

Bio-Beads® SM-2 Hydrophobic Adsorbents

Applications Bibliography

Bio-Beads SM adsorbents are neutral, macroporous polymeric beads of high surface area for adsorbing organics from aqueous solutions. Each bead is composed of a large number of highly crosslinked microspheres, giving it high surface area and uniform pores. Bio-Beads adsorbents can be used with a variety of solvents, including alcohols, petroleum ether, diethyl ether, hexane, and solvent mixtures, as well as with aqueous media. They have excellent physical stability and withstand temperatures to 250 °C.

Bio-Beads SM-2 nonpolar polystyrene adsorbents are particularly useful for the adsorption of nonpolar substances or surface active agents from aqueous solutions.

The following reference cite the use of Bio-Beads SM-2 adsorbents for the analysis of organic compounds, drugs, biologicals, foods, pesticides, chemicals, metals, and detergents. For more information on Bio-Beads SM adsorbents, request the Bio-Beads SM Instruction Manual.

Applications for Bio-Beads SM-2

Application	Reference
Organics	
Trace organics in water	Wigilius, B., Boren, H., Cvarlberg, G. E., Grimvall, A., Lundgren, B. V. and Savenhed, R., <i>J. Chromatog.</i> , 391 , 169-182 (1987).
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Chlorinated hydrocarbons in water	Picer, N. and Picer, M., <i>J. Chromatogr.</i> , 193 , 357-369 (1980).
Separation of nitro- and chlorophenols	Grieser, M.D. and Pietrzyk, D. J., <i>Anal. Chem.</i> , 45 , 1348-1353 (1973).
Organic bases	Chu, C. and Pietrzyk, D. J., <i>Anal. Chem.</i> , 46 (3), 330-340 (1974).

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Drugs	
Retention and sorption of sulfas	Rotsch, T. D., Sydor, R. J. and Pietrzyk, D. J., <i>J. Chrom. Sci.</i> , 17 , 339-344 (1979).
Separation of cannabinoids from cannabis extract	Hendriks, H., Batterman, S., Bos, R., Huizing, H. J. and Malingre, Th. M., <i>J. Chromatogr.</i> , B205, 444-450 (1981).
Determination of benzo[a]pyrene in cigarette smoke condensate	Robinson, J. L., Marshall, M. A., Draganjac, M. E. and Noggle, L. C., <i>Anal. Chim. Acta</i> , 115 , 229-238 (1980).
Narcotic antagonists in human urine	Digregorio, G.J., <i>J. Chromatogr.</i> , 101 , 424-427 (1974).
Drugs in urine	Roerig, D. L., Lewand, D., Mueller, M. and Wang, R. I. H., <i>J. Chromatogr.</i> , 110 , 349-359 (1975).
	Bastos, M. L., Jukofsly, D. and Mule, S. J., <i>J. Chromatogr.</i> , 81 , 93 (1973).
Morphine and codeine in urine	Ulrich, L. and Ruegsegger, P., <i>Arch. Toxicol.</i> , 45 , 241-248 (1980). German.
Morphine in urine	Kullberg, M. P. and Gorodetzky, C. W., <i>Clinical Chem.</i> , 20 (2), 177-183 (1974).
Methaqualone in blood plasma	Hux, R. A., Mohammed, H. Y. and Cantwell, F. F., <i>Anal. Chem.</i> , 54 , 113-117 (1982).

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Drugs in blood	Schlicht, H. J. and Gelbke, H. P., <i>Z. Rechtsmedizin</i> , 81 , 25-30 (1978).
Pharmaceutical drug syrups	Mohammed, H. Y. and Cantwell, F. F., <i>Anal. Chem.</i> , 50 (3), 491-496 (1978).
Extraction of drugs from human stomach fluid	Ibrahim G., Andryauskas, S. and Bastos, M. L., <i>J. Chromatogr.</i> , 108 , 107-116 (1975).
Polar and non-polar drug metabolites	Dieterle, W., Faigle, J. W. and Mory, H., <i>J. Chromatogr.</i> , 168 , 27-34 (1979).
Biological	
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Crude plasma clean-up	Tamura, M., Harris, T. M. Higashimori, K., Sweetman, B. J., Blair, I. A. and Inagami, T., <i>Biochem.</i> , 26 , 2797-2806 (1987).
Leukotrienes from plasma prostaglandins	Salari, H. and Steffenrud, S., <i>J. Chromatogr.</i> , 378 , 35-44 (1986).
Prostaglandins	Hamberg, M., <i>Anal. Biochem.</i> , 55 , 368-378 (1973).
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Isolation of proline and proline from fossil bone	Stafford, T. W., Duhamel, R. C., Haynes, C. V. and Brendel, K., <i>Life Sciences</i> , 31 , 931-938 (1982).
Anabolic steroids in animal tissue and urine	Verbeke, R., <i>J. Chromatogr.</i> , 177 , 69-84 (1979).
Steroids from urine	Shackleton, C. H. L., Sjovall, J. and Wisen, O., <i>Clin. Chim. Acta</i> , 27 , 354-356 (1970).
Extraction of steroids	Bradlow, H. L., <i>Steroids</i> , 11 , 265 (1968).
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Phosphatidyl-ethanolamine from plasma	Salari, H., <i>J. Chromatogr.</i> , 419 , 103-111 (1987).
Glucuronides	Delaborde, S., Loosli, H. R., Ponelle, M., Griesser, R. and Maurer, G., <i>J. High Resolution Chromatography & Chromatography Communications</i> , 10 , 71-76 (1987).
Impregnation of resin with pentafluorobenzyl bromide microbial fatty acid analysis	Rosenfeld, J. M., Hammerberg, O. and Orvidas, M. C., <i>J. Chromatogr.</i> , 378 , 9-16 (1986).
Plant hormones	Stafford, A. E., Kunhle, J. A., Corse, J. and Hautala, E., <i>J. Chromatogr.</i> , 294 , 485-488 (1984).
Captopril (derivatized in blood)	Funke, P.T., Ivashkiv, E., Malley, M.F. and Cohen, A.I., <i>Anal. Chem.</i> , 52 , 1086-1089, (1980).
Food	
Flavonoids from aqueous fractions	Rosler, K. H. and Goodwin, R. S., <i>J. Natural Products</i> , 47 (1), 188 (1983).
Acid dyes	Uematsu, T., Kurita, T. and Hamada, A., <i>J. Chromatogr.</i> , 172 , 327-334 (1979).
Naringin and limonin from grapefruit juice	Chandler, B. V. and Johnson, R.I., <i>Proc. Int. Soc. Citriculture</i> , 2 , 885-888 (1981).
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Environmental	
Indium treated adsorbent to concentrate humic complexes	Hiraide, M., Arima, Y. and Mizuike, A., <i>Anal. Chim. Acta</i> , 200 , 171-179 (1987).
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Carbamate insecticides	Sundaram, K. M. S., Szeto, S. Y. and Hindle, R., <i>J. Chromatogr.</i> , 177 , 29-34 (1979).
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Ethyl and methyl parathion	Paschal, D. D., Bicknell, R. and Dresbach, D., <i>Anal. Chem.</i> , 49 , (11) 1551-1554 (1977).
Fenitrothion and its degradation products	Volpe, G. and Mallet, V. N., <i>Chromatographia</i> , 14 (6), 333-336 (1981).
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Resin impregnation with TBP for extracting actinides from fission products	Green, L. W., Elliot, N. L. and Longhurst, T. H., <i>Anal. Chem.</i> , 55 , 2394-2398 (1983).

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Detergents	
Triton X-100 detergent	Holloway, P. W., <i>Anal. Chem.</i> , 53 , 304-308 (1973).
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Coating microtiter plates with detergent soluble membrane proteins	Drexler, G., Eichinger, A., Wolf, C. and Sieghart, W., <i>J. Immunological Methods</i> , 95 , 117-122 (1986).



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