

Analysis and Specification of Starch Granule Size Distributions

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Materials

Name	Company	Catalog Number	Comments
Analytical beaker	Beckman Coulter Life Sciences	A35595	Smart-Technology (ST) beaker
Aperture tube, 100 µm	Beckman Coulter Life Sciences	A36394	For the MS4E
Disposable transfer pipettor,	Fisher Scientific (Fishersci.com)	13-711-9AM	Other disposable transfer pipettors with similar orifice can also be used.
Fisherbrand Conical Polypropylene Centrifuge Tubes, 50 ml	Fisher Scientific (Fishersci.com)	05-539-13	Any other similar types of tubes can be used.
Glass beakers, 150 to 250 ml	Fisher Scientific (Fishersci.com)	02-540K	These beakers are used to contain methanol for washing the aperture tube and stirrer between runs.
LiCl	Fisher Chemical	L121-100	
Methanol	Fisher Chemical	A412-500	Buy in bulk as the analysis uses a large quantity of methanol.
Mettler Toledo ML-T Precision Balances	Mettler Toledo	30243412	Any other precision balance with a readability 0.01 g to 1 mg will work.
Multisizer 4e Coulter Counter	Beckman Coulter Life Sciences	B23005	The old model, Multisizer 3 can also be used with slight adjustment of parameters. The 4e model comes with a 100 µm aperture tube. Other aperture tubes of different diameter can be purchased separately from the company.
Ultrasonic processor UP50H	Hielscher Ultrasound Technology	UP50H	Other laboratory sonicator having a low-power (<50 Watt) output can be also used. Both MS1 and MS2 sonotrodes for the particular sonicator can be used to disperse starch granules in 5 ml methanol. Always use the lowest setting first, 20% amplitude and 0.1 or 0.2 cycle, and raise the setting if aggregates persist in suspension.