

Materials List for:

Pretreatment of Lignocellulosic Biomass with Low-cost Ionic Liquids

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Materials

Name	Company	Catalog Number	Comments
IL synthesis			
Round bottom flask, with standard ground joint 24/29 NS, 1,000 ml	Lenz	3 0024 70	VWR product code 271-1309
250 ml Addition Funnel, Graduated, 29/26 Joint Size, 0-4 mm PTFE Valve	GPE	CG-1714-16	
Dish-shaped dewar flask, SCH 31 CAL	KGW-Isotherm	1197	
Volumetric flask, 200 ml	VWR	612-3745	
Cork rings, pasteur pipettes and teet, wash bottle with deionised water, large magentic stir bar			
Biomass size reduction			
Heavy Duty Cutting Mill SM2000	Retsch	Discontinued	Replaced with Cutting Mill SM 200 (20.728.0001)
Bottom sieves (10 mesh square holes, for particle size <2 mm)	Retsch	03.647.0318	Part of cutting mill
Analytical Sieve Shaker AS 200	Retsch	30.018.0001	Part of sieving machine
Test Sieve 200 mm Ø x 50 mm height ISO 3310/1 (180 µm)	Retsch	60.131.000180	Part of sieving machine
Test Sieve 200 mm Ø x 50 mm height ISO 3310/1 (850 µm)	Retsch	60.131.000850	Part of sieving machine
Collecting pan, stainless steel, 200 mm Ø, height 50 mm	Retsch	69.720.0050	Part of sieving machine
Rotary evaporator			
Rotary evaporator (Rotavapor R-210)	Buchi	Discontinued	Replaced with Rotavapor R-300
Water bath (Heating bath B-491)	Buchi	48201	Part of rotary evaporator
Recirculator	Julabo	F25	Part of rotary evaporator
Vacuum pump (MPC 101 Z)	Ilmvac GmbH	412522	Part of rotary evaporator
Vacuum controller (Vacuum Control Box VCB 521)	Ilmvac GmbH	600053	Part of rotary evaporator
Parallel evaporator			
StarFish Base Plate 135 mm (for Radleys & IKA)	Radleys	RR95010	Part of parallel evaporator
Monoblock for 5 x 250 ml Flasks	Radleys	RR95130	Part of parallel evaporator
Telescopic 5-way Clamp with Velcro	Radleys	RR95400	Part of parallel evaporator
Gas/Vacuum Manifold with connectors	Radleys	RR95510	Part of parallel evaporator

650 mm Rod	Radleys	RR95665	Part of parallel evaporator
Quick Release Male, R/A Barbed 6.4 mm + Shut-off (3.2 mm ID)	Radleys	RR95520	Part of parallel evaporator
Stirrer/hot plate	Radleys	RR98072	Part of soxhlet extractor
Temperature controller	Radleys	RR98073	Part of soxhlet extractor
Elliptical Stirring Bar 15 mm Rare Earth	Radleys	RR98097	Part of parallel evaporator
Vacuum cold trap, plastic coated, PTFE stopcock	Chemglass	CG-4519-01	Part of parallel evaporator
Vacuum pump (MPC 101 Z)	Ilmvac GmbH	412522	Part of parallel evaporator
Tygon tubing E-3603, 6.40 mm (internal) 12.80 mm (external)	Saint-Gobain/VWR	228-1292	Part of parallel evaporator
Parallel Soxhlet extractor			
StarFish Base Plate 135 mm (for Radleys & IKA)	Radleys	RR95010	Part of soxhlet extractor
Monoblock for 5 x 250 ml Flasks	Radleys	RR95130	Part of soxhlet extractor
Telescopic 5-way Clamp with Velcro	Radleys	RR95400	Part of soxhlet extractor
Telescopic 5-way Clamp with Silicone Strap and Long Handle	Radleys	RR95410	Part of soxhlet extractor
Water Manifold with connectors	Radleys	RR95500	Part of soxhlet extractor
650 mm Rod	Radleys	RR95665	Part of soxhlet extractor
Quick Release Male, R/A Barbed 6.4 mm + Shut-off (3.2 mm ID)	Radleys	RR95520	Part of soxhlet extractor
Coil condensers with standard ground joints 29/32 NS	Lenz	5.2503.04	Part of soxhlet extractor
Extractor Soxhlet 40 ml borosilicate glass 29/32 socket 24/29 cone	Quickfit	EX5/43	Part of soxhlet extractor
Stirrer/hot plate	Radleys	RR98072	Part of soxhlet extractor
Temperature controller	Radleys	RR98073	Part of soxhlet extractor
Recirculator	Grant	LTC1	Part of soxhlet extractor
Cellulose extraction thimble	Whatman	2280-228	
Tweezers	Excelta	20A-S-SE	
Vacuum drying oven			
Vacuum drying oven	Binder	VD 23	Part of vacuum oven
Dewar vessel 2 L 100 x 290 mm with handle	KGW-Isotherm	10613	Part of vacuum oven
Vacuum Trap	GPE	CG-4532-01	Part of vacuum oven
Other equipment			
Analytical balance	A&D	GH-252	accuracy to ± 0.1 mg
Volumetric Karl Fischer titrator	Mettler Toledo	V20	
10 ml disposable pipette	Corning Inc	Costar 4101 10 mL Stripette	
Eppendorf Research plus pipette, variable volume, volume 100-1,000 μ l	Eppendorf	3120000062	
Desiccator	Jencons	JENC250-028BOM	
Ace pressure tube bushing type, Front seal, volume 15 ml	Ace Glass	8648-04	
Ace O-rings, silicone, 2.6 mm, I.D. 9.2 mm	Ace Glass	7855216	O-ring for pressure tube
Vortex shaker	VWR International	444-1378 (UK)	

Fan-assisted convection oven	ThermoScientific	HeraTherm OMH60	
Oven glove (Crusader Flex)	Ansel Edmont	42-325	
250 ml Round bottom flask single neck ground joint 24/29 (Pyrex)	Quickfit	FR250/3S	
Rotaflor stopcock adapter with cone 24/29	Rotaflor England	MF11/2/SC	
50 ml Falcon tube	Heraeus/Kendro	HERA 76002844	
Centrifuge (Mega Star 3.0)	VWR	521-1751	
Reagents			
Ethanol absolute	VWR	20820.464	
Triethylamine	Sigma-Aldrich	T0886	
Sulfuric acid 5 mol/L (10 N) AVS TITRINORM volumetric solution Safe-break bottle 2.5 L	VWR	191665V	
Purified water (15 MΩ resistance)	Elga	CENTRA R200	
Lignocellulosic biomass			
Miscanthus X giganteus			
Pinus sylvestris			