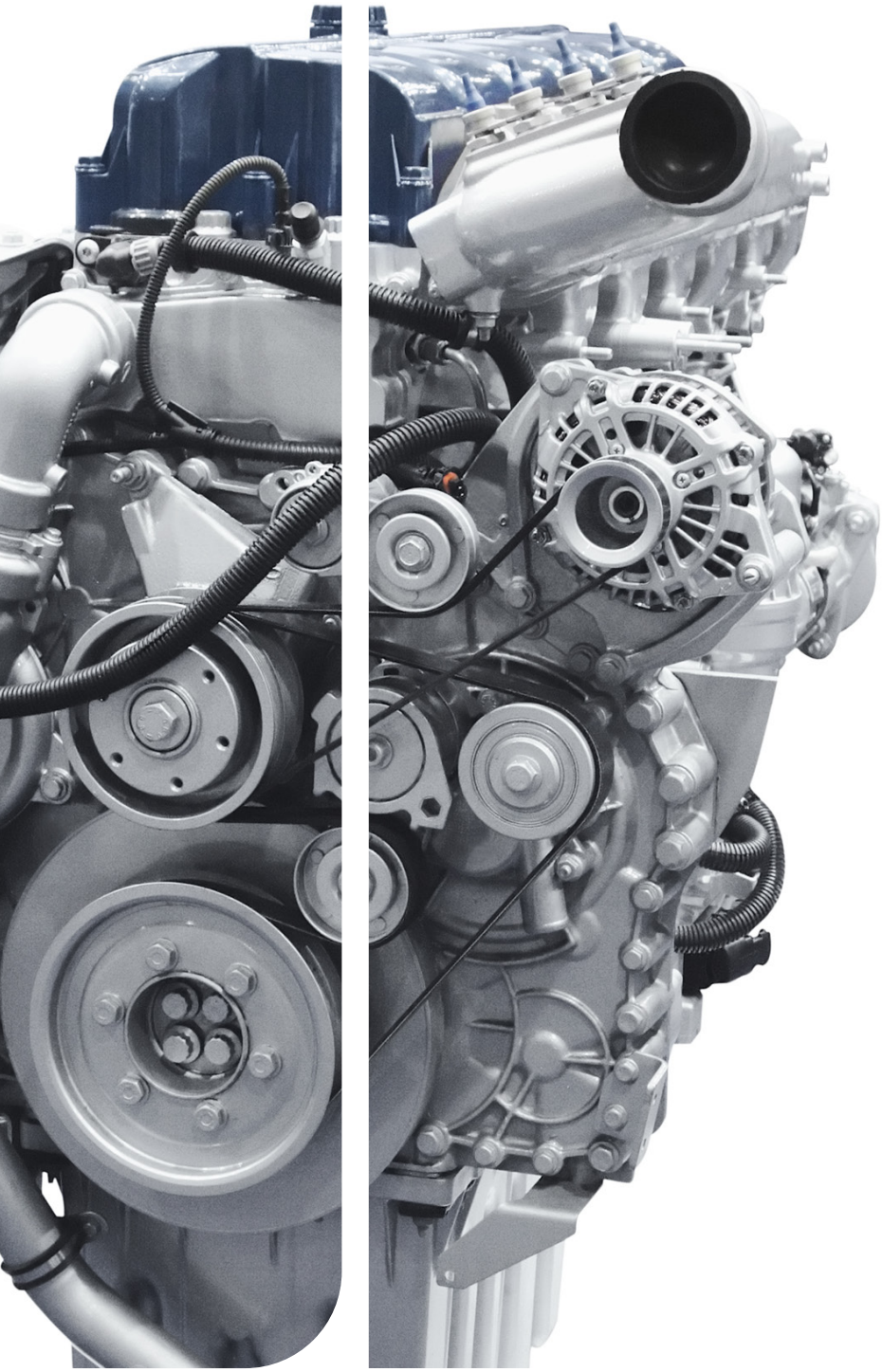


HPLC Reagents & Columns

Designed and Modified for Optimal Performance

EMD

What's EMD's approach to HPLC?

We know that purity and efficiency
can make all the difference in your analysis,
so we bring you a full range of
reagents and chromatography products designed,
tested, and modified
for optimal HPLC performance.

That's what's in it for you. EMD Chemicals

Introduction

EMD Chemicals, an affiliate of Merck KGaA, Darmstadt, Germany is a recognized leader in high purity solvents and chemicals for liquid chromatography.

To ensure peak performance and reproducibility, our products are tested for parameters such as:

UV-optical transparency
insoluble matter
heavy metals
absence of interfering ions

Much of EMD's reputation and success is founded on ensuring customer satisfaction before, during, and after the sale. A wealth of information about all EMD products is easily accessible to customers 24 hours a day, 7 days a week, via our website www.emdchemicals.com/analytics where Certificates of Analysis, Material Safety Data Sheets, product specifications, literature, and other useful documents can be accessed with just a few mouse clicks.

Alternatively, try our Award-winning Customer Service and Technical Service is just a phone call away:

800-222-0342

Hours of Operation
8:30am - 5:00pm EST (Monday-Friday)

Table of Contents

HPLC Solvents

As the main component of your mobile phase, the solvent you choose needs to be suitable for your application. EMD Chemicals has over 30 years experience producing the highest quality solvents for HPLC applications. Don't trust your work to anything less.

Acetone, OmniSolv®

EMD No.	Size	Pkg.
AX0116-6	1 L	Glass Bottle
AX0116-1	4 L	Glass Bottle
AX0116P-1	4 L	Poly-coated Glass Bottle
AX0116-NP20	20 L	NOWPak®

Specifications

Assay (GC) ..... 99.5% min
Capillary ECD responsive substances ..... (as PCNB) 2ng/L max
Capillary FID responsive substances ..... (as decane) 3µg/L max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass Test
Fluorescence (as quinine base)..... 1.0ppb max
Identity (IR-spectrum)..... Conforms
Residue after evaporation..... 1ppm max
Titrable acid ..... 0.3µeq/g max
UV Abs. at 329 nm ..... 1.00AU max
UV Abs. at 330 nm ..... 0.80AU max
UV Abs. at 335 nm ..... 0.30AU max
UV Abs. at 340 nm ..... 0.06AU max
UV Abs. at 350 nm ..... 0.005AU max
UV Abs. at 400 nm ..... 0.005AU max
UV Cut-off..... 329nm max
Water (H_2O)..... 0.5% max

Acetone, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
AX0115-6	1 L	Glass Bottle
AX0115-1	4 L	Glass Bottle
AX0115P-1	4 L	Poly-coated Glass Bottle
AX0115-NP20	20 L	NOWPak®

Specifications

Assay (GC, corrected for water content) ..... 99.5% min
Aldehyde (as HCHO)..... 0.002% max
Appearance ..... Clear liquid, free from particulates
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Infrared spectrum ..... Conforms to standard
Isopropyl alcohol..... 0.05% max
Methanol ..... 0.05% max
Residue after evaporation..... 5ppm max
Solubility in water..... To pass test
Substances reducing permanganate..... To pass test
Titrable acid ..... 0.0003meq/g max
Titrable base..... 0.0006meq/g max
UV Abs. at 330 nm ..... 1.00AU max
UV Abs. at 340 nm ..... 0.10AU max
UV Abs. at 350 nm ..... 0.02AU max
UV Abs. at 400 nm ..... 0.01AU max
UV Cut-off..... 330nm max
Water (H_2O)..... 0.5% max

Acetonitrile, Anhydrous, OmniSolv®

EMD No.	Size	Pkg.
AX0151-5	450 ml	Glass Bottle
AX0151-6	1 L	Glass Bottle
AX0151-1	4 L	Glass Bottle

Specifications

Assay (GC)..... 99.9% min
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 250ppt max
Free amine (as dimethylamine)..... 0.20ppm max
Gradient at 210 nm ..... 0.003AU max
Infrared spectrum ..... Conforms to standard
Residue after evaporation..... 1ppm max
Titrable acid ..... 0.8µeq/g max
Titrable base..... 0.16µeq/g max
UV Abs. at 189 nm ..... 1.00AU max
UV Abs. at 195 nm ..... 0.15AU max
UV Abs. at 210 nm ..... 0.03AU max
UV Abs. at 230 nm ..... 0.005AU max
UV Abs. at 250 nm ..... 0.005AU max
UV Abs. at 270 nm ..... 0.005AU max
UV Cut-off..... 189nm max
Water (H_2O)..... 10ppm max

Acetonitrile, OmniSolv®

EMD No.	Size	Pkg.
AX0142-6	1 L	Glass Bottle
AX0142-1	4 L	Glass Bottle
AX0142P-1	4 L	Poly-coated Glass Bottle
AX0142-NP20	20 L	NOWPak®

Specifications

Assay (GC) ..... 99.9% min
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 300ppt max
Gradient at 210 nm ..... 0.002AU max
Gradient at 254 nm ..... 0.0003AU max
Identity (IR-spectrum)..... Conforms
Residue after evaporation..... 1ppm max
Titrable acid ..... 8.0µeq/g max
Titrable base ..... 0.16µeq/g max
UV Abs. at 189 nm ..... 1.00AU max
UV Abs. at 195 nm ..... 0.15AU max
UV Abs. at 210 nm ..... 0.03AU max
UV Abs. at 230 nm ..... 0.005AU max
UV Abs. at 250 nm ..... 0.005AU max
UV Abs. at 270 nm ..... 0.005AU max
UV Cut-off..... 189nm max
Water (H_2O)..... 0.02% max

Acetonitrile, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
AX0145P-6	1 L	Poly-coated Glass Bottle
AX0145-1	4 L	Glass Bottle
AX0145P-1	4 L	Poly-coated Glass Bottle
AX0145-NP20	20 L	NOWPak®

Specifications

Assay (GC) ..... 99.8% min
Appearance ..... Clear liquid, free from particulates
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Gradient at 254 nm ..... 0.005AU max
Infrared spectrum..... Conforms to standard
Residue after evaporation..... 5ppm max
Titrable acid ..... 0.008meq/g max
Titrable base ..... 0.006meq/g max
UV Abs. at 190 nm ..... 1.00AU max
UV Abs. at 220 nm ..... 0.05AU max
UV Abs. at 254 nm ..... 0.01AU max
UV Cut-off..... 190nm max
Water (H_2O)..... 0.10% max

Alcohol, Reagent, Anhydrous, OmniSolv®

EMD No.	Size	Pkg.
AX0445-6	1 L	Glass Bottle
AX0445-1	4 L	Glass Bottle

Specifications

Assay (Ethanol)..... 89.5-91.5%
Assay (Isopropyl alcohol) 4.0-6.0%
Assay (Methanol)..... 3.5-5.5%
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Infrared spectrum..... Conforms to standard
Residue after evaporation..... 4ppm max
Titrable acid ..... 0.3µeq/g max
Titrable base..... 0.04µeq/g max
UV Abs. at 205 nm ..... 1.00AU max
UV Abs. at 210 nm ..... 0.65AU max
UV Abs. at 220 nm ..... 0.35AU max
UV Abs. at 230 nm ..... 0.20AU max
UV Abs. at 250 nm ..... 0.04AU max
UV Abs. at 270 nm ..... 0.01AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Cut-off..... 205nm max
Water (H_2O)..... 0.04% max

Helpful Hint

To help develop an ideal isocratic mobile phase, why not try using a simple spot test on a TLC plate. A solution of the substances to be separated is spotted several times on the desired sorbent plate at distances of several centimeters apart. The solvent from the sample is allowed to evaporate and a thin capillary of the desired mobile phase is applied to each spot. Due to the capillary forces, the liquid leaving the capillary spreads in a circular fashion and may separate the substance in a kind of circular chromatogram. Comparison of these fast tests permits an estimation of the best mobile phase and sorbent.

This helpful hint and other tips can be found in the TLC/Chrom Notes Section on our web site: www.emdchemicals.com/analytics

Benzene, OmniSolv®

EMD No.	Size	Pkg.
BX0212-6	1 L	Glass Bottle
BX0212-1	4 L	Glass Bottle

Specifications

Assay (GC)..... 99.7% min
Color (APHA)..... 10 max
Filtered through 0.2 µm filter..... To pass test
Infrared spectrum..... Conforms to standard
Residue after evaporation..... 2ppm max
UV Abs. at 280 nm..... 1.00AU max
UV Abs. at 290 nm..... 0.15AU max
UV Abs. at 300 nm..... 0.05AU max
UV Abs. at 330 nm..... 0.01AU max
UV Abs. at 350 nm..... 0.005AU max
UV Cut-off..... 280nm max
Water (H_2O)..... 0.03% max

Butyl Alcohol, OmniSolv®

EMD No.	Size	Pkg.
BX1777-6	1 L	Glass Bottle
BX1777-1	4 L	Glass Bottle

Specifications

Assay (GC) ..... 99.7% min
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 500ppt max
Infrared spectrum ..... Conforms to standard
Residue after evaporation..... 1ppm max
Titrable acid ..... 0.2µeq/g max
UV Abs. at 215 nm ..... 1.00AU max
UV Abs. at 225 nm ..... 0.25AU max
UV Abs. at 230 nm ..... 0.15AU max
UV Abs. at 250 nm ..... 0.05AU max
UV Abs. at 260 nm ..... 0.05AU max
UV Abs. at 270 nm ..... 0.01AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Cut-off..... 215nm max
Water (H_2O)..... 0.05% max

1-Chlorobutane, OmniSolv®

EMD No.	Size	Pkg.
CX0914-6	1 L	Glass Bottle
CX0914-1	4 L	Glass Bottle

Specifications

Assay (GC) ..... 99.5% min
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 1.0ppb max
Infrared spectrum ..... Conforms to standard
Residue after evaporation..... 1ppm max
UV Abs. at 220 nm ..... 1.00AU max
UV Abs. at 225 nm ..... 0.50AU max
UV Abs. at 233 nm ..... 0.10AU max
UV Abs. at 240 nm ..... 0.05AU max
UV Abs. at 270 nm ..... 0.01AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Cut-off..... 220nm max
Water (H_2O)..... 0.01% max

Chloroform, HPLC

Meets ACS Specifications

Stabilized with an alkene

EMD No.	Size	Pkg.
CX1050P-6	1 L	Poly-coated Glass Bottle
CX1050-1	4 L	Glass Bottle
CX1050P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (GC) ..... 99.8% min
Acetone and Aldehydes (about 0.005%)..... To pass test
Acid and chloride ..... To pass test
Appearance ..... Clear liquid, free from particulates
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Free chlorine (Cl) ..... To pass test
Infrared spectrum..... Conforms to standard
Lead (Pb) ..... 0.05ppm max
Residue after evaporation..... 5ppm max
Suitability for dithizone tests..... To pass test
UV Abs. at 245 nm ..... 1.00AU max
UV Abs. at 255 nm ..... 0.25AU max
UV Abs. at 260 nm ..... 0.15AU max
UV Abs. at 270 nm ..... 0.05AU max
UV Abs. at 290 nm ..... 0.01AU max
UV Cut-off..... 245nm max
Water (H_2O)..... 0.05% max

Chloroform, OmniSolv®

Stabilized with an alkene

EMD No.	Size	Pkg.
CX1054-6	1 L	Glass Bottle
CX1054-1	4 L	Glass Bottle
CX1054P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (GC) ..... 99.9% min
Capillary ECD responsive substances ..... (as PCNB) 2ng/L max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 250ppt max
Free chlorine (Cl) ..... To pass test
Identity (IR-spectrum)..... Conforms
Residue after evaporation..... 1ppm max
Titrable acid ..... 0.2µeq/g max
UV Abs. at 245 nm ..... 1.00AU max
UV Abs. at 250 nm ..... 0.30AU max
UV Abs. at 260 nm ..... 0.04AU max
UV Abs. at 270 nm ..... 0.005AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Cut-off..... 245nm max
Water (H_2O)..... 0.01% max

HPLC Filter Degasser

The HPLC Filter Degasser removes dissolved gas and particulates from Organic Solvents. It is designed to filter and degas 4 liters of solvent without operator attention at a rate of 4 liters per 10 minutes. The Filter Degasser uses a 0.2µm PTFE filter (sold separately) and is autoclavable at 120°C.

EMD No.	Size	Description
692000-1	1 Unit	Filter-Degasser Unit
692001-1	1 Pack	0.2µm PTFE Replacement Filters (10/pack)

Chloroform, HPLC

Meets ACS Specifications

Stabilized with 0.75% Ethanol

EMD No.	Size	Pkg.
CX1058-6	1 L	Glass Bottle
CX1058-1	4 L	Glass Bottle
CX1058P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay ($CHCl_3$ + C_2H_5OH)..... 99.8% min
Acetone and Aldehydes (about 0.005%)..... To pass test
Acid and chloride ..... To pass test
Appearance ..... Clear liquid, free from particulates
Color (APHA) ..... 10 max
Density at 25°C..... 1.471-1.476g/ml
Ethanol ..... 0.7-1.0% (v/v)
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 1.0ppb max
Free chlorine (Cl) ..... To pass test
Infrared spectrum..... Conforms to standard
Lead (Pb)..... 0.05ppm max
Refractive index (n 20/D)..... 1.442-1.446
Residue after evaporation..... 2ppm max
Substances darkened by sulfuric acid ..... To pass test
Suitability for dithizone tests..... To pass test
UV Abs. at 245 nm ..... 1.00AU max
UV Abs. at 255 nm ..... 0.25AU max
UV Abs. at 260 nm ..... 0.15AU max
UV Abs. at 270 nm ..... 0.05AU max
UV Abs. at 290 nm - 400nm ..... 0.01AU max
UV Cut-off..... 244nm max
Water (H_2O)..... 0.01% max

Chloroform, OmniSolv®

Stabilized with Ethanol

EMD No.	Size	Pkg.
CX1059-6	1 L	Glass Bottle
CX1059-1	4 L	Glass Bottle

Specifications

Assay ($CHCl_3$ + C_2H_5OH)..... 99.8% min
Capillary ECD responsive substances (as PCNB)..... 5ng/L max
Color (APHA)..... 10 max
Ethanol..... 0.8-1.2%
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 250ppt max
Infrared spectrum ..... Conforms to standard
Residue after evaporation..... 1ppm max
Titrable acid ..... 0.2µeq/g max
UV Abs. at 245 nm ..... 1.00AU max
UV Abs. at 255 nm ..... 0.15AU max
UV Abs. at 260 nm ..... 0.05AU max
UV Abs. at 270 nm ..... 0.02AU max
UV Abs. at 290 nm ..... 0.01AU max
UV Cut-off..... 245nm max
Water (H_2O)..... 0.01% max

1,2-Dichloroethane, OmniSolv®

EMD No.	Size	Pkg.
DX0796-6	1 L	Glass Bottle
DX0796-1	4 L	Glass Bottle
DX0796P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (GC) ..... 99.0% min
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 500ppt max
Free halogens ..... To pass test
Infrared spectrum ..... Conforms
Residue after evaporation..... 1ppm max
Titrable acid ..... 0.3µeq/g max
UV Abs. at 230 nm ..... 1.00AU max
UV Abs. at 240 nm ..... 0.30AU max
UV Abs. at 250 nm ..... 0.10AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Abs. at 400 nm ..... 0.005AU max
UV Cut-off..... 230nm max
Water (H_2O)..... 0.02% max

Dichloromethane, OmniSolv®

Stabilized with an alkene

EMD No.	Size	Pkg.
DX0831-6	1 L	Glass Bottle
DX0831-1	4 L	Glass Bottle
DX0831P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (GC) ..... 99.9% min
Capillary ECD responsive substances .....
.....(as PCNB) 2ng/L max
Capillary FID responsive substances .....
.....(as decane) 3µg/L max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 500ppt max
Free halogens ..... To pass test
Identity (IR-spectrum)..... Conforms
Residue after evaporation..... 1ppm max
Titrable acid ..... 0.2µeq/g max
UV Abs. at 231 nm ..... 1.00AU max
UV Abs. at 235 nm ..... 0.40AU max
UV Abs. at 240 nm ..... 0.20AU max
UV Abs. at 250 nm ..... 0.01AU max
UV Abs. at 260 nm ..... 0.005AU max
UV Cut-off..... 231nm max
Water (H_2O)..... 0.005% max

Dichloromethane, HPLC

Meets ACS Specifications

Stabilized with an alkene

EMD No.	Size	Pkg.
DX0838-6	1 L	Glass Bottle
DX0838-1	4 L	Glass Bottle
DX0838P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (GC) ..... 99.8% min
Appearance ..... Clear liquid, free from particulates
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Free halogens ..... To pass test
Infrared spectrum..... Conforms to standard
Residue after evaporation..... 5ppm max
Titrable acid ..... 0.0003meq/g max
UV Abs. at 235 nm ..... 1.00AU max
UV Abs. at 240 nm ..... 0.35AU max
UV Abs. at 250 nm ..... 0.1AU max
UV Abs. at 260 nm ..... 0.04AU max
UV Abs. at 270 nm ..... 0.01AU max
UV Abs. at 300 nm ..... 0.01AU max
UV Abs. at 350 nm ..... 0.01AU max
UV Cut-off..... 235nm max
Water (H_2O)..... 0.02% max

Ethyl Acetate, OmniSolv®

EMD No.	Size	Pkg.
EX0241-6	1 L	Glass Bottle
EX0241-1	4 L	Glass Bottle
EX0241P-1	4 L	Poly-coated Glass Bottle
EX0241-NP20	20 L	NOWPak®

Specifications

Assay (GC) ..... 99.9% min
Capillary ECD responsive substances.....
..... (as PCNB) 2ng/L max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 250ppt max
Identity (IR-spectrum)..... Conforms
Residue after evaporation..... 1ppm max
Titrable acid ..... 0.8µeq/g max
UV Abs. at 254 nm ..... 1.00AU max
UV Abs. at 255 nm ..... 0.80AU max
UV Abs. at 257 nm ..... 0.35AU max
UV Abs. at 265 nm ..... 0.02AU max
UV Abs. at 270 nm ..... 0.01AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Cut-off..... 254nm max
Water (H_2O)..... 0.02% max

Ethyl Acetate, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
EX0245-6	1 L	Glass Bottle
EX0246P-6	1 L	Poly-coated Glass Bottle
EX0245-1	4 L	Glass Bottle
EX0245P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (GC) ..... 99.8% min
Appearance ..... Clear liquid, free from particulates
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Infrared spectrum..... Conforms to standard
Residue after evaporation..... 5ppm max
Substances darkened by sulfuric acid ..... To pass test
Titrable acid ..... 0.0009meq/g max
UV Abs. at 255 nm ..... 1.00AU max
UV Abs. at 257 nm ..... 0.50AU max
UV Abs. at 263 nm ..... 0.10AU max
UV Abs. at 275 nm ..... 0.05AU max
UV Abs. at 300-400nm ..... 0.01AU max
UV Cut-off..... 255nm max
Water (H_2O)..... 0.05% max

Ethyl Alcohol, Pure, 190 Proof, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
EX0290-6	6 x 1 L	Glass Bottle
EX0290-1	4 x 4 L	Glass Bottle

Specifications

Assay (GC)..... 94.9-96.0%
Color (APHA) ..... 10 max
Limit of Acetone & IPA..... Passes test
Methanol content (CH_3OH) ..... 0.1% max
Solubility in water..... Passes test
Substances darkened by sulfuric acid ..... Passes test
Substances reduced by permanganate ..... Passes test
Titrable acid ..... 0.0005meq/g max
Ttitrable base..... 0.0002meq/g max
UV Abs. at 210nm ..... 0.40AU max
UV Abs. at 220nm ..... 0.25AU max
UV Abs. at 230nm ..... 0.15AU max
UV Abs. at 240nm ..... 0.05AU max
UV Abs. at 270-400nm ..... 0.01AU max
Gradient at 254nm ..... Passes test
Water (H_2O)..... 5% max

Ethyl Ether, OmniSolv®

EMD No.	Size	Pkg.
EX0182-1	4 L	Poly-coated Glass Bottle

Specifications

Expiration date ..... 12 months from mfg date
Assay (GC) ..... 99.9% min
Appearance ..... Clear, free from particulates
Capillary ECD responsive substances (as PCNB) ..... 10ng/L max
Color (APHA) ..... 10 max
Filtered for particulate matter ..... To pass test
Peroxide (as H_2O_2)* ..... 1ppm max
Refractive index (n 20/D) 1.3471-1.3571
Residue after evaporation ..... 1.0ppm max
UV Abs. at 212 nm ..... 1.000AU max
UV Abs. at 250 nm ..... 0.080AU max
UV Abs. at 275 nm ..... 0.010AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Abs. at 400 nm ..... 0.005AU max
UV Cut-off ..... 212nm max
Water (H_2O) ..... 0.030% max

Heptane, OmniSolv®

EMD No.	Size	Pkg.
HX0078-6	1 L	Glass Bottle
HX0078-1	4 L	Glass Bottle
HX0078P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (n-heptane) ..... 99.0% min
Assay (saturated C7 hydrocarbons) ..... 99.9% min
Boiling range ..... 94.5-99.0°C
Capillary ECD responsive substances ..... (as PCNB) 5ng/L max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter ..... To pass test
Fluorescence (as quinine base) ..... 250ppt max
Infrared spectrum ..... Conforms to standard
Residue after evaporation ..... 1ppm max
UV Abs. at 197 nm ..... 1.00AU max
UV Abs. at 200 nm ..... 0.50AU max
UV Abs. at 210 nm ..... 0.25AU max
UV Abs. at 220 nm ..... 0.10AU max
UV Abs. at 230 nm ..... 0.05AU max
UV Abs. at 250 nm ..... 0.01AU max
UV Abs. at 260 nm ..... 0.01AU max
UV Abs. at 270 nm ..... 0.005AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Cut-off ..... 197nm max
Water (H_2O) ..... 0.01% max

Hexanes, OmniSolv®

EMD No.	Size	Pkg.
HX0296-6	1 L	Glass Bottle
HX0296-1	4 L	Glass Bottle
HX0296P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (total aliphatic hydrocarbons) ..... 99.8% min
Assay (total hexane isomers + methylcyclopentane) ..... 98.5% min
Boiling range ..... 66.1-69.4°C
Capillary ECD responsive substances (as PCNB) ..... 5ng/L max
Capillary ECD responsive substances (as decane) 3µg/L
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter ..... To pass test
Fluorescence (as quinine base) ..... 250ppt max
Identity (IR-spectrum) ..... Conforms
Residue after evaporation ..... 1ppm max
UV Abs. at 195 nm ..... 1.00AU max
UV Abs. at 200 nm ..... 0.50AU max
UV Abs. at 210 nm ..... 0.20AU max
UV Abs. at 220 nm ..... 0.05AU max
UV Abs. at 230 nm ..... 0.05AU max
UV Abs. at 250 nm ..... 0.01AU max
UV Abs. at 280 nm ..... 0.005AU max
UV Cut-off ..... 195nm max
Water (H_2O) ..... 0.01% max

Hexanes, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
HX0290-6	1 L	Glass Bottle
HX0290P-6	1 L	Poly-coated Glass Bottle
HX0290-1	4 L	Glass Bottle
HX0290P-1	4 L	Poly-coated Glass Bottle
HX0290-NP20	20 L	NOWPak®

Specifications

Assay (n-hexane) ..... Report
Assay (total hexane isomers + methylcyclopentane) ..... 98.5% min
Appearance ..... Clear liquid, free from particulates
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter ..... To pass test
Infrared spectrum ..... Conforms
Residue after evaporation ..... 5ppm max
Sulfur compounds (as S) ..... 0.005% max
Thiophene ..... To pass test
UV Abs. at 200 nm ..... 1.00AU max
UV Abs. at 210 nm ..... 0.30AU max
UV Abs. at 220 nm ..... 0.20AU max
UV Abs. at 230 nm ..... 0.10AU max
UV Abs. at 240 nm ..... 0.04AU max
UV Abs. at 250 nm ..... 0.02AU max
UV Abs. at 270 nm ..... 0.01AU max
UV Abs. at 300 nm ..... 0.01AU max
UV Abs. at 350 nm ..... 0.01AU max
UV Cut-off ..... 200nm max
Water (H_2O) ..... 0.01% max
Water-soluble titrable acid ..... 0.0003meq/g max

Bulk HPLC Solvents in EMD ReCycler™ Containers

EMD ReCycler™ Containers ensure solvent purity and meet the needs of the scientific community by eliminating the need to dispose of large volumes of glass bottles, polystyrene packaging inserts, and corrugated cartons. Additionally, these bulk refillable containers reduce QC time due to the larger batch size per delivery and eliminate the costs incurred by the triple rinsing requirements of glass bottles.

EMD ReCycler™ containers are available in sizes ranging from 18.9L (5 gallon) to 1250L for most of the OmniSolv® and HPLC-grade solvents listed in this brochure.

n-Hexane, 95%, OmniSolv®

EMD No.	Size	Pkg.
HX0295-6	1 L	Glass Bottle
HX0295-1	4 L	Glass Bottle
HX0295P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (n-hexane) ..... 95% min
Boiling range ..... 66.1-69.4°C
Capillary ECD responsive substances ..... (as PCNB) 5ng/L max
Capillary FID responsive substances (as decane) ..... 3µg/L max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter ..... To pass test
Fluorescence (as quinine base) ..... 250ppt max
Infrared spectrum ..... Conforms to standard
Residue after evaporation ..... 1ppm max
UV Abs. at 195 nm ..... 1.00AU max
UV Abs. at 200 nm ..... 0.50AU max
UV Abs. at 210 nm ..... 0.20AU max
UV Abs. at 220 nm ..... 0.05AU max
UV Abs. at 230 nm ..... 0.05AU max
UV Abs. at 250 nm ..... 0.01AU max
UV Abs. at 280 nm ..... 0.005AU max
UV Cut-off ..... 195nm max
Water (H_2O) ..... 0.01% max

n-Hexane, 95%, HPLC

EMD No.	Size	Pkg.
HX0291P-6	1 L	Poly-coated Glass Bottle
HX0291-1	4 L	Teflon Bottle
HX0291P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (n-hexane) ..... 95% min
Assay (total hexane isomers + methylcyclopentane) ..... 99.0% min
Appearance ..... Clear liquid, free from particulates
Color (APHA) ..... 10 max
Infrared spectrum ..... Conforms
Residue after evaporation ..... 5ppm max
Sulfur compounds (as S) ..... 0.005% max
Thiophene ..... To pass test
UV Abs. at 200 nm ..... 1.00AU max
UV Abs. at 210 nm ..... 0.30AU max
UV Abs. at 220 nm ..... 0.10AU max
UV Abs. at 230 nm ..... 0.05AU max
UV Abs. at 240 nm ..... 0.04AU max
UV Abs. at 250 nm ..... 0.02AU max
UV Abs. at 270 nm ..... 0.01AU max
UV Abs. at 300 nm ..... 0.01AU max
UV Abs. at 350 nm ..... 0.01AU max
UV Cut-off ..... 200nm max
Water (H_2O) ..... 0.01% max
Water-soluble titrable acid ..... 0.0003meq/g max

Methanol, OmniSolv®

EMD No.	Size	Pkg.
MX0488-6	1 L	Glass Bottle
MX0488-1	4 L	Glass Bottle
MX0488P-1	4 L	Poly-coated Glass Bottle
MX0488-NP20	20 L	NOWPak®

Specifications

Assay (GC) ..... 99.9% min
Acetone ..... 10ppm max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter ..... To pass test
Fluorescence (as quinine base) ..... 250ppt max
Gradient at 235 nm ..... 0.001AU max
Gradient at 254 nm ..... 0.001AU max
Identity (IR-spectrum) ..... Conforms
Residue after evaporation ..... 1ppm max
Titrable acid ..... 0.3µeq/g max
Titrable base ..... 0.2µeq/g max
UV Abs. at 203 nm ..... 1.00AU max
UV Abs. at 205 nm ..... 0.80AU max
UV Abs. at 210 nm ..... 0.25AU max
UV Abs. at 220 nm ..... 0.10AU max
UV Abs. at 230 nm ..... 0.03AU max
UV Abs. at 250 nm ..... 0.01AU max
UV Abs. at 260 nm ..... 0.005AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Cut-off ..... 203nm max
Water (H_2O) ..... 0.05% max

Methanol, HR-GC, OmniSolv®

EMD No.	Size	Pkg.
MX0480-6	1 L	Glass Bottle
MX0480-1	4 L	Glass Bottle

Specifications

Assay (GC) ..... 99.9% min
Appearance ..... Clear liquid, free from particulates
Cap. ECD responsive substances as PCNB (peak) ..... 2ng/L max
Cap. ECD responsive substances as PCNB (total) ..... 20ng/L max
Cap. FID responsive substances as decane (peak) ..... 1µg/L max
Cap. FID responsive substances as decane (total) ..... 10µg/L max
Color (APHA) ..... 5 max
Filtered through 0.2 µm filter ..... To pass test
Formaldehyde (HCHO) ..... 1ppm max
Infrared spectrum ..... Conforms to standard
Residue after evaporation ..... 1ppm max
Titrable acid ..... 0.2µeq/g max
Volatile impurities (P&T), Methyl ethyl ketone ..... 3ppm max
Volatile impurities (P&T), Other organics ..... 1ppm max
Water (H_2O) ..... 0.05% max

Methanol, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
MX0475P-6	1 L	Poly-coated Glass Bottle
MX0475-1	4 L	Glass Bottle
MX0475P-1	4 L	Poly-coated Glass Bottle
MX0475-NP20	20 L	NOWPak®

Specifications

Assay (GC) ..... 99.8% min
Appearance ..... Clear liquid free from particulates
Carbonyl comps (acetone, formaldehyde,acetaldehyde) ..... 0.001% max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter ..... To pass test
Gradient at 254 nm ..... 0.005AU max
Identity (IR-spectrum) ..... Conforms
Residue after evaporation ..... 2ppm max
Solubility in water ..... To pass test
Substances darkened by sulfuric acid ..... To pass test
Substances reducing permanganate ..... To pass test
Titrable acid ..... 0.0003meq/g max
Titrable base ..... 0.0002meq/g max
UV Abs. at 205 nm ..... 1.00AU max
UV Abs. at 210 nm ..... 0.80AU max
UV Abs. at 220 nm ..... 0.40AU max
UV Abs. at 230 nm ..... 0.20AU max
UV Abs. at 240 nm ..... 0.10AU max
UV Abs. at 260 nm ..... 0.04AU max
UV Abs. at 280 nm ..... 0.01AU max
UV Abs. at 300 nm ..... 0.01AU max
UV Abs. at 350 nm ..... 0.01AU max
UV Cut-off 205nmmax
Water (H_2O) ..... 0.05% max

1-Methyl-2-Pyrrolidone, OmniSolv®

EMD No.	Size	Pkg.
MX1390-4	500 ml	Glass Bottle
MX1390-1	4 L	Glass Bottle

Specifications

Assay (GC) ..... 99.7% min
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter ..... To pass test
Infrared spectrum ..... Conforms to standard
Residue after ignition ..... 5ppm max
Titrable base ..... 1µeq/g max
UV Abs. at 270 nm ..... 1.00AU max
UV Abs. at 300 nm ..... 0.20AU max
UV Abs. at 325 nm ..... 0.10AU max
UV Abs. at 350 nm ..... 0.03AU max
UV Abs. at 400 nm ..... 0.005AU max
UV Cut-off ..... 270nm max
Water (H_2O) ..... 0.08% max

Methylsulfoxide, OmniSolv®

EMD No.	Size	Pkg.
MX1456-6	1 L	Glass Bottle
MX1456-1	4 L	Glass Bottle
MX1456P-1	4 L	Poly-coated Glass Bottle
MX1456P-6	1 L	Poly-coated Glass Bottle

Specifications

Assay (GC) ..... 99.9% min
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Infrared spectrum .....Conforms to standard
Residue after evaporation.....5ppm max
UV Abs. at 263 nm ..... 1.00AU max
UV Abs. at 270 nm ..... 0.30AU max
UV Abs. at 275 nm ..... 0.15AU max
UV Abs. at 280 nm ..... 0.10AU max
UV Abs. at 335 nm ..... 0.01AU max
UV Cut-off..... 263nm max
Water (H_2O)..... 0.05% max

iso-Propyl Alcohol, OmniSolv®

EMD No.	Size	Pkg.
PX1834-6	1 L	Glass Bottle
PX1834-1	4 L	Glass Bottle
PX1834P-1	4 L	Poly-coated Glass Bottle
PX1834-NP20	20 L	NOWPak®

Specifications

Assay (GC) ..... 99.9% min
Capillary ECD responsive substances (as PCNB) ..... 2ng/L max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 250ppt max
Identity (IR-spectrum)..... Conforms
Residue after evaporation.....1ppm max
Titrable acid .....0.2µeq/g max
UV Abs. at 204 nm ..... 1.00AU max
UV Abs. at 205 nm ..... 0.80AU max
UV Abs. at 210 nm ..... 0.35AU max
UV Abs. at 220 nm ..... 0.10AU max
UV Abs. at 230 nm ..... 0.05AU max
UV Abs. at 240 nm ..... 0.02AU max
UV Abs. at 260 nm ..... 0.005AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Cut-off..... 204nm max
Water (H_2O)..... 0.05% max

iso-Propyl Alcohol, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
PX1838P-6	1 L	Poly-coated Glass Bottle
PX1838-1	4 L	Glass Bottle
PX1838P-1	4 L	Poly-coated Glass Bottle
PX1838-NP20	20 L	NOWPak®

Specifications

Assay (GC) ..... 99.8% min
Appearance .....
Clear liquid, free from particulates Carbonyl compounds
(acetone or propionaldehyde) ..... 0.002% max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Infrared spectrum .....Conforms to standard
Residue after evaporation.....5ppm max
Solubility in water..... To pass test
Titrable acid .....0.0001meq/g max
Titrable base.....0.0001meq/g max
UV Abs. at 210 nm ..... 1.00AU max
UV Abs. at 220 nm ..... 0.40AU max
UV Abs. at 230 nm ..... 0.20AU max
UV Abs. at 245 nm ..... 0.08AU max
UV Abs. at 260 nm ..... 0.04AU max
UV Abs. at 275 nm ..... 0.03AU max
UV Abs. at 300 nm ..... 0.02AU max
UV Abs. at 350 nm ..... 0.01AU max
UV Cut-off..... 210nm max
Water (H_2O)..... 0.10% max

n-Propyl Alcohol, OmniSolv®

EMD No.	Size	Pkg.
PX1824-6	1 L	Glass Bottle
PX1824-1	4 L	Glass Bottle

Specifications

Assay (GC) ..... 99.5% min
Aldehydes..... 0.01% max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 200ppt max
Infrared spectrum..... Conforms to standard
Residue after evaporation.....1ppm max
Titrable acid .....0.2µeq/g max
UV Abs. at 210 nm ..... 1.00AU max
UV Abs. at 220 nm ..... 0.50AU max
UV Abs. at 230 nm ..... 0.25AU max
UV Abs. at 250 nm ..... 0.05AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Cut-off..... 210nm max
Water (H_2O)..... 0.05% max

Tetrahydrofuran, Unstabilized OmniSolv®

EMD No.	Size	Pkg.
TX0279-7	100 ml	Glass Bottle
TX0279-6	1 L	Glass Bottle
TX0279-1	4 L	Glass Bottle
TX0279P-1	4 L	Poly-coated Glass Bottle
TX0279-NP20	20 L	NOWPak®

Specifications

Expiration date ..... 12 months from mfg date
Assay (GC) ..... 99.9% min
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Identity (IR-spectrum)..... Conforms
Peroxide (as H_2O_2)..... 0.02% max
Residue after evaporation.....2ppm max
Titrable acid .....0.8µeq/g max
UV Abs. at 212 nm ..... 1.00AU max
UV Abs. at 225 nm ..... 0.50AU max
UV Abs. at 250 nm ..... 0.10AU max
UV Abs. at 300 nm .....0.005AU max
UV Cut-off..... 212nm max
Water (H_2O)..... 0.02% max

Tetrahydrofuran, Non UV, OmniSolv®

Stabilized with 250 ppm BHT

EMD No.	Size	Pkg.
TX0282-6	1 L	Glass Bottle
TX0282-1	4 L	Glass Bottle

Specifications

Assay (GC) ..... 99.9% min
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Identity (IR-spectrum)..... Conforms
Peroxide (as H_2O_2)..... 0.01% max
Stabilizer (BHT).....~0.025% min
Titrable acid ..... 1.0µeq/g max
Water (H_2O)..... 0.03% max

1,2,4-Trichlorobenzene, OmniSolv®

Meets ACS Specifications

EMD No.	Size	Pkg.
TX1056P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (GC) ..... 99.0% min
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Infrared spectrum .....Conforms to standard
Titrable acid .....0.27µeq/g max
UV Abs. at 307 nm ..... 1.00AU max
UV Abs. at 310 nm ..... 0.50AU max
UV Abs. at 325 nm ..... 0.10AU max
UV Abs. at 350 nm ..... 0.05AU max
UV Abs. at 385 nm ..... 0.01AU max
UV Cut-off..... 307nm max
Water (H_2O)..... 0.02% max

Triethylamine, HPLC

EMD No.	Size	Pkg.
TX1202-5	500 g	Glass Bottle

Specifications

Assay..... 99.5% min
Appearance ..... Clear, free of particulate matter
Color (APHA) ..... 20 max
Identity (IR-spectrum)..... Conforms
UV Abs. at 254 nm (0.1% in water)..... 0.10AU max
UV Abs. at 280 nm (0.1% in water)..... 0.04AU max
UV Abs. at 300 nm (0.1% in water)..... 0.02AU max

2,2,4-Trimethylpentane, OmniSolv®

EMD No.	Size	Pkg.
TX1389-6	1 L	Glass Bottle
TX1389-1	4 L	Glass Bottle
TX1389P-1	4 L	Poly Coated Glass Bottle

Specifications

Assay (GC) ..... 99.5% min
Capillary ECD responsive substances (as PCNB)..... 5ng/L max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 250ppt max
Infrared spectrum .....Conforms to standard
Residue after evaporation.....1ppm max
UV Abs. at 200 nm ..... 1.00AU max
UV Abs. at 220 nm ..... 0.05AU max
UV Abs. at 230 nm ..... 0.02AU max
UV Abs. at 250 nm ..... 0.005AU max
UV Abs. at 270 nm ..... 0.005AU max
UV Abs. at 300 nm ..... 0.005AU max
UV Cut-off..... 200nm max
Water (H2O)..... 0.01% max

Toluene, OmniSolv®

EMD No.	Size	Pkg.
TX0737-6	1 L	Glass Bottle
TX0737-1	4 L	Glass Bottle
TX0737P-1	4 L	Poly-coated Glass Bottle
TX0737-NP20	20 L	NOWPak®

Specifications

Assay (Toluene)..... 99.9% min
Capillary ECD responsive substances (as PCNB) ..... 5ng/L max
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Infrared spectrum ..... Conforms
Residue after evaporation.....3ppm max
UV Abs. at 285 nm ..... 1.00AU max
UV Abs. at 286 nm ..... 0.70AU max
UV Abs. at 288 nm ..... 0.40AU max
UV Abs. at 300 nm ..... 0.10AU max
UV Abs. at 350 nm ..... 0.01AU max
UV Cut-off..... 285nm max
Water (H_2O)..... 0.02% max

Water, OmniSolv®

EMD No.	Size	Pkg.
WX0004-6	1 L	Glass Bottle
WX0004-1	4 L	Glass Bottle
WX0004P-1	4 L	Poly-coated Glass Bottle
WX0004-NP20	20 L	NOWPak®

Specifications

Expiration date ..... 12 months from mfg date
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter ..... To pass test
Fluorescence (as quinine base) ..... 100ppt max
Form ..... Clear liquid
Gradient at 210 nm ..... 0.002AU max
Gradient at 254 nm ..... 0.0005AU max
Odor .....None
Residue after evaporation.....1ppm max
Specific conductance .....2µmho/cm max
Total purgeable organics .....5ppb max
UV Abs. at 190 nm. ..... 0.010AU max
UV Abs. at 200 nm ..... 0.010AU max
UV Abs. at 210 nm ..... 0.010AU max
UV Abs. at 220 nm..... 0.010AU max
UV Abs. at 230 nm..... 0.010AU max
UV Abs. at 240 nm..... 0.010AU max
UV Abs. at 250 nm..... 0.005AU max
UV Abs. at 280 nm..... 0.005AU max

Water, HPLC

EMD No.	Size	Pkg.
WX0008-1	4 L	Glass Bottle

Specifications

Expiration date ..... 12 months from mfg date
Appearance ..... Clear liquid, free from particulates
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Fluorescence (as quinine base)..... 150ppt max
Gradient at 210 nm ..... 0.002AU max
Gradient at 254 nm .....0.0005AU max
Odor ..... To pass test
Residue after evaporation.....2ppm max
UV Abs. at 190 nm. ..... 0.01AU max
UV Abs. at 210 nm ..... 0.01AU max
UV Abs. at 230 nm ..... 0.01AU max
UV Abs. at 250 nm .....0.005AU max
UV Abs. at 280 nm .....0.005AU max

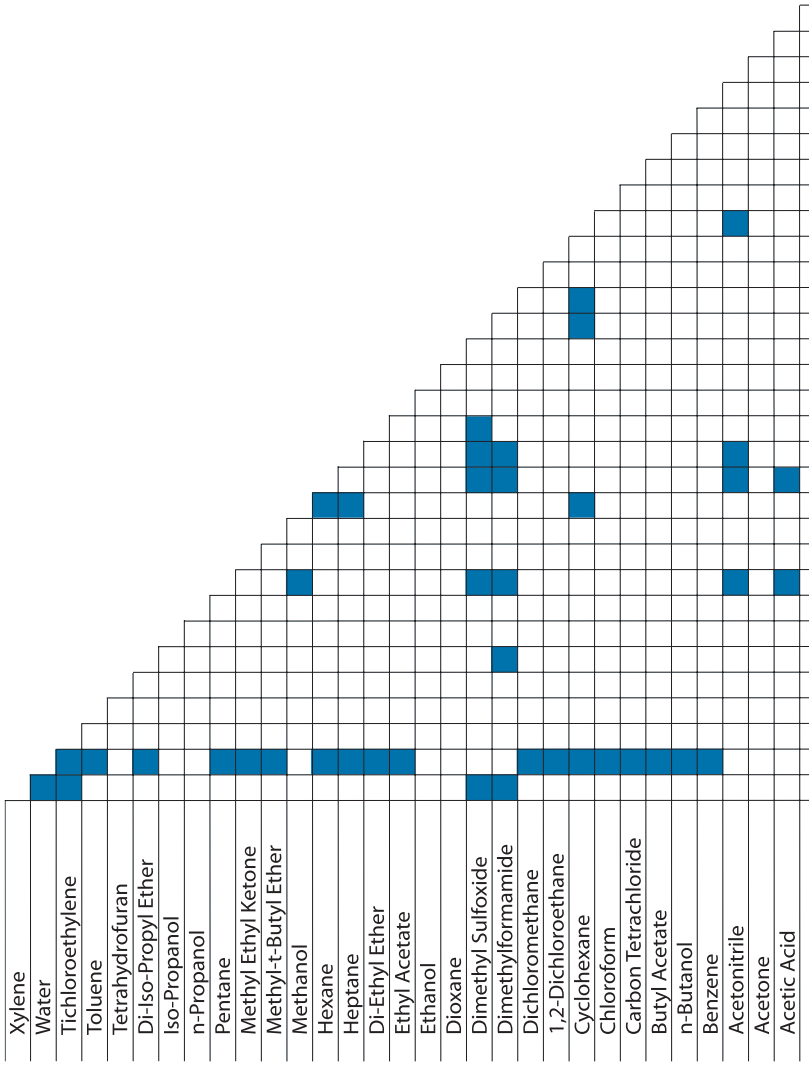
Properties of Solvents

Physical and Chromatographical Properties of Some Common Solvents / According to Kucera and Scott*

Solvent	Relative K' SiO_2 Heptane	ε_0 Solvent Strength (SiO_2)	Solubil. Param. (20°C)	RI (20°C)	η (Cp20°C)	Dielect. Const. (20°C)	Dipole Moment (25°C)	Density (20°C)	Boiling Point (°C)	Mol. Wt.	UV Cutoff (nm)
1,2,4-Trichlorobenzene	0.44	-	-	1.572	-	-	1.25	1.4542	213.5	181.45	307
2,2,4-Trimethylpentane	0.01	0.01	7.0	1.391	0.50	1.940	0.00	0.6919	99.2	114.23	200
2-Propanol	193.	0.63	11.4	1.377	2.49	19.9	1.66	0.7855	82.3	60.10	204
Acetone	156.	0.47	9.4	1.359	0.32	20.70	2.69	0.7900	56.3	58.08	329
Acetonitrile	167.	0.50	11.8	1.344	0.36	37.5	3.44	0.7822	81.6	41.05	189
Carbon Disulfide	0.25	0.20	10.0	1.628	0.37	2.641	0.06	1.2628	46.2	76.14	380
Carbon Tetrachloride	0.14	0.11	8.6	1.460	0.97	2.238	0.00	1.5940	76.7	153.82	265
Chloroform	0.63	0.26	9.1	1.446	0.57	4.806	1.15	1.4892	61.1	119.38	245
Cyclohexane	0.01	0.03	8.2	1.427	0.98	2.023	0.00	0.7786	80.7	84.16	200
Dichloromethane	1.30	0.32	9.6	1.424	0.43	9.08	1.14	1.3257	39.8	84.93	231
Ethyl Acetate	87.3	0.38	8.6	1.372	0.45	6.02	1.88	0.9006	77.1	88.11	254
Methanol	546.	0.73	12.9	1.329	0.55	33.6	2.87	0.7913	64.7	32.04	204
N,N-Dimethylformamide	959.	-	11.5	1.430	0.92	36.7	3.86	0.9487	153.0	73.10	268
n-Butyl Chloride	0.65	-	-	1.402	0.45	7.39	1.90	0.8862	78.5	92.57	220
n-Heptane	0.00	0.01	7.4	1.388	0.42	1.924	0.00	0.6838	98.4	100.21	197
n-Hexane	0.00	0.00	7.3	1.375	0.32	1.880	0.09	0.6594	68.7	86.18	195
n-Pentane	0.01	0.00	7.1	1.358	0.23	1.844	0.00	0.6262	36.1	72.15	200
o-Dichlorobenzene	0.68	-	-	1.552	1.41	9.93	2.27	1.3059	180.5	147.01	306
p-Dioxane	183.	0.43	9.8	1.422	1.32	2.21	0.45	1.0336	101.3	88.11	215
Tetrahydrofuran	160.	0.35	9.1	1.407	0.55	7.58	1.75	0.8892	66.0	72.11	212
Toluene	1.20	0.23	8.9	1.497	0.59	2.379	0.31	0.8670	110.6	92.14	285

**P. Kucera, Lederle Laboratories, Pearl River, NY., 10956 and R.P.W. Scott, Georgetown University, Washington, D.C., 20057*

Solvent Miscibility Table



Solvent	Polarity Index	Refractive Index @20°C	UV (nm) Cutoff @1AU	Boiling Point (°C)	Viscosity (cPoise)	Solubility in water (%w/w)
Acetic Acid	6.2	1.372	230	118	1.26	100
Acetone	5.1	1.359	330	56	0.32	100
Acetonitrile	5.8	1.344	190	82	0.37	100
Benzene	2.7	1.501	280	80	0.65	0.18
n-Butanol	4.0	1.394	254	125	0.73	0.43
Butyl Acetate	3.9	1.399	215	118	2.98	7.81
Carbon Tetrachloride	1.6	1.466	263	77	0.97	0.08
Chloroform	4.1	1.446	245	61	0.57	0.815
Cyclohexane	0.2	1.426	200	81	1.00	0.01
1,2-Dichloroethane[1]	3.5	1.444	225	84	0.79	0.81
Dichloromethane[2]	3.1	1.424	235	41	0.44	1.6
Dimethylformamide	6.4	1.431	268	155	0.92	100
Dimethyl Sulfoxide[3]	7.2	1.478	268	189	2.00	100
Dioxane	4.8	1.422	215	101	1.54	100
Ethanol	5.2	1.360	210	78	1.20	100
Ethyl Acetate	4.4	1.372	260	77	0.45	8.7
Di-Ethyl Ether	2.8	1.353	220	35	0.32	6.89
Heptane	0.0	1.387	200	98	0.39	0.0003
Hexane	0.0	1.375	200	69	0.33	0.001
Methanol	5.1	1.329	205	65	0.60	100
Methyl-t-Butyl Ether[4]	2.5	1.369	210	55	0.27	4.8
Methyl Ethyl Ketone[5]	4.7	1.379	329	80	0.45	24
Pentane	0.0	1.358	200	36	0.23	0.004
n-Propanol	4.0	1.384	210	97	2.27	100
Iso-Propanol[6]	3.9	1.377	210	82	2.30	100
Di-Iso-Propyl Ether	2.2	1.368	220	68	0.37	
Tetrahydrofuran	4.0	1.407	215	65	0.55	100
Toluene	2.4	1.496	285	111	0.59	0.051
Tichloroethylene	1.0	1.477	273	87	0.57	0.11
Water	9.0	1.333	200	100	1.00	100
Xylene	2.5	1.500	290	139	0.61	0.018

Immiscible

Miscible

Immiscible means that in some proportions two phases will be produced

Synonym Table

[1]Ethylene Chloride
[2]Methylene Chloride
[3]Methyl Sulfoxide
[4]tert-Butyl Methyl Ether
[5]2-Butanone
[6]2-Propanol

Blended Mobile Phases

For the most reliable and consistent mobile phases, try certified pre-blended products. These mobile phases are made from the highest quality solvents and then put through a series of rigorous quality control checks. You can be assured of the utmost performance in your HPLC applications by purchasing these pre-made mobile phases from EMD Chemicals.

In addition to TFA and Formic Acid Blends, we also specialize in Acetic Acid Blends, Organic Aqueous Blends and Organic-Organic Blends. These can be packaged in anything from glass bottles to bulk EMD ReCycler™ containers. Contact your Technical Sales Representative for details.

0.1% Formic Acid in Acetonitrile

EMD No.	Size	Pkg.
FX0437P-1	4 L	Poly-coated Glass Bottle
FX0437-NP20	20 L	NOWPak®

Specifications

Assay (HCOOH)	0.095 - 0.105%
Color (APHA)	10 max
Density at 25°C	Determine
Filtered through 0.2 µm filter	To pass test
Gradient @ 280 nm	0.005AU max
Residue after evaporation	5ppm max
UV Abs. at 230 nm	1.00AU max
UV Abs. at 240	0.50AU max
UV Abs. at 250	0.05AU max
UV Abs. at 280 nm and higher	0.05AU max

0.05% Formic Acid in Acetonitrile

EMD No.	Size	Pkg.
FX0438P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (HCOOH)	0.045- 0.055%
Color (APHA)	10 max
Density at 25°C	Determine
Filtered through 0.2 µm filter	To pass test
Gradient @ 280 nm	0.005AU max
Residue after evaporation	5ppm max
UV Abs. at 230 nm	1.00AU max
UV Abs. at 240	0.50AU max
UV Abs. at 250	0.05AU max
UV Abs. at 280 nm and higher	0.05AU max

0.1% Formic Acid in Water

EMD No.	Size	Pkg.
4.85085.4000	4 L	Poly-coated Glass Bottle
4.85085.9020	20 L	NOWPak®

Specifications

Assay (HCOOH)	0.095-0.105% v/v
Density at 20°C	Determine
Filtered through 0.2 µm filter	To pass test
Gradient @ 254 nm	0.005AU max
Gradient @ 280 nm	0.003AU max
UV Abs. at 220 nm	1.00AU max
UV Abs. at 230 nm	0.50AU max
UV Abs. at 240 nm	0.10AU max
UV Abs. at 250 nm	0.02AU max
UV Abs. at 280 nm	0.01AU max

0.1% Trifluoroacetic Acid in Acetonitrile

EMD No.	Size	Pkg.
TX1277P-1	4 L	Poly-coated Glass Bottle
TX1277-NP20	20 L	NOWPak®

Specifications

Assay (TFA) ..... 0.095 - 0.105%
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Gradient @ 210 nm..... 0.005AU max
Gradient @ 220 nm..... 0.001AU max
Gradient @ 280 nm..... 0.001AU max
Residue after evaporation..... 5ppm max
UV Abs. at 190 nm ..... 1.00AU max
UV Abs. at 200 nm ..... 0.50AU max
UV Abs. at 210 nm ..... 0.40AU max
UV Abs. at 230 nm ..... 0.30AU max
UV Abs. at 250 nm..... 0.05AU max
UV Abs. at 280 nm..... 0.010AU max
UV Abs. at 300 nm..... 0.010AU max
UV Abs. at 350 nm..... 0.010AU max

0.1% Trifluoroacetic Acid in Water

EMD No.	Size	Pkg.
TX1280P-1	4 L	Poly-coated Glass Bottle
TX1280-NP20	20 L	NOWPak®

Specifications

Assay (TFA) 0.095- 0.105%
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Gradient @ 210 nm..... 0.01AU max
Gradient @ 220 nm..... 0.001AU max
Gradient @ 280 nm..... 0.001AU max
Residue after evaporation..... 5ppm max
UV Abs. at 205 nm ..... 1.00AU max
UV Abs. at 210 nm ..... 0.70AU max
UV Abs. at 230 nm ..... 0.30AU max
UV Abs. at 250 nm ..... 0.05AU max
UV Abs. at 280 nm..... 0.010AU max
UV Abs. at 300 nm..... 0.010AU max
UV Abs. at 350 nm..... 0.010AU max

0.05% Trifluoroacetic Acid in Acetonitrile

EMD No.	Size	Pkg.
TX1278P-1	4 L	Poly-coated Glass Bottle
TX1278-NP20	20 L	NOWPak®

Specifications

Assay (TFA) ..... 0.045% - 0.055%
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Gradient @ 210 nm..... 0.005AU max
Gradient @ 220 nm..... 0.001AU max
Gradient @ 280 nm..... 0.001AU max
Residue after evaporation..... 5ppm max
UV Abs. at 190 nm ..... 1.00AU max
UV Abs. at 200 nm ..... 0.50AU max
UV Abs. at 210 nm ..... 0.40AU max
UV Abs. at 230 nm ..... 0.30AU max
UV Abs. at 250 nm..... 0.05AU max
UV Abs. at 280 nm..... 0.010AU max
UV Abs. at 300 nm..... 0.010AU max
UV Abs. at 350 nm..... 0.010AU max

0.05% Trifluoroacetic Acid in Water

EMD No.	Size	Pkg.
TX1282P-1	4 L	Poly-coated Glass Bottle

Specifications

Assay (TFA) 0.045- 0.055%
Color (APHA) ..... 10 max
Filtered through 0.2 µm filter..... To pass test
Gradient @ 210 nm..... 0.03AU max
Gradient @ 280 nm..... 0.01AU max
Residue after evaporation..... 5ppm max
UV Abs. at 205 nm ..... 1.00AU max
UV Abs. at 210 nm ..... 0.70AU max
UV Abs. at 230 nm ..... 0.30AU max
UV Abs. at 250 nm ..... 0.05AU max
UV Abs. at 280 nm..... 0.010AU max
UV Abs. at 300 nm..... 0.010AU max
UV Abs. at 350 nm..... 0.010AU max

Safety Bottle Carrier

EMD Chemicals introduces a new Safety Bottle Carrier for 4 L Solvents Bottles. EMD Chemicals has always been a strong proponent of laboratory safety. We have a long history of offering innovative products to improve the safety in the laboratories of our customers, well before such safeguards became compulsory. By exceeding industry standards, the products and technical support we provide allow for the safer handling of chemicals.

EMD No.	Size	Package
695120-1	4L	EA

HPLC Salts

Salts used to prepare HPLC buffers need to be highly refined with no absorbance interference. HPLC salts from EMD are specifically designed to be used in HPLC applications with appropriate UV absorbance limits.

Ammonium Acetate, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
AX1222-5	500 g	Poly Bottle

Specifications

Assay	98.0% min
Chloride (Cl)	5ppm max
Heavy metals (as Pb)	5ppm max
Insoluble matter	0.005% max
Iron (Fe)	5ppm max
Nitrate (NO_3)	0.001% max
pH of a 5% solution at 25°C	6.7-7.3
Residue after ignition	0.01% max
Sulfate (SO_4)	0.001% max
UV Absorbance (1 M, water, 254 nm)	0.02AU max
UV Absorbance (1 M, water, 280 nm)	0.01AU max
UV Absorbance (1 M, water, 350 nm)	0.01AU max

Potassium Phosphate, Monobasic, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
PX1562-5	500 g	Poly Bottle

Specifications

Assay	99.0% min
Chloride (Cl)	0.001% max
Heavy metals (as Pb)	0.001% max
Insoluble matter	0.01% max
Iron (Fe)	0.002% max
Loss on drying (105°C)	0.2% max
pH of a 5% solution at 25°C	4.1-4.5
Sodium (Na)	0.005% max
Sulfate (SO_4)	0.003% max

Sodium Acetate, Trihydrate, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
SX0256-5	500 g	Poly Bottle

Specifications

Assay	99.0-101.0%
Calcium (Ca)	0.005% max
Chloride (Cl)	0.001% max
Heavy metals (as Pb)	5ppm max
Insoluble matter	0.005% max
Iron (Fe)	5ppm max
Magnesium (Mg)	0.002% max
pH of a 5% solution at 25°C	7.5-9.2
Phosphate (PO_4)	5ppm max
Potassium (K)	0.005% max
Substances reducing permanganate	To pass test
Sulfate (SO_4)	0.002% max
UV Absorbance (1 M, water, 254 nm)	0.02AU max
UV Absorbance (1 M, water, 280 nm)	0.01AU max
UV Absorbance (1 M, water, 350 nm)	0.01AU max

Sodium Bicarbonate, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
SX0322-5	500 g	Poly Bottle

Specifications

Assay (dried basis) 99.7-100.3%
Ammonium (NH_4) ..... 4ppm max
Calcium (Ca) ..... 0.02% max
Chloride (Cl) ..... 0.003% max
Heavy metals (as Pb) ..... 5ppm max
Insoluble matter ..... 0.015% max
Iron (Fe) ..... 0.001% max
Magnesium (Mg) ..... 0.005% max
Phosphate (PO_4) ..... 0.001% max
Potassium (K) ..... 0.005% max
Sulfur compounds (as SO_4) ..... 0.003% max
UV Absorbance (1 M, water, 254 nm) ..... 0.05AU max
UV Absorbance (1 M, water, 280 nm) ..... 0.02AU max
UV Absorbance (1 M, water, 350 nm) ..... 0.01AU max

Sodium Phosphate, Dibasic, Anhydrous, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
SX0723-5	500 g	Poly Bottle

Specifications

Assay ..... 99.0% min
Chloride (Cl) ..... 0.002% max
Heavy metals (as Pb) ..... 0.001% max
Insoluble matter ..... 0.01% max
Iron (Fe) ..... 0.001% max
Loss on drying ..... 0.2% max
pH of a 5% solution at 25°C 8.7-9.3
Sulfate (SO_4) ..... 0.005% max
UV Absorbance (1 M, water, 280 nm) ..... 0.05AU max

Sodium Phosphate, Monobasic, Monohydrate, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
SX0709-5	500 g	Poly Bottle

Specifications

Assay 99.0-102.0%
Calcium (Ca) ..... 0.005% max
Chloride (Cl) ..... 5ppm max
Heavy metals (as Pb) ..... 0.001% max
Insoluble matter ..... 0.01% max
Iron (Fe) ..... 0.001% max
pH of a 5% solution at 25°C 4.1-4.5
Potassium (K) ..... 0.01% max
Sulfate (SO_4) ..... 0.003% max
UV Absorbance (1 M, water, 280 nm) ..... 0.05AU max

Ion Pair Reagents

Ion Pair Reagents are used for improving the chromatographic separation of polar compounds. The use of these reagents can enhance peak shape and retention time when conventional techniques such as changing the stationary phase or altering eluent ratios prove insufficient. Ion Pair Reagents are added to HPLC mobile phase to promote the formation of ion pairs with charged analytes.

EMD offers n-akyl sulfonates with varying chain lengths that act as anionic counter-ions for improving the separation and resolution of positively charged molecules. These products feature outstanding purity and UV transparency.

1-Decanesulfonic Acid, Sodium Salt, Anhydrous, HPLC

EMD No.	Size	Pkg.
DX0101-2	25 g	Poly Bottle
DX0101-3	100 g	Poly Bottle

Specifications

Loss on drying ..... 1% max
Solubility ..... To pass test
UV Abs. at 210 nm ..... 0.5AU max
UV Abs. at 220 nm ..... 0.1AU max
UV Abs. at 254 nm ..... 0.04AU max
UV Abs. at 280 nm ..... 0.04AU max

1-Dodecanesulfonic Acid, Sodium Salt, Monohydrate, HPLC

EMD No.	Size	Pkg.
DX0102-2	25 g	Poly Bottle
DX0102-3	100 g	Poly Bottle

Specifications

Loss on drying (vacuum) 5.5-8.5%
Purity ..... 99% min
Solubility ..... To pass test
UV Absorbance (1%, ACN/H_2O/H_3PO_4, 210 nm) ..... 1.0AU max
UV Absorbance (1%, ACN/H_2O/H_3PO_4, 220 nm) ..... 0.25AU max
UV Absorbance (1%, ACN/H_2O/H_3PO_4, 254 nm) ..... 0.10AU max
UV Absorbance (1%, ACN/H_2O/H_3PO_4, 280 nm) ..... 0.10AU max

1-Heptanesulfonic Acid, Sodium Salt, Monohydrate, HPLC

EMD No.	Size	Pkg.
HX0101-2	25 g	Poly Bottle
HX0101-3	100 g	Poly Bottle

Specifications

Purity ..... 99% min
Solubility in water (5% w/v) ..... To pass test
UV Abs. at 210 nm ..... 1.00AU max
UV Abs. at 220 nm ..... 0.10AU max
UV Abs. at 254 nm ..... 0.06AU max
UV Abs. at 280 nm ..... 0.06AU max

1-Hexanesulfonic Acid, Sodium Salt, Monohydrate, HPLC

EMD No.	Size	Pkg.
HX0102-2	25 g	Poly Bottle
HX0102-3	100 g	Poly bottle

Specifications

Purity ..... 99% min
Solubility ..... To pass test
UV Abs. at 210 nm ..... 1.00AU max
UV Abs. at 220 nm ..... 0.10AU max
UV Abs. at 254 nm ..... 0.04AU max
UV Abs. at 280 nm ..... 0.04AU max

1-Octanesulfonic Acid, Sodium Salt, Monohydrate, HPLC

EMD No.	Size	Pkg.
OX0101-2	25 g	Poly Bottle
OX0101-3	100 g	Poly Bottle
OX0101-4	500 g	Poly Bottle

Specifications

Purity ..... 99% min
Solubility in water (5% w/v) ..... To pass test
UV Abs. at 210 nm ..... 1.00AU max
UV Abs. at 220 nm ..... 0.10AU max
UV Abs. at 254 nm ..... 0.06AU max
UV Abs. at 280 nm ..... 0.06AU max

1-Pentanesulfonic Acid, Sodium Salt, Monohydrate, HPLC

EMD No.	Size	Pkg.
PX0101-2	25 g	Poly Bottle
PX0101-3	100 g	Poly Bottle

Specifications

Purity ..... 99% min
Solubility in water (5% w/v) ..... To pass test
UV Abs. at 210 nm ..... 1.00AU max
UV Abs. at 220 nm ..... 0.10AU max
UV Abs. at 254 nm ..... 0.06AU max
UV Abs. at 280 nm ..... 0.06AU max

Tetra-n-butyl Ammonium Hydrogen Sulfate

EMD No.	Size	Pkg.
1.18312.0025	25 kg	Poly Bottle

Specifications

Assay (acidimetric, calc. on dried substance) ... 99% min
Identity (IR-spectrum) ..... Passes test
Loss on drying (120°C, vacuum) ..... 2% max
pH value (10%, water) ..... 2 max
UV Abs. at 200 nm (0.005 mol/l, 1cm, water) 70% T min
UV Abs. at 220 nm (0.005 mol/l, 1cm, water) 90% T min
UV Abs. at 250 nm (0.005 mol/l, 1cm, water) 98% T min

OmniSolv® LC-MS Grade

OmniSolv® high purity solvents have long been recognized as the preferred choice of discriminating scientists and lab professionals demanding only the best for their applications. The quality of acetonitrile, methanol and water has actually allowed them to be used in most HPLC and LC-MS applications. Now we're introducing a new line of LC-MS Grade solvents that are tested under actual application conditions to assure optimal performance under even the most exacting demands and requirements.

LC-MS Acetonitrile, OmniSolv®

EMD No.	Size	Pkg.
AX0156-6	1 L	Glass Bottle
AX0156-1	4 L	Glass Bottle

Specifications

Assay (GC)	99.9% min
Color (APHA)	10 max
Filtered through 0.2 µm filter	To pass test
Fluorescence as quinine at 254 nm	1ppb max
Fluorescence as quinine at 365 nm	1ppb max
Gradient at 210 nm	2mAU max
Gradient at 254 nm	0.3mAU max
Identity (IR-spectrum)	Conforms
Metals, suitable for LC/MS	To pass test
MS purity, ESI(+), largest response as reserpine	50ppb max
MS purity, ESI(-), largest response, p-nitrophenol	50ppb max
Residue after evaporation	1ppm max
Titrable acid	1µeq/g max
Titrable base	0.5µeq/g max
UV Abs. at 200 nm	0.1AU max
UV Abs. at 210 nm	0.04AU max
UV Abs. at 220 nm	0.02AU max
UV Abs. at 230 nm	0.01AU max
UV Abs. at 240 nm	0.01AU max
UV Abs. at 250 nm	0.01AU max
UV Abs. at 270 nm	0.01AU max
UV Abs. at 400-280 nm	0.005AU max
UV Cut-off	190nm max
Water (H_2O)	0.02% max

LC-MS Methanol, OmniSolv®

EMD No.	Size	Pkg.
MX0486-6	1 L	Glass Bottle
MX0486-1	4 L	Glass Bottle

Specifications

Assay (GC)	99.9% min
Color (APHA)	10 max
Filtered through 0.2 µm filter	To pass test
Fluorescence as quinine at 254 nm	1ppb max
Fluorescence as quinine at 365 nm	1ppb max
Gradient at 235 nm	1mAU max
Gradient at 254 nm	1mAU max
Identity (IR-spectrum)	Conforms
Metals, suitable for LC/MS	To pass test
MS purity, ESI(+), largest response as reserpine	50ppb max
MS purity, ESI(-), largest response, p-nitrophenol	50ppb max
Residue after evaporation	1ppm max
Titrable acid	0.3µeq/g max
Titrable base	0.2µeq/g max
UV Abs. at 210 nm	0.3AU max
UV Abs. at 220 nm	0.1AU max
UV Abs. at 230 nm	0.04AU max
UV Abs. at 240 nm	0.03AU max
UV Abs. at 250 nm	0.01AU max
UV Abs. at 270 nm	0.01AU max
UV Abs. at 400-280 nm	0.005AU max
UV Cut-off	205nm max
Water (H_2O)	0.05% max

LC-MS Water, OmniSolv®

EMD No.	Size	Pkg.
WX0001-6	1 L	Glass Bottle
WX0001-1	4 L	Glass Bottle

Specifications

Expiration date	12 months from mfg date
Filtered through 0.2 µm filter	To pass test
Fluorescence as quinine at 254 nm	1ppb max
Fluorescence as quinine at 365 nm	1ppb max
Gradient at 210 nm	0.002AU max
Gradient at 254 nm	0.0005AU max
Metals, suitable for LC/MS	To pass test
MS purity, ESI(+), largest response as reserpine	50ppb max
MS purity, ESI(-), largest response, p-nitrophenol	50ppb max
Residue after evaporation	1ppm max
UV Abs. at 200 nm	0.01AU max
UV Abs. at 210 nm	0.01AU max
UV Abs. at 220 nm	0.01AU max
UV Abs. at 230 nm	0.01AU max
UV Abs. at 240 nm	0.01AU max
UV Abs. at 250 nm	0.005AU max
UV Abs. at 270 nm	0.005AU max
UV Abs. at 400-280 nm	0.005AU max

HPLC Acids

For preparing HPLC buffers, choose HPLC acids from EMD Chemicals. Our products are suitable for all of your HPLC needs. Each EMD HPLC acid meets ACS or industry standard specifications and includes additional UV absorbance and trace metal testing.

Acetic Acid, Glacial, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
AX0074-6	500 ml	Poly-coated Glass Bottle
AX0074-2	2.5 L	Poly-coated Glass Bottle

Specifications

Acetic anhydride [$(CH_3CO)_2O$] ..... 0.01% max
Assay (GC) ..... 99.7% min
Chloride (Cl) ..... 0.4ppm mx
Color (APHA) ..... 10 max
Copper (Cu) ..... 0.1ppm max
Dilution test ..... To pass test
Gradient at 254 nm ..... 0.005AU max
Gradient at 280 nm ..... 0.003AU max
Gradient Suitability for LC-MS ..... Conforms
Heavy metals (as Pb) ..... 0.5ppm max
Iron (Fe) ..... 0.2ppm max
MS Purity (as Reserpine) ..... Conforms
Nickel (Ni) ..... 0.1ppm max
Residue after evaporation ..... 5ppm max
Substances reducing dichromate ..... To pass test
Substances reducing permanganate ..... To pass test
Sulfate (SO_4) ..... 0.4ppm mx
Titrable base ..... 0.0004meq/g max
UV Absorbance (1 cm, 255 nm) ..... 1.0AU max
UV Absorbance (1 cm, 280 nm) ..... 0.05AU max
UV Absorbance (1 cm, 350 nm) ..... 0.02AU max
Water (H_2O) ..... 0.1% max

o-Phosphoric Acid, 85% w/w, HPLC

Meets ACS Specifications

EMD No.	Size	Pkg.
PX0996-6	500 ml	Poly-coated Glass Bottle

Specifications

Antimony (Sb) ..... 0.002% max
Arsenic (As) ..... 0.5ppm max
Assay ..... 85.0% min
Calcium (Ca) ..... 0.002% max
Chloride (Cl) ..... 3ppm max
Color (APHA) ..... 10 max
Heavy metals (as Pb) ..... 0.001% max
Insoluble matter ..... 0.001% max
Iron (Fe) ..... 0.003% max
Magnesium (Mg) ..... 0.002% max
Manganese (Mn) ..... 0.5ppm max
Nitrate (NO_3) ..... 5ppm max
Phosphorous or hypophosphorous acid ..... To pass test
Potassium (K) ..... 0.005% max
Reducing substances ..... To pass test
Sodium (Na) ..... 0.025% max
Sulfate (SO_4) ..... 0.001% max
UV Absorbance at 220 nm (1M, 1cm, water) .... 0.05AU max
UV Absorbance at 254 nm (1M, 1cm, water) .... 0.04AU max
UV Absorbance at 300 nm (1M, 1cm, water) .... 0.02AU max
Volatile acids (as acetic acid) ..... 0.001% max

Triethylamine, HPLC

EMD No.	Size	Pkg.
TX1202-5	500 g	Glass Bottle

Specifications

Assay ..... 99.5% min
Appearance ..... Clear, free of particulate matter
Color (APHA) ..... 20 max
Identity (IR-spectrum) ..... Conforms
UV Absorbance (0.1%, water, 254 nm) ..... 0.10AU max
UV Absorbance (0.1%, water, 280 nm) ..... 0.04AU max
UV Absorbance (0.1%, water, 300 nm) ..... 0.02AU max

Trifluoroacetic Acid, HPLC

EMD No.	Size	Pkg.
TX1276-0004	10 x 4ml	Ampoules
TX1276-6	250 ml	Glass Bottle
TX1276-7	1 L	Glass Bottle
TX1276-4	2.5 L	Poly-coated Glass Bottle

Specifications

Assay..... 99.9% min
Chloride (Cl) ..... 0.001% max
Color (APHA) ..... 5 max
Fluoride (F)..... 0.001% max
Iron (Fe) ..... 0.0001% max
Residue after evaporation..... 0.005% max
Sulfate (SO_4) ..... 0.001% max
UV Absorbance (0.1%, 1 cm, H_2O, 230 nm)..... 0.15AU max
UV Absorbance (0.1%, 1 cm, H_2O, 254 nm)..... 0.01AU max
Water (H_2O)..... 0.05% max

11670 SUPRAPUR® Formic Acid, 98%

EMD No.	Size	Pkg.
11670-1	1 L	Glass Bottle

Specifications

Assay ..... 98% min
Acetic acid (CH_3COOH) .....0.05% max
Aluminum (Al).....0.005ppm max
Barium (Ba) .....0.002ppm max
Beryllium (Be) .....0.001ppm max
Bismuth (Bi)..... 0.002ppm max
Cadmium (Cd) ..... 0.001ppm max
Calcium (Ca) ..... 0.05ppm max
Chloride (Cl) .....5ppm max
Chromium (Cr) ..... 0.001ppm max
Cobalt (Co)..... 0.001ppm max
Color (Hazen) ..... 10 max
Copper (Cu) .....0.002ppm max
Gallium (Ga) .....0.005ppm max
Gold (Au) .....0.005ppm max
Indium (In) .....0.002ppm max
Iron (Fe) ..... 0.01ppm max
Lead (Pb) .....0.002ppm max
Lithium (Li) 0.001ppm
Magnesium (Mg) ..... 0.01ppm max
Manganese (Mn) ..... 0.001ppm max
Mercury (Hg) .....0.005ppm max
Molybdenum (Mo) ..... 0.001ppm max
Nickel (Ni) .....0.002ppm max
Potassium (K) ..... 0.02ppm max
Residue after ignition .....2ppm max
Silver (Ag) ..... 0.001ppm max
Sodium (Na) .....0.02ppm max
Strontium (Sr) ..... 0.001ppm max
Sulfate (SO4) ..... 0.5ppm max
Thallium (Tl) ..... 0.001ppm max
Tin (Sn) ..... 0.001ppm max
Titanium (Ti).....0.001ppm max
Vanadium (V) ..... 0.001ppm max
Zinc (Zn) ..... 0.005ppm max

Lab Safety

EMD Chemicals offers the next generation in spill cleanup technology. SpillSolv® Chemical Treatment Kits are available in six different types: Multi-Purpose, Acid, Caustic, Solvent, Formaldehyde, and Mercury. Replacement neutralizers, bulk sizes, and safety accessories are also available. Please visit www.SpillSolv.com for more information.

Kit	EMD No.
SpillSolv® Multi-Purpose Kit Acid, Caustic & Solvent Spills	SX1300-1
SpillSolv® Acid Spill Kit	SX1310-1
SpillSolv® Caustic Spill Kit	SX1320-1
SpillSolv® Solvent Spill Kit	SX1330-1
SpillSolv® Formaldehyde Spill Kit	SX1340-1
SpillSolv® Mercury Spill Kit	SX1350-1

TLC Plates

- We are the world's largest producer of Chromatographic Silica and TLC Plates which is your best assurance of consistent and reproducible results across our entire product range
- Many additional sizes and types of TLC plates are available from EMD Chemicals

TLC plates from EMD Chemicals are produced with an organic binder (acrylate) sufficient to bind the layer to the plate during shipping, but does not interfere with the separation process or cause flaking, which can occur when Gypsum is used. Isolated substances are easily recovered from plates containing an organic binder. Moderate charring with sulfuric acid makes it possible to differentiate between the darkened plate and the charred spots.

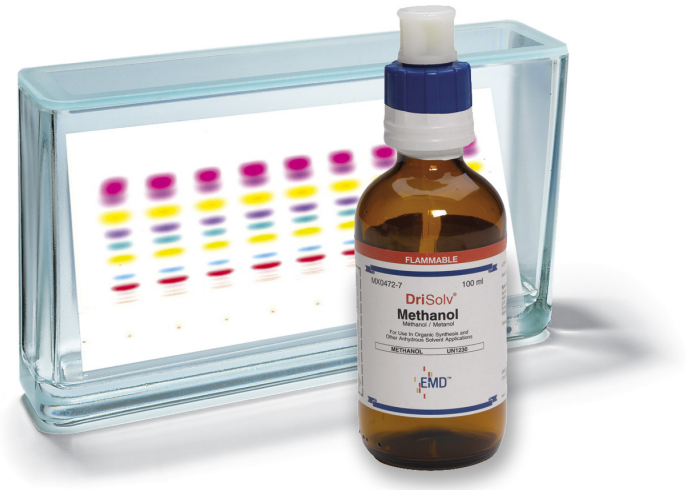
P/N	Description	Plate Size, cm	Backing	Application	Layer Thickness, µm	Pkg size
16834-2	Silica Gel 60 F254	5 x 10	Aluminum	TLC	200	50-PK
5534-3	Silica Gel 60 F254	5 x 20	Aluminum	TLC	200	100-PK
5560-4	Silica Gel RP-18 F254s	5 x 7.5	Aluminum	HPTLC	200	20-PK
5549-4	Silica Gel 60 F254	5 x 7.5	Aluminum	TLC	200	25-PK
5559-7	Silica Gel RP-18 F254s	20 x 20	Aluminum	HPTLC	200	25-PK
105586-1	Silica Gel 60 F254 LiChrospher® HPTLC	20 x 20	Aluminum	HPTLC	200	25-PK
5553-7	Silica Gel 60	20 x 20	Aluminum	TLC	200	25-PK
5554-7	Silica Gel 60 F254	20 x 20	Aluminum	TLC	200	25-PK
5567-7	Silica Gel 60/Kieselguhr F254	20 x 20	Aluminum	TLC	200	25-PK
16484-1	Silica Gel 60 W F254	20 x 20	Aluminum	TLC	200	25-PK
16487-1	Silica Gel 60 W (wettable)	20 x 20	Aluminum	TLC	200	25-PK
5550-7	Aluminum Oxide 60, Neutral F254	20 x 20	Aluminum	TLC	200	25-PK
5563-7	Silica 60 ALUMINUM ROLL	500 x 20	Aluminum	TLC	200	1 roll
15341-1	Silica Gel 60 F254 Micro Slide	2.5 x 7.5	Glass	MICRO	250	100-PK
15327-1	Silica Gel 60 F254 Micro Slides with Box for Storage	2.5 x 7.5	Glass	MICRO	250	100-PK
15341-5	Silica Gel 60 F254 Micro Slide	2.5 x 7.5	Glass	MICRO	250	500-PK
5801-1	SI60 F254 LUX (Ultra High Fluorescence)	2.5 x 7.5	Glass	MICRO	210	100-PK
15685-1	Silica Gel RP-18 F254	5 x 10	Glass	TLC	250	25-PK
5719-2	Silica Gel 60 F254	5 x 10	Glass	TLC	250	200-PK
5789-2	Silica Gel 60 F254	5 x 10	Glass	TLC	250	25-PK
5714-3	Silica Gel 60 F254	5 x 20	Glass	TLC	250	100-PK
5808-3	Silica Gel 60 F254	5 x 20	Glass	TLC	250	25-PK
12668-5	Diol F254s on Silica Gel 60 HPTLC	10 x 10	Glass	HPTLC	200	25-PK
5631-5	Silica Gel 60 HPTLC	10 x 10	Glass	HPTLC	200	25-PK
5629-5	Silica Gel 60 F254 HPTLC	10 x 10	Glass	HPTLC	200	100-PK
5628-5	Silica Gel 60 F254 HPTLC	10 x 10	Glass	HPTLC	200	25-PK
5635-5	Silica Gel 60 F254 (Prescored to 5x5) HPTLC	10 x 10	Glass	HPTLC	200	25-PK
5641-6	Silica Gel 60 HPTLC	10 x 20	Glass	HPTLC	200	50-PK
5642-6	Silica Gel 60 F254 HPTLC	10 x 20	Glass	HPTLC	200	50-PK
11764-6	Silica Gel 60 F254 HPTLC extra thin	10 x 20	Glass	HPTLC	100	25-PK

P/N	Description	Plate Size, cm	Backing	Application	Layer Thickness, µm	Pkg size
5626-6	Silica Gel 60	10 x 20	Glass	TLC	250	50-PK
5729-6	Silica Gel 60 F254	10 x 20	Glass	TLC	250	50-PK
5715-7	Silica Gel 60 F254	20 x 20	Glass	TLC	250	25-PK
5608-7	Silica Gel 60 F254 (Prescored to 5x20)	20 x 20	Glass	TLC	250	20-PK
11798-7	Silica Gel 60 F254 with 2.5 x 20 cm Concentration Zone	20 x 20	Glass	TLC	250	25-PK
5721-7	Silica Gel 60	20 x 20	Glass	TLC	250	25-PK
5747-7	Silica Gel RP-2 F254	20 x 20	Glass	TLC	250	25-PK
15389-7	Silica Gel RP-18 F254s	20 x 20	Glass	TLC	250	25-PK
5713-7	Aluminum Oxide 60 Basic F254	20 x 20	Glass	TLC	250	25-PK
5716-7	Cellulose	20 x 20	Glass	TLC	100	25-PK
5725-7	PEI (Polyethyleneimine) Cellulose F	20 x 20	Glass	TLC	100	25-PK
5744-7	Silica Gel 60 F254	20 x 20	Glass	PREP	500	25-PK
13794-7	Silica Gel 60 F254s with 4 x 20 cm Concentration Zone	20 x 20	Glass	PREP	500	20-PK
13895-7	Silica Gel 60 F254	20 x 20	Glass	PREP	1000	15-PK
13792-7	Silica Gel 60 F254s with 4 x 20 cm Concentration Zone	20 x 20	Glass	PREP	1000	15-PK
5717-7	Silica Gel 60 F254	20 x 20	Glass	PREP	2000	12-PK
13793-7	Silica Gel 60 F254s with 4 x 20 cm Concentration Zone	20 x 20	Glass	PREP	2000	12-PK
5735-7	Silica Gel 60 F254	20 x 20	Plastic	TLC	200	25-PK
5748-7	Silica Gel 60	20 x 20	Plastic	TLC	200	25-PK
5749-7	Si60 Plastic Roll	500 x 20	Plastic	TLC	200	1 roll
5581-7	Aluminum Oxide 60, Neutral F254	20 x 20	Plastic	TLC	200	25-PK
5577-7	Cellulose	20 x 20	Plastic	TLC	100	25-PK
5579-7	PEI (Polyethyleneimine) Cellulose F	20 x 20	Plastic	TLC	100	25-PK
5007-1	UTLC (Ultra-thin Ultra-Fast Monolithic Silica)	3.6 x 6	Glass	UTLC	10	25-PK

Some important TLC considerations

Although it is not difficult to get good TLC results, the reproducibility of results is paramount. For highly consistent and reliable results, start by selecting a TLC plate from EMD Chemicals. To get started, it is recommended to always heat activate the plate before spotting it with the sample. Then, when the plate is ready to be placed into the development chamber, make sure that the chamber is lined with filter paper and has been sufficiently equilibrated with the solvent mixture.

EMD Chemicals supplies an unbeatable combination to chromatographers in both critical essentials - mobile phase and stationary phase. You can trust your results when you depend on EMD Chemicals.



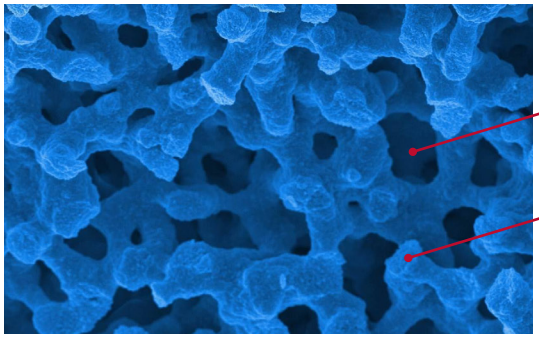
Chromolith® Monolithic Silica HPLC Columns

- UHPLC- quality results on traditional HPLC Systems
- Separations two to three times faster at a fraction of the column backpressure vs 5 µm columns
- Higher sample throughput – separations up to 9 times faster
- Fast column re-equilibration between analyses
- Cost savings due to faster sample throughput and significantly longer column lifetime
- Improved HPLC system performance-less maintenance- due to much lower operating pressure
- Reduced need for sample preparation as columns are very resistant to blocking (even with biological samples)
- Because of its low backpressure, solvent viscosity is no longer a limitation in method development
- Chromolith® RP-18 is USP Column Classification L1, Chromolith® Si is L3, and Chromolith® RP-8 is L7

Chromolith® consists of a continuous rigid structure of silica with a bimodal pore structure. The 2µm Macropores give Chromolith® its 80% porosity, giving dramatically reduced backpressure (allowing much higher flowrates) and high availability of the analytes to the 130Å mesopore sites that function like the active sites on particulate columns .

Revolutionary and unique – monolithic silica replaces particles. Chromolith® HPLC columns are not filled with minute silica particles like conventionally packed HPLC columns, but consist of a single rigid rod of high purity monolithic silica. It's consistent - no particulate bed to shift with time, changing your separations and decreasing lifetime It's rugged - not subject to 'pressure-shocks' due to rapidly changing flow or solvent composition. Unlike particulate columns, it can simply be reversed to wash out retained material without risking void formation. It has no frits to clog - because it is a single piece of silica, it doesn't need any. Because of their uinque design, Chromolith® columns will give you up to several times the lifetime of particulate columns.

SEM of a cross section from silica monolith



Total porosity > 80% gives Chromolith® its very low backpressure.

Chromolith® Semi-preparative and preparative columns

EMD No.	Description	Size
1.52016.0001	Chromolith® SemiPrep RP -18 endcapped 1 piece	100 mm X 10 mm
1.25251.0001	Chromolith® prep Si 1 piece	100 mm X 25 mm
1.25252.0001	Chromolith® prep RP -18 endcapped 1 piece	100 mm X 25 mm

Chromolith® Analytical columns

EMD No.	Description	Size
1.51465.0001	Chromolith® Performance Si	100 mm X 4.6 mm
1.02129.0001	Chromolith® Performance RP-18 endcapped	100 mm X 4.6 mm
1.51468.0001	Chromolith® Performance RP-8 endcapped	100 mm X 4.6 mm
1.51450.0001	Chromolith® SpeedROD RP-18 endcapped	50 mm X 4.6 mm
1.51463.0001	Chromolith® Flash RP-18 endcapped	25 mm X 4.6 mm
1.51466.0001	Chromolith® Validation Kit RP-18e (3 columns from different batches)	100 mm X 4.6 mm
1.52001.0001	Chromolith® Performance RP-18 endcapped	100 mm X 3 mm
1.52002.0001	Chromolith® RP-18 endcapped	50 mm x 3 mm
1.52003.0001	Chromolith® RP-18 endcapped	25 mm x 3 mm
1.52006.0001	Chromolith RP-18 endcapped	100mm X 2mm
1.52007.0001	Chromolith® FastGradient RP-18 endcapped	50 mm X 2 mm
1.52014.0001	Chromolith® Flash	25 mm x 2 mm
1.51467.0001	Chromolith® Column Coupler 1 piece	n/a

Chromolith® Capillary columns

EMD No.	Description	Size
1.50424.0001	Chromolith® CapRod® RP -18 endcapped	300 mm x 0.1 mm
1.50407.0001	Chromolith® CapRod® RP -18 endcapped HR	150 mm X 0.2 mm
1.50405.0001	Chromolith® CapRod® RP -18 endcapped	150 mm X 0.2 mm
1.50404.0001	Chromolith® CapRod® RP -18 endcapped HR	150 mm X 0.1 mm
1.50402.0001	Chromolith® CapRod® RP -18 endcapped	150 mm X 0.1 mm
1.50400.0001	Chromolith® CapRod® RP - 8 endcapped	150 mm X 0.1 mm
1.50403.0001	Chromolith® CapRod® RP -18 endcapped	150 mm X 0.05 mm
1.50409.0001	Chromolith® CapRod® RP -18 endcapped Trapping	50 mm X 0.2 mm
1.50426.0001	Chromolith® CapRod® RP -18 endcapped	50 mm x 0.1 mm

Chromolith® Guard columns

EMD No.	Description	Size
1.51451.0001	Chromolith® RP -18 endcapped Guard Column 3 pieces	5 mm X 4.6 mm
1.51452.0001	Chromolith® RP -18 endcapped Guard Column 3 pieces	10 mm X 4.6 mm
1.51470.0001	Chromolith® RP -18 endcapped Guard Column kit 3 pieces + holder + tool	5 mm X 4.6 mm
1.51471.0001	Chromolith® RP -18 endcapped Guard Column kit 3 pieces + holder + tool	10 mm X 4.6 mm
1.52008.0001	Chromolith® 5-2MM GUARD KIT with holder	
1.52004.0001	Chromolith® RP-18E 5-3MM KIT	
1.52005.0001	Chromolith® 5-3MM GUARD COL	
1.52009.0001	Chromolith® 5-2MM GUARD COL pk 3	

ZIC®-HILIC HPLC Columns

- High performance Hydrophilic Interaction Liquid Chromatography
- Unique zwitterionic functional groups assure the day-to-day reproducibility that you must have for rugged method development
- The better choice for chromatographic separation of polar and hydrophilic compounds
- Sets the standard for melamine analysis
- From small peptides to ions, from complex carbohydrates to metabolites – all types of hydrophilic compounds can be separated with ZIC®-HILIC

Your benefits:

- Low cost per analysis due to robust permanent covalently bonded stationary phase
- Straightforward separation of polar and hydrophilic compounds
- Enhanced MS sensitivity and simpler sample work-up
- Uses typical Reversed-phase eluents and MS-friendly buffers

ZIC®-HILIC Analytical Columns and Guards

P/N	DESCRIPTION	PARTICLE SIZE	ID X LENGTH	POROSITY
1.50458.0001	ZIC®-HILIC PEEK HPLC Column	5 µm	4.6 mm X 250 mm	200 Å
1.50455.0001	ZIC®-HILIC PEEK HPLC Column	5 µm	4.6 mm X 150 mm	200 Å
1.50444.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	4.6 mm X 150 mm	100 Å
1.50449.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	4.6 mm X 150 mm	200 Å
1.50453.0001	ZIC®-HILIC PEEK HPLC Column	5 µm	4.6 mm X 100 mm	200 Å
1.50451.0001	ZIC®-HILIC PEEK HPLC Column	5 µm	4.6 mm X 50 mm	200 Å
1.50446.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	4.6 mm X 50 mm	200 Å
1.50457.0001	ZIC®-HILIC PEEK HPLC Column	5 µm	2.1 mm X 250 mm	200 Å
1.50443.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	2.1 mm X 250 mm	100 Å
1.50454.0001	ZIC®-HILIC PEEK HPLC Column	5 µm	2.1 mm X 150 mm	200 Å
1.50442.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	2.1 mm X 150 mm	100 Å
1.50448.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	2.1 mm X 150 mm	200 Å
1.50452.0001	ZIC®-HILIC PEEK HPLC Column	5 µm	2.1 mm X 100 mm	200 Å
1.50441.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	2.1 mm X 100 mm	100 Å
1.50447.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	2.1 mm X 100 mm	200 Å
1.50450.0001	ZIC®-HILIC PEEK HPLC Column	5 µm	2.1 mm X 50 mm	200 Å
1.50440.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	2.1 mm X 50 mm	100 Å
1.50445.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	2.1 mm X 50 mm	200 Å
1.50439.0001	ZIC®-HILIC PEEK HPLC Column	3.5 µm	2.1 mm X 20 mm	100 Å
1.50434.0001	ZIC®-HILIC PEEK Fitting Guard Column (5-pack)	5 µm	1 mm X 14 mm	200 Å
1.50436.0001	ZIC®-HILIC Guard Column incl. column coupler (3-pack)	5 µm	2.1 mm X 20 mm	200 Å
1.50435.0001	ZIC®-HILIC Guard Column (1-pack)	5 µm	2.1 mm X 20 mm	200 Å

ZIC®-HILIC Microbore, Capillary, and Nano Columns and Guards

P/N	DESCRIPTION	PARTICLE SIZE	ID X LENGTH	POROSITY
1.50482.0001	ZIC®-HILIC Microbore Column	5 µm	1 mm X 150 mm	200 Å
1.50487.0001	ZIC®-HILIC Microbore Column	3.5 µm	1 mm X 150 mm	100 Å
1.50480.0001	ZIC®-HILIC Microbore Column	3.5 µm	1 mm X 150 mm	200 Å
1.50478.0001	ZIC®-HILIC Microbore Column	3.5 µm	1 mm X 30 mm	200 Å
1.50481.0001	ZIC®-HILIC Capillary Column	5 µm	300 µm X 150 mm	200 Å
1.50479.0001	ZIC®-HILIC Capillary Column	3.5 µm	300 µm X 150 mm	200 Å
1.50491.0001	ZIC®-HILIC Capillary Column	5 µm	300 µm X 30 mm	200 Å
1.50489.0001	ZIC®-HILIC Capillary Column	3.5 µm	300 µm X 30 mm	200 Å
1.50466.0001	ZIC®-HILIC Nano Column	3.5 µm	100 µm X 100 mm	200 Å
1.50465.0001	ZIC®-HILIC Nano Column	5 µm	75µm X 150 mm	200 Å
1.50484.0001	ZIC®-HILIC Guard Column (1-pack)	5 µm	300 µm X 5 mm	200 Å
1.50492.0001	ZIC®-HILIC Guard Column (5-pack)	5 µm	300 µm X 5 mm	200 Å
1.50483.0001	ZIC®-HILIC Guard Column (1-pack)	5 µm	1 mm X 5 mm	200 Å
1.50490.0001	ZIC®-HILIC Guard Column (5-pack)	5 µm	1 mm X 5 mm	200 Å

Semi-Preparative Columns

P/N	DESCRIPTION	PARTICLE SIZE	ID X LENGTH	POROSITY
1.50497.0001	ZIC®-HILIC Stainless Steel Column	5 µm	20 mm X 150 mm	200 Å
1.50496.0001	ZIC®-HILIC Stainless Steel Column	5 µm	20 mm X 50 mm	200 Å
1.50494.0001	ZIC®-HILIC Stainless Steel Column	5 µm	10 mm X 250 mm	200 Å
1.50493.0001	ZIC®-HILIC Stainless Steel Column	5 µm	10 mm X 150 mm	200 Å
1.50495.0001	ZIC®-HILIC Stainless Steel Column	5 µm	10 mm X 50 mm	200 Å
1.50456.0001	ZIC®-HILIC PEEK HPLC Column	5 µm	7.5 mm X 150 mm	200 Å

ZIC ®-pHILIC columns (porous polymer) with PEEK frits

P/N	DESCRIPTION	PARTICLE SIZE	ID X LENGTH
1.50461.0001	ZIC®-pHILIC PEEK HPLC Column	5 µm	4.6 mm X 150 mm
1.50464.0001	ZIC®-pHILIC PEEK HPLC Column	5 µm	4.6 mm X 100 mm
1.50463.0001	ZIC®-pHILIC PEEK HPLC Column	5 µm	4.6 mm X 50 mm
1.50460.0001	ZIC®-pHILIC PEEK HPLC Column	5 µm	2.1 mm X 150 mm
1.50462.0001	ZIC®-pHILIC PEEK HPLC Column	5 µm	2.1 mm X 100 mm
1.50459.0001	ZIC®-pHILIC PEEK HPLC Column	5 µm	2.1 mm X 50 mm
1.50437.0001	ZIC®-pHILIC Guard Column, (1-pack) 1504370001	5 µm	2.1 mm X 20 mm
1.50438.0001	ZIC®-pHILIC Guard Column, (3-pack), incl. column coupler	5 µm	2.1 mm X 20 mm

Distributed by:

The Nest Group, Inc.
45 Valley Rd.
Southborough, MA 01722
(800)-347-6378
info@nestgrp.com
www.nestgrp.com

Classical Particulate HPLC Columns

- Many additional dimensions and packings are available for most columns

Purospher® / Purospher® STAR HPLC Columns

EMD No.	Description
1.50359.0001	LiChroCART® 250-4.6 Purospher® STAR RP-18 endcapped (5 µm) HPLC cartridge
1.51456.0001	Hibar® 250-4.6 Purospher® STAR RP-18 endcapped (5 µm) HPLC column
1.50358.0001	LiChroCART® 150-4.6 Purospher® STAR RP-18 endcapped (5 µm) HPLC cartridge
1.50032.0001	LiChroCART® 250-4.6 Purospher® STAR RP-8E (5 µm) cartridge
1.50031.0001	LiChroCART® 150-4.6 Purospher® STAR RP-8 endcapped (5 µm)
1.50144.0001	LiChroCART® 250-4 Purospher® RP-18 (5 µm) HPLC cartridge
1.50169.0001	LiChroCART® 250-4 Purospher® RP-18 endcapped (5 µm) HPLC cartridge
1.50252.0001	LiChroCART® 250-4 Purospher® STAR RP-18 endcapped (5 µm) HPLC cartridge
1.50142.0001	LiChroCART® 125-4 Purospher® RP-18 (5 µm) HPLC cartridge
1.50251.0001	LiChroCART® 125-4 Purospher® STAR RP-18 endcapped (5 µm) HPLC cartridge
1.51460.0001	LiChroCART® 75-4 Purospher® STAR RP-18 endcapped (3 µm) HPLC cartridge
1.50253.0001	LiChroCART® 125-3 Purospher® STAR RP-18 endcapped (5 µm) HPLC cartridge
1.50250.0001	LiChroCART® 4-4 Purospher® STAR RP-18 endcapped (5 µm) 10 HPLC guard cartridges
1.50237.0001	LiChroCART® 30-2 Purospher® STAR RP-18 endcapped (3 µm) 1 HPLC guard cartridge and 1 cartridge holder
1.50239.0001	LiChroCART® 30-4 Purospher® STAR RP-18 endcapped (3 µm) 1 HPLC guard cartridge and 1 cartridge holder
1.50240.0001	LiChroCART® 55-2 Purospher® STAR RP-18 endcapped (3 µm) 1 HPLC guard cartridge and 1 cartridge holder
1.50242.0001	LiChroCART® 55-4 Purospher® STAR RP-18 endcapped (3 µm) 1 HPLC guard cartridge and 1 cartridge holder

- Purospher® STAR RP-18 endcapped HPLC columns are designed for universal use
- Purospher® STAR RP-18 endcapped allows maximum flexibility in method development
- Robust methods can be developed across the entire pH spectrum from 1.5 to 10
- The "Well Balanced" HPLC Column--the first one to try for new method development

Purospher® STAR UHPLC Columns

EMD No.	Description
1.50646.0001	Hibar® HR 50-2.1 Purospher® STAR RP-18 endcapped, 2 µm
1.50651.0001	Hibar® HR 50-2.1 Purospher® STAR RP-18 endcapped, 3 µm
1.50645.0001	Hibar® HR 30-2.1 Purospher® STAR RP-18 endcapped, 2 µm
1.50650.0001	Hibar® HR 30-2.1 Purospher® STAR RP-18 endcapped, 3 µm

- High purity of sorbent – best peak symmetry for giving excellent results
- High pressure stability (600 bar) – ideal for UHPLC use
- Very broad selectivity – one column type for most applications
- High separation efficiency – highly sensitive results
- Excellent pH stability (pH 1.5-10) – extremely wide application range

LiChrospher® HPLC Columns

EMD No.	Description
1.50830.0001	LiChroCART® 250-4 LiChrospher® Si 60 (5 µm) HPLC cartridge
1.50984.0001	LiChroCART® 250-4 LiChrospher® 60 RP-select B (C8) (5 µm) HPLC cartridge
1.50839.0001	LiChroCART® 250-4 LiChrospher® 60 RP-select B (C8) (5 µm) HPLC cartridge
1.50377.0001	Hibar® 250-4 LiChrospher® 100 RP-18 (5 µm) HPLC column
1.50329.0001	Hibar® 250-4 LiChrospher® 100 RP-8 (5 µm) HPLC column
1.50983.0001	LiChroCART® 250-4 LiChrospher® 100 RP-18 (5 µm) HPLC cartridge
1.50833.0001	LiChroCART® 250-4 LiChrospher® 100 RP-18 (5 µm) HPLC cartridge
1.50477.0001	Hibar® 125-4 LiChrospher® 100 RP-18 (5 µm) HPLC column
1.50838.0001	LiChroCART® 250-4 LiChrospher® 100 RP-18 endcapped (5 µm) HPLC cartridge
1.50832.0001	LiChroCART® 250-4 LiChrospher® 100 RP-8 (5 µm) HPLC cartridge
1.50837.0001	LiChroCART® 250-4 LiChrospher® 100 RP-8 endcapped (5 µm) HPLC cartridge
1.50892.0001	LiChroCART® 250-4 LiChrospher® 100 CN (5 µm) HPLC cartridge
1.50836.0001	LiChroCART® 250-4 LiChrospher® 100 DIOL (5 µm) HPLC cartridge
1.50834.0001	LiChroCART® 250-4 LiChrospher® 100 NH2 (5 µm) HPLC cartridge
1.50829.0001	LiChroCART® 125-4 LiChrospher® 60 RP-select (5 µm) HPLC cartridge
1.50981.0001	LiChroCART® 125-4 LiChrospher® 60 RP-select B (C8) (5 µm) HPLC cartridge
1.50823.0001	LiChroCART® 125-4 LiChrospher® 100 RP-18 (5 µm) HPLC cartridge
1.50943.0001	LiChroCART® 125-4 LiChrospher® 100 RP-18 (5 µm) HPLC cartridge
1.50734.0001	LiChroCART® 125-4 LiChrospher® 100 RP-18 endcapped (5 µm) HPLC cartridge
1.50942.0001	LiChroCART® 125-4 LiChrospher® 100 RP-8 (5 µm) HPLC cartridge
1.50822.0001	LiChroCART® 125-4 LiChrospher® 100 RP-8 (5 µm) HPLC cartridge
1.50825.0001	LiChroCART® 125-4 LiChrospher® 100 CN (5 µm) HPLC cartridge
1.50826.0001	LiChroCART® 125-4 LiChrospher® 100 DIOL (5 µm) HPLC cartridge
1.50947.0001	LiChroCART® 25-4 LiChrospher® 100 ADS (25 µm) 3 HPLC cartridges
1.50957.0001	LiChroCART® 4-4 LiChrospher® 100 RP-18 (5 µm) HPLC guard column
1.50962.0001	LiChroCART® 4-4 LiChrospher® 100 RP-18 endcapped (5 µm) HPLC guard column
1.50963.0001	LiChroCART® 4-4 LiChrospher® 60 RP-select B (C8) (5 µm) HPLC guard column

- LiChrospher® RP-18 is a reliable and versatile traditionally produced spherical silica gel sorbent with C-18 reversed-phase properties. It is well suited for the separation of neutral, acidic and weak basic compounds

Classical Particulate HPLC Columns *CONTINUED*

LiChrosorb® HPLC Columns

EMD No.	Description
1.50388.0001	Hibar® 250-4 LiChrosorb® Si 60 (5 µm) HPLC column
1.50333.0001	Hibar® 250-4 LiChrosorb® RP-18 (5 µm) HPLC column
1.50334.0001	Hibar® 250-4 LiChrosorb® RP-18 (10 µm) HPLC column
1.50433.0001	Hibar® 125-4 LiChrosorb® RP-18 (5 µm) HPLC column
1.51349.0001	LiChroCART® 125-4 LiChrosorb® RP-18 (5 µm) HPLC cartridge
1.51355.0001	LiChroCART® 250-4 LiChrosorb® RP-18 (5 µm) HPLC cartridge
1.51356.0001	LiChroCART® 250-4 LiChrosorb® RP-18 (10 µm) HPLC cartridge

- LiChrosorb® RP-18 is a classical irregular shaped silica gel sorbent with reversed phase properties
- It is well suited for the separation of neutral, acidic and weak basic compounds

Superspher® HPLC Columns

EMD No.	Description
1.16056.0001	LiChroCART® 250-4 Superspher® 100 RP-18 HPLC cartridge
1.50973.0001	LiChroCART® 250-4 Superspher® 60 RP-select B (C8) HPLC cartridge
1.16051.0001	LiChroCART® 125-4 Superspher® 100 RP-18 HPLC cartridge
1.50975.0001	LiChroCART® 125-4 Superspher® 60 RP-select B (C8) HPLC cartridge
1.50974.0001	LiChroCART® 75-4 Superspher® 60 RP-select B (C8) HPLC cartridge

- Superspher® is a traditionally produced spherical silica gel sorbent

LiChroCART® columns (75, 125, 150, and 250 mm length, and 2, 3, 4 and 4.6 mm i.d.) require the universal manu-CART® cartridge column holder (1.51486.0001) which can be used to hold one cartridge column with or without a 4-4 mm guard column. They may be re-used on any other LiChroCART® column. Hibar® HPLC columns come complete with endfittings, no manu-CART® endfittings kit is necessary

Many additional dimensions and packings are available for most columns

Notes

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