



GREEN SOLVENTS

FOR SUSTAINABLE CHEMISTRY



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We support the concept of Green Chemistry and the growing awareness of the environmental impacts of chemical products and their production processes. Green Solvents are a vital part of sustainable chemistry. Besides obvious “green” solvents such as water and ethanol, CHEMSOLUTE® contains “green” alternatives to commonly used solvents.

Paul Anastas and John C. Warner developed the practice of Green Chemistry by formulating the 12 principles of the US Environmental Protection Agency (EPA):



GREEN CHEMISTRY-THE 12 PRINCIPLES

- Waste prevention instead of treating or cleaning up waste
- Atom economy and atom efficiency
- Less hazardous chemical syntheses
- Design safer chemicals
- Safer solvents and auxiliaries
- Design for energy efficiency
- Use of renewable feedstocks
- Reduce derivatives
- Catalytic reagents instead of stoichiometric reagents
- Design products for degradation
- Real-time analysis for pollution prevention
- Inherently safer chemistry for accident prevention

GREEN SOLVENTS AS AN ALTERNATIVE TO:

Art. no.	Description	Acetonitrile	DCM (Dichloromethane)	DCM HPLC (Dichloromethane)	THF (Tetrahydrofuran)	DMSO (Dimethyl sulfoxide)	DMF (Dimethylformamide)	MTBE (tert-Butyl methyl ether)	NMP (N-Methyl-2-pyrrolidone)	1,4-Dioxane	Diethyl ether	Toluene	Xylene	HMPT (Hexamethylphosphoric triamide)	Petroleum derivatives
2497	CPME (Cyclopentyl methyl ether)				x	x		x		x	x				
2322	Dihydrolevoglucosenone						x		x						
2327	DMPU (N,N'-Dimethylpropylene urea)						x							x	
2314	1,3-Dioxolane		x		x	x						x	x		
1442	Ethanol-Ethyl acetate solution 3:1 (v/v)			x											
2036	Glycerol anhydrous p. a.	x				x	x								
2039	Glycerol anhydrous puriss.	x				x	x								
1483	2-Methyltetrahydrofuran		x		x						x				
1474	2-Methyltetrahydrofuran		x		x										
1180	1,3-Propanediol														x

CYCLOPENTYL METHYL ETHER FOR SYNTHESIS, PURE (MIN. 99.9%)

- $C_6H_{12}O$
- CAS-No. 5614-37-9

- Density (20 °C) 0.86 g/ml
- M = 100.16 g/mol

Specifications

- Colourless liquid
- Melting point < -140 °C
- Boiling point 106 °C
- Refractive index (20 °C) 1.4199–1.4219
- Water (KF) max. 100 mg/kg
- Colour (Hazen) max. 10



Danger

- H225 H302 H315 H319
- P210 P243 P280 P303+P361+P353 P305+P351+P338 P403+P235 P501
- Peroxides max. 50 meq/kg

Quantity	Packaging material	Art. no.
1 l	Glass bottle	2497.1000
5 l	Plastic canister	2497.5000

DIHYDROLEVOGLUCOSENONE P.A. (MIN. 99.0%)

- $C_6H_8O_3$
- CAS-No. 53716-82-8

- Density (20 °C) 1.245–1.255 g/ml
- M = 128.13 g/mol

Specifications

- Clear, colourless to pale yellow liquid
- Boiling point 116.0–116.5 °C



Warning

- H225 H319 H336
- P210 P243 P261 P280 P303+P361+P353 P305+P351+P338 P308+P313 P403+P235 P501
- Water miscibility complies

Quantity	Packaging material	Art. no.
1 l	Glass bottle	2322.1000

N,N'-DIMETHYLPROPYLENE UREA FOR SYNTHESIS, PURE (MIN. 99.0%)

- $C_6H_{12}N_2O$
- CAS-No. 7226-23-5

- Density (20 °C) 1.06 g/ml
- M = 128.17 g/mol

Specifications

- Clear, colourless to light yellow liquid
- Boiling point 247 °C
- Refractive index (20 °C) 1.4883–1.4913
- Water (KF) max. 1000 mg/kg



Danger

- H302 H318 H361f
- P280 P305+P351+P338 P308+P313 P501

Quantity	Packaging material	Art. no.
500 ml	Glass bottle	2327.0500
1 l	Glass bottle	2327.1000

1,3-DIOXOLANE FOR SYNTHESIS, PURE (MIN. 99.9 %)

- $C_3H_6O_2$
- CAS-No. 646-06-0

- Density (20 °C) 1.06 g/ml
- M = 74.08 g/mol



Danger

- H225 H319
- P210 P243 P280 P303+P361+P353 P305+P351+P338 P403+P235 P501
- Peroxides (as H_2O_2) max. 10 mg/kg
- Stabilized with BHT appr. 75 mg/kg

Specifications

- Colourless liquid
- Melting point -26.4 °C
- Boiling point 75 °C
- Refractive index (20 °C) 1.3980–1.4020
- Colour (Hazen) max. 10
- Water (KF) max. 150 mg/kg

Quantity	Packaging material	Art. no.
1 l	Glass bottle	2314.1000
5 l	Plastic canister	2314.5000

ETHANOL-ETHYL ACETATE SOLUTION 3:1 (V/V) FOR HPLC

- Ethylacetat ($C_4H_8O_2$) 74.0–76.0 %
- Ethanol (C_2H_5OH) 24.0–26.0 %

- Density 0.870 g/ml



Danger

- H225 H319 H336
- P210 P243 P261 P280 P303+P361+P353 P305+P351+P338 P308+P313 P403+P235 P501

Specifications

- Clear, colourless liquid

Quantity	Packaging material	Art. no.
1 l	Glass bottle	1442.1000
2.5 l	Glass bottle	1442.2500

GLYCEROL

- $C_3H_8O_3$
- CAS-No. 56-81-5

- Density 1.26 g/ml
- M = 92.09 g/mol



GLYCEROL ANHYDROUS P. A. (MIN. 99.5 %)

Specifications

- Colourless liquid
- Melting point 18 °C
- Boiling point 290 °C
- Water max. 0.5 %
- Colour (Hazen) max. 8
- Sulphated ash max. 0.01 %
- Heavy metals (as Pb) max. 0.0005 %
- Chloride (Cl) max. 0.001 %
- Halogen compounds max. 0.0035 %

Quantity	Packaging material	Art. no.
1 l	Plastic bottle	2036.1000

GLYCEROL ANHYDROUS PURISS., DAB, PH. EUR., BP, PH. FRANÇ., USP, FCC, E422 (MIN. 99.0 %)

Specifications

- Colourless liquid
- Melting point 18 °C
- Boiling point 290 °C
- Water $\pm$ 2.0 %
- Residue on ignition max. 0.01 %
- Free acid max. 0.003 %
- Arsenic (As) max. 0.0001 %
- Copper (Cu) max. 0.001 %
- Lead (Pb) max. 0.001 %
- Zinc (Zn) max. 0.001 %
- Heavy metals (as Pb) max. 0.0005 %
- Chloride (Cl) max. 0.001 %
- Sulphate (SO_4) max. 0.001 %
- Reducing substances max. 0.0005 %
- 1,2,4-Butanetriol ($C_4H_7(OH)_3$) max. 0.2 %

Quantity	Packaging material	Art. no.
1 l	Plastic bottle	2039.1000

2-METHYLTETRAHYDROFURAN



- C₅H₁₀O
- CAS-No. 96-47-9

- Density (20 °C) 0.855 g/ml
- M = 29.02 g/mol

Danger

- H225 H302 H318 H335 EUH019
- P210 P241 P280 P303+P361+P353
P304+P340 P305+P351+P338
P403+P235 P501
- Boiling point 80.2 °C

Specifications

- Colourless liquid
- Melting point -136 °C

2-METHYLTETRAHYDROFURAN FOR SYNTHESIS, PURE (MIN. 99.9 %)

Specifications

- Refractive index (20 °C) 1.404–1.408
- Water (KF) max. 300 mg/kg
- Peroxides (as H₂O₂) max. 100 mg/kg
- Stabilized with ionol 150–400 mg/kg

Quantity	Packaging material	Art. no.
1 l	Glass bottle	1483.1000
2.5 l	Glass bottle	1483.2500
5 l	Plastic canister	1483.5000

2-METHYLTETRAHYDROFURAN FOR HPLC, ISOCRATIC (MIN. 99.5 % (UNSTAB.))

Specifications

- Identity complies
- Colour (APHA) max. 10
- Refractive index (20 °C) 1.404–1.408
- Water (KF) max. 200 mg/kg
- Non-volatile substances max. 5 mg/kg
- Peroxides (as H₂O₂) max. 300 mg/kg
- UV transmittance at 240 nm min. 30 %
- UV transmittance at 250 nm min. 50 %
- UV transmittance at 260 nm min. 70 %
- UV transmittance at 280 nm min. 90 %
- UV transmittance from 310 nm min. 98 %

Quantity	Packaging material	Art. no.
1 l	Glass bottle	1474.1000
2.5 l	Glass bottle	1474.2500

1,3-PROPANEDIOL FOR SYNTHESIS, PURE (MIN. 99.7 %)

- C₃H₈O₂
- CAS-No. 504-63-2

- Density (20 °C) 1.054 g/ml
- M = 76.09 g/mol



Specifications

- Clear, viscous liquid
- Melting point -26 °C
- Boiling point 213 °C
- Identity (IR) complies
- Refractive index (20 °C) 1.438–1.442
- Water (KF) max. 1000 mg/kg
- Colour (Hazen) max. 15

Quantity	Packaging material	Art. no.
1 l	Glass bottle	1180.1000
5 l	Plastic canister	1180.5000

REDISTILLED SOLVENTS

Reuse instead of disposing: these solvents are obtained by distillation from solvent waste and thus contribute to environmental protection and resource efficiency.

ACETONE REDIST. (MIN. 99.0 %)

- CH_3COCH_3
- CAS-No. 67-64-1
- Density (20 °C) 0.788–0.793 g/ml
- M = 58.08 g/mol

Specifications

- Clear, colourless liquid
- Boiling point 55.6–56.7 °C
- Melting point -94–95 °C
- Water (KF) max. 1 %



Danger

- H225 H319 H336 EUH066
- P210 P233 P241 P243 P261 P271 P280 P303+P361+P353 P304+P340 P305+P351+P338 P312 P337+P313 P370+P378 P403+P235 P405 P501

Quantity	Packaging material	Art. no.
2.5 l	Plastic bottle	3101.2511
5 l	Plastic canister	3101.5000

2-PROPANOL REDIST. (MIN. 99.0 %)

- $\text{CH}_3\text{CH}(\text{OH})\text{CH}_3$
- CAS-No. 67-63-0
- M = 60.10 g/mol

Specifications

- Clear, colourless liquid
- Boiling point 81–83 °C
- Melting point -89 °C
- Water (KF) max. 1 %



Danger

- H225 H319 H336
- P210 P240 P280 P304+P340 P305+P351+P338 P501

Quantity	Packaging material	Art. no.
2.5 l	Plastic bottle	3102.2500
5 l	Plastic canister	3102.5000

XYLENE REDIST. (MIN. 99.0 %)

- C_8H_{10}
- CAS-No. 1330-20-7
- Density (20 °C) 0.860 g/ml
- M = 106.17 g/mol

Specifications

- Clear, colourless liquid
- Boiling point 136.5–140.5 °C
- Water max. 1 %



Danger

- H226 H304 H312+H332 H315 H319 H335 H373
- P210 P233 P241 P242 P243 P260 P280 P301+P310 P304+P340 P305+P351+P338 P314 P332+P313 P370+P378 P403+P235 P501

Quantity	Packaging material	Art. no.
5 l	Plastic canister	3100.5000

BIOETHANOL

- C_2H_5OH
- CAS-No. 64-17-5

- $M = 46.07 \text{ g/mol}$



Danger

- H225 H319
- P210 P240 P241 P260 P280
P303+P361+P353 P501

BIOETHANOL 96 % DENATURED WITH MEK, IPA AND BITREX® (MIN. 96.0 %)

Specifications

- Colourless liquid
- Density (20 °C) 0.805–0.807 g/ml
- Methanol (CH_3OH) max. 50 mg/dl
- 1-Propanol (C_3H_7OH) 10.0 mg/dl
- Methyl ethyl ketone 0.98–1.20 l/hl
- Bitrex® 0.98–1.20 g/hl
- Fusel oils max. 12.0 mg/dl
- Total acids (as CH_3COOH) max. 1.0 mg/dl
- Refractive index 1.362–1.364

Quantity	Packaging material	Art. no.
1 l	Plastic bottle	2209.1000
5 l	Plastic canister	2209.5000
10 l	Plastic canister	2209.9010
25 l	Plastic canister	2209.9025
200 l	Metal drum	2209.9200

BIOETHANOL 99 % DENATURED WITH MEK, IPA AND BITREX® (MIN. 99.2 %)

Specifications

- Colourless liquid
- Melting point -114.5 °C
- Boiling point 78 °C
- Density (20 °C) 0.789–0.790 g/ml
- Methanol (CH_3OH) max. 50 mg/dl
- 1-Propanol (C_3H_7OH) 10.0 mg/dl
- Methyl ethyl ketone 0.98–1.20 l/hl
- Bitrex® 0.98–1.20 g/hl
- Fusel oils max. 12.0 mg/dl
- Total acids (as CH_3COOH) max. 1.0 mg/dl
- Refractive index 1.361–1.363

Quantity	Packaging material	Art. no.
1 l	Plastic bottle	2211.1000
5 l	Plastic canister	2211.5000
10 l	Plastic canister	2211.9010
25 l	Plastic canister	2211.9025

DISPOSABLE GLOVES, NITRILE GREEN, POWDER-FREE MATCHING OUR GREEN CHEMICALS



The powder-free, green, disposable LABSOLUTE® GREEN gloves made of nitrile are flat with rolled cuff and offer excellent elasticity and wearing comfort. The gloves have textured finger tips.

The LABSOLUTE® nitrile gloves with an AQL value of 1.5 correspond to the following standards and directives:

- EN 420, EN ISO 374-1, -2, -4, -5, EN 455 1-4, EN 16523-1 und ISO 15223-1
- (EU) 2016/425 (PPE in accordance with CE category III)
- 1935/2004 (food contact)
- ASTM 1671 / ISO 16604 (viral penetration)



LABSOLUTE® Nitrile GREEN disposable gloves are manufactured without the use of chlorine and vulcanization accelerators, making them especially skin-friendly. Due to the additional saving of water, energy and carbon dioxide during production, these gloves are a contribution to **more sustainability in the laboratory.**

Further specifications:

- Approved for the use within HACCP concepts
- Resistance against ethidium bromide (1 %) for more than 480 min (level 6)
- Delivered in handy dispenser boxes of 200 pieces (S, M, L) or 180 pieces (XL)
- Free from phthalates, softeners and allergenic latex proteins
- Storage life: 3 years
- Length: approx. 240 mm
- Thickness (double): Finger min. 0.14 mm, Palm min. 0.12 mm, Cuff min. 0.10 mm
- Easy to don thanks to a synthetic inner coating
- Can be worn on the right or left hand
- Not suitable to be used in cleanrooms

Quantity	Size	Art. no.
200	S	7.696 915
200	M	7.696 916
200	L	7.696 917
180	XL	7.696 918

Germany

Tel.: 0800 4393784
sales@thgeyer.de

Scandinavia

Tel.: +45 4630 0030
sales@thgeyer.dk

Tel.: +46 8 6030200
sales@thgeyer.se

Poland

Tel.: +48 2242764-64
sales@thgeyer.pl

Other countries

Tel.: +49 7159 1637-823
sales@thgeyer.com