11th Edition

DUKSAN
High Purity Solvents

LC-MS
Ultimate
Pesticide
HPLC
DNA Biosynthesis
Ultra Dry

Line @thankyou2562 Tel.02 372 1545 - 6

REAGENTS
DUKSAN

Greetings

Since Its Establishment In 1970,
DUKSAN Pure Chemicals has served customers as a supplier of analytical lab reagents for more than 45 years to contribute to the basic and fine chemicals industry.

We began our business by providing organic solvent recovery service and industrial grade raw materials. With our extensive knowledge and expertise in the field, we have successfully branched out into manufacture in first and special grade chemical reagents, food additives, pharmaceutical raw materials, high purity analytical reagents, electronic solvents, and ultra dry solvents for molecular biology.

As for chemical reagents, we provide the high purity reagents by organic and inorganic syntheses, and critical point organic solvent recovery technology. In result of continuous effort of R&D, our products are produced with genuine domestic technology. As for domestic consumption, Duksan products are competing shoulder to shoulder with foreign reagents in major corporations, small and large scale laboratories, and many Universities. Currently High Purity Solvents are sold in over 20 countries including South Asia, Middle East, Nortn/South America and Europe as our own brand. We also export our products as an OEM to global major corporations and received outstanding reputations throughout the field.

We believe the expansion will allow us to elevate already-at-the-peak product quality further, to improve production processes, and to develop new products. With this plan Duksan family will re-assure ourselves of our motto “Customer Satisfaction” and will try our best to continue our presence at the top of Korean and furthermore of the world reagent industry.

Duksan Pure Chemicals CO., Ltd.

Line @hankyou2562 Tel.02-372-1545-6

Duksan
High Purity Solvents

As a major manufacturer of high purity solvents in Korea, having a specialties in solvent purification, DUKSAN Pure Chemicals is working hard toward achieving 'High Quality, High Customer-satisfaction' by enforcing strict quality management and new product development.

Since the development of Solvents for HPLC in 1996, DUKSAN has been producing a series of High Purity Solvents.

LC-MS	for LC-MS analysis
Ultimate	Multi purpose solvents for trace organic residue analysis, HPLC
HPLC	Solvents for HPLC and ACS experiments
Pesticide	for Pesticide Residue Analysis
BIO	Solvents for Bio-synthesis
Ultra Dry	for requiring Low water application

Certification

Registered
ISO 9001:2015 / ISO 14001:2015

BGMP
KOREA AEO
INNOBIZ

ISO 9001/ISO 14001 Qualified Company
BGMP Qualified Company
Innovation-Business [INNO-BIZ]

REAGENTS
DUKSAN

DUKSAN
PURE CHEMICALS

Line @thankyou2562 Tel.02372 1545 - 6

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General Product Guide

LC-MS
ULTIMATE
PESTICIDE
HPLC
BIO
ULTRA DRY

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LC-MS

Features

- No LC-MS TIC signals higher than
  50ppb Reserpine (ESI+mode)
  50ppb 4-Nitrophenol(ESI-mode)
- Very low metal concentration
- Low particles

Applications

- LC-MS
- HPLC
- Spectrophotometry

Package

- 1ℓ, 4ℓ Glass bottle

ITEM

Acetonitrile
Methanol
Water

Line @thankyou2562 Tel.02 372 1545 - 6

Ultimate solvents

Features

- Multi purpose grade for HPLC, Trace organic analysis by GC-ECD/GC-FID & Spectrophotometry
- Minimal UV absorbance
- Low water, residue after evaporation
- Low organic impurities

Applications

- HPLC
- Trace organic analysis by GC-ECD/ GC-FID
- spectrophotometry
- Applications requiring ACS reagent-grade solvent

Package

- 1ℓ, 4ℓ Glass bottle

ITEM

Acetone
Acetonitrile
Benzene
Chloroform (stabilized with Amylene)
Chloroform (stabilized with Ethanol)
Dichloromethane
Ethyl Acetate
Ethyl Ether (stabilized with Ethanol)
n-Heptane 97%
n-Heptane 99%
n-Hexane 95%
Isooctane
Methanol
Methyl t-Butyl Ether
n-Pentane
Petroleum Ether(35~60°C)
2-Propanol
Toluene

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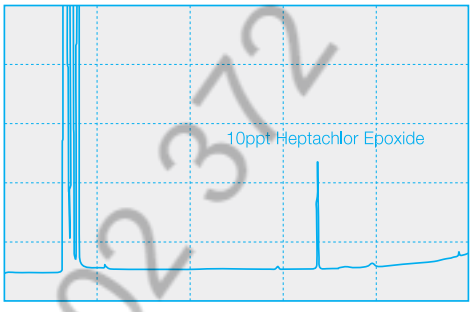
Pesticide solvents

Features

- Meets Extraction-Concentration Suitability test (GC-ECD)
- Low water content and residue after evaporation

Applications

- Pesticide Multi residue Analysis by GC-ECD
- Gas chromatography



Package

- 1ℓ, 4ℓ Glass bottle

ITEM

Acetone
Acetonitrile
Benzene
1-Butanol
Chloroform (stabilized with Amylene)
Chloroform (stabilized with Ethanol)
Cyclohexane
Dichloromethane
Ethyl Acetate
Ethyl Ether (stabilized with Ethanol)
n-Heptane 97%
n-Heptane 99%
n-Hexane 95%
Isooctane
Methanol
Methyl t-Butyl Ether
n-Pentane
Petroleum Ether(35~60°C)
2-Propanol
Sodium sulfate, Anhydrous
Toluene

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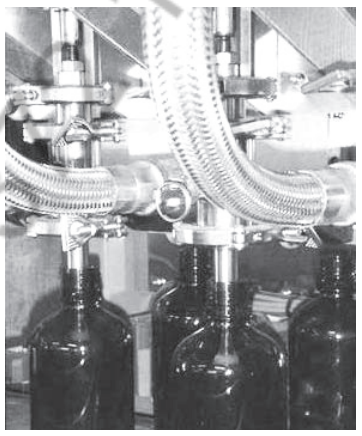
HPLC solvents

Features

- ACS Certified
- Low UV absorbance, High GC assay
- Low water content and residue after evaporation
- Packaged with Nitrogen & Sub-micron filtration



Applications

- HPLC
- Spectrophotometry
- Applications requiring ACS reagent-grade solvent

Package

- 1ℓ, 2.5ℓ, 4ℓ Glass bottle

ITEM

Acetic acid, glacial
Acetone
Acetonitrile
Acetonitrile, isocratic
Benzene
1-Butanol
n-Butyl acetate
Chlorobenzene
Chloroform (stabilized with Amylene)
Chloroform (stabilized with Ethanol)
Cyclohexane
o-Dichlorobenzene
1,2-Dichloroethane
Dichloromethane
N,N-Dimethyl Acetamide
N,N-Dimethylformamide
Dimethyl Sulfoxide
1,4-Dioxane
Ethanol

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HPLC solvents

ITEM

Ethyl Acetate
Ethyl Ether (stabilized with Ethanol)
n-Heptane 97%
n-Heptane 99%
n-Hexane 95%
Isooctane
Methanol
Methanol, isocratic
Methyl-t-Butyl Ether
Methyl Ethyl Ketone
Methyl Isobutyl Ketone
N-Methyl-2-Pyrrolidone
n-Pentane
Petroleum Ether(35~60°C)
1-Propanol
2-Propanol
Pyridine
Tetrahydrofuran
Tetrahydrofuran(stabilized with BHT)
Toluene
1,2,4-Trichlorobenzene
Water

Acid & Buffers for HPLC

ITEM

Ammonium acetate
Ammonium carbonate
Ammonium phosphate, monobasic
Phosphoric acid 85%
Potassium phosphate, monobasic
Sodium acetate trihydrate
Sodium bicarbonate

Ion-Pair Reagents

ITEM

1-Dodecane Sulfonic acid Sodium salt
1-Heptane Sulfonic acid Sodium salt
1-Hexane Sulfonic acid Sodium salt
1-Octane Sulfonic acid Sodium salt
1-Pentane Sulfonic acid Sodium salt

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BIO solvents

Features

- Specially purified for Bio synthesis
- Minimal water contents to optimize the yields in Bio synthesis
- Low water content and non-volatile residue

Applications

- Biosynthesis
  : nucleic acid & peptide synthesis
- Spectrophotometry
- Applications requiring Low-water solvent

Package

- 1ℓ, 4ℓ Glass bottle

ITEM

Acetonitrile
Dichloromethane (stabilized with Amylene)
N,N-Dimethylformamide
Dimethyl Sulfoxide
Methanol
N-Methyl-2-Pyrrolidone
Pyridine
Tetrahydrofuran
Triethylamine

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Ultra Dry solvents

Features

- Specially designed process for low water content
- Minimal water contents from 10 ppm to 50 ppm

Applications

- Biosynthesis
- Applications requiring Low-water solvent

Package

- 1ℓ, 4ℓ Glass bottle

ITEM

Acetonitrile (water10)
Acetonitrile (water30)
Chloroform (stabilized with Ethanol)
1,4-Dioxane
Ethyl Acetate
Ethyl ether (stabilized with Ethanol)
n-Hexane 95%
Methanol
Pyridine
Toluene

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Solvent Specifications

Solvent Name Synonyms

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

Line @thankyou2562 Tel.02 372 1543-6

Solvent name synonyms

Solvent name	DUKSAN Product	CAS No.
Ammonium dihydrogen Phosphate	Ammonium Phosphate, monobasic	7722-76-1
n-Butyl Alcohol	1-Butanol	71-36-3
2-Butanone	Methyl Ethyl Ketone	78-93-3
tert-Butyl Methyl Ether	Methyl t-Butyl Ether	1634-04-4
DCM	Dichloromethane	75-09-02
DMAC	N,N-Dimethylacetamide	127-19-5
DMF	N,N-Dimethylformamide	68-12-2
DMSO	Dimethyl Sulfoxide	67-68-5
1,2-Dichlorobenzene	o-Dichlorobenzene	95-50-1
Diethyl ether	Ethyl Ether	60-29-7
Diethylene Dioxide	1,4-Dioxane	123-91-1
Diethylene Ether	1,4-Dioxane	123-91-1
Ether	Ethyl Ether	60-29-7
Ethyl Alcohol	Ethanol	64-17-5
Ethyl Methyl Ketone	Methyl Ethyl Ketone	78-93-3
Ethylene Dichloride	1,2-Dichloroethane	107-06-2
Isopropanol	2-Propanol	67-63-0
Isopropyl Alcohol	2-Propanol	67-63-0
MEK	Methyl Ethyl Ketone	78-93-3
MIBK	Methyl Isobutyl Ketone	108-10-1
MTBE	Methyl t-Butyl Ether	1634-04-4
Methyl Alcohol	Methanol	67-56-1
Methyl Cyanide	Acetonitrile	75-05-8
Methylene Chloride	Dichloromethane	75-09-2
4-Methyl-2-Pentanone	Methyl Isobutyl Ketone	108-10-1
1-Methyl-2-Pyrrolidinone	N-Methyl-2-Pyrrolidone	872-50-4
N-Methyl-2-Pyrrolidinone	N-Methyl-2-Pyrrolidone	872-50-4
N-Methylpyrrolidone	N-Methyl-2-Pyrrolidone	872-50-4
1-Methyl-2-Pyrrolidone	N-Methyl-2-Pyrrolidone	872-50-4
Methyl Sulfoxide	Dimethyl Sulfoxide	67-68-5
Monochlorobenzene	Chlorobenzene	108-90-7
NMP	N-Methyl-2-Pyrrolidinone	872-50-4
n-Propyl Alcohol	1-Propanol	71-23-8

Line @rankyou2562 Tel.02 372 1545 - 6

Solvent name	DUKSAN Product	CAS No.
n-Propanol	1-propanol	71-23-8
Potassium dihydrogen phosphate	Potassium phosphate, monobasic	7778-77-0
Sodium hydrogen carbonate	Sodium bicarbonate	144-55-8
TEA	Triethylamine	121-44-8
THF	Tetrahydrofuran	109-99-9
TMP	Isooctane	540-84-1
2,2,4-Trimethylpentane	Isooctane	540-84-1

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LC-MS Grade

Item	LC-MS Suitability		Metal impurities		
	ESI + Reserpine (max, ppb)	ESI -, 4-Nitrophenol (max, ppb)	Na (ppb)	Al, Ca, Mg, K (ppb)	Ba, Cd, Cr, Co, Cu, Fe, Pb, Li, Ni, Sn, Zn (ppb)
Acetonitrile	50	50	50	25	5
Methanol	50	50	50	25	5
Water	50	50	50	25	5

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Acetronitrile

Specifications and Max. impurities

LC-MS Suitability

ESI+ mode (as Reserpine)	50ppb
ESI- mode (as 4-Nitrophenol)	50ppb
Assay (by GC)	min. 99.9%
Color (APHA)	10
Water	0.01%
Residue after evaporation	1 ppm
Titrable acid	0.008 meq/g
Titrable base	0.0006 meq/g

UltraViolet Spectrophotometry

Maximum UV Absorbance

190nm	1.00
195nm	0.15
200nm	0.05
205nm	0.04
210nm	0.02
220nm	0.01
254nm	0.005
LC Gradient Suitability	To pass test

Metal impurities

Aluminum(Al)	25 ppb
Barium(Ba)	5 ppb
Cadmium(Cd)	5 ppb
Calcium(Ca)	25 ppb
Chromium(Cr)	5 ppb
Cobalt(Co)	5 ppb
Copper(Cu)	5 ppb
Iron(Fe)	5 ppb
Lead(Pb)	5 ppb
Magnesium(Mg)	25 ppb
Manganese(Mn)	5 ppb
Lithium(Li)	5 ppb
Nickel(Ni)	5 ppb
Potassium(K)	25 ppb
Silver(Ag)	5 ppb
Sodium(Na)*	50 ppb
Tin(Sn)	5 ppb
Zinc(Zn)	5 ppb

* May change over time

Packaged under Nitrogen and sub-micron filtered.
or use in LC-MS, HPLC

Formula
CH_3CN

F.W
41.05

CAS
75-05-8

Product No.
3040

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

LC-MS Grade

Line @thankyou2562 Tel.02 372 1545-6

Methanol

Formula
CH_3OH

F.W
32.04

CAS
67-56-1

Product No.
3041

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Specifications and Max. impurities

LC-MS Suitability

ESI+ mode (as Reserpine)	50 ppb
ESI- mode (as 4-Nitrophenol)	50 pbb
Assay (by GC)	min 99.9%
Color (APHA)	10
Water	0.05%
Residue after evaporation	10 ppm
Titrable acid	0.0003 meq/g
Titrable base	0.0002 meq/g

UltraViolet Spectrophotometry

Maximum UV Absorbance

205nm	1.00
220nm	0.25
230nm	0.15
254nm	0.02
280nm	0.01

LC Gradient Suitability	To pass test

Metal impurities

Aluminum(Al)	25 ppb
Barium(Ba)	5 ppb
Cadmium(Cd)	5 ppb
Calcium(Ca)	25 ppb
Chromium(Cr)	5 ppb
Cobalt(Co)	5 ppb
Copper(Cu)	5 ppb
Iron(Fe)	5 ppb
Lead(Pb)	5 ppb
Magnesium(Mg)	25 ppb
Manganese(Mn)	5 ppb
Lithium(Li)	5 ppb
Nickel(Ni)	5 ppb
Potassium(K)	25 ppb
Silver(Ag)	5 ppb
Sodium(Na)*	50 ppb
Tin(Sn)	5 ppb
Zinc(Zn)	5 ppb

* May change over time

Packaged under Nitrogen and sub-micron filtered.
For use in LC-MS, HPLC

LC-MS Grade

Line @thankyou2562 Tel.02 372 1545 - 6

Water

Specifications and Max. impurities

LC-MS Suitability

ESI+ mode (as Reserpine)	50 ppb
ESI- mode (as 4-Nitrophenol)	50 ppb
Color (APHA)	10
Residue after evaporation	10ppm

UltraViolet Spectrophotometry

Maximum UV Absorbance	
190nm	0.01
200nm	0.01
250~400nm	0.005
LC Gradient Suitability	To pass test

Metal impurities

Aluminum(Al)	25 ppb
Barium(Ba)	5 ppb
Cadmium(Cd)	5 ppb
Calcium(Ca)	25 ppb
Chromium(Cr)	5 ppb
Cobalt(Co)	5 ppb
Copper(Cu)	5 ppb
Iron(Fe)	5 ppb
Lead(Pb)	5 ppb
Magnesium(Mg)	25 ppb
Manganese(Mn)	5 ppb
Lithium(Li)	5 ppb
Nickel(Ni)	5 ppb
Potassium(K)	25 ppb
Silver(Ag)	5 ppb
Sodium(Na)*	50 ppb
Tin(Sn)	5 ppb
Zinc(Zn)	5 ppb

* May change over time

Formula
H_2O

F.W
18.01

CAS
7732-18-5

Product No.
3042

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Packaged under Nitrogen and sub-micron filtered.
For use in LC-MS, HPLC

LC-MS Grade

Line @thankyou2562 Tel.02-372-1545-6

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Solvent Specifications

Solvent Name Synonyms

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

Line @thankyou2562 Tel.02 372 1543-6

Ultimate Grade

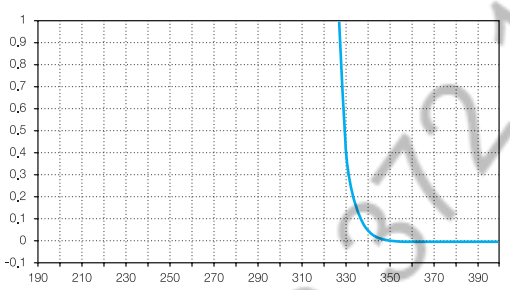
Item	Extraction-Concentration Suitability		UV Cutoff (max.nm)	Assay (min. %)	Water (max. %)	Residue aft. Evaporation (max. ppm)
	ECD (max. ppt)	FID (max. ppb)				
Acetone	10	5	330	99.9	0.2	1
Acetonitrile	10	5	<190	99.9	0.01	1
Benzene	10		280	99.9	0.03	1
Chloroform w/ Amylene	10	5	245	99.9	0.02	1
Chloroform w/ Ethanol	10	5	245	99.9	0.02	1
Dichloromethane	10	5	233	99.9	0.02	1
Ethyl Acetate	10	5	255	99.9	0.02	1
Ethyl Ether w/ Ethanol	10	5	218	99.9	0.01	1
n-Heptane 97%	10	5	197	97.0	0.02	1
n-Heptane 99%	10	5	197	99.9	0.02	1
n-Hexane 95%	10	5	195	95.0	0.01	1
Isooctane	10	5	205	99.8	0.02	1
Methanol	10	5	205	99.9	0.05	1
Methyl t-Butyl Ether	10	5	210	99.5	0.05	1
n-Pentane	10	5	190	98.0	0.02	1
Petroleum Ether(35~60°C)	10	5	-	-	0.01	1
2-Propanol	10	5	205	99.9	0.05	1
Toluene	10	5	286	99.9	0.02	1

Line @thankyou2562 Tel 02 372 1545 - 6

Acetone

Physical Data

Eluotropic value (E^0)(on Alumina) ··· 0.56
Polarity Index (P') ····· 5.1
Viscosity (cP, 25°C) ····· 0.306
Density (g/mℓ, 25°C) ····· 0.785
Boiling Point (°C) ····· 56
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.357



Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance
330 nm ····· 1.00
340 nm ····· 0.06
350 nm ····· 0.01
UV Cutoff ····· max. 330 nm

Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.20%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Titrable acid ····· 0.0003 mEq/g
Titrable base ····· 0.0006 mEq/g
Solubility in water ····· To pass test
Substances reducing permanganate ····· To pass test
Aldehyde (as HCHO) ····· 0.002%
Methanol (as CH_3OH) ····· 0.05%
Isopropyl Alcohol (as $(CH3)_2CHOH$) ····· 0.05%

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Formula
$(CH_3)_2CO$

F.W
58.08

CAS
67-64-1

Product No.
1761

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Ultimate Grade

Line @thankyou2562 Tel.02-372-1545-6

Acetonitrile

Formula
CH_3CN

F.W
41.05

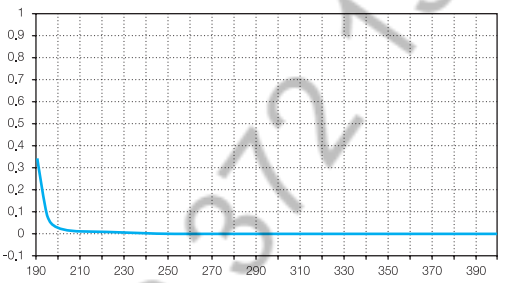
CAS
75-05-8

Product No.
2675

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ··· 0.65
Polarity Index (P') ····· 5.8
Viscosity (cP, 25°C) ····· 0.369
Density (g/mℓ, 25°C) ····· 0.779
Boiling Point (°C) ····· 82
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.342



Specifications and Max. impurities

Extraction-Concentration Suitability
ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry
Maximum UV Absorbance
190 nm ····· 1.00
195 nm ····· 0.15
200 nm ····· 0.05
205 nm ····· 0.04
210 nm ····· 0.02
220 nm ····· 0.01
254 nm ····· 0.009
UV Cutoff ····· max. 190 nm

LC Gradient Suitability
Gradient Elution test ····· To pass test

Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.01%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Titrable acid ····· 0.008 mEq/g
Titrable base ····· 0.0006 mEq/g

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

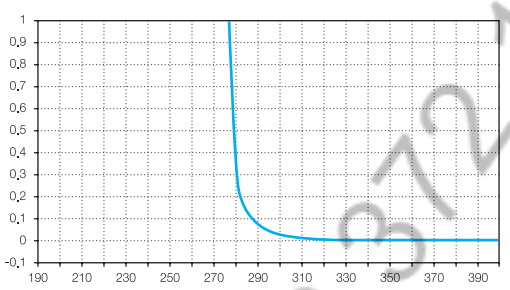
Ultimate Grade

Line @thanky2u2562 Tel.02-372-1545 - 6

Benzene

Physical Data

Eluotropic value (E^0)(on Alumina) ··· 0.32
Viscosity (cP, 25°C) ····· 0.604
Density (g/mℓ, 25°C) ····· 0.872
Boiling Point (°C) ····· 80
Solubility of water (%, 20°C) ····· 0.063
Refractive Index (25°C) ····· 1.498



Formula
C_6H_6

F.W
78.10

CAS
71-43-2

Product No.
1828

Package
1L × **10** Btl/Box
4L × **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt

Ultraviolet Spectrophotometry

Maximum UV Absorbance

280 nm ····· 1.00
290 nm ····· 0.15
300 nm ····· 0.05
330 nm ····· 0.01
350 nm ····· 0.005
UV Cutoff ····· max. 280 nm

Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.03%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Substances darkened by sulfuric acid ····· To pass test
Thiophene (limit about 1 ppm) ····· To pass test
Sulfur compounds (as S) ····· 0.005%

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Line @thankyou2562 Tel.02-872-1543-6

Chloroform

(Stabilized with Amylene)

Formula
$CHCl_3$

F.W
119.38

CAS
67-66-3

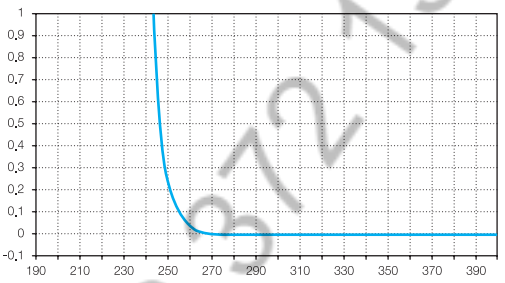
Product No.
1779

Stabilized with 15~200 ppm Amylene

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.40
Polarity Index (P') ····· 4.1
Viscosity (cP, 25°C) ····· 0.537
Density (g/mℓ, 25°C) ····· 1.480
Boiling Point (°C) ····· 61
Solubility of water (%, 20°C) ····· 0.056
Refractive Index (25°C) ····· 1.444



Specifications and Max. impurities

Extraction-Concentration Suitability
ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry
Maximum UV Absorbance
245 nm ····· 1.00
250 nm ····· 0.33
254 nm ····· 0.15
270 nm ····· 0.02
280 nm ····· 0.01
UV Cutoff ····· max. 245 nm

Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Lead (Pb) ····· 0.05 ppm
Acid and Chloride ····· To pass test
Free Chlorine ····· To pass test
Suitability for use in Dithizone test ····· To pass test
Acetone and Aldehyde ····· 0.005%
Contains Stabilizer (Amylene) 15~200 ppm

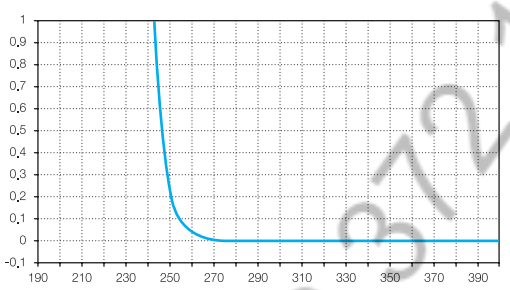
Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Line @thanyou2562 Tel.02-372-1545 - 6

Chloroform
(Stabilized with Ethanol)

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.40
Polarity Index (P') ····· 4.1
Viscosity (cP, 25°C) ····· 0.537
Density (g/mℓ, 25°C) ····· 1.480
Boiling Point (°C) ····· 61
Solubility of water (%, 20°C) ····· 0.056
Refractive Index (25°C) ····· 1.444



Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance
245 nm ····· 1.00
250 nm ····· 0.33
254 nm ····· 0.15
270 nm ····· 0.02
280 nm ····· 0.01
UV Cutoff ····· max. 245 nm

Assay (by GC, Excluding preservative) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Lead (Pb) ····· 0.05 ppm
Acid and Chloride ····· To pass test
Free Chlorine ····· To pass test
Substances darkened by sulfuric acid ····· To pass test
Suitability for use in Dithizone test ····· To pass test
Acetone and Aldehyde ····· 0.005%
Contains Stabilizer (Ethanol) 0.5~1.0 %

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Formula
$CHCl_3$

F.W
119.38

CAS
67-66-3

Product No.
1782

Stabilized with 0.5~1.0% Ethanol

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Ultimate Grade

Line @thankyou2562 Tel.02 372 1545-6

Dichloromethane

(Stabilized with Amylene)

Formula
CH_2Cl_2

F.W
84.93

CAS
75-09-2

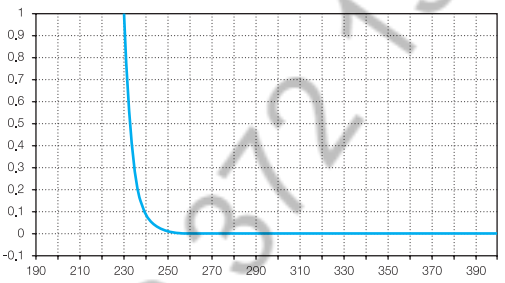
Product No.
1667

Stabilized with 15~200ppm Amylene

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.42
Polarity Index (P') ····· 3.1
Viscosity (cP, 25°C) ····· 0.413
Density (g/mℓ, 25°C) ····· 1.318
Boiling Point (°C) ····· 40
Solubility of water (%, 20°C) ····· 0.24
Refractive Index (25°C) ····· 1.421



Specifications and Max. impurities

Extraction-Concentration Suitability
ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry
Maximum UV Absorbance
233 nm ····· 1.00
235 nm ····· 0.50
240 nm ····· 0.15
254 nm ····· 0.01
280 nm ····· 0.01
UV Cutoff ····· max. 233 nm

Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Titrable acid ····· 0.0003 mEq/g
Free Halogens ····· To pass test
Contains Stabilizer (Amylene) 15~200 ppm

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

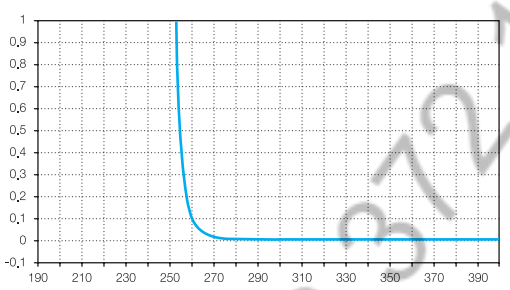
Ultimate Grade

Line @thankyou2562 Tel.02-372-1545 - 6

Ethyl Acetate

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.58
Polarity Index (P') ····· 4.4
Viscosity (cP, 25°C) ····· 0.423
Density (g/mℓ, 25°C) ····· 0.894
Boiling Point (°C) ····· 77
Solubility of water (%, 20°C) ····· 3.3
Refractive Index (25°C) ····· 1.370



Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance
255 nm ····· 1.00
260 nm ····· 0.15
270 nm ····· 0.025
UV Cutoff ····· max. 255 nm

Assay (by GC) ····· min. 99.9%
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Titrable acid ····· 0.0009 mEq/g
Substances darkened by sulfuric acid ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Formula
$CH_3COOC_2H_5$

F.W
88.11

CAS
141-78-6

Product No.
2697

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Ultimate Grade

Line @thankyou2562 Tel.02 372 1545-6

Ethyl Ether, Anhydrous

(Stabilized with Ethanol)

Formula
$C_2H_5OC_2H_5$

F.W
74.12

CAS
60-29-7

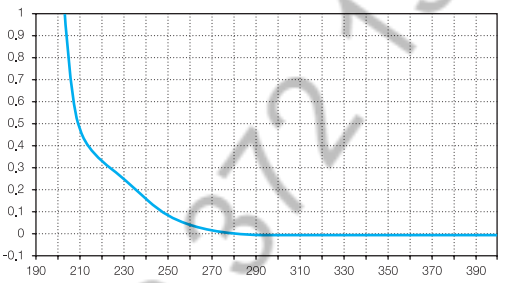
Product No.
2691

Stabilized with 1.5~2.5% Ethanol

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.38
Polarity Index (P') ····· 2.8
Viscosity (cP, 25°C) ····· 0.24
Density (g/mℓ, 25°C) ····· 0.708
Boiling Point (°C) ····· 4
Solubility of water (%, 20°C) ····· 1.26
Refractive Index (25°C) ····· 1.352



Specifications and Max. impurities

Extraction-Concentration Suitability
ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry
Maximum UV Absorbance
218 nm ····· 1.00
254 nm ····· 0.07
280 nm ····· 0.02
350 nm ····· 0.01
UV Cutoff ····· max. 218 nm

Assay (by GC, Excluding preservative) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.01%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Titrable acid ····· 0.0002 mEq/g
Peroxide (as H_2O_2, at time of packaging) ····· max. 5 ppm
Carbonyl compound (as HCHO) ····· 0.001%
Substances darkened by sulfuric acid ····· To pass test
Contains Stabilizer (Ethanol) 1.5~2.5 %

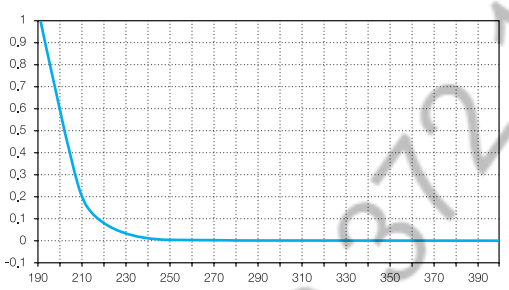
Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Line @thanyabu2562 Tel.02-372-1545 - 6

n-Heptane 97%

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.01
Polarity Index (P') ····· 0.1
Viscosity (cP, 25°C) ····· 0.40
Density (g/mℓ, 25°C) ····· 0.681
Boiling Point (°C) ····· 98
Solubility of water (%, 20°C) ····· 0.01
Refractive Index (25°C) ····· 1.385



Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance
197 nm ····· 1.00
200 nm ····· 0.75
215 nm ····· 0.20
254 nm ····· 0.014
UV Cutoff ····· max. 197 nm

Assay (by GC, n-Heptane) ····· min. 97.0 %
(total C7 Hydrocarbons) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Substances darkened by sulfuric acid ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Formula
$CH_3(CH_2)_5CH_3$

F.W
100.21

CAS
142-82-5

Product No.
2052

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Ultimate Grade

Line @thankyou2562 Tel.02 372 1543 6

n-Heptane 99%

Formula
$CH_3(CH_2)_5CH_3$

F.W
100.21

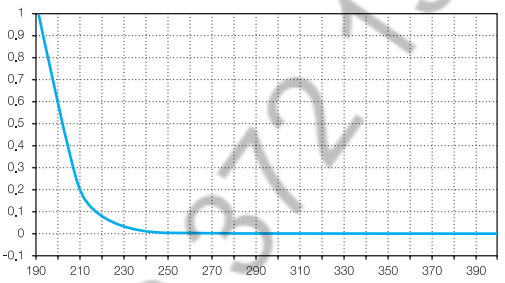
CAS
142-82-5

Product No.
2702

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.01
Polarity Index (P') ····· 0.1
Viscosity (cP, 25°C) ····· 0.40
Density (g/mℓ, 25°C) ····· 0.681
Boiling Point (°C) ····· 98
Solubility of water (%, 20°C) ····· 0.01
Refractive Index (25°C) ····· 1.385



Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance
197 nm ····· 1.00
200 nm ····· 0.75
215 nm ····· 0.20
254 nm ····· 0.014
UV Cutoff ····· max. 197 nm

Assay (by GC, n-Heptane) ····· min. 99.0 %
(total C7 Hydrocarbons) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Substances darkened by sulfuric acid ····· To pass test

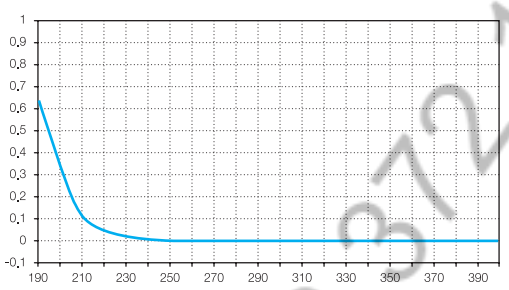
Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Line @thankrou2562 Tel.02-372-1545 - 6

n-Hexane 95%

Physical Data

Eluotropic value (E^0)(on Alumina)	0.01
Polarity Index (P')	0.1
Viscosity (cP, 25°C)	0.300
Density (g/mℓ, 25°C)	0.656
Boiling Point (°C)	69
Solubility of water (%, 20°C)	0.01
Refractive Index (25°C)	1.372



Formula
$CH_3(CH_2)_4CH_3$

F.W
86.18

CAS
110-54-3

Product No.
1666

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
FID Detectable residue (as 2-Octanol)	max. 5 ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance

195 nm	1.00
210 nm	0.25
220 nm	0.075
254 nm	0.005
UV Cutoff	max. 195 nm
Assay (by GC, n-Hexane)	min. 95.0 %
(total C6 Hydrocarbons)	min. 99.8 %
Color (APHA)	10
Water	0.01%
Residue after Evaporation	1 ppm
Fluorescence Background	To pass test
Water soluble titrable acid	0.0003 mEq/g
Sulfur compounds (as S)	0.005%
Thiophene	To pass test

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Line @thankyou2562 Tel.02 372 1543 6

Isooctane (2,2,4-Trimethylpentane)

Formula
$(CH_3)_2CHCH_2C(CH_3)_3$

F.W
114.23

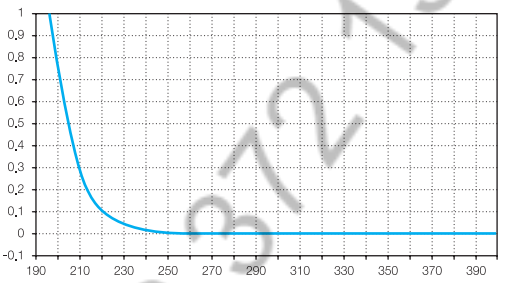
CAS
540-84-1

Product No.
1188

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.01
Polarity Index (P') ····· 0.1
Viscosity (cP, 22°C) ····· 0.51
Density (g/mℓ, 20°C) ····· 0.691
Boiling Point (°C) ····· 99
Solubility of water (%, 20°C) ····· 0.006
Refractive Index (25°C) ····· 1.389



Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance
205 nm ····· 1.00
225 nm ····· 0.10
254 nm ····· 0.014
UV Cutoff ····· max. 205 nm

Assay (by GC) ····· min. 99.8 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Water soluble titrable acid ····· 0.0003 mEq/g
Sulfur compounds (as S) ····· 0.005%

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

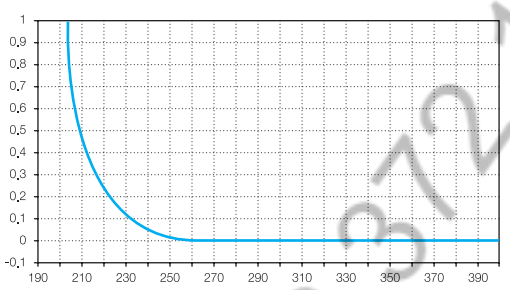
Ultimate Grade

Line @thankyou2562 Tel.02-372-1545 - 6

Methanol

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.95
Polarity Index (P') ····· 5.1
Viscosity (cP, 25°C) ····· 0.544
Density (g/mℓ, 25°C) ····· 0.787
Boiling Point (°C) ····· 65
Solubility of water (%, 20°C) ··· Misicible
Refractive Index (25°C) ····· 1.326



Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance
205 nm ····· 1.00
220 nm ····· 0.25
230 nm ····· 0.15
254 nm ····· 0.02
280 nm ····· 0.01
UV Cutoff ····· max. 205 nm

LC Gradient Suitability

Gradient Elution test ····· To pass test
Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.05%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Titrable acid ····· 0.0003 mEq/g
Titrable base ····· 0.0002 mEq/g
Carbonyl compounds ····· 0.001%
(each of Acetone, Formaldehyde and Acetaldehyde)
Substances darkened by sulfuric acid ····· To pass test
Substances reducing permanganate ····· To pass test
Solubility in water ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Formula
CH_3OH

F.W
32.04

CAS
67-56-1

Product No.
2721

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Ultimate Grade

Line @thankyou2562 Tel.02-872-1545-6

Methyl t-Butyl Ether

Formula
$(CH_3)_3COCH_3$

F.W
88.14

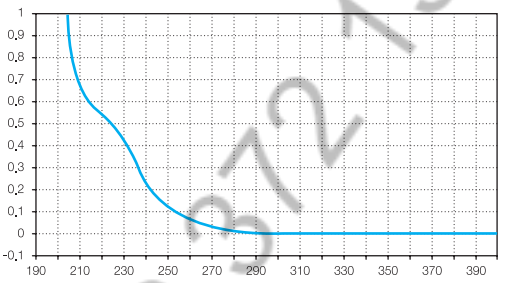
CAS
1634-04-4

Product No.
2764

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.35
Polarity Index (P') ····· 2.5
Viscosity (cP, 25°C) ····· 0.28
Density (g/mℓ, 20°C) ····· 0.740
Boiling Point (°C) ····· 55
Solubility of water (%, 20°C) ····· 1.5
Refractive Index (25°C) ····· 1.366



Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance
210 nm ····· 1.00
225 nm ····· 0.50
254 nm ····· 0.10
300 nm ····· 0.01
350 nm ····· 0.01
UV Cutoff ····· max. 210 nm

Assay (by GC) ····· min. 99.5 %
Color (APHA) ····· 10
Water ····· 0.05%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Peroxide (as H_2O_2, at time of packaging) ····· max. 1 ppm

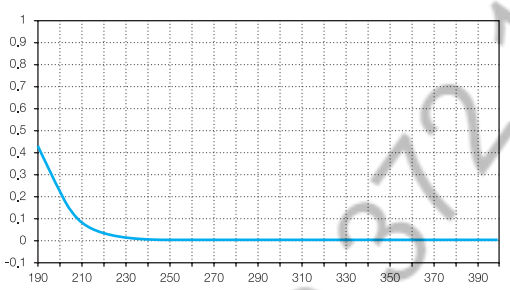
Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Line @thankyou2562 Tel.02-372-1545 - 6

n-Pentane

Physical Data

Eluotropic value (E^0)(on Alumina)	0.00
Polarity Index (P')	0.00
Viscosity (cP, 25°C)	0.22
Density (g/mℓ, 25°C)	0.621
Boiling Point (°C)	36
Solubility of water (%, 20°C)	0.009
Refractive Index (25°C)	1.355



Specifications and Max. impurities

Extraction-Concentration Suitability

EECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
FID Detectable residue (as 2-Octanol)	max. 5 ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance

190 nm	1.00
200 nm	0.30
210 nm	0.10
254 nm	0.01
UV Cutoff	max. 190 nm
Assay (by GC, n-Pentane)	min. 98.0 %
(total C5 Hydrocarbons)	min 99.9 %
Color (APHA)	5
Water	0.02%
Residue after Evaporation	1 ppm
Fluorescence Background	To pass test
Substances darkened by sulfuric acid	To pass test

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Formula
$CH_3(CH_2)_3CH_3$

F.W
72.15

CAS
109-66-0

Product No.
2291

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Ultimate Grade

Line @thankyou2562 Tel.02-372-1543-6

Petroleum Ether (35~60°C)

CAS
8032-32-4

Product No.
1593

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Density (g/mℓ, 20°C) ····· 0.64
Boiling Point (°C) ····· 35~60
Refractive Index (20°C) ····· 1.365

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb
Boiling range (Initial to dry point) ····· 35~60°C
Color (APHA) ····· 10
Water ····· 0.01%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Acidity ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Line @thankyou2562 Tel.02 372 1545 - 6

2-Propanol
(Isopropyl Alcohol)

Formula
$(CH_3)_2CHOH$

F.W
60.10

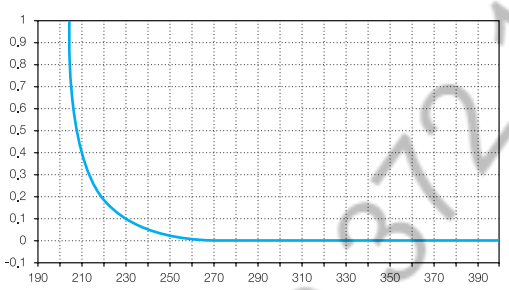
CAS
67-63-0

Product No.
2377

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.82
Polarity Index (P') ····· 3.9
Viscosity (cP, 25°C) ····· 2.038
Density (g/mℓ, 25°C) ····· 0.782
Boiling Point (°C) ····· 82
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.375



Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ····· max. 10ppt
FID Detectable residue (as 2-Octanol) ····· max. 5ppb

Ultraviolet Spectrophotometry

Maximum UV Absorbance
205 nm ····· 1.00
220 nm ····· 0.25
230 nm ····· 0.13
254 nm ····· 0.02
UV Cutoff ····· max. 205 nm

Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.05%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Titrable acid or Base ····· 0.0001 mEq/g
Solubility in water ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Ultimate Grade

Line @thankyou2562 Tel.02-872-1545-6

Toluene

Formula
$C_6H_5CH_3$

F.W
92.14

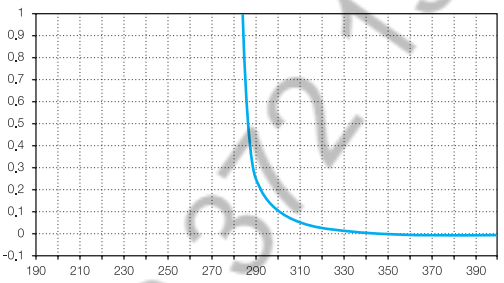
CAS
108-88-3

Product No.
1722

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.29
Polarity Index (P') ····· 2.4
Viscosity (cP, 25°C) ····· 0.560
Density (g/mℓ, 25°C) ····· 0.864
Boiling Point (°C) ····· 111
Solubility of water (%, 25°C) ····· 0.033
Refractive Index (25°C) ····· 1.494



Specifications and Max. impurities

Extraction-Concentration Suitability
ECD Detectable residue (as Heptachlor epoxide) ····· max. 10 ppt
FID Detectable residue (as 2-Octanol) ····· max. 5 ppb

Ultraviolet Spectrophotometry
Maximum UV Absorbance
286 nm ····· 1.00
288 nm ····· 0.40
300 nm ····· 0.10
350 nm ····· 0.01
UV Cutoff ····· max. 286 nm

Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 1 ppm
Fluorescence Background ····· To pass test
Sulfur compounds (as S) ····· 0.003%
Substances darkened by sulfuric acid ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
Multi purpose grade for HPLC, GC & Spectrophotometry
For use in Trace organic residue analysis

Line @thankyou2562 Tel.02 372 1545 - 6

Solvent Specifications

Solvent Name Synonyms

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

Line @thankyou2562 Tel.02 372 1543-6

Pesticide Grade

Item	Extraction-Concentration Suitability - ECD (max. ppt)	Assay (min. %)	Water (max. %)	Residue aft. Evaporation (max. ppm)
Acetone	10	99.8	0.25	5
Acetonitrile	10	99.8	0.05	5
Benzene	10	99.7	0.03	5
1-Butanol	20	99.5	0.1	5
Chloroform w/ Amylene	10	99.8	0.02	2
Chloroform w/ Ethanol	10	99.8	0.02	2
Cyclohexane	10	99.7	0.01	5
Dichloromethane	10	99.7	0.02	5
Ethyl Acetate	10	99.8	0.02	5
Ethyl Ether w/ Ethanol	10	99.5	0.08	3
n-Heptane 97%	10	97.0	0.02	3
n-Heptane 99%	10	99.0	0.02	3
n-Hexane 95%	10	95.0	0.01	5
Isooctane	10	99.0	0.01	5
Methanol	10	99.8	0.1	5
Methyl -t-Butyl Ether	10	99.0	0.05	5
n-Pentane	10	98.0	0.02	5
Petroleum Ether (35~60°C)	10	-	0.05	5
2-propanol	10	99.7	0.1	5
Sodium Sulfate, Anhydrous	-	99.0	-	-
Toluene	10	99.8	0.03	5

Line @thankyou2562 Tel.02 372 1545 - 6

Acetone

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.5 %
Color (APHA)	10
Water	0.5%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Formula
$(CH_3)_2CO$

F.W
58.08

CAS
67-64-1

Product No.
518

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Pesticide Grade

Acetonitrile

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.8 %
Color (APHA)	10
Water	0.05%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Formula
CH_3CN

F.W
41.05

CAS
75-05-8

Product No.
1791

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Pesticide Grade

Line @thankyou2562 Tel.02 372 1643-6

Benzene

Pesticide Grade

Formula
C_6H_6

F.W
78.10

CAS
71-43-2

Product No.
981

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.7 %
Color (APHA)	10
Water	0.03%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

1-Butanol
(n-Butyl Alcohol)

Pesticide Grade

Formula
$CH_3(CH_2)_3OH$

F.W
74.12

CAS
71-36-3

Product No.
1877

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.5 %
Color (APHA)	10
Water	0.10%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Line @thankyou2562 Tel.02 372 1545 - 6

Chloroform
(Stabilized with Amylene)

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ..... max. 10 ppt
Assay (by GC) ..... min. 99.8 %
Color (APHA) 10
Water 0.02%
Residue after Evaporation ..... 2 ppm
Chloride (Cl) ..... 10 ppm
Contains Stabilizer (Amylene) 15~200 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Formula
$CHCl_3$

F.W
119.38

CAS
67-66-3

Product No.
1780

Stabilized with 15~200 ppm Amylene

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Pesticide Grade

Chloroform
(Stabilized with Ethanol)

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide) ..... max. 10 ppt
Assay (by GC, Excluding preservative) ..... min. 99.8 %
Color (APHA) 10
Water 0.02%
Residue after Evaporation ..... 2 ppm
Contains Stabilizer (Ethanol) 0.5~1.0 %

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Formula
$CHCl_3$

F.W
119.38

CAS
67-66-3

Product No.
1272

Stabilized with 0.5~1.0% Ethanol

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Pesticide Grade

Line @thaikou2562 Tel. 02 372 1545-6

Cyclohexane

Pesticide Grade

Formula
C_6H_{12}

F.W
84.16

CAS
110-82-7

Product No.
1332

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.7 %
Color (APHA)	10
Water	0.01%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Dichloromethane
(Stabilized with Amylene)

Pesticide Grade

Formula
CH_2Cl_2

F.W
84.93

CAS
75-09-2

Product No.
580

Stabilized with
15~200ppm
Amylene

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.7 %
Color (APHA)	10
Water	0.02%
Residue after Evaporation	5 ppm
Chloride (Cl)	10 ppm

Contains Stabilizer (Amylene) 15~200 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Line @thankyou2562 Tel.02 372 1545 - 6

Ethyl Acetate

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.8 %
Color (APHA)	10
Water	0.02%
Residue after Evaporation	5 ppm
Titrable acid	0.0009 mEq/g

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Formula
$CH_3COOC_2H_5$

F.W
88.11

CAS
141-78-6

Product No.
11

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Pesticide Grade

Ethyl Ether, Anhydrous
(Stabilized with Ethanol)

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC, Excluding preservative)	min. 99.5 %
Color (APHA)	10
Water	0.08%
Residue after Evaporation	3 ppm
Peroxide (as H_2O_2, at time of packaging)	5 ppm
Titrable acid	0.0002 mEq/g

Contains Stabilizer (Ethanol) 1.5~2.5 %

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Formula
$C_2H_5OC_2H$

F.W
74.12

CAS
60-29-7

Product No.
567

Stabilized
with 1.5~2.5%
Ethanol

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Pesticide Grade

Line @markkou2562 Tel.02 372 1545-6

n-Heptane 97%

Pesticide Grade

Formula
$CH_3(CH_2)_5CH_3$

F.W
100.21

CAS
142-82-5

Product No.
2053

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC, n-Heptane)	min. 97.0 %
(total C7 Hydrocarbons)	min. 99.9 %
Color (APHA)	10
Water	0.02%
Residue after Evaporation	3 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

n-Heptane 99%

Pesticide Grade

Formula
$CH_3(CH_2)_5CH_3$

F.W
100.21

CAS
142-82-5

Product No.
2703

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC, n-Heptane)	min. 99.0 %
(total C7 Hydrocarbons)	min. 99.9 %
Color (APHA)	10
Water	0.02%
Residue after Evaporation	3 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Line @thankyou562 Tel.02 372 1545 - 6

n-Hexane 95%

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC, n-Hexane)	min. 95.0 %
(total C6 Hydrocarbons)	min. 99.8 %
Color (APHA)	10
Water	0.01%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Formula
$CH_3(CH_2)_4CH_3$

F.W
86.18

CAS
110-54-3

Product No.
821

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Pesticide Grade

Isooctane
(2,2,4-Trimethylpentane)

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.0 %
Color (APHA)	10
Water	0.01%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Formula
$(CH_3)_2CHCH_2C(CH_3)_3$

F.W
114.23

CAS
540-84-1

Product No.
1187

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Pesticide Grade

Line @thankyou2562 Tel.02 372 1643-6

Methanol

Pesticide Grade

Formula
CH_3OH

F.W
32.04

CAS
67-56-1

Product No.
63

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.8 %
Color (APHA)	10
Water	0.1%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Methyl t-Butyl Ether

Pesticide Grade

Formula
$(CH_3)_3COCH_3$

F.W
88.14

CAS
1634-04-4

Product No.
2765

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.0 %
Color (APHA)	10
Water	0.05%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Line @thankyou562 Tel.02 372 1545 - 6

n-Pentane

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC, n-Pentane)	min. 98.0 %
(total C5 Hydrocarbons)	min. 99.9 %
Color (APHA)	10
Water	0.02%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Formula
$CH_3(CH_2)_3CH_3$

F.W
72.15

CAS
109-66-0

Product No.
1576

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Pesticide Grade

Petroleum Ether (35~60°C)

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Boiling range (Initial to dry)	35~60°C
Color (APHA)	10
Water	0.05%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

CAS
8032-32-4

Product No.
1592

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Pesticide Grade

Line @thankyou2562 Tel.02 372 1643-6

2-Propanol
(Isopropyl Alcohol)

Pesticide Grade

Formula
$(CH_3)_2CHOH$

F.W
60.10

CAS
67-63-0

Product No.
861

Package
1ℓ×**10** Btl/Box
4ℓ× **4** Btl/Box

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.7 %
Color (APHA)	10
Water	0.1%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Sodium Sulfate, Anhydrous

Pesticide Grade

Formula
Na_2SO_4

F.W
142.04

CAS
7757-82-6

Product No.
315

Package
500g×**20** Btl/Box
1kg ×**10** Btl/Box

Specifications and Max. impurities

Meets ACS Specification

Extraction-Concentration Suitability

Extraction-Concentration Suitability	To pass test
Assay (Na_2SO_4)	min. 99.0 %
Calcium (Ca)	0.01%
Chloride (Cl)	0.001%
Heavy Metals (Pb)	5 ppm
Insoluble matters	0.01%
Iron (Fe)	0.001%
Loss on Ignition	0.5%
Magnesium (Mg)	0.001%
Nitrogen compound (as N)	5 ppm
pH of a 5% Solution at 25°C	5.2 ~ 9.2
Phosphate (PO_4)	0.001%
Potassium (K)	0.01%

For use in Pesticide Residue analysis &
general lab experiments.

Line @thankyou2562 Tel.02 372 1545 - 6

Toluene

Specifications and Max. impurities

Extraction-Concentration Suitability

ECD Detectable residue (as Heptachlor epoxide)	max. 10 ppt
Assay (by GC)	min. 99.8 %
Color (APHA)	10
Water	0.03%
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Pesticide Residue analysis by GC-ECD

Formula
$C_6H_5CH_3$

F.W
92.14

CAS
108-88-3

Product No.
184

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Pesticide Grade

Line @thankyou2562 Tel.02 372 1545-6

Line @thankyou2562 Tel.02 372 1545 - 6

Solvent Specifications

Solvent Name Synonyms

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

Line @thankyou2562 Tel.02 372 1545-6

HPLC Grade

Solvents

Item	UV Cutoff (max.nm)	Assay (min. %)	Water (max. %)	Residue aft. Evaporation (max. ppm)
Acetic acid, glacial	254	99.7	0.1	5
Acetone	330	99.7	0.25	1
Acetonitrile	<190	99.9	0.01	1
Acetonitrile, isocratic	-	99.8	0.02	5
Benzene	280	99.7	0.03	5
1-Butanol	215	99.5	0.1	5
n-Butyl acetate	254	99.5	0.05	5
Chlorobenzene	288	99.9	0.03	5
Chloroform w/ Amylene	245	99.8	0.02	2
Chloroform w/ Ethanol	245	99.8	0.02	2
Cyclohexane	202	99.7	0.01	5
o-Dichlorobenzene	296	98.0	0.02	5
1,2-Dichloroethane	226	99.5	0.02	5
Dichloromethane	233	99.9	0.02	2
N,N-Dimethylacetamide	270	99.8	0.03	5
N,N-Dimethylformamide	270	99.9	0.03	5
Dimethyl Sulfoxide	263	99.9	0.05	5
1,4-Dioxane	215	99.8	0.02	5
Ethanol	205	99.9	0.1	5
Ethyl Acetate	255	99.9	0.02	5
Ethyl Ether w/ Ethanol	218	99.8	0.01	5
n-Heptane 97%	197	97.0	0.02	3
n-Heptane 99%	197	99.0	0.02	3
n-Hexane 95%	195	95.0	0.01	3
Isooctane	205	99.0	0.02	4
Methanol	205	99.9	0.05	3
Methanol, isocratic	-	99.7	0.05	5
Methyl t-Butyl Ether	210	99.0	0.05	5
Methyl Ethyl Ketone	329	99.6	0.03	3
Methyl Isobutyl Ketone	334	99.0	0.05	5
N-Methyl-2-Pyrrolidone	285	99.7	0.02	10
n-Pentane	190	98.0	0.02	5

Line @thankyou2562 Tel.02 372 1545 - 6

Item	UV Cutoff (max.nm)	Assay (min. %)	Water (max. %)	Residue aft. Evaporation (max. ppm)
Petroleum Ether (35~60°C)	210	-	0.01	5
1-Propanol	210	99.8	0.05	3
2-Propanol	205	99.9	0.05	2
Pyridine	330	99.5	0.02	5
Tetrahydrofuran	210	99.9	0.02	5
Tetrahydrofuran w/BHT	-	99.5	0.02	-
Toluene	286	99.8	0.02	5
1,2,4-Trichlorobenzene	310	99.0	0.01	5
Water	190	-	-	10

Acid & Buffers for HPLC

Item	UV Absorbance (max., 254nm, 1.0M)	Assay (min. %)	Insoluble matter (max. %)
Ammonium acetate	0.02	99.0	0.005
Ammonium carbonate	0.02	30.0 (as NH3)	0.005
Ammonium phosphate, monobasic	0.03	98.0	0.005
Phosphoric acid 85%	0.04	85.0	0.001
Potassium phosphate, monobasic	0.04	99.0	0.01
Sodium acetate trihydrate	0.02	99.0	0.005
Sodium bicarbonate	0.05	99.7	0.015

Ion-Pair Reagents

Item	UV Absorbance (max., 200nm, 0.005M)	UV Transmittance (min., 200nm, 0.005M)	Assay (min. %)	pH value
1-Dodecane Sulfonic acid Sodium salt	0.15	-	98.0	5.5 ~ 7.5 (1%, sol)
1-Heptane Sulfonic acid Sodium salt	-	70.0	99.0	5.5 ~ 7.5 (10%, sol)
1-Hexane Sulfonic acid Sodium salt	-	70.0	99.0	5.5 ~ 7.5 (10%, sol)
1-Octane Sulfonic acid Sodium salt	-	70.0	99.0	5.5 ~ 7.5 (10%, sol)
1-Pentane Sulfonic acid Sodium salt	-	70.0	99.0	5.5 ~ 7.5 (10%, sol)

Line @thankyou2562 Tel.02 372 1545 - 6

Acetic acid, glacial

Formula
CH_3COOH

F.W
60.05

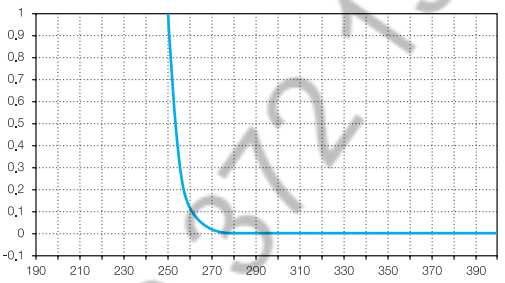
CAS
64-19-7

Product No.
1755

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^0)(on Alumina) ··· >0.73
Polarity Index (P') ····· 6.2
Viscosity (cP, 25°C) ····· 1.10
Density (g/mℓ, 25°C) ····· 1.049
Boiling Point (°C) ····· 117
Solubility of water (%, 20°C) ·····Miscible
Refractive Index (25°C) ····· 1.370



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
254 nm ····· 1.00
256 nm ····· 0.80
280 nm ····· 0.05
350 nm ····· 0.02
UV Cutoff ····· max. 254 nm
Assay (by GC) ····· min. 99.7 %
Color (APHA) ····· 10
Water ····· 0.1%
Residue after Evaporation ····· 5 ppm
Titrable base ····· 0.0004 mEq/g
Dilution test ····· To pass test
Acetic anhydride ····· 0.01%
Chloride (Cl) ····· 1 ppm
Sulfate (SO_4) ····· 1 ppm
Heavy Metals (as Pb) ····· 0.5 ppm
Iron (Fe) ····· 0.2 ppm
Substances reducing dichromate ····· To pass test
Substances reducing permanganate ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

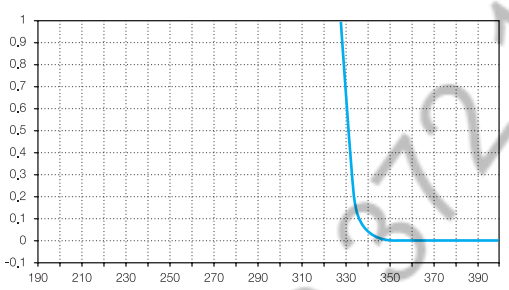
HPLC Grade

Line @thanyou2562 Tel.02-372-1545 - 6

Acetone

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.56
Polarity Index (P') ····· 5.1
Viscosity (cP, 25°C) ····· 0.306
Density (g/mℓ, 25°C) ····· 0.785
Boiling Point (°C) ····· 56
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.357



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
330 nm ····· 1.00
340 nm ····· 0.06
350 nm ····· 0.01
UV Cutoff ····· max. 330 nm

Assay (by GC) ····· min 99.7%
Color (APHA) ····· 10
Water ····· 0.25%
Residue after Evaporation ····· 1 ppm
Titrable acid ····· 0.0003 mEq/g
Titrable base ····· 0.0006 mEq/g
Solubility in water ····· To pass test
Substances reducing permanganate ····· To pass test
Aldehyde (as HCHO) ····· 0.002%
Methanol (as CH_3OH) ····· 0.05%
Isopropyl Alcohol (as $(CH_3)_2CHOH$) ····· 0.05%

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
$(CH_3)_2CO$

F.W
58.08

CAS
67-64-1

Product No.
515

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-372-1545-6

Acetonitrile

Formula
CH_3CN

F.W
41.05

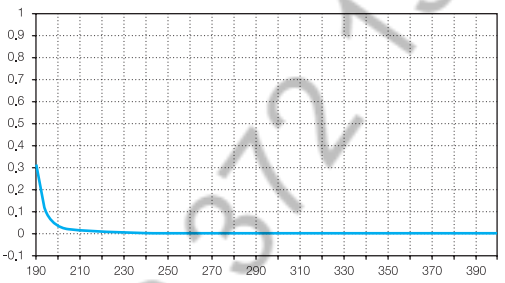
CAS
75-05-8

Product No.
549

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.65
Polarity Index (P') ····· 5.8
Viscosity (cP, 25°C) ····· 0.369
Density (g/mℓ, 25°C) ····· 0.779
Boiling Point (°C) ····· 82
Solubility of water (%, 20°C) ····· Miscible
Refractive Index (25°C) ····· 1.342



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
190 nm ····· 1.00
195 nm ····· 0.15
200 nm ····· 0.05
205 nm ····· 0.04
210 nm ····· 0.02
220 nm ····· 0.01
254 nm ····· 0.009
UV Cutoff ····· max. 190 nm

LC Gradient Suitability

Gradient Elution test ····· To pass test
Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.01%
Residue after Evaporation ····· 1 ppm
Titrable acid ····· 0.008 mEq/g
Titrable base ····· 0.0006 mEq/g

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

Acetonitrile, isocratic

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.65
Polarity Index (P') ····· 5.8
Viscosity (cP, 25°C) ····· 0.369
Density (g/mℓ, 25°C) ····· 0.779
Boiling Point (°C) ····· 82
Percent water soluble in Solvent ··· Miscible
Refractive Index (25°C) ····· 1.342

Specifications and Max. impurities

Ultraviolet Spectrophotometry

Maximum UV Absorbance
200 nm ····· 0.30
220 nm ····· 0.15
240 nm ····· 0.05
Identification ····· IR Spectrometry
Assay (by GC) ····· Min. 99.8 %
Water ····· 0.02%
Density (20°C) ····· 0.779 ~ 0.783
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.008 mEq/g
Titrable base ····· 0.0006 mEq/g

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
CH_3CN

F.W
41.05

CAS
75-05-8

Product No.
4761

Package
2.5ℓ×4 Btl/Box
4ℓ × 4 Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02 372 1545 6

Ammonium acetate

Formula
$CH_3CO_2NH_4$

F.W
77.08

CAS
631-61-8

Product No.
3033

Package
500g ×**20** Btl/Box
1kg ×**10** Btl/Box

Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)

254 nm	0.02
280 nm	0.01
350 nm	0.01
Assay	min. 97.0%
pH of a 5% solution (25°C)	6.7 ~ 7.3
Insoluble matter	0.005%
Residue after ignition	0.01%
Chloride (Cl)	5 ppm
Nitrate (NO_3)	0.001%
Sulfate (SO_4)	0.001%
Heavy metals (as Pb)	5 ppm
Iron (Fe)	5 ppm

For use in HPLC & ACS experiments

Line @thankyou2562 Tel.02 372 1545 - 6

Ammonium carbonate

Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)

254 nm	0.02
280 nm	0.01
350 nm	0.01
Assay (as NH_3)	min. 30.0%
Insoluble matter	0.005%
Chloride (Cl)	5 ppm
Sulfur compounds (as SO_4)	0.002%
Heavy metals (as Pb)	5 ppm
Iron (Fe)	5 ppm
Nonvolatile matter	0.01%

Formula
$(NH_4)_2CO_3$

F.W
96.09

CAS
506-87-6

Product No.
3034

Package
500g ×**20** Btl/Box
1kg ×**10** Btl/Box

For use in HPLC & ACS experiments

Line @thankyou2562 Tel.02-372-1545-6

Ammonium phosphate, monobasic

Formula
$NH_4H_2PO_4$

F.W
115.03

CAS
7722-76-1

Product No.
3035

Package
500g ×**20** Btl/Box
1kg ×**10** Btl/Box

Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)

254 nm	0.03
280 nm	0.02
350 nm	0.01
Assay	min. 98.0%
pH of a 5% solution (25°C)	3.8 ~ 4.4
Insoluble matter	0.005%
Chloride (Cl)	5 ppm
Nitrate (NO_3)	0.001%
Sulfate (SO_4)	0.01%
Heavy metals (as Pb)	5 ppm
Iron (Fe)	0.001%
Potassium (K)	0.005%
Sodium (Na)	0.005%
Calcium (Ca)	0.001%
Magnesium (Mg)	0.0005%

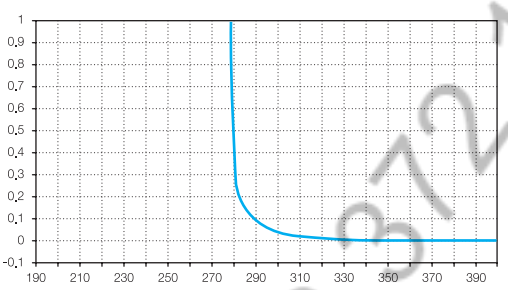
For use in HPLC & ACS experiments

Line @thankyou2562 Tel.02 372 1545 - 6

Benzene

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.32
Viscosity (cP, 25°C) ····· 0.604
Density (g/mℓ, 25°C) ····· 0.872
Boiling Point (°C) ····· 80
Solubility of water (%, 25°C) ····· 0.063
Refractive Index (25°C) ····· 1.498



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
3280 nm ····· 1.00
290 nm ····· 0.15
300 nm ····· 0.05
330 nm ····· 0.01
350 nm ····· 0.005
UV Cutoff ····· max. 280 nm
Assay (by GC) ····· min. 99.7 %
Color (APHA) ····· 10
Water ····· 0.03%
Residue after Evaporation ····· 5 ppm
Substances darkened by sulfuric acid ····· To pass test
Thiophene (limit about 1 ppm) ····· To pass test
Sulfur compounds (as S) ····· 0.005%

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
C_6H_6

F.W
78.10

CAS
71-43-2

Product No.
980

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-372-1543-6

1-Butanol (n-Butyl Alcohol)

Formula
$CH_3(CH_2)_3OH$

F.W
74.12

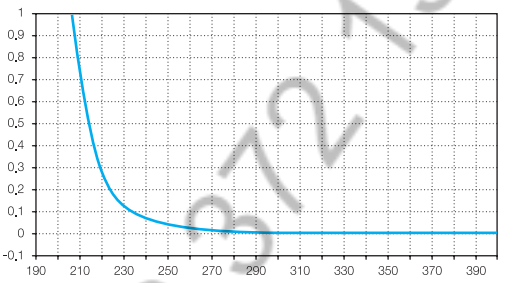
CAS
71-36-3

Product No.
1047

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.7
Polarity Index (P') ····· 3.9
Viscosity (cP, 25°C) ····· 2.544
Density (g/mℓ, 25°C) ····· 0.806
Boiling Point (°C) ····· 118
Solubility of water (%, 20°C) ····· 20.07
Refractive Index (25°C) ····· 1.397



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
215 nm ····· 1.00
220 nm ····· 0.50
230 nm ····· 0.20
254 nm ····· 0.025
UV Cutoff ····· max. 215 nm
Assay (by GC) ····· min. 99.5%
Color (APHA) ····· 10
Water ····· 0.1%
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.0008 mEq/g
Carbonyl compounds (as butyraldehyde) ····· 0.01%
Butyl ether ····· 0.2%

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

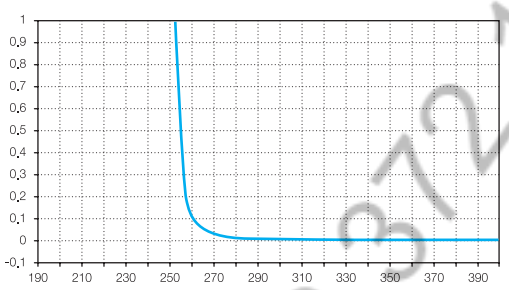
HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

n-Butyl acetate

Physical Data

Eluotropic value (E^0)(on Alumina)	4.0
Viscosity (cP, 25°C)	0.685
Density (g/mℓ, 25°C)	0.876
Boiling Point (°C)	126
Solubility of water (%, 20°C)	1.86
Refractive Index (25°C)	1.392



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance	
254 nm	1.00
260 nm	0.20
275 nm	0.04
300 nm	0.02
320 nm	0.01
UV Cutoff	max. 254 nm
Assay (by GC)	min. 99.5 %
Color (APHA)	10
Water	0.05%
Residue after Evaporation	5 ppm
Titrable acid	0.0016 mEq/g
Substances darkened by sulfuric acid	To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
$CH_3CO_2(CH_2)_3CH_3$

F.W
116.16

CAS
123-86-4

Product No.
1038

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-872-1545-6

Chlorobenzene

Formula
C_6H_5Cl

F.W
112.56

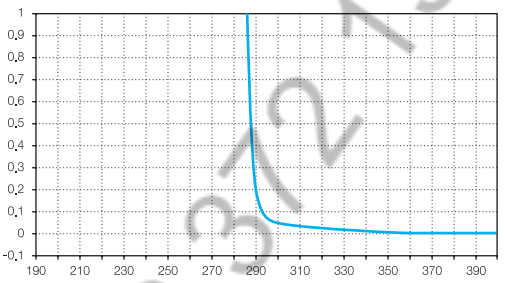
CAS
108-90-7

Product No.
2229

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 4.0
Polarity Index (P') ····· 2.7
Density (g/mℓ, 25°C) ····· 1.107
Boiling Point (°C) ····· 132
Refractive Index (20°C) ····· 1.525



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
288 nm ····· 1.00
300 nm ····· 0.05
325 nm ····· 0.04
350 nm ····· 0.02
400 nm ····· 0.01
UV Cutoff ····· max. 288 nm
Assay (by GC) ····· min. 99.9%
Color (APHA) ····· 30
Water ····· 0.03%
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.004 mEq/g

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

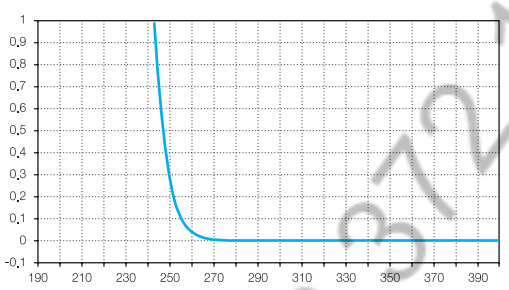
HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

Chloroform
(Stabilized with Amylene)

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.40
Polarity Index (P') ····· 4.1
Viscosity (cP, 25°C) ····· 0.537
Density (g/mℓ, 25°C) ····· 1.480
Boiling Point (°C) ····· 61
Solubility of water (%, 20°C) ····· 0.056
Refractive Index (25°C) ····· 1.444



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
245 nm ····· 1.00
250 nm ····· 0.33
254 nm ····· 0.15
270 nm ····· 0.02
280 nm ····· 0.01
UV Cutoff ····· max. 245 nm
Assay (by GC) ····· min. 99.8 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 2 ppm
Lead (Pb) ····· 0.05 ppm
Acid and Chloride ····· To pass test
Free Chlorine ····· To pass test
Suitability for use in Dithizone test ····· To pass test
Acetone and Aldehyde ····· 0.005%
Contains Stabilizer (Amylene) 15~200 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
$CHCl_3$

F.W
119.38

CAS
67-66-3

Product No.
1781

Stabilized with 15~200 ppm Amylene

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02 372 1545-6

Chloroform

(Stabilized with Ethanol)

Formula
$CHCl_3$

F.W
119.38

CAS
67-66-3

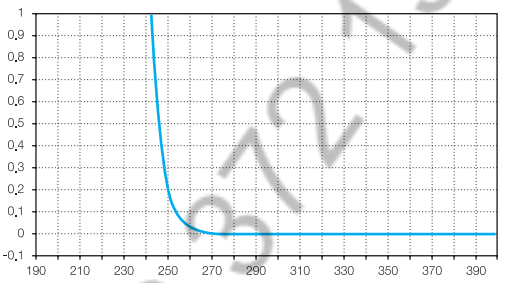
Product No.
1271

Stabilized with 0.5~1.0% Ethanol

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.40
Polarity Index (P') ····· 4.1
Viscosity (cP, 25°C) ····· 0.537
Density (g/㎖, 25°C) ····· 1.480
Boiling Point (°C) ····· 61
Solubility of water (%, 20°C) ····· 0.056
Refractive Index (25°C) ····· 1.444



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
245 nm ····· 1.00
250 nm ····· 0.33
254 nm ····· 0.15
270 nm ····· 0.02
280 nm ····· 0.01
UV Cutoff ····· max. 245 nm

Assay (by GC, Excluding preservative) ····· min. 99.8 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 2 ppm
Lead (Pb) ····· 0.05 ppm
Acid and Chloride ····· To pass test
Free Chlorine ····· To pass test
Substances darkened by sulfuric acid ····· To pass test
Suitability for use in Dithizone test ····· To pass test
Acetone and Aldehyde ····· 0.005%
Contains Stabilizer (Ethanol) 0.5 ~ 1.0%

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

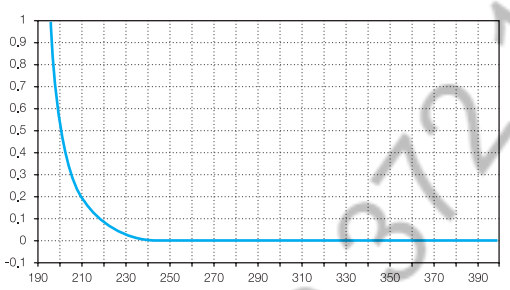
HPLC Grade

Line @thanakyou2562 Tel.02-372-1545 - 6

Cyclohexane

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.04
Polarity Index (P') ····· 0.2
Viscosity (cP, 25°C) ····· 0.894
Density (g/mℓ, 25°C) ····· 0.773
Boiling Point (°C) ····· 81
Solubility of water (%, 20°C) ····· 0.01
Refractive Index (25°C) ····· 1.424



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
202 nm ····· 1.00
205 nm ····· 0.88
210 nm ····· 0.67
254 nm ····· 0.01
UV Cutoff ····· max. 202 nm
Assay (by GC) ····· min. 99.7%
Color (APHA) ····· 10
Water ····· 0.01%
Residue after Evaporation ····· 5 ppm
Substances darkened by sulfuric acid ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
C_6H_{12}

F.W
84.16

CAS
110-82-7

Product No.
1331

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-872-1543-6

o-Dichlorobenzene

Formula
$C_6H_4Cl_2$

F.W
147.00

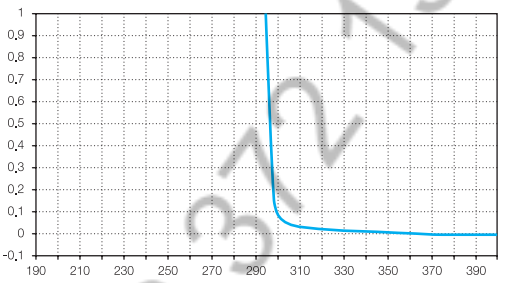
CAS
95-50-1

Product No.
1680

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Viscosity (cP, 25°C) ····· 1.32
Density (g/mℓ, 20°C) ····· 1.3058
Boiling Point (°C) ····· 180.5
Refractive Index (20°C) ····· 1.5514



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
296 nm ····· 1.00
300 nm ····· 0.30
325 nm ····· 0.10
350 nm ····· 0.05
400 nm ····· 0.01
UV Cutoff ····· max. 296 nm

Assay (by GC) ····· min. 98.0%
Color (APHA) ····· 30
Water ····· 0.02%
Residue after Evaporation ····· 5 ppm
Acidity (as HCl) ····· 0.005%

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

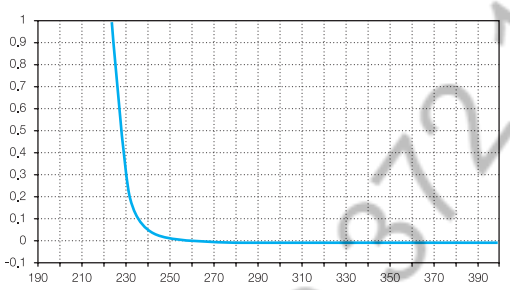
HPLC Grade

Line @thankyou2562 Tel.02 372 1545 - 6

1,2-Dichloroethane

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.44
Polarity Index (P') ····· 3.5
Viscosity (cP, 25°C) ····· 0.779
Density (g/mℓ, 25°C) ····· 1.245
Boiling Point (°C) ····· 84
Solubility of water (%, 20°C) ····· 0.15
Refractive Index (25°C) ····· 1.444



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
226 nm ····· 1.00
230 nm ····· 0.50
235 nm ····· 0.20
240 nm ····· 0.10
245 nm ····· 0.05
250 nm ····· 0.02
255 nm ····· 0.01
400 nm ····· 0.01
UV Cutoff ····· max. 226 nm
Assay (by GC) ····· min. 99.5%
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.0003 mEq/g

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
$ClCH_2CH_2Cl$

F.W
98.96

CAS
107-06-2

Product No.
425

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-872-1543-6

Dichloromethane

(Stabilized with Amylene)

Formula
CH_2Cl_2

F.W
84.93

CAS
75-09-2

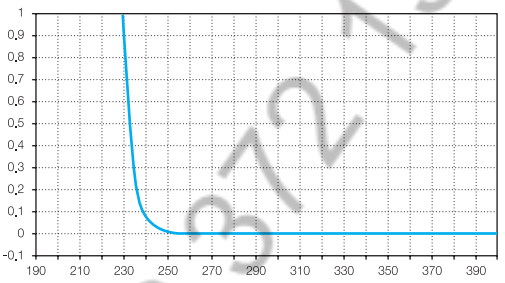
Product No.
577

Stabilized with 15~200ppm Amylene

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.42
Polarity Index (P') ····· 3.1
Viscosity (cP, 25°C) ····· 0.413
Density (g/mℓ, 25°C) ····· 1.318
Boiling Point (°C) ····· 40
Solubility of water (%, 20°C) ····· 0.24
Refractive Index (25°C) ····· 1.421



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
233 nm ····· 1.00
235 nm ····· 0.50
240 nm ····· 0.15
254 nm ····· 0.01
280 nm ····· 0.01
UV Cutoff ····· max. 233 nm

Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 2 ppm
Titrable acid ····· 0.0003 mEq/g
Free Halogens ····· To pass test
Contains Stabilizer (Amylene) 15~200 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

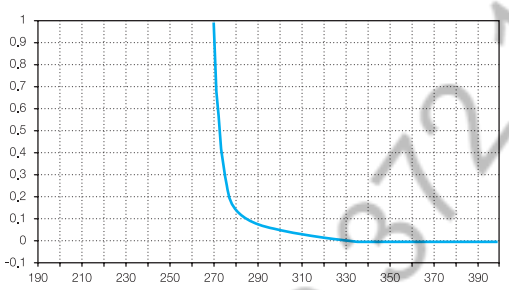
HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

N,N-Dimethylacetamide

Physical Data

Polarity Index (P') ····· 6.5
Viscosity (cP, 20°C) ····· 2.14
Density (g/mℓ, 25°C) ····· 0.937
Boiling Point (°C) ····· 165~166
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (20°C) ····· 1.4384



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
270 nm ····· 1.00
280 nm ····· 0.30
290 nm ····· 0.15
310 nm ····· 0.05
320 nm ····· 0.03
360 nm ····· 0.01
400 nm ····· 0.01
UV Cutoff ····· max. 270 nm
Assay (by GC) ····· min. 99.8%
Water ····· 0.03%
Residue after Evaporation ····· 5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC & Spectrophotometry

Formula
$CH_3CON(CH_3)_2$

F.W
87.12

CAS
127-19-5

Product No.
2964

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-872-1543-6

N,N-Dimethylformamide

Formula
$HCON(CH_3)_2$

F.W
73.09

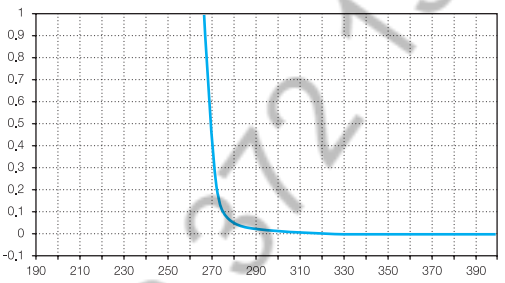
CAS
68-12-2

Product No.
1371

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on C18) ····· 7.6
Polarity Index (P') ····· 6.4
Viscosity (cP, 25°C) ····· 0.794
Density (g/mℓ, 25°C) ····· 0.944
Boiling Point (°C) ····· 153
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.427



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
270 nm ····· 1.00
275 nm ····· 0.30
295 nm ····· 0.10
310 nm ····· 0.05
340 nm ····· 0.01
UV Cutoff ····· max. 270 nm
Assay (by GC) ····· min. 99.9%
Color (APHA) ····· 10
Water ····· 0.03%
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.0005 mEq/g
Titrable base ····· 0.003 mEq/g

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

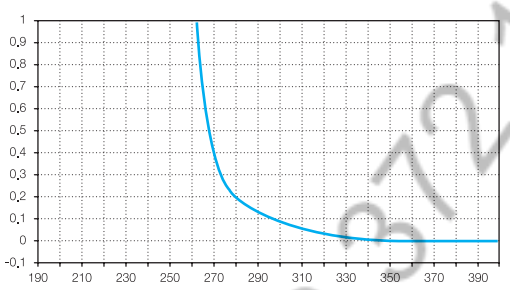
HPLC Grade

Line @thankyou2562 Tel.02-272-1545 - 6

Dimethyl Sulfoxide

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.62
Polarity Index (P') ····· 7.2
Viscosity (cP, 25°C) ····· 1.987
Density (g/mℓ, 25°C) ····· 1.096
Boiling Point (°C) ····· 189
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.476



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
263 nm ····· 1.00
270 nm ····· 0.40
290 nm ····· 0.18
310 nm ····· 0.06
330 nm ····· 0.02
350 nm ····· 0.01
UV Cutoff ····· max. 263 nm
Assay (by GC) ····· min. 99.9%
Color (APHA) ····· 10
Water ····· 0.05%
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.001 mEq/g

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
$(CH_3)_2SO$

F.W
78.13

CAS
67-68-5

Product No.
2762

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-372-1543-6

1,4-Dioxane

Formula
$(CH_2)_4O_2$

F.W
88.11

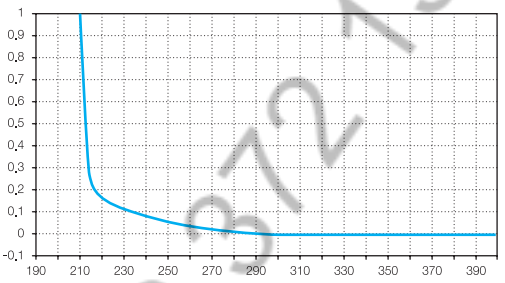
CAS
123-91-1

Product No.
1356

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.56
Polarity Index (P') ····· 4.8
Viscosity (cP, 25°C) ····· 1.177
Density (g/mℓ, 25°C) ····· 1.028
Boiling Point (°C) ····· 101.0
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.420



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
215 nm ····· 1.00
225 nm ····· 0.50
250 nm ····· 0.24
270 nm ····· 0.10
300 nm ····· 0.01
UV Cutoff ····· max. 215 nm

Assay (by GC) ····· min. 99.8 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.0016 mEq/g
Peroxide (as H_2O_2, at time of packaging) ····· 0.003%
Carbonyl (as CHO) ····· 0.01%
Freezing point ····· Not below 11.0 °C

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

1-Dodecane Sulfonic acid Sodium salt

Specifications and Max. impurities

Ultraviolet Spectrophotometry

UV Absorbance (0.005M, Water)

200 nm ····· Max. 0.15

220 nm ····· Max. 0.05

Assay ····· Min. 98.0%

pH value (1%, sol) ····· 5.5 ~ 7.5

Loss on drying (at 120°C, vacuum) ····· Max. 2.0%

Formula
$C_{12}H_{25}NaO_3S$

F.W
272.38

CAS
2386-53-0

Package
25g ×**10** Btl/Box

Line @thankyou2562 Tel.02 372 1545-6

Ethanol

Formula
C_2H_5OH

F.W
46.07

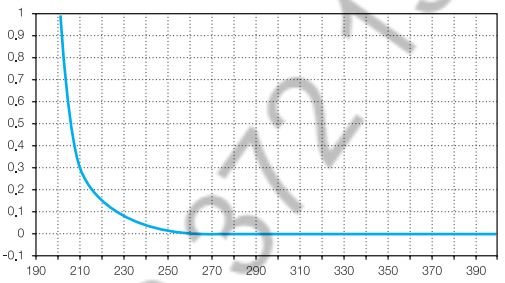
CAS
64-17-5

Product No.
76

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.88
Polarity Index (P') ····· 4.3
Viscosity (cP, 25°C) ····· 1.074
Density (g/mℓ, 25°C) ····· 0.787
Boiling Point (°C) ····· 78
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.359



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
205 nm ····· 1.00
210 nm ····· 0.65
220 nm ····· 0.35
254 nm ····· 0.04
UV Cutoff ····· max. 205 nm
Assay (by GC) ····· min. 99.9%
Color (APHA) ····· 10
Water ····· 0.1%
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.0003 mEq/g
Titrable base ····· 0.0002 mEq/g
Acetone, isopropyl alcohol ····· To pass test
Methanol (CH_3OH) ····· 0.1%
Solubility in water ····· To pass test
Substances darkened by sulfuric acid ····· To pass test
Substances reducing permanganate ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

HPLC Grade

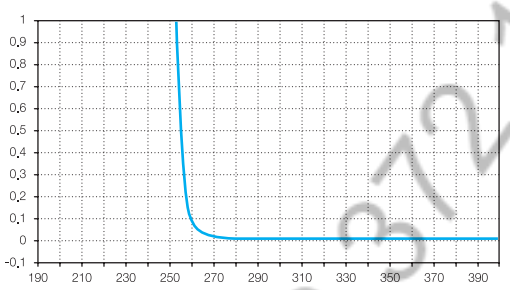
076

Line @thanakrou2562 Tel.02-372-1545 - 6

Ethyl Acetate

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.58
Polarity Index (P') ····· 4.4
Viscosity (cP, 25°C) ····· 0.423
Density (g/mℓ, 25°C) ····· 0.894
Boiling Point (°C) ····· 77
Solubility of water (%, 20°C) ····· 3.3
Refractive Index (25°C) ····· 1.370



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
255 nm ····· 1.00
260 nm ····· 0.15
270 nm ····· 0.025
UV Cutoff ····· max. 255 nm
Assay (by GC) ····· min. 99.9%
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.0009 mEq/g
Substances darkened by sulfuric acid ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
$CH_3COOC_2H_5$

F.W
88.11

CAS
141-78-6

Product No.
3083

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-872-1543-6

Ethyl Ether, Anhydrous

(Stabilized with Ethanol)

Formula
$C_2H_5OC_2H_5$

F.W
74.12

CAS
60-29-7

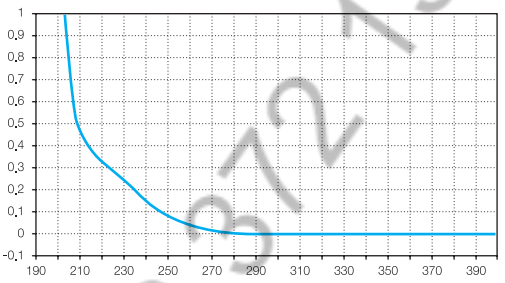
Product No.
558

Stabilized with 1.5~2.5% Ethanol

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.38
Polarity Index (P') ····· 2.8
Viscosity (cP, 25°C) ····· 0.24
Density (g/mℓ, 25°C) ····· 0.708
Boiling Point (°C) ····· 34
Solubility of water (%, 20°C) ····· 1.26
Refractive Index (25°C) ····· 1.352



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
218 nm ····· 1.00
254 nm ····· 0.07
280 nm ····· 0.02
350 nm ····· 0.01
UV Cutoff ····· max. 218 nm

Assay (by GC, Excluding preservative) ····· min. 99.8 %
Color (APHA) ····· 10
Water ····· 0.03 %
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.0002 mEq/g
Peroxide (as H_2O_2, at time of packaging) ····· max. 1 ppm
Carbonyl compounds (as HCHO) ····· 0.001 %
Contains Stabilizer (Ethanol) 1.5~2.5 %

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

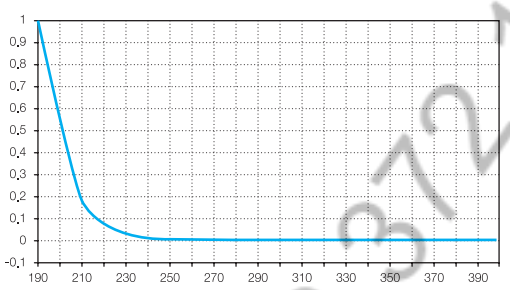
HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

n-Heptane 97%

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.01
Polarity Index (P') ····· 0.1
Viscosity (cP, 25°C) ····· 0.40
Density (g/mℓ, 25°C) ····· 0.681
Boiling Point (°C) ····· 98
Solubility of water (%, 25°C) ····· 0.01
Refractive Index (25°C) ····· 1.385



Specifications and Max. impurities

Ultraviolet Spectrophotometry

Maximum UV Absorbance
197 nm ····· 1.00
200 nm ····· 0.75
215 nm ····· 0.20
254 nm ····· 0.014
UV Cutoff ····· max. 197 nm
Assay (by GC, n-Heptane) ····· min. 97.0 %
(total C7 Hydrocarbons) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.02 %
Residue after Evaporation ····· 3 ppm
Substances darkened by sulfuric acid ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
$CH_3(CH_2)_5CH_3$

F.W
100.21

CAS
142-82-5

Product No.
2054

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02 372 1543-6

n-Heptane 99%

Formula
$CH_3(CH_2)_5CH_3$

F.W
100.21

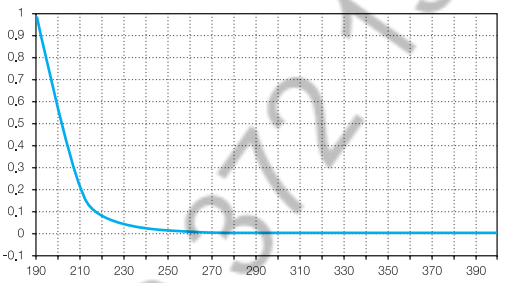
CAS
142-82-5

Product No.
2704

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.01
Polarity Index (P') ····· 0.1
Viscosity (cP, 25°C) ····· 0.40
Density (g/mℓ, 25°C) ····· 0.681
Boiling Point (°C) ····· 98
Solubility of water (%, 25°C) ····· 0.01
Refractive Index (25°C) ····· 1.385



Specifications and Max. impurities

Ultraviolet Spectrophotometry

Maximum UV Absorbance
197 nm ····· 1.00
200 nm ····· 0.75
215 nm ····· 0.20
254 nm ····· 0.014
UV Cutoff ····· max. 197 nm
Assay (by GC, n-Heptane) ····· min. 99.0 %
(total C7 Hydrocarbons) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.02 %
Residue after Evaporation ····· 3 ppm
Substances darkened by sulfuric acid ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

1-Heptane Sulfonic acid Sodium salt

Specifications and Max. impurities

Ultraviolet Spectrophotometry

UV Transmittance (0.005M, Water)

200 nm	Min. 70.0%
220 nm	Min. 90.0%
250 nm	Min. 99.0%
Assay	Min. 99.0%
pH value (10%, sol)	5.5 ~ 7.5
Loss on drying (at 120°C, vacuum)	Max. 2.0%

Formula
$C_7H_{15}NaO_3S$

F.W
202.25

CAS
22767-50-6

Package
25g ×**10** Btl/Box

Line @thankyou2562 Tel.02 372 15456

n-Hexane 95%

Formula
$CH_3(CH_2)_4CH_3$

F.W
86.18

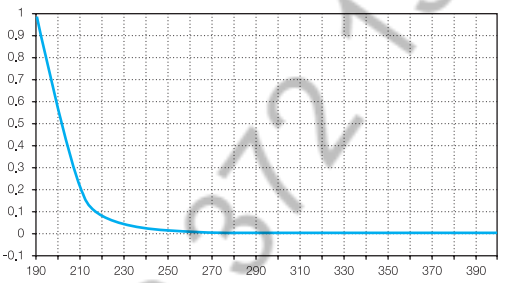
CAS
110-54-3

Product No.
820

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.01
Polarity Index (P') ····· 0.1
Viscosity (cP, 25°C) ····· 0.300
Density (g/mℓ, 25°C) ····· 0.656
Boiling Point (°C) ····· 69
Solubility of water (%, 20°C) ····· 0.01
Refractive Index (25°C) ····· 1.372



Specifications and Max. impurities

Ultraviolet Spectrophotometry

Maximum UV Absorbance
195 nm ····· 1.00
210 nm ····· 0.25
220 nm ····· 0.075
254 nm ····· 0.005
UV Cutoff ····· max. 195 nm
Assay (by GC, n-Hexane) ····· min. 95.0 %
(total C6 Hydrocarbons) ····· min. 99.8 %
Color (APHA) ····· 10
Water ····· 0.01%
Residue after Evaporation ····· 3 ppm
Water soluble titrable acid ····· 0.0003 mEq/g
Sulfur compounds (as S) ····· 0.005%
Thiophene ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

1-Hexane Sulfonic acid Sodium salt

Specifications and Max. impurities

Ultraviolet Spectrophotometry

UV Transmittance (0.005M, Water)

200 nm	Min. 70.0%
220 nm	Min. 90.0%
250 nm	Min. 98.0%
Assay	Min. 99.0%
pH value (10%, sol)	5.5 ~ 7.5
Loss on drying (at 120°C, vacuum)	Max. 2.0%

Formula
$C_6H_{13}NaO_3S$

F.W
188.22

CAS
2832-45-3

Product No.
4591

Package
25g ×**10** Btl/Box

Line @thankyou2562 Tel.02 372 1545-6

Isooctane (2,2,4-Trimethylpentane)

Formula
$(CH_3)_2CHCH_2C(CH_3)_3$

F.W
114.23

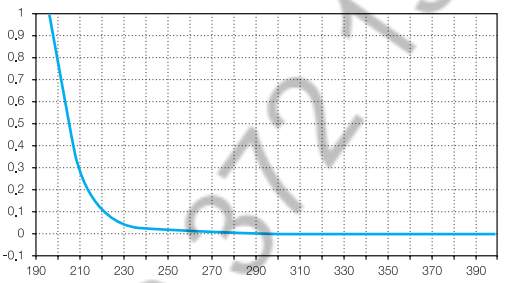
CAS
540-84-1

Product No.
1186

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.01
Polarity Index (P') ····· 0.1
Viscosity (cP, 22°C) ····· 0.51
Density (g/mℓ, 20°C) ····· 0.691
Boiling Point (°C) ····· 99
Solubility of water (%, 20°C) ····· 0.006
Refractive Index (25°C) ····· 1.389



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
205 nm ····· 1.00
225 nm ····· 0.10
254 nm ····· 0.014
UV Cutoff ····· max. 205 nm
Assay (by GC) ····· min. 99.0 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 4 ppm
Water soluble titrable acid ····· 0.0003 mEq/g
Sulfur compounds (as S) ····· 0.005%

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

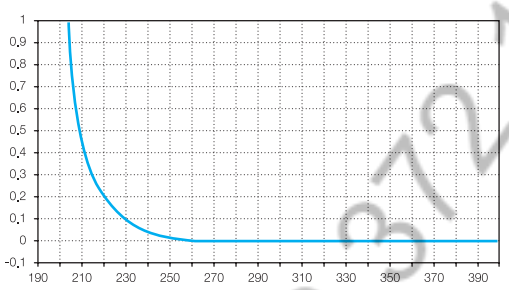
HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

Methanol

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.95
Polarity Index (P') ····· 5.1
Viscosity (cP, 25°C) ····· 0.544
Density (g/mℓ, 25°C) ····· 0.787
Boiling Point (°C) ····· 65
Solubility of water (%, 20°C) ··· Misicible
Refractive Index (25°C) ····· 1.326



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
205 nm ····· 1.00
220 nm ····· 0.25
230 nm ····· 0.15
254 nm ····· 0.02
280 nm ····· 0.01
UV Cutoff ····· max. 205 nm

LC Gradient Suitability

Gradient Elution test ····· To pass test
Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.05%
Residue after Evaporation ····· 3 ppm
Titrable acid ····· 0.0003 mEq/g
Titrable base ····· 0.0002 mEq/g
Carbonyl compounds ····· 0.001%
(each of Acetone, Formaldehyde and Acetaldehyde)
Substances darkened by sulfuric acid ····· To pass test
Substances reducing permanganate ····· To pass test
Solubility in water ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
CH_3OH

F.W
32.04

CAS
67-56-1

Product No.
62

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-372-1545-6

Methanol, isocratic

Formula
CH_3OH

F.W
32.04

CAS
67-56-1

Product No.
4978

Package
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina)	0.95
Polarity Index (P')	5.1
Viscosity (cP, 25°C)	0.544
Density (g/㎖, 25°C)	0.787
Boiling Point (°C)	65
Percent water soluble in Solvent	Misicible
Refractive Index (25°C)	1.326

Specifications and Max. impurities

Ultraviolet Spectrophotometry

Maximum UV Absorbance	
212 nm	0.70
220 nm	0.30
243 nm	0.05
Identification	IR Spectrometry
Assay (by GC)	Min. 99.7 %
Water	0.05%
Density (25°C)	0.790 ~ 0.792
Residue after Evaporation	5 ppm
Titrable acid	0.0003 mEq/g
Titrable base	0.0002 mEq/g

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

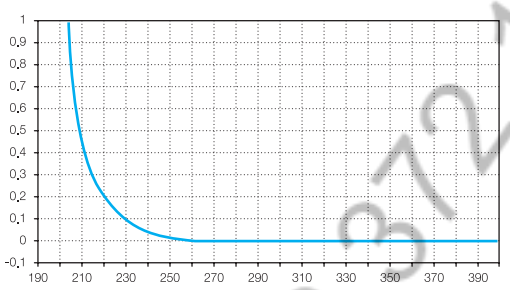
HPLC Grade

Line @thankyou2562 Tel.02 372 1545 - 6

Methyl t-Butyl Ether

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.35
Polarity Index (P') ····· 2.5
Viscosity (cP, 25°C) ····· 0.28
Density (g/mℓ, 20°C) ····· 0.740
Boiling Point (°C) ····· 55
Solubility of water (%, 20°C) ····· 1.5
Refractive Index (25°C) ····· 1.366



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
210 nm ····· 1.00
225 nm ····· 0.50
254 nm ····· 0.10
300 nm ····· 0.01
350 nm ····· 0.01
UV Cutoff ····· max. 210 nm
Assay (by GC) ····· min. 99.0 %
Color (APHA) ····· 10
Water ····· 0.05%
Residue after Evaporation ····· 5 ppm
Peroxide (as H_2O_2, at time of packaging) ····· 1 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
$(CH_3)_3COCH_3$

F.W
88.14

CAS
1634-04-4

Product No.
1070

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-372-1545-6

Methyl Ethyl Ketone

Formula
$C_2H_5OCH_3$

F.W
72.11

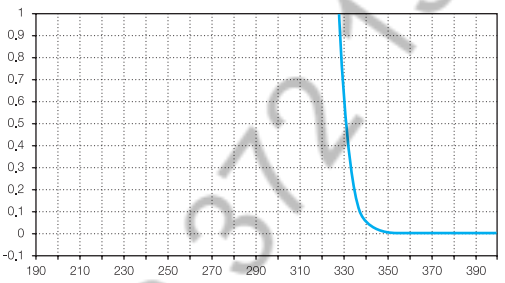
CAS
78-93-3

Product No.
610

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.51
Polarity Index (P') ····· 4.7
Viscosity (cP, 25°C) ····· 0.38
Density (g/mℓ, 25°C) ····· 0.799
Boiling Point (°C) ····· 80
Solubility of water (%, 20°C) ····· 10.0
Refractive Index (25°C) ····· 1.377



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
329 nm ····· 1.00
335 nm ····· 0.30
340 nm ····· 0.07
350 nm ····· 0.01
400 nm ····· 0.01
UV Cutoff ····· max. 329 nm
Assay (by GC) ····· Min. 99.6 %
Color (APHA) ····· 10
Water ····· 0.03%
Residue after Evaporation ····· 3 ppm
Titrable acid ····· 0.0005 mEq/g
Substances darkened by sulfuric acid ····· To pass test

HPLC Grade

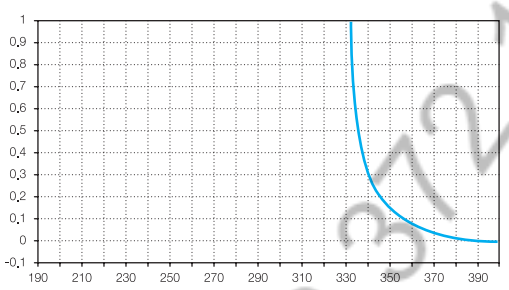
Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Line @thankyou2562 Tel.02-372-1545 - 6

Methyl Isobutyl Ketone

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.43
Polarity Index (P') ····· 4.2
Viscosity (cP, 25°C) ····· 0.58
Density (g/mℓ, 20°C) ····· 0.801
Boiling Point (°C) ····· 117~118
Refractive Index (20°C) ····· 1.3957



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
334 nm ····· 1.00
340 nm ····· 0.50
350 nm ····· 0.25
360 nm ····· 0.15
400 nm ····· 0.01
UV Cutoff ····· max. 334 nm
Assay (by GC) ····· min. 99.0 %
Color (APHA) ····· 10
Water ····· 0.05%
Residue after Evaporation ····· 5 ppm
Titrable acid ····· 0.002 mEq/g

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
$(CH_3)_2CHCH_2COCH_3$

F.W
100.16

CAS
108-10-1

Product No.
634

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-372-1545-6

N-Methyl-2-Pyrrolidone

Formula
C_5H_9NO

F.W
99.13

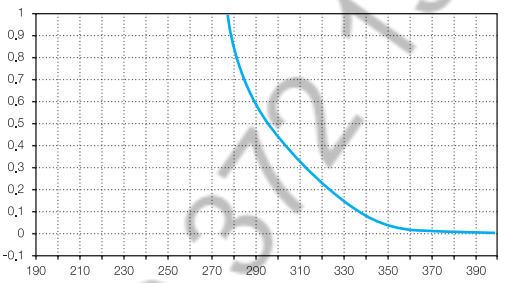
CAS
872-50-4

Product No.
674

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Polarity Index (P') ····· 6.7
Viscosity (cP, 25°C) ····· 1.65
Density (g/㎖, 25°C) ····· 1.025
Boiling Point (°C) ····· 202
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.469



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
285 nm ····· 1.00
300 nm ····· 0.50
325 nm ····· 0.10
350 nm ····· 0.03
400 nm ····· 0.01
UV Cutoff ····· max. 285 nm
Assay (by GC) ····· Min. 99.7 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 10 ppm
Free Amines (as CH_3NH_2) ····· 0.01%
Chloride (Cl) ····· 1 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

1-Octane Sulfonic acid Sodium salt

Specifications and Max. impurities

Ultraviolet Spectrophotometry

UV Transmittance (0.005M, Water)

200 nm	Min. 70.0%
220 nm	Min. 90.0%
250 nm	Min. 98.0%
Assay	Min. 99.0%
pH value (10%, sol)	5.5 ~ 7.5
Loss on drying (at 120°C, vacuum)	Max. 2.0%

Formula
$C_8H_{17}NaO_3S$

F.W
216.28

CAS
5324-84-5

Product No.
4592

Package
25g ×**10** Btl/Box

Line @thankyou2562 Tel.02 372 1545-6

n-Pentane

Formula
$CH_3(CH_2)_3CH_3$

F.W
72.15

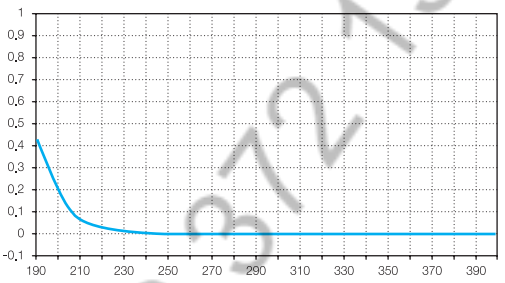
CAS
109-66-0

Product No.
1575

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.00
Polarity Index (P') ····· 0.00
Viscosity (cP, 25°C) ····· 0.22
Density (g/mℓ, 25°C) ····· 0.621
Boiling Point (°C) ····· 36
Solubility of water (%, 20°C) ····· 0.009
Refractive Index (25°C) ····· 1.355



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
190 nm ····· 1.00
200 nm ····· 0.30
210 nm ····· 0.10
254 nm ····· 0.01
UV Cutoff ····· max. 190 nm
Assay (by GC, n-Pentane) ····· min. 98.0 %
(total C5 Hydrocarbons) ····· min 99.9 %
Color (APHA) ····· 5
Water ····· 0.02%
Residue after Evaporation ····· 5 ppm
Substances darkened by sulfuric acid ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

1-Pentane Sulfonic acid Sodium salt

Specifications and Max. impurities

Ultraviolet Spectrophotometry

UV Transmittance (0.005M, Water)

200 nm	Min. 70.0%
220 nm	Min. 90.0%
250 nm	Min. 98.0%
Assay	Min. 99.0%
pH value (10%, sol)	5.5 ~ 7.5
Loss on drying (at 120°C, vacuum)	Max. 2.0%

Formula
$C_5H_{11}NaO_3S$

F.W
174.20

CAS
22767-49-3

Product No.
5430

Package
25g ×**10** Btl/Box

Line @thankyou2562 Tel.02 372 1545-6

Petroleum Ether (35~60°C)

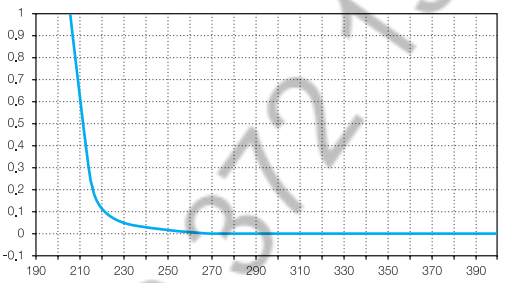
CAS
8032-32-4

Product No.
1591

Package
1ℓ × 10 Btl/Box
2.5ℓ×4 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Polarity Index (P') ····· 0.1
Density (g/mℓ, 20°C) ····· 0.64
Boiling Point (°C) ····· 35~60
Refractive Index (20°C) ····· 1.365



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
220 nm ····· 1.00
230 nm ····· 0.20
250 nm ····· 0.05
270 nm ····· 0.01
400 nm ····· 0.01
UV Cutoff ····· max. 220 nm

Boiling range (Initial to dry point) ····· 35~60°C
Color (APHA) ····· 10
Water ····· 0.01%
Residue after Evaporation ····· 0.001%
Acidity ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

Phosphoric acid 85%

Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)

220 nm	0.05
254 nm	0.04
300 nm	0.02
Assay	min. 85.0%
Color (APHA)	10
Insoluble matter	0.001%
Chloride (Cl)	3 ppm
Nitrate (NO_3)	5 ppm
Sulfate (SO_4)	0.003%
Volatile acids (as CH_3COOH)	0.001%
Antimony (Sb)	0.002%
Calcium (Ca)	0.002%
Magnesium (Mg)	0.002%
Potassium (K)	0.005%
Sodium (Na)	0.025%
Arsenic (As)	1 ppm
Heavy metals (as Pb)	0.001%
Iron (Fe)	0.003%
Manganese (Mn)	0.5 ppm
Reducing substances	To pass test

For use in HPLC & ACS experiments

Formula
H_3PO_4

F.W
98.00

CAS
7664-38-2

Product No.
3036

Package
500g × **20** Btl/Box
1kg × **10** Btl/Box

Line @thankyou2562 Tel.02-372-1543-6

Potassium phosphate, monobasic

Formula
KH_2PO_4

F.W
136.09

CAS
7778-77-0

Product No.
1755

Package
500g ×**20** Btl/Box
1kg ×**10** Btl/Box

Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)	
254 nm	0.04
Assay	min. 99.0%
pH of a 5% solution (25°C)	4.1 ~ 4.5
Insoluble matter	0.01%
Loss on drying (at 105°C)	0.2%
Chloride (Cl)	0.001%
Nitrogen compounds (as N)	0.001%
Sulfate (SO_4)	0.003%
Heavy metals (as Pb)	0.001%
Iron (Fe)	0.002%
Sodium (Na)	0.005%

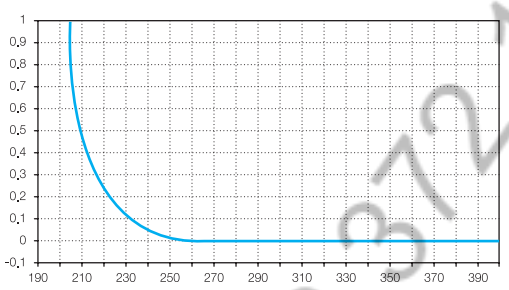
For use in HPLC & ACS experiments

Line @thankyou2562 Tel.02-372-1545-6

1-Propanol (n-Propyl Alcohol)

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.82
Polarity Index (P') ····· 4.0
Viscosity (cP, 25°C) ····· 1.95
Density (g/mℓ, 25°C) ····· 0.802
Boiling Point (°C) ····· 97
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.383



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
210 nm ····· 1.00
225 nm ····· 0.50
250 nm ····· 0.05
300 nm ····· 0.01
UV Cutoff ····· max. 210 nm
Assay (by GC) ····· min. 99.8 %
Color (APHA) ····· 10
Water ····· 0.05%
Residue after Evaporation ····· 3 ppm
Titrable acid ····· 0.0003 mEq/g
Carbonyl compounds (as C_2H_5CHO) ····· 0.03%
Ethanol (CH_3CH_2OH) ····· 0.01%
Methanol (CH_3OH) ····· 0.01%
Isopropyl Alcohol ($CH_3CHOHCH_3$) ····· 0.05%
Solubility in water ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
$CH_3CH_2CH_2OH$

F.W
60.10

CAS
71-23-8

Product No.
623

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02 372 1545 6

2-Propanol (Isopropyl Alcohol)

Formula
$(CH_3)_2CHOH$

F.W
60.10

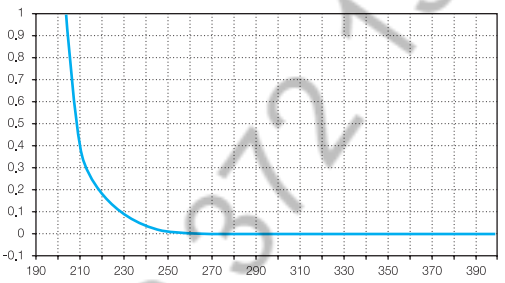
CAS
67-63-0

Product No.
859

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.82
Polarity Index (P') ····· 3.9
Viscosity (cP, 25°C) ····· 2.038
Density (g/mℓ, 25°C) ····· 0.782
Boiling Point (°C) ····· 82
Solubility of water (%, 20°C) ····· Miscible
Refractive Index (25°C) ····· 1.375



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
205 nm ····· 1.00
220 nm ····· 0.25
230 nm ····· 0.13
254 nm ····· 0.02
UV Cutoff ····· max. 205 nm
Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.05%
Residue after Evaporation ····· 2 ppm
Titrable acid or Base ····· 0.0001 mEq/g
Carbonyl compounds ····· 0.002%
(as propionaldehyde or acetone)
Solubility in water ····· To pass test

HPLC Grade

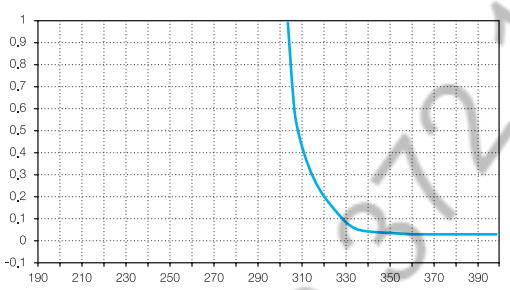
Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Line @thankyou2562 Tel.02-372-1545 - 6

Pyridine

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.71
Polarity Index (P') ····· 5.3
Viscosity (cP, 25°C) ····· 0.88
Density (g/mℓ, 25°C) ····· 0.978
Boiling Point (°C) ····· 115
Solubility of water (%, 20°C) ····· Miscible
Refractive Index (25°C) ····· 1.507



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
330 nm ····· 1.00
340 nm ····· 0.10
350 nm ····· 0.01
400 nm ····· 0.005
UV Cutoff ····· max. 330 nm
Assay (by GC) ····· min. 99.5%
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 5 ppm
Ammonia (as NH_3) ····· 0.002%
Chloride (Cl) ····· 0.0005%
Sulfate (SO_4) ····· 0.001%
Copper (Cu) ····· 5 ppm
Solubility in water ····· To pass test
Reducing substances ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

Formula
C_5H_5N

F.W
79.10

CAS
110-86-1

Product No.
877

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-372-1543-6

Sodium acetate trihydrate

Formula
$CH_3COONa \cdot 3H_2O$

F.W
136.08

CAS
6131-90-4

Product No.
3039

Package
500g ×**20** Btl/Box
1kg ×**10** Btl/Box

Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)

254 nm 0.02

Assay ..... 9.0 ~ 101.0%

pH of a 5% solution (25°C) ..... 7.5 ~ 9.2

Substances reducing permanganate ..... To pass test

Insoluble matter 0.005%

Chloride (Cl) 0.001%

Phosphate (PO_4) ..... 5 ppm

Sulfate (SO_4) 0.002%

Heavy metals (as Pb) ..... 5 ppm

Iron (Fe) ..... 5 ppm

Calcium (Ca) 0.005%

Magnesium (Mg) 0.002%

Potassium (K) 0.005%

Line @thankyou2562 Tel.02 372 1545 - 6

For use in HPLC & ACS experiments

Sodium bicarbonate

Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance (1M Solution)

254 nm	0.05
280 nm	0.02
350 nm	0.01
Assay (dried basis)	99.7 ~ 100.3%
Insoluble matter	0.015%
Chloride (Cl)	0.003%
Phosphate (PO_4)	0.001%
Sulfur compounds (as SO_4)	0.003%
Ammonium (NH_4)	5 ppm
Heavy metals (as Pb)	5 ppm
Iron (Fe)	0.001%
Calcium (Ca)	0.02%
Magnesium (Mg)	0.005%
Potassium (K)	0.005%

Formula
$NaHCO_3$

F.W
84.01

CAS
144-55-8

Product No.
3038

Package
500g × **20** Btl/Box
1kg × **10** Btl/Box

Line @thankyou2562 Tel.02-372-1545-6

Tetrahydrofuran

Formula
C_4H_8O

F.W
72.11

CAS
109-99-9

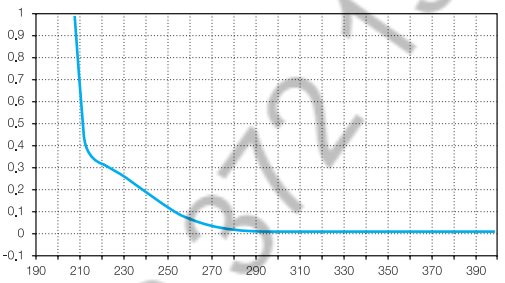
Product No.
218

No Stabilizer

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.45
Polarity Index (P') ····· 4.0
Viscosity (cP, 25°C) ····· 0.456
Density (g/mℓ, 25°C) ····· 0.880
Boiling Point (°C) ····· 65
Solubility of water (%, 20°C) ····· Miscible
Refractive Index (25°C) ····· 1.404



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
210 nm ····· 1.00
215 nm ····· 0.60
230 nm ····· 0.30
254 nm ····· 0.10
UV Cutoff ····· max. 210 nm

Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 5 ppm
Peroxides (as H_2O_2, at time of packaging) ····· 0.015%

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

Tetrahydrofuran
(Stabilized with BHT)

Physical Data

Eluotropic value (E^o)(on Alumina)	0.45
Polarity Index (P')	4.0
Viscosity (cP, 25°C)	0.456
Density (g/mℓ, 25°C)	0.880
Boiling Point (°C)	65
Solubility of water (%, 20°C)	Miscible
Refractive Index (25°C)	1.404

Specifications and Max. impurities

Meets ACS Specification

Assay (by GC)	min. 99.5 %
Color (APHA)	10
Water	0.02%
Peroxides (as H_2O_2, at time of packaging)	0.015%
Stabilizer (BHT)	200 ~ 300 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in GPC experiments

Formula
C_4H_8O

F.W
72.11

CAS
109-99-9

Product No.
219

Stabilized with 200~300 ppm BHT

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02 372 1545-6

Toluene

Formula
$C_6H_5CH_3$

F.W
92.14

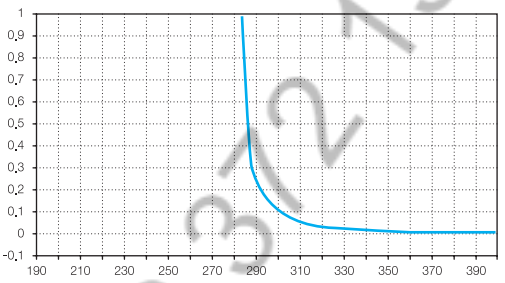
CAS
108-88-3

Product No.
187

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.29
Polarity Index (P') ····· 2.4
Viscosity (cP, 25°C) ····· 0.560
Density (g/mℓ, 25°C) ····· 0.864
Boiling Point (°C) ····· 111
Solubility of water (%, 25°C) ····· 0.033
Refractive Index (25°C) ····· 1.494



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
286 nm ····· 1.00
288 nm ····· 0.40
300 nm ····· 0.10
350 nm ····· 0.01
UV Cutoff ····· max. 286 nm
Assay (by GC) ····· min. 99.8 %
Color (APHA) ····· 10
Water ····· 0.02%
Residue after Evaporation ····· 5 ppm
Sulfur compounds (as S) ····· 0.003%
Substances darkened by sulfuric acid ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC, GC, ACS experiments & Spectrophotometry

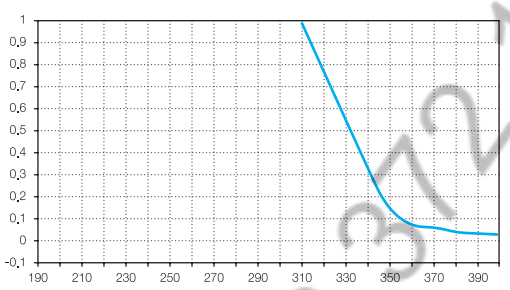
HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

1,2,4-Trichlorobenzene

Physical Data

Density (g/mℓ, 25°C) ····· 1.454
Boiling Point (°C) ····· 213.5
Solubility of water (%, 20°C) ····· 0.03
Refractive Index (20°C) ····· 1.571



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
310 nm ····· 1.00
350 nm ····· 0.15
375 nm ····· 0.05
400 nm ····· 0.01
UV Cutoff ····· max. 310 nm
Assay (by GC) ····· min. 99.0 %
Water ····· 0.01%
Residue after Evaporation ····· 5 ppm
Density (20°C) ····· 1.452 ~ 1.458
Refractive Index (20°C) ····· 1.569 ~ 1.574

Packaged under Nitrogen and sub-micron filtered.
For use in GPC, ACS experiments

Formula
$C_6H_3Cl_3$

F.W
181.46

CAS
120-82-1

Product No.
4579

Package
3.8ℓ×4 Btl/Box

HPLC Grade

Line @thankyou2562 Tel.02-372-1543-6

Water

Formula
H_2O

F.W
18.01

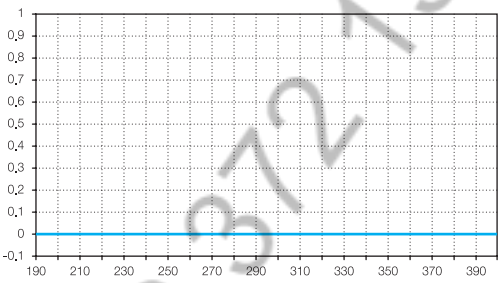
CAS
7732-18-5

Product No.
119

Package
1ℓ × **10** Btl/Box
2.5ℓ×**4** Btl/Box
4ℓ × **4** Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.99
Polarity Index (P') ····· 10.2
Viscosity (cP, 25°C) ····· 0.89
Density (g/mℓ, 20°C) ····· 0.998
Boiling Point (°C) ····· 100
Refractive Index (25°C) ····· 1.333
Surface tension (20°C, dyne/cm) ··· 72.7



Specifications and Max. impurities

Meets ACS Specification

Ultraviolet Spectrophotometry

Maximum UV Absorbance
190 nm ····· 0.01
200 nm ····· 0.01
250 ~ 400 nm ····· 0.005
UV Cutoff ····· max. 190 nm

LC Gradient Suitability

Gradient Elution test ····· To pass test

Color (APHA) ····· 5

Residue after Evaporation (at time of packaging) ····· 10 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in HPLC & Spectrophotometry

HPLC Grade

Line @thankyou2562 Tel.02-372-1545 - 6

Solvent Specifications

Solvent Name Synonyms

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

Line @thankyou2562 Tel.02 372 1543-6

BIO Grade

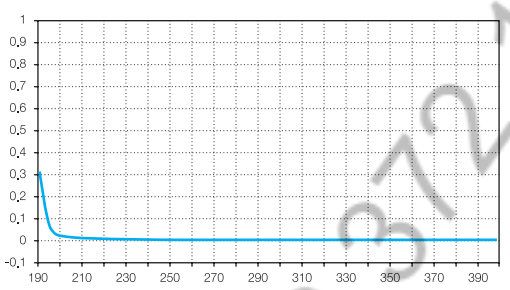
Item	UV Cutoff (max. nm)	Water (max. ppm)	Other
Acetonitrile	<190	10	
Dichloromethane w/Amylene	233	30	Chloride < 10 ppm Acidity < 0.0003 mEq/g
N,N Dimethylformamide	270	300	Amines < 5 ppm
Dimethyl Sulfoxide	263	250	
Methanol	205	300	Acetone < 0.001 %
N-Methyl-2-Pyrrolidone	285	200	Amines < 5 ppm
Pyridine	330	100	Amines < 10 ppm
Tetrahydrofuran	210	50	
Triethyl Amine	-	0.1%	

Line @thankyou2562 Tel.02 372 1545 - 6

Acetonitrile

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.65
Polarity Index (P') ····· 5.8
Viscosity (cP, 25°C) ····· 0.369
Density (g/mℓ, 25°C) ····· 0.779
Boiling Point (°C) ····· 82
Solubility of water (%, 20°C) ····· Miscible
Refractive Index (25°C) ····· 1.342



Specifications and Max. impurities

Ultraviolet Spectrophotometry

Maximum UV Absorbance
190 nm ····· 1.00
195 nm ····· 0.15
200 nm ····· 0.07
205 nm ····· 0.05
210 nm ····· 0.04
220 nm ····· 0.02
254 nm ····· 0.01
UV Cutoff ····· max. 190 nm

LC Gradient Suitability

Gradient Elution test ····· To pass test
Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 10 ppm
Residue after Evaporation ····· 1 ppm
Titrable acid ····· 0.008 mEq/g
Titrable base ····· 0.0006 mEq/g

Packaged under Nitrogen and sub-micron filtered.
For use in Bio synthesis and requiring low water applications

Formula
CH_3CN

F.W
41.05

CAS
75-05-8

Product No.
3362

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

BIO Grade

Line @thankyou2562 Tel.02-872-1545-6

Dichloromethane

(Stabilized with Amylene)

Formula
CH_2Cl_2

F.W
84.93

CAS
75-09-2

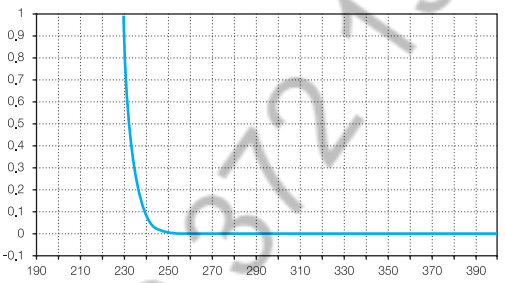
Product No.
597

Stabilized with 15~200ppm Amylene

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.42
Polarity Index (P') ····· 3.1
Viscosity (cP, 25°C) ····· 0.413
Density (g/mℓ, 25°C) ····· 1.318
Boiling Point (°C) ····· 40
Solubility of water (%, 20°C) ····· 0.24
Refractive Index (25°C) ····· 1.421



Specifications and Max. impurities

Ultraviolet Spectrophotometry
Maximum UV Absorbance
233 nm ····· 1.00
240 nm ····· 0.12
254 nm ····· 0.01
UV Cutoff ····· max. 233 nm
Chloride (Cl) ····· 10 ppm
Titrable acid ····· 0.0003 mEq/g
Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 30 ppm
Residue after Evaporation ····· 3 ppm
Contains Stabilizer (Amylene) 15~200 ppm

BIO Grade

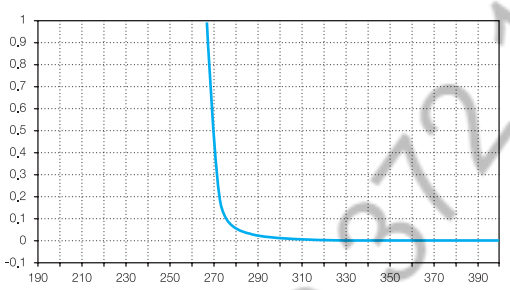
Packaged under Nitrogen and sub-micron filtered.
For use in Bio synthesis and requiring low water applications

Line @thankyou2562 Tel.02 372 1545 - 6

N,N-Dimethylformamide

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 7.6
Polarity Index (P') ····· 6.4
Viscosity (cP, 25°C) ····· 0.794
Density (g/mℓ, 25°C) ····· 0.944
Boiling Point (°C) ····· 153
Solubility of water (%, 20°C) ····· Miscible
Refractive Index (25°C) ····· 1.427



Specifications and Max. impurities

Ultraviolet Spectrophotometry

Maximum UV Absorbance
270 nm ····· 1.00
275 nm ····· 0.30
295 nm ····· 0.10
310 nm ····· 0.05
340 nm ····· 0.01
UV Cutoff ····· max. 270 nm

Amines (as Dimethylamine) ····· 5 ppm
Assay (by GC) ····· min. 99.8%
Color (APHA) ····· 10
Water ····· 0.03%
Residue after Evaporation ····· 5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Bio synthesis and requiring low water applications

Formula
$HCON(CH_3)_2$

F.W
73.09

CAS
68-12-2

Product No.
1373

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

BIO Grade

Line @thankyou2562 Tel.02-872-1543-6

Dimethyl Sulfoxide

Formula
$(CH_3)_2SO$

F.W
78.13

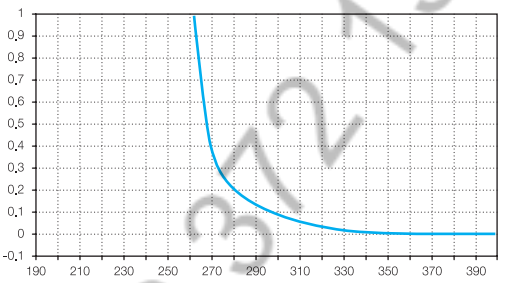
CAS
67-68-5

Product No.
1381

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.62
Polarity Index (P') ····· 7.2
Viscosity (cP, 25°C) ····· 1.987
Density (g/mℓ, 25°C) ····· 1.096
Boiling Point (°C) ····· 189
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.476



Specifications and Max. impurities

Ultraviolet Spectrophotometry

Maximum UV Absorbance
263 nm ····· 1.00
270 nm ····· 0.40
275 nm ····· 0.20
280 nm ····· 0.15
335 nm ····· 0.02
400 nm ····· 0.01
UV Cutoff ····· max. 263 nm
Assay (by GC) ····· min. 99.7%
Color (APHA) ····· 10
Water ····· 0.025%
Residue after Evaporation ····· 5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in Bio synthesis and requiring low water applications

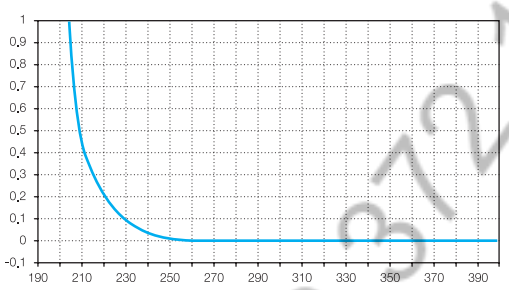
BIO Grade

Line @thankyou2562 Tel.02-372-1545 - 6

Methanol

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.95
Polarity Index (P') ····· 5.1
Viscosity (cP, 25°C) ····· 0.544
Density (g/mℓ, 25°C) ····· 0.787
Boiling Point (°C) ····· 65
Solubility of water (%, 20°C) ··· Misicible
Refractive Index (25°C) ····· 1.326



Specifications and Max. impurities

Ultraviolet Spectrophotometry

Maximum UV Absorbance
205 nm ····· 1.00
220 nm ····· 0.25
230 nm ····· 0.15
254 nm ····· 0.02
280 nm ····· 0.01
UV Cutoff ····· max. 205 nm

Acetone ····· **To pass test (about 0.001%)**
Assay (by GC) ····· min. 99.9 %
Color (APHA) ····· 10
Water ····· 0.03%
Residue after Evaporation ····· 3 ppm
Titrable acid ····· 0.0003 mEq/g
Titrable base ····· 0.0002 mEq/g
Substances reducing permanganate ····· To pass test
Solubility in water ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in Bio synthesis and requiring low water applications

Formula
CH_3OH

F.W
32.04

CAS
67-56-1

Product No.
2722

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

BIO Grade

Line @thankyou2562 Tel.02 872 1545 6

N-Methyl-2-Pyrrolidone

Formula
C_5H_9NO

F.W
99.13

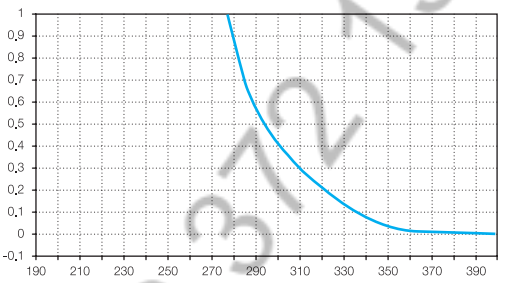
CAS
872-50-4

Product No.
2220

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Polarity Index (P') ····· 6.7
Viscosity (cP, 25°C) ····· 1.65
Density (g/mℓ, 25°C) ····· 1.025
Boiling Point (°C) ····· 202
Solubility of water (%, 20°C) ··· Miscible
Refractive Index (25°C) ····· 1.469



Specifications and Max. impurities

Ultraviolet Spectrophotometry
Maximum UV Absorbance
285 nm ····· 1.00
300 nm ····· 0.50
325 nm ····· 0.10
350 nm ····· 0.03
400 nm ····· 0.01
UV Cutoff ····· max. 285 nm
Amines (as Dimethylamine) ····· **5 ppm**
Assay (by GC) ····· min. 99.5 %
Color (APHA) ····· 20
Water ····· 200 ppm
Residue after Evaporation ····· 10 ppm

BIO Grade

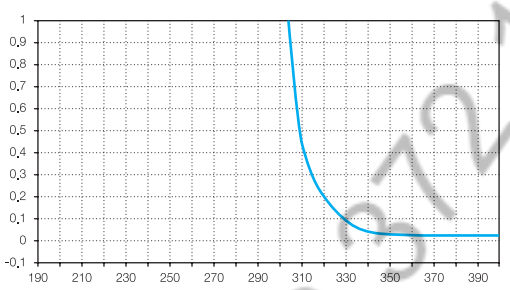
Packaged under Nitrogen and sub-micron filtered.
For use in Bio synthesis and requiring low water applications

Line @thankyou2562 Tel.02-372-1545 - 6

Pyridine

Physical Data

Eluotropic value (E^0)(on Alumina) ····· 0.71
Polarity Index (P') ····· 5.3
Viscosity (cP, 25°C) ····· 0.88
Density (g/mℓ, 25°C) ····· 0.978
Boiling Point (°C) ····· 115
Solubility of water (%, 20°C) ····· Miscible
Refractive Index (25°C) ····· 1.507



Specifications and Max. impurities

Ultraviolet Spectrophotometry

Maximum UV Absorbance
330 nm ····· 1.00
340 nm ····· 0.10
350 nm ····· 0.01
400 nm ····· 0.005
UV Cutoff ····· max. 330 nm

Amines (as Ninhydrin test) ····· **10 ppm**
Assay (by GC) ····· min. 99.0%
Color (APHA) ····· 10
Water ····· 0.01%
Residue after Evaporation ····· 5 ppm
Chloride (Cl) ····· 0.001%
Sulfate (SO_4) ····· 0.001%
Copper (Cu) ····· 5 ppm
Solubility in water ····· To pass test
Reducing substances ····· To pass test

Packaged under Nitrogen and sub-micron filtered.
For use in Bio synthesis and requiring low water applications

Formula
C_5H_5N

F.W
79.10

CAS
110-86-1

Product No.
2396

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

BIO Grade

Line @thankyou2562 Tel.02-372-1543-6

Tetrahydrofuran

Formula
C_4H_8O

F.W
72.11

CAS
109-99-9

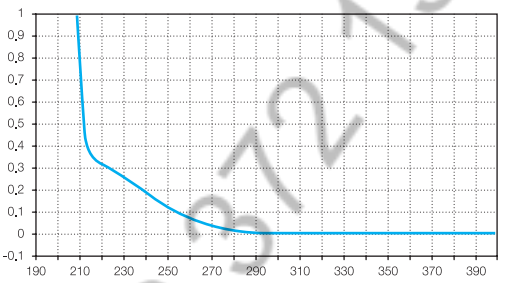
Product No.
221

No Stabilizer

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Physical Data

Eluotropic value (E^o)(on Alumina) ····· 0.45
Polarity Index (P') ····· 4.0
Viscosity (cP, 25°C) ····· 0.456
Density (g/mℓ, 25°C) ····· 0.880
Boiling Point (°C) ····· 65
Solubility of water (%, 20°C) ····· Miscible
Refractive Index (25°C) ····· 1.404



Specifications and Max. impurities

Ultraviolet Spectrophotometry
Maximum UV Absorbance
210 nm ····· 1.00
215 nm ····· 0.60
230 nm ····· 0.30
254 nm ····· 0.10
UV Cutoff ····· max. 210 nm
Assay (by GC) ····· min. 99.8 %
Color (APHA) ····· 10
Water ····· 50 ppm
Residue after Evaporation ····· 5 ppm
Peroxides (as H_2O_2, at time of packaging) ····· 0.015%

Packaged under Nitrogen and sub-micron filtered.
For use in Bio synthesis and requiring low water applications

BIO Grade

Line @thankyou2562 Tel.02-372-1545 - 6

Triethylamine

Physical Data

Density (g/mℓ, 20°C) ····· 0.73
Boiling Point (°C) ····· 88.8
Refractive Index (20°C) ····· 1.4

Specifications and Max. impurities

Assay (by GC) ····· min. 99.5%
Color (APHA) ····· 10
Water ····· 0.1%

Packaged under Nitrogen and sub-micron filtered.
For use in Bio synthesis and requiring low water applications

Formula
$(C_2H_5)_3N$

F.W
101.19

CAS
121-44-8

Product No.
2766

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

BIO Grade

Line @thankyou2562 Tel.02 372 1543-6

Line @thankyou2562 Tel.02 372 1545 - 6

Solvent Specifications

Solvent Name Synonyms

LC-MS

ULTIMATE

PESTICIDE

HPLC

BIO

ULTRA DRY

Line @thankyou2562 Tel.02 372 1543-6

Ultra Dry Grade

Item	Water (max. ppm)	Assay (min. %)	Residue aft. Evaporation (max. ppm)
Acetonitrile (water10)	10	99.8	5
Acetonitrile (water30)	30	99.8	5
Chloroform w/Ethanol	50	99.8	3
1,4-Dioxane	30	99.8	3
Ethyl Acetate	50	99.8	5
Ethyl Ether w/Ethanol	50	99.8	5
n-Hexane 95%	20	95.0	5
Methanol	50	99.8	3
Pyridine	50	99.8	5
Toluene	50	99.8	5

Line @thankyou2562 Tel.02 372 1645 - 6

Acetonitrile (Water10)

Specifications and Max. impurities

Assay (by GC)	min. 99.8%
Color (APHA)	10
Water	10 ppm
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in requiring low water applications

Formula
CH_3CN

F.W
41.05

CAS
75-05-8

Product No.
556

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Ultra Dry Grade

Acetonitrile (Water30)

Specifications and Max. impurities

Assay (by GC)	min. 99.8%
Color (APHA)	10
Water	30 ppm
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in requiring low water applications

Formula
CH_3CN

F.W
41.05

CAS
75-05-8

Product No.
559

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Ultra Dry Grade

Line @thankyou2562 Tel.02 372 1545 6

Chloroform
(Stabilized with Ethanol)

Ultra Dry Grade

Formula
$CHCl_3$

F.W
119.38

CAS
67-66-3

Product No.
1274

Stabilized with 0.5~1.0% Ethanol

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Specifications and Max. impurities

Assay (by GC, Excluding preservative)	min. 99.8%
Color (APHA)	10
Water	50 ppm
Residue after Evaporation	3 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in requiring low water applications

1,4-Dioxane

Ultra Dry Grade

Formula
$(CH_2)_4O_2$

F.W
88.11

CAS
123-91-1

Product No.
1358

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Specifications and Max. impurities

Assay (by GC)	min. 99.8%
Color (APHA)	10
Water	30 ppm
Residue after Evaporation	3 ppm
Peroxides (as H_2O_2, at time of packaging)	0.003%

Packaged under Nitrogen and sub-micron filtered.
For use in requiring low water applications

Line @thankyou2562 Tel.02 372 1545 - 6

Ethyl Acetate

Specifications and Max. impurities

Assay (by GC)	min. 99.8%
Color (APHA)	10
Water	50 ppm
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in requiring low water applications

Formula
$CH_3COOC_2H_5$

F.W
88.11

CAS
141-78-6

Product No.
1406

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Ultra Dry Grade

Ethyl Ether, Anhydrous
(Stabilized with Ethanol)

Specifications and Max. impurities

Assay (by GC)	min. 99.8%
Color (APHA)	10
Water	50 ppm
Residue after Evaporation	5 ppm
Peroxides (as H_2O_2, at time of packaging)	max. 5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in requiring low water applications

Formula
$C_2H_5OC_2H_5$

F.W
74.12

CAS
60-29-7

Product No.
570

Stabilized
with 1.5~2.5%
Ethanol

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Ultra Dry Grade

Line @thankyou2562 Tel.02 372 1545-6

n-Hexane 95%

Ultra Dry Grade

Formula
$CH_3(CH_2)_4CH_3$

F.W
86.18

CAS
110-54-3

Product No.
823

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Specifications and Max. impurities

Assay (by GC, n-Hexane)	min. 95.0 %
(total C6 Hydrocarbons)	min. 99.5 %
Color (APHA)	10
Water	20 ppm
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in requiring low water applications

Methanol

Ultra Dry Grade

Formula
CH_3OH

F.W
32.04

CAS
67-56-1

Product No.
66

Package
1ℓ × 10 Btl/Box
4ℓ × 4 Btl/Box

Specifications and Max. impurities

Assay (by GC)	min. 99.8%
Color (APHA)	10
Water	50 ppm
Residue after Evaporation	3 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in requiring low water applications

Line @thankyou2562 Tel.02 372 1545 - 6

Pyridine

Specifications and Max. impurities

Assay (by GC)	min. 99.8%
Color (APHA)	10
Water	50 ppm
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in requiring low water applications

Formula
C_5H_5N

F.W
79.10

CAS
110-86-1

Product No.
878

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Ultra Dry Grade

Toluene

Specifications and Max. impurities

Assay (by GC)	min. 99.8%
Color (APHA)	10
Water	50 ppm
Residue after Evaporation	5 ppm

Packaged under Nitrogen and sub-micron filtered.
For use in requiring low water applications

Formula
$C_6H_5CH_3$

F.W
92.14

CAS
108-88-3

Product No.
186

Package
1ℓ × **10** Btl/Box
4ℓ × **4** Btl/Box

Ultra Dry Grade

Line @thankyou2562 Tel.02 372 1543-6

Line @thankyou2562 Tel.02 372 1545 - 6

Supplementary Reference Information

Physical Properties
Solvent Miscibility Chart
Transport Information
Units Conversion Tables
GHS Symbols and their meaning
Solvent Quick Search Guide

Line @thankyou2562 Tel.02 372 1643 6

Physical properties

Eluotropic Strength of Solvents on Various Sorbents

Solvent	ε° (Alumina)	ε° (SiO_2)	ε° (C_{18})
n-Pentane	0.00 [1]	0.00 [1]	-
n-Hexane	0.00 - 0.01	0.00 - 0.01	-
Isooctane	0.01	0.01	-
Cyclohexane	0.04	0.03	-
Toluene	0.20 - 0.30	0.22	-
Chlorobenzene	0.30 - 0.31	0.23	-
Benzene	0.32	0.25	-
Ethyl ether	0.38	0.38 - 0.43	-
Dichloromethane	0.36 - 0.42	0.30 - 0.42	-
Chloroform	0.36 - 0.40	0.26	-
1,2-Dichloroethane	0.44 - 0.49	-	-
Methyl ethyl ketone	0.51	-	-
Acetone	0.56 - 0.58	0.47 - 0.53	8.8
1,4-Dioxane	0.56 - 0.61	0.49 - 0.51	11.7
Tetrahydrofuran	0.45 - 0.62	0.53	3.7
Methyl t-butyl ether	0.3 - 0.62	0.48	-
Ethyl acetate	0.58 - 0.62	0.38 - 0.48	-
Dimethyl sulfoxide	0.62 - 0.75	-	-
Acetonitrile	0.52 - 0.65	0.50 - 0.52	3.1
1-Butanol	0.70	-	-
Pyridine	0.71	-	-
1-Propanol	0.78 - 0.82	-	10.1
2-Propanol	0.78 - 0.82	0.60	8.3
Ethanol	0.88	-	3.1
Methanol	0.95	0.70 - 0.73	1.0 [1]
Dimethylformamide	-	-	7.6

1) Defined value

Line @thankyou2562 Tel.02 372 1545 - 6

Physical properties

Polarity Index(P°)

Solvent	P°
n-Pentane	0.0
n-Heptane	0.1
n-Hexane	0.1
Isooctane	0.1
Petroleum Ether	0.1
Cyclohexane	0.2
Toluene	2.4
Methyl t-Butyl Ether	2.5
Chlorobenzene	2.7
Ethyl Ether	2.8
Dichloromethane	3.1
1,2-Dichloroethane	3.5
1-Butanol	3.9
2-Propanol	3.9
n-Butyl acetate	4.0
1-Propanol	4.0
Tetrahydrofuran	4.0
Chloroform	4.1
Methyl Isobutyl Ketone	4.2
Ethyl Acetate	4.4
Methyl Ethyl Ketone	4.7
1,4-Dioxane	4.8
Acetone	5.1
Methanol	5.1
Pyridine	5.3
Acetonitrile	5.8
Acetic acid	6.2
N,N-Dimethylformamide	6.4
N,N-Dimethylacetamide	6.5
N-Methyl-2-Pyrrolidone	6.7
Dimethyl Sulfoxide	7.2
Water	10.2

Line @thankyou2562 Tel.02 372 1545-6

Physical properties

Viscosity (cP)

Solvent	cP (25°C)
n-Pentane	0.22
Ethyl ether	0.24
Methyl t-butyl ether	0.28
n-Hexane	0.3
Acetone	0.306
Acetonitrile	0.369
Methyl ethyl ketone	0.38
n-Heptane	0.4
Dichloromethane	0.413
Ethyl acetate	0.423
Tetrahydrofuran	0.456
Isooctane	0.51 [1)]
Chloroform	0.537
Methanol	0.544
Toluene	0.56
Methyl Isobutyl ketone	0.58
Benzene	0.604
n-Butyl acetate	0.685
1,2-Dichloroethane	0.779
Dimethylformamide	0.794
Pyridine	0.88
Water	0.89
Cyclohexane	0.894
Ethanol	1.074
Acetic acid	1.10
1,4-Dioxane	1.177
o-Dichlorobenzene	1.32
N-Methyl-2-Pyrrolidone	1.65
1-propanol	1.95
N,N-Dimethylacetamide	1.956
Dimethyl sulfoxide	1.987
2-Propanol	2.038
1-Butanol	2.544

1) measured at 22°C

Line @thankyou2562 Tel.02 372 1545 - 6

Physical properties

Density

Solvent	Density (g/ml, 25°C)
n-Pentane	0.621
n-Heptane	0.681
Petroleum Ether (35~60°C)	0.64 [1)]
n-Hexane	0.656
Isooctane	0.691 [1)]
Ethyl Ether	0.708
Triethylamine	0.73 [1)]
Methyl t-Butyl Ether	0.740 [1)]
Cyclohexane	0.773
Acetonitrile	0.779
2-Propanol	0.782
Acetone	0.785
Methanol	0.787
Ethanol	0.787
Methyl Ethyl Ketone	0.799
Methyl Isobutyl Ketone	0.801 [1)]
1-Propanol	0.802
1-Butanol	0.806
Toluene	0.864
Benzene	0.872
n-Butyl acetate	0.876
Tetrahydrofuran	0.880
Ethyl Acetate	0.894
N,N-Dimethylacetamide	0.937
N,N-dimethylformamide	0.944
Pyridine	0.978
Water	0.998 [1)]
N-Methyl-2-Pyrrolidone	1.025
1,4-Dioxane	1.028
Acetic acid, glacial	1.049
Dimethyl Sulfoxide	1.096
Chlorobenzene	1.107
1,2-Dichloroethane	1.245

Solvent	Density (g/ml, 25°C)
o-Dichlorobenzene	1.3058 [1)]
Dichloromethane	1.318
1,2,4-Trichlorobenzene	1.454
Chloroform	1.480

1) measured at 20°C

Line @hankyou2562 Tel.02 372 1543-6

Physical properties

Solubility of water in solvent

Solvent	Solubility (%, 20°C)
1,2,4-Trichlorobenzene	0.0025
Isooctane	0.006
n-Pentane	0.009
Cyclohexane	0.01
n-Heptane	0.01 [1)]
n-Hexane	0.01
Toluene	0.033 [1)]
Chloroform	0.056
Benzene	0.063 [1)]
1,2-Dichloroethane	0.15
Dichloromethane	0.24
Ethyl Ether	1.26
Methyl t-Butyl Ether	1.5
n-Butyl acetate	1.86
Ethyl Acetate	3.3
Methyl Ethyl Ketone	10
1-Butanol	20.07
Acetic acid, glacial	Miscible [2)]
Acetone	Miscible
Acetonitrile	Miscible
N,N-Dimethylacetamide	Miscible
N,N-Dimethylformamide	Miscible
Dimethyl Sulfoxide	Miscible
1,4-Dioxane	Miscible
Ethanol	Miscible
Methanol	Miscible
N-Methyl-2-Pyrrolidone	Miscible
1-Propanol	Miscible
2-Propanol	Miscible
Pyridine	Miscible
Tetrahydrofuran	Miscible

1) measured at 25°C
2) Miscible : two components can be mixed together in all proportions without forming two separate phases

Line @thankyou2562 Tel.02 372 1545 - 6

Physical properties

Refractive Index

Solvent	Refractive Index (25°C)
Methanol	1.326
Water	1.333 [1)]
Acetonitrile	1.342
Ethyl Ether	1.352
n-Pentane	1.355
Acetone	1.357
Ethanol	1.359
Petroleum Ether (35~60°C)	1.365
Methyl t-Butyl Ether	1.366
Acetic acid, glacial	1.370 [1)]
Ethyl Acetate	1.370
n-Hexane	1.372
2-Propanol	1.375
Methyl Ethyl Ketone	1.377
1-propanol	1.383
n-Heptane	1.385
Isooctane	1.389
n-Butyl acetate	1.392
Methyl Isobutyl Ketone	1.3957 [1)]
1-Butanol	1.397
Tetrahydrofuran	1.404
1,4-Dioxane	1.420
Dichloromethane	1.421
Cyclohexane	1.424
N,N-Dimethylformamide	1.427
N,N-Dimethylacetamide	1.4384 [1)]
Chloroform	1.444
1,2-Dichloroethane	1.444
1,2,4-Trichlorobenzene	1.454
N-Methyl-2-Pyrrolidone	1.469
Dimethyl Sulfoxide	1.476
Toluene	1.494
Benzene	1.498

Solvent	Refractive Index (25°C)
Pyridine	1.507
Chlorobenzene	1.525 [1)]
o-Dichlorobenzene	1.5514 [1)]

1) measured at 20°C

Line @ranky0562 Tel.02 372 1545-6

Physical properties

Boiling point

Solvent	Boiling point (°C)
Ethyl Ether	34
n-Pentane	36
Dichloromethane	40
Methyl t-Butyl Ether	55
Acetone	56
Petroleum Ether (35~60°C)	35~60
Chloroform	61
Methanol	65
Tetrahydrofuran	65
n-Hexane	69
Ethyl Acetate	77
Ethanol	78
Benzene	80
Methyl Ethyl Ketone	80
Cyclohexane	81
Acetonitrile	82
2-Propanol	82
1,2-Dichloroethane	84
1-Propanol	97
n-Heptane	98
Isooctane	99
Water	100
1,4-Dioxane	101
Toluene	111
Pyridine	115
Acetic acid, glacial	117
Methyl Isobutyl Ketone	117~118
1-Butanol	118
n-Butyl acetate	126
Chlorobenzene	132
N,N-Dimethylformamide	153
N,N-Dimethylacetamide	165~166
o-Dichlorobenzene	180.5

Solvent	Boiling point (°C)
Dimethyl Sulfoxide	189
N-Methyl-2-Pyrrolidone	202
1,2,4-Trichlorobenzene	213.5

Line @thankyou2562 Tel.02 372 1545 - 6

Physical properties

Freezing point

Solvent	Freezing point (°C)
n-Pentane	-129.7
1-Propanol	-126.2
Ethyl Ether	-117.4
Ethanol	-114.1
Methyl t-Butyl Ether	-108.6
Tetrahydrofuran	-108.5
Isooctane	-107.4
Methanol	-97.7
n-Hexane	-95.3
Dichloromethane	-95.1
Toluene	-95.0
Acetone	-94.7
n-Heptane	-90.6
1-Butanol	-88.6
2-Propanol	-88.0
Methyl Ethyl Ketone	-86.7
Methyl Isobutyl Ketone	-84
Ethyl Acetate	-84.0
n-Butyl acetate	-73.5
Chloroform	-63.5
N,N-Dimethylformamide	-60.4
Chlorobenzene	-45.6
Acetonitrile	-43.8
Pyridine	-41.5
N-Methyl-2-Pyrrolidone	-24.4
N,N-Dimethylacetamide	-20
o-Dichlorobenzene	-17.0
Water	0
Cyclohexane	6.5
1,4-Dioxane	11.8
Acetic Acid, glacial	16~17
1,2,4-Trichlorobenzene	16.9
Dimethyl Sulfoxide	18.5

Line @thankyou2562 Tel.02 372 1545-6

Physical properties

UV Cutoff

Solvent	UV Cutoff (nm)
Acetonitrile	<190
n-Pentane	190
Water	190
n-Hexane	195
n-Heptane	197
Cyclohexane	202
Ethanol	205
Isooctane	205
Methanol	205
2-Propanol	205
Methyl t-Butyl Ether	210
Petroleum Ether	210
1-Propanol	210
Tetrahydrofuran	210
1-Butanol	215
1,4-Dioxane	215
Ethyl Ether	218
1,2-Dichloroethane	226
Dichloromethane	233
Chloroform	245
Acetic acid, glacial	254
n-Butyl acetate	254
Ethyl Acetate	255
Dimethyl Sulfoxide	263
N,N-Dimethylacetamide	270
N,N-Dimethylformamide	270
Benzene	280
N-Methyl-2-Pyrrolidone	285
Toluene	286
Chlorobenzene	288
o-Dichlorobenzene	296
1,2,4-Trichlorobenzene	310
Methyl Ethyl Ketone	329

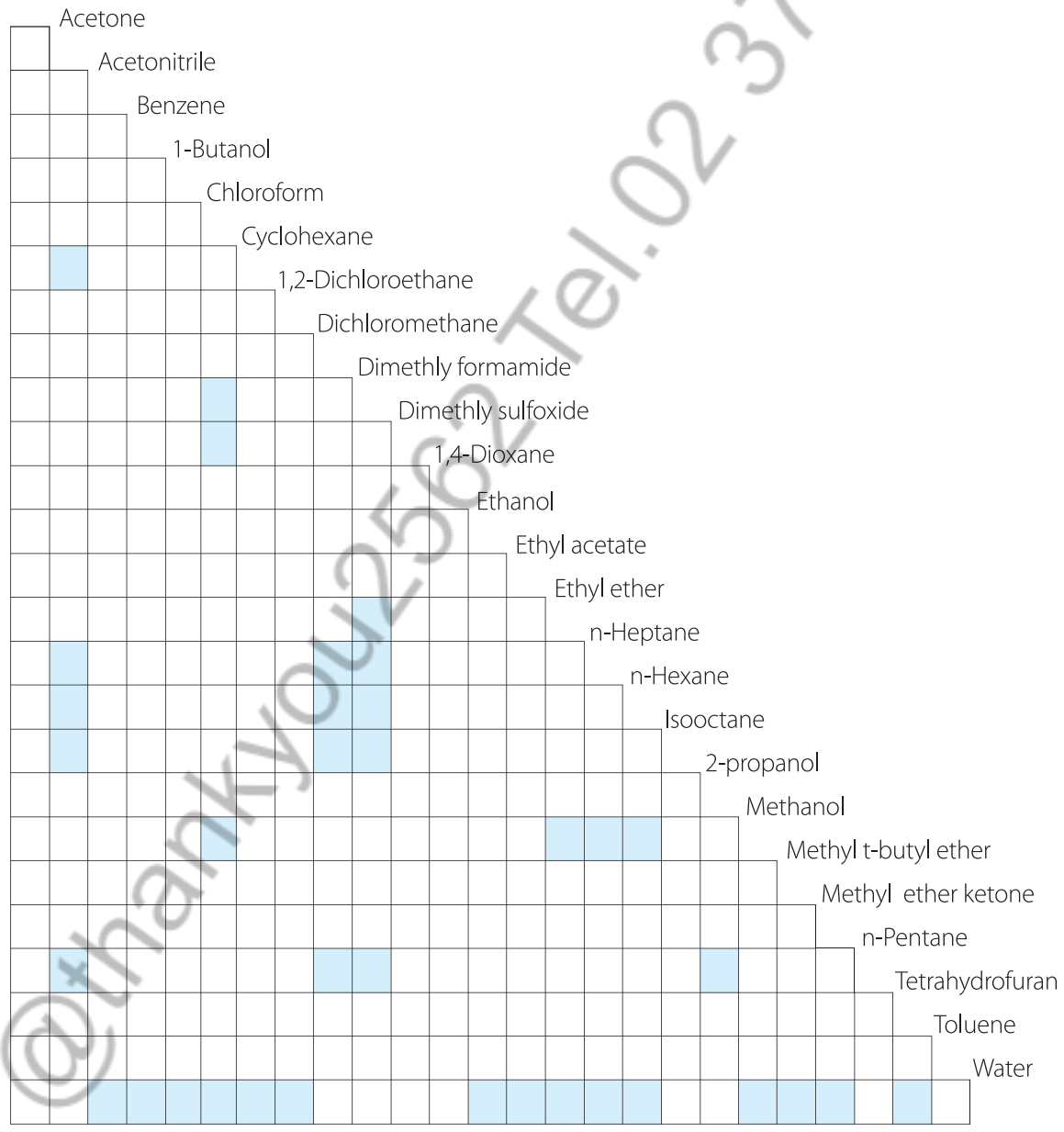
Solvent	UV Cutoff (nm)
Acetone	330
Pyridine	330
Methyl Isobutyl Ketone	334

Line @thankyou2562 Tel.02 372 1545 - 6

Solvent Miscibility chart

Miscible
Immiscible

Miscible : two components can be mixed together in all proportions without forming two separate phases



Line @thankyou2562 Tel.02 372 1545-6

Transport Information[1)]

Solvent	Class[2)]	Subsidiary risk[2)]	Packing group	UN NO.	Flash point[3)] (°C)
Acetic acid	8	3	II	UN 2789	40
Acetone	3	-	II	UN 1090	-20 ~ -18
Acetonitrile	3	-	II	UN 1648	2
Benzene	3	-	II	UN 1114	-11
1-Butanol	3	-	III	UN 1120	37
n-Butyl Acetate	3	-	II	UN 1123	27
Chlorobenzene	3	-	III	UN 1134	29
Chloroform	6.1	-	III	UN 1888	non-flammable
Cyclohexane	3	-	II	UN 1145	-18
o-Dichlorobenzene	6.1	-	III	UN 1591	66
1,2-Dichloroethane	3	6.1	II	UN1184	13
Dichloromethane	6.1	-	III	UN1593	-
N,N-Dimethylacetamide	6.1	-	III	UN 2810	70
N,N-Dimethylformamide	3	-	III	UN 2265	58
Dimethyl Sulfoxide	Not regulated	Not regulated	Not regulated	Not regulated	89
1,4-Dioxane	3	-	II	UN 1165	12
Ethanol	3	-	II	UN 1170	13
Ethyl Acetate	3	-	II	UN 1173	-4
Ethyl Ether	3	-	I	UN 1155	-40
n-Heptane	3	-	II	UN 1206	-4
n-Hexane	3	-	II	UN 1208	-22
Isooctane	3	-	II	UN 1262	-12
Methanol	3	6.1	II	UN 1230	12
Methyl Ethyl Ketone	3	-	II	UN 1193	-1
Methyl Isobutyl Ketone	3	-	II	UN 1245	14
Methyl t-butyl ether	3	-	II	UN 2398	below -18
N-Methyl-2-Pyrolidone	Not regulated	Not regulated	Not regulated	Not regulated	96[4)]
n-Pentane	3	-	I	UN 1265	below -40
Petroleum Ether (35~60°C)	3	-	I	UN 1268	-49
1-Propanol	3	-	III	UN 1274	23
2-Propanol	3	-	II	UN 1219	12
Pyridine	3	-	II	UN 1282	17
Tetrahydrofuran	3	-	II	UN 2056	below -18
Toluene	3	-	II	UN 1294	7
1,2,4-Trichlorobenzene	6.1	-	III	UN 2321	105
Triethylamine	3	8	II	UN 1296	-11

1) Reference : International Maritime Dangerous Goods Code, Volume 2, 2014
2) Class & Subsidiary risk
   3. Flammable liquids
   6. 1 Toxic substances
   8. Corrosive substances
3) Measured by closed cup method
4) Measured by open cup method

Lin@thankyou2562 Tel.02 372 1545 - 6

Units Conversion Tables

Units of Measure Conversion Factors

Percent	Parts per Million	Parts per Billion	Parts per Trillion
.001%=	10 ppm	-	-
.0001%=	1 ppm=	1,000 ppb=	1,000,000 ppt
.00001%=	.1 ppm=	100 ppb=	100,000 ppt
.000001%=	.01 ppm=	10 ppb=	10,000 ppt
-	.001 ppm=	1 ppb=	1,000 ppt
-	.0001 ppm=	.1 ppb=	100 ppt
-	-	.01 ppb=	10 ppt
-	-	.001 ppb=	1 ppt

Temperature Conversion Formulas

℃ to ℉	℉ to ℃
(℃×9/5)+32=℉	(℉−32)×5/9=℃

Perfix	Factor	Fraction
centi	10^{-2}	1/100 (part per hundred)
milli	10^{-3}	1/1,000 (part per thousand)
micro	10^{-6}	1/1,000,000 (ppm, part per million)
nano	10^{-9}	1/1,000,000,000 (ppb, part per billion)
pico	10^{-12}	1/1,000,000,000,000 (ppt, part per trillion)
femto	10^{-15}	1/1,000,000,000,000,000 (ppq, part per quadrillion)
atto	10^{-18}	1/1,000,000,000,000,000,000 (part per quintillion)

Weight Conversion Table[1]

From/To	g	kg	metiric ton	grain	oz	lb
g	1	0.001	1×10^{-6}	15.43	0.03527	0.00220
kg	1000	1	0.001	1.54×10^{4}	35.27	2.205
metric ton	1×10^{6}	1000	1	1.54×10^{7}	3.53×10^{4}	2205
grain	6.48×10^{-2}	6.48×10^{-5}	6.48×10^{-3}	1	2.29×10^{-3}	1.43×10^{-4}
oz	28.35	0.02835	2.83×10^{-5}	437.5	1	0.06250
lb	453.6	0.4536	4.54×10^{4}	7000	16	1

1.To convert from a unit shown in the left column, multiply by the factor listed in the column for the desired unit.

Volume Conversion Table[1] (metric and U.S.liquid measures)

From/To	cm^3	liter	m^3	in^3	ft^3	yd^3	fl oz	fl pt	fl qt	gal
cm^3	1	0.001	1×10^{-6}	0.06102	3.53×10^{-5}	1.31×10^{-6}	0.03381	0.00211	0.00106	2.64×10^{-4}
liter	1000	1	0.001	61.02	0.03532	0.00131	33.81	2.113	1.057	0.2642
m^3	1×10^{6}	1000	1	6.10×10^{4}	35.31	1.308	3.38×10^{4}	2113	1057	264.2
in^3	16.39	0.01639	1.64×10^{-5}	1	5.79×10^{-4}	2.14×10^{-5}	0.5541	0.03463	0.01732	0.00433
ft^3	2.83×10^{4}	28.32	0.02832	1728	1	0.03704	957.5	69.84	29.92	7.481
yd^3	7.65×10^{5}	764.5	0.7646	4.67×10^{4}	27	1	2.59×10^{4}	1616	807.9	202.0
fl oz	29.57	0.02957	2.96×10^{-5}	1.805	0.00104	3.87×10^{-5}	1	0.06250	0.03125	0.00781
fl pt	473.2	0.4732	473×10^{-4}	28.88	0.01671	619×10^{-4}	16	1	0.6000	0.1250
fl qt	946.4	0.9463	9.46×10^{-4}	57.75	0.03342	0.00124	32	2	1	0.2500
gal	3785	3.786	0.00379	231.0	0.1337	0.00495	128	8	4	1

1.To convert from a unit shown in the left column, multiply by the factor listed in the column for the desired unit.

Length Conversion Table[1]

From/To	cm	m	km	in	ft	mile
cm	1	0.01	1×10^{-5}	0.3937	0.03281	6.214×10^{-6}
m	100	1	0.001	39.37	3.281	6.214×10^{-4}
km	1×10^{5}	1000	1	3.94×10^{4}	3281	0.6214
in	2.540	0.02540	2.540×10^{-5}	1	0.08333	1.578×10^{-5}
ft	30.48	0.3048	3.048×10^{-4}	12	1	18.94×10^{-4}
mile	1.609×10^{5}	1609	1.609	6.336×10^{4}	5280	1

1.To convert from a unit shown in the left column, multiply by the factor listed in the column for the desired unit.

Line @thermfisher Tel.02 372 1545-6

GHS[1)] Symbols and their meaning

	Explosive Self Reactive Organic Peroxides	
	Flammable Self Reactive Pyrophorics	Self-Heating Emits Flammable Gas Organic Peroxide
	Acute Toxicity (severe)	
	Carcinogen Respiratory Sensitizer Reproductive Toxicity	Target Organ Toxicity Mutagenicity Aspiration Toxicity
	Environmental Toxicity	
	Oxidizer	
	Gasses Under Pressure	
	Corrosives	
	Irritant Dermal Sensitizer Acute Toxicity (harmful)	Narcotic Effects Respiratory Tract Irritation

1) GHS : Globally Harmonized System

The use of chemical products to enhance and improve life is a widespread practice worldwide. But alongside the benefits of these products, there is also the potential for adverse effects to people or the environment. As a result, a number of countries or organizations have developed laws or regulations over the years that require information to be prepared and transmitted to those using chemicals, through labels or Material Safety Data Sheets (MSDS). While these existing laws or regulations are similar in many respects, their differences are significant enough to result in different labels or MSDS for the same product in different countries. Given the reality of the extensive global trade in chemicals, and the need to develop national programs to ensure their safe use, transport, and disposal, it was recognized that a Globally harmonization system of classification and labeling of chemicals(GHS) would provide the foundation for such programs.

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