

Selection Guide

Selection Guide for SPE Sorbents and Solvents

ORGANIC SAMPLES MW < 2000 (in solution) This Sorbent Selection Guide is a systematic guide classifying samples according to polarity, ionizability and solubility in water or organic solvents. This information is useful in selecting the necessary components of a preliminary extraction method.

Sample Solubility	Organic Solvent Soluble			Water Soluble				
Sample Matrix	Organic Polar	Organic Moderately Polar	Aqueous Non-polar	Ionic Aqueous Anionic Cationic		Non-ionic/Ion-paired Aqueous Non-polar Moderately Polar Aqueous Polar		
Mechanism ¹	NPC	LSC	RPC	IEC	IEC	RPC	LSC	NPC
Spe Phase Recommended²	H ₂ O-Philic DVB Cyano Diol Amino 1,2 Amino	H ₂ O-Phobic DVB H ₂ O-Philic DVB Silica gel Florisil Alumina	H ₂ O-Phobic DVB H ₂ O-Phobic DVB SDB-1/SDB-2 Octadecyl Octyl Cyclohexyl Phenyl Cyano	H ₂ O-Phobic SC-DVB H ₂ O-Philic SA-DVB Amino 1,2 Amino Quaternary Amine	H ₂ O-Phobic SC-DVB H ₂ O-Philic SC-DVB Cyano Carboxylic Acid Sulfonic Acid	H ₂ O-Phobic DVB H ₂ O-Philic DVB SDB-1/SDB-2 Octadecyl Octyl Cyclohexyl Phenyl Cyano	H ₂ O-Phobic DVB H ₂ O-Phobic DVB Silica gel Florisil Alumina	H ₂ O-Philic DVB Cyano Diol Amino 1,2 Amino
SOLVENTS^{3,4}	Hexane Chloroform Dichloro-methane Acetone Methanol	Hexane Chloroform Dichloro-methane Ethyl acetate Methanol	Hexane Dichloro-methane Acetone Acetonitrile Methanol Water	Acids, buffers	Acids, bases, buffers	Hexane Dichloro-methane Acetone Acetonitrile Methanol Water	Hexane Chloroform Dichloro-methane Ethyl acetate Methanol	Hexane Chloroform Dichloro-methane Acetone Methanol

1 Separation Mechanisms
 2 Bonded phases listed in order of increasing polarity
 3 Eluting solvents listed in order of increasing polarity
 4 Selective elution can be performed by combining two or more miscible solvents to achieve various degrees of polarity

LSC: Liquid Solid Chromatography (Adsorption)
 NPC: Normal Phase Chromatography (Bonded Phase Partition)
 RPC: Reverse Phase Chromatography (Bonded Phase Partition)
 IEC: Ion-Exchange Chromatography (Bonded Phase Ion-Exchange)
 SDB: Styrene Divinyl Benzene
 DVB: Divinyl Benzene
 H₂O-Phobic WA DVB: Weak anion exchanger
 H₂O-Phobic SC DVB: Strong cation exchanger
 H₂O-Philic SA DVB Strong anion exchanger
 H₂O-Philic SC DVB: Strong cation exchanger

3, 4 Solvents:
 9262 Hexane, ULTRA RESI-ANALYZED™
 9257 Chloroform, ULTRA RESI-ANALYZED™
 9264 Dichloromethane, ULTRA RESI-ANALYZED™
 9260 Ethyl acetate, ULTRA RESI-ANALYZED™
 9254 Acetone, ULTRA RESI-ANALYZED™
 9255 Acetonitrile, ULTRA RESI-ANALYZED™
 9077 Methanol, ULTRA RESI-ANALYZED™
 4219 Water, ULTRA RESI-ANALYZED™



Phillipsburg, NJ 9001:2008 & 14001:2004
Paris, KY 9001:2008
Mexico City, Mexico 9001:2008
Deventer, Holland 9001:2008 & 14001:2004
Selangor, Malaysia 9001:2008

About Avantor™ Performance Materials

Avantor Performance Materials manufactures and markets high-performance chemistries and materials around the world under several respected brand names, including the J.T.Baker®, Macrom™, Rankem™, Diagnova™, and POCH™ brands.

Avantor products are used in a wide range of industries. Our biomedical and life science solutions are used in academic, industry and quality control laboratories for research, pharmaceutical production and medical lab testing, while our electronics solutions are used in the manufacturing of semiconductors, photovoltaic cells and flat panel displays. Based in Center Valley, Pennsylvania (USA), Avantor is owned by an affiliate of New Mountain Capital, LLC.

For additional information please visit www.avantormaterials.com or follow www.twitter.com/avantor_news



Ordering Information and Assistance

Customer Service and Technical Service
TOLL FREE: +1-855-AVANTOR (+1-855-282-6867)
OUTSIDE OF U.S. TEL: +1-610-573-2600
FAX: +1-610-573-2610
E-MAIL: info@avantormaterials.com
www.avantormaterials.com

Our Web site features ASK Avantor™ which includes live chat capabilities with customer service representatives.
www.avantormaterials.com/askavantor

Avantor Performance Materials, Inc.
3477 Corporate Parkway
Suite #200
Center Valley, PA 18034 USA

Lit # Selection Guide for spe sorbents and solvents
ORGANIC SAMPLES MW1

©2011 Avantor Performance Materials, Inc. All rights reserved.
Trademarks are owned by Avantor Performance Materials, Inc. or its affiliates unless otherwise noted.

Worldwide Locations

North America: Avantor Performance Materials, Inc.
3477 Corporate Parkway
Suite #200
Center Valley, PA 18034 USA
TOLL FREE: +1-855-AVANTOR (+1-855-282-6867)
OUTSIDE OF U.S. TEL: +1-610-573-2600
FAX: +1-610-573-2610

China: Avantor Performance Materials Trading (Shanghai) Co., Ltd.
Room 501, Block E, Poly Plaza,
No.18, Dongfang Road
Pudong New Area, Shanghai 200120 China
TEL: +86-21-5878 3226
FAX: +86-21-5877 7253

India: J.T.Baker India Private Limited
425-426, Chintamani Plaza
Andheri Kurla Road
Chakala
Andheri (East)
Mumbai — 400 099 India
TEL: +91-22-4215 2458
FAX: +91-22-4215 2465

Malaysia: Avantor Performance Materials, Sdn. Bhd. (formerly Mallinckrodt Baker, Sdn. Bhd.)
A-1201-2, 12th Floor,
Kelana Brem Tower 1
Jalan SS7/15, Kelana Jaya
47301 Petaling Jaya, Selangor, Malaysia
TEL: +60-3-7803 0378
FAX: +60-3-7803 0405 / 7804 5427

Mexico: Avantor Performance Materials, S.A. de C. V.
Plomo 2
Fracc. Industrial Esfuerzo Nacional Xalostoc
CP 55320 Ecatepec, Estado de Mexico, Mexico
TEL: +52-55-5699-0250
FAX: +52-55-5755-2585

Netherlands: Avantor Performance Materials, B.V.
Teugseweg 20, 7418 AM Deventer
P.O. Box 1, 7400 AA Deventer
The Netherlands
TEL: +31-570-687500
FAX: +31-570-687574