100I	
Inverted optical microscope	Olympus	IX70	
Scanning electron microscope	Carl Zeiss	Supra V55	
Conductive copper tape	3M	16072	
Aluminum SEM stubs	Electron Microscopy Sciences	75200	
Contact angle goniometer	Kruss	DSA100	
Propylene glycol	Sigma-Aldrich	W294004	Toxic.
Ethylene glycol	Sigma-Aldrich	324558	Toxic.
Ioxaglate	Guerbet		
Fetal bovine serum	American Type Culture Collection	30-2020	
Micro-computed tomography instrument	Scanco		
Image analysis software (Analyze)	Mayo Clinic		
Tensile tester	Instron	5848	
Micrometer	Multitoyo	293-340	
Calipers	Fisher Scientific	14-648-17	