

# Solvents

Expedient quality for all requirements  
delivered by Carl ROTH



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# ROTIPURAN® Solvents for Analysis

## Highest purity and extensive trace analysis for excellent results!

### We offer:

ROTIPURAN® p.a. solvents with superior analytical reliability in terms of quality and batch consistency. The so branded solvents are being constantly controlled, guaranteed, and safeguarded through careful preparation, testing and packaging. In addition, many of these solvents meet the requirements of ACS (American Chemical Society) and ISO (International Organization for Standardization), and thus are fully specified.

### Applications:

ROTIPURAN® p.a. solvents are suitable for all standard applications in biological and chemical laboratory or pilot plant, such as: extractions, qualitative and quantitative analysis. As a matter of course, the p.a. solvents offered here may well be used for other applications instead.

Product name	Purity	Pack.	Art. No.	Pack Qty.
Acetic acid anhydride	≥99 %, p.a., ACS, ISO	glass	CP28.1	1 l
			CP28.2	2.5 l
		plastic	CP28.3	5 l
			CP28.4	10 l
			CP28.5	25 l
Acetic acid <i>n</i> -butyl ester	≥99,5 %, p.a., ACS	glass	P036.1	1 l
			P036.2	2.5 l
Acetic acid ethyl ester	≥99,5 %, p.a., ACS, ISO	glass	6784.1	1 l
			6784.3	1 l
		plastic	6784.2	2.5 l
			6784.4	2.5 l
			6784.5	5 l
Acetone	≥99,8 %, p.a., ACS, ISO	glass	9372.1	1 l
			9372.4	1 l
		plastic	9372.2	2.5 l
			9372.5	2.5 l
			9372.6	5 l
			PE/steel	9372.7
tinplate	9372.3	25 l		
	Acetonitrile	≥99,5 %, p.a., ACS	glass	4722.1
4722.2				2.5 l
Benzene	≥99,5 %, p.a.	glass	7173.4	100 ml
			7173.3	500 ml
			7173.1	1 l
			7173.2	2.5 l
Benzyl alcohol	≥99 %, p.a.	glass	0336.1	500 ml
			0336.2	1 l
1-Butanol	≥99,5 %, p.a., ACS	glass	7171.2	1 l
			7171.1	2.5 l
			7171.3	5 l
		plastic	7171.4	10 l
			7171.5	25 l
<i>tert</i> -Butanol	≥99,5 %, p.a., ACS	glass	AE16.1	500 ml
			AE16.2	1 l
			AE16.3	2.5 l
		plastic	AE16.4	5 l
			AE16.5	10 l
AE16.6	25 l			
2-Butanone	≥99,5 %, p.a., ACS	glass	T920.1	1 l
			T920.2	2.5 l
			T920.3	5 l
		plastic	T920.4	10 l
			T920.5	25 l

Product name	Purity	Pack.	Art. No.	Pack Qty.
<i>tert</i> -Butyl methyl ether	≥99,5 %, p.a.	glass	8462.1	1 l
			8462.2	2.5 l
		tinplate	8462.3	10 l
			8462.4	25 l
Cyclohexane	≥99,5 %, p.a., ACS, ISO	glass	6886.1	1 l
			6886.2	2.5 l
		aluminium	6886.3	5 l
			tinplate	6886.4
6886.5	25 l			
1,2-Dichloroethane	≥99,5 %, p.a.	glass	6837.4	500 ml
			6837.1	1 l
		tinplate	6837.2	2.5 l
			6837.3	10 l
Dichloromethane	≥99,5 %, p.a., ACS, ISO	glass	6053.3	100 ml
			6053.1	1 l
			6053.2	2.5 l
		tinplate	6053.4	10 l
			6053.5	25 l
Diethanolamine	≥99 %, p.a., ACS	glass	0332.1	250 ml
			0332.2	500 ml
			0332.3	1 l
Diethylamine	≥99,5 %, p.a., ACS	glass	3495.1	250 ml
			3495.2	1 l
Diethyl ether	≥99,5 %, p.a., stabilised	glass	3942.1	1 l
			3942.6	2.5 l
		aluminium	3942.4	5 l
			tinplate	3942.5
Diisopropyl ether	≥99 %, p.a., stabilised	glass	T919.1	1 l
			T919.2	2.5 l
		aluminium	T919.4	5 l
			tinplate	T919.3
<i>N,N</i> -Dimethylformamide (DMF)	≥99,8 %, p.a., ACS, ISO	glass	T921.3	250 ml
			T921.1	1 l
			T921.2	2.5 l
Dimethyl sulphoxide (DMSO)	≥99,8 %, p.a.	glass	4720.4	100 ml
			4720.2	500 ml
			4720.1	1 l
			4720.3	2.5 l
1,4-Dioxane	≥99,5 %, p.a., ACS, ISO, stabilised	glass	4626.4	100 ml
			4626.3	500 ml
			4626.1	1 l
		aluminium	4626.2	2.5 l
			4626.5	5 l
			tinplate	4626.6

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

# ROTIPURAN® Solvents for Analysis

Product name	Purity	Pack.	Art. No.	Pack Qty.	
Ethanol	≥99,8 %, p.a.	glass	<b>9065.1</b>	1 l	
		plastic	<b>9065.3</b>	1 l	
		glass	<b>9065.2</b>	2.5 l	
			<b>9065.4</b>	2.5 l	
		plastic	<b>9065.5</b>	5 l	
			<b>9065.7</b>	10 l	
		tinplate	<b>9065.6</b>	25 l	
		plastic	<b>9065.8</b>	25 l	
		plastic	<b>0911.1</b>	1 l	
		glass	<b>0911.2</b>	2.5 l	
	≥99,8 %, p.a., denatured	plastic	<b>0911.3</b>	2.5 l	
		plastic	<b>0911.4</b>	5 l	
		tinplate	<b>0911.5</b>	10 l	
		plastic	<b>0911.7</b>	10 l	
		tinplate	<b>0911.6</b>	25 l	
		plastic	<b>0911.8</b>	25 l	
		≥70 %, p.a.	plastic	<b>T868.1</b>	1 l
				<b>T868.2</b>	2.5 l
	plastic		<b>T868.3</b>	5 l	
			<b>T868.4</b>	10 l	
	<b>T868.5</b>		25 l		
	<b>0342.1</b>		500 ml		
Ethanolamine	≥99,5 %, p.a.	plastic	<b>0342.2</b>	1 l	
			<b>0342.3</b>	2.5 l	
			<b>0342.4</b>	10 l	
			<b>0342.7</b>	25 l	
Ethylenediamine	≥99,5 %, p.a., anhydrous	glass	<b>3049.1</b>	250 ml	
Ethylene glycol	≥99,5 %, p.a.	plastic	<b>6881.1</b>	1 l	
			<b>6881.2</b>	2.5 l	
			<b>6881.4</b>	5 l	
			<b>6881.3</b>	10 l	
			<b>6881.5</b>	25 l	
Formamide	≥99,5 %, p.a., ACS	glass	<b>6749.3</b>	500 ml	
			<b>6749.1</b>	1 l	
			<b>6749.2</b>	2.5 l	
Glycerol	≥99,7 %, p.a., anhydrous, Ultra Quality, synthetic	glass	<b>6962.5</b>	100 ml	
			<b>6962.1</b>	1 l	
			plastic	<b>6962.2</b>	2.5 l
				<b>6962.3</b>	5 l
				<b>6962.4</b>	10 l
	≥99,5 %, p.a., anhydrous	plastic	<b>3783.1</b>	1 l	
			<b>3783.3</b>	1 l	
			<b>3783.2</b>	2.5 l	
			<b>3783.4</b>	2.5 l	
			<b>3783.5</b>	5 l	
	≥86 %, p.a.	plastic	<b>3783.6</b>	10 l	
			<b>4043.1</b>	1 l	
			<b>4043.3</b>	2.5 l	
			<b>4043.2</b>	5 l	
<i>n</i> -Heptane	≥99 %, p.a.	glass	<b>T174.1</b>	1 l	
			<b>T174.2</b>	2.5 l	
<i>n</i> -Hexane	≥99 %, p.a., ACS	aluminium	<b>T174.3</b>	5 l	
			glass	<b>4723.1</b>	1 l
				<b>4723.2</b>	2.5 l
				<b>4723.3</b>	5 l
tinplate	<b>4723.5</b>	10 l			
	<b>4723.4</b>	25 l			
Isoamyl alcohol	≥98,5 %, p.a., ACS	glass	<b>T870.1</b>	500 ml	
			<b>T870.2</b>	1 l	
			<b>T870.3</b>	2.5 l	

Product name	Purity	Pack.	Art. No.	Pack Qty.	
Isobutyl methylketone	≥99 %, p.a., ACS	glass	<b>0338.1</b>	1 l	
			<b>0338.2</b>	2.5 l	
Isooctane	≥99,5 %, p.a., ACS	glass	<b>6889.1</b>	1 l	
			<b>6889.2</b>	2.5 l	
Methanol	≥99,9 %, p.a., ACS, ISO	glass	<b>4627.1</b>	1 l	
			<b>4627.4</b>	1 l	
			<b>4627.2</b>	2.5 l	
			plastic	<b>4627.5</b>	2.5 l
				<b>4627.6</b>	5 l
tinplate	<b>4627.3</b>	25 l			
2-Methoxyethanol	≥99,5 %, p.a., ACS	glass	<b>CP08.1</b>	500 ml	
			<b>CP08.2</b>	1 l	
			<b>CP08.3</b>	2.5 l	
2-Methylbutane	≥99,5 %, p.a.	glass	<b>3926.1</b>	250 ml	
			<b>3926.2</b>	1 l	
2-Methyl-1-propanol	≥99 %, p.a., ACS	glass	<b>6772.1</b>	1 l	
			<b>6772.2</b>	2.5 l	
<i>n</i> -Pentane	≥99 %, p.a.	glass	<b>4978.1</b>	1 l	
			<b>4978.2</b>	2.5 l	
Petroleum ether 40–60 °C	p.a., ACS, ISO	glass	<b>T173.1</b>	1 l	
			<b>T173.2</b>	2.5 l	
			aluminium	<b>T173.3</b>	5 l
tinplate	<b>T173.5</b>	25 l			
	1-Propanol	≥99,5 %, p.a.	glass	<b>6776.1</b>	1 l
				<b>6776.2</b>	2.5 l
2-Propanol	≥99,8 %, p.a., ACS, ISO	glass	<b>6752.1</b>	1 l	
			plastic	<b>6752.3</b>	1 l
			glass	<b>6752.2</b>	2.5 l
			plastic	<b>6752.4</b>	2.5 l
			plastic	<b>6752.5</b>	5 l
			PE/steel	<b>6752.7</b>	10 l
tinplate	<b>6752.6</b>	25 l			
Pyridine	≥99,5 %, p.a., ACS	glass	<b>9729.3</b>	500 ml	
			<b>9729.1</b>	1 l	
			<b>9729.2</b>	2.5 l	
Tetrahydrofuran	≥99,5 %, p.a., ACS, stabilised	glass	<b>6788.1</b>	1 l	
			<b>6788.2</b>	2.5 l	
			PE/steel	<b>6788.3</b>	10 l
tinplate	<b>6788.5</b>	25 l			
Toluene	≥99,5 %, p.a., ACS, ISO	glass	<b>7115.1</b>	1 l	
			<b>7115.2</b>	2.5 l	
			aluminium	<b>7115.3</b>	5 l
			tinplate	<b>7115.4</b>	25 l
Trichloromethane/ Chloroform	≥99 %, p.a.	glass	<b>3313.4</b>	100 ml	
			<b>3313.1</b>	1 l	
			<b>3313.2</b>	2.5 l	
tinplate	<b>3313.5</b>	25 l			
Water	p.a., ACS	plastic	<b>T172.1</b>	1 l	
			<b>T172.2</b>	2.5 l	
			<b>T172.3</b>	5 l	
			<b>T172.5</b>	30 l	
Xylene (isomers)	≥99 %, p.a., ACS, ISO	glass	<b>4436.1</b>	1 l	
			<b>4436.2</b>	2.5 l	
			aluminium	<b>4436.3</b>	5 l
tinplate	<b>4436.7</b>	25 l			

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# Solvents acc. to Pharmacopoeia

Solvents in this quality are specified according to a pharmacopoeia and meet the requirements according to the respective monograph.



Product name	Purity	Pack.	Art. No.	Pack Qty.
Acetic acid ethyl ester	≥99,5 %, Ph. Eur., extra pure	glass	CP42.1	1 l
			CP42.2	2.5 l
		plastic	CP42.3	2.5 l
			CP42.4	5 l
		tinplate	CP42.5	10 l
			CP42.6	25 l
Acetone	≥99,7 %, Ph. Eur., extra pure	glass	CP40.1	1 l
			CP40.2	2.5 l
		plastic	CP40.3	2.5 l
			CP40.4	5 l
		tinplate	CP40.5	10 l
			CP40.6	25 l
Benzyl alcohol	≥98 %, Ph. Eur.	glass	8657.1	500 ml
			8657.2	1 l
			8657.3	2.5 l
Dichloromethane	≥99,5 %, Ph. Eur., extra pure	glass	CP45.1	1 l
			CP45.2	2.5 l
		tinplate	CP45.3	10 l
			CP45.4	25 l
Diethyl ether	≥99,5 %, Ph. Eur., stabilised	glass	8810.1	1 l
			8810.5	2.5 l
		aluminium	8810.2	5 l
		tinplate	8810.4	25 l
Ethanol	≥99,5 %, Ph. Eur., extra pure	glass	5054.1	1 l
			5054.3	1 l
		plastic	5054.2	2.5 l
			5054.4	2.5 l
		plastic	5054.5	5 l
			5054.7	10 l
		tinplate	5054.6	25 l
			plastic	5054.8
Bioethanol	96 %, Ph. Eur.	glass	6724.1	1 l
			6724.2	2.5 l
			6724.3	2.5 l
		plastic	6724.4	5 l
			6724.5	10 l
			6724.6	25 l
Ethanol	96 %, Ph. Eur., extra pure	glass	P075.1	1 l
			P075.3	1 l
		plastic	P075.2	2.5 l
			P075.4	2.5 l
		tinplate	P075.5	5 l
			P075.6	10 l
	plastic	P075.7	10 l	
		P075.8	25 l	
70 %, DAB	glass	7301.1	500 ml	
Glycerol	≥99 %, anhydrous, Ph. Eur., USP, synthetic	plastic	6967.1	1 l
			6967.2	2.5 l
			6967.3	5 l
			6967.4	10 l

Product name	Purity	Pack.	Art. No.	Pack Qty.
Glycerol	≥98 %, anhydrous, Ph. Eur.	plastic	7530.1	1 l
			7530.4	2.5 l
			7530.5	5 l
			7530.2	10 l
			7530.6	25 l
	~86 %, Ph. Eur., extra pure	plastic	7533.1	1 l
			7533.3	2.5 l
			7533.4	5 l
			7533.2	10 l
			7533.5	25 l
Methanol	≥99,5 %, Ph. Eur., extra pure	glass	CP43.1	1 l
			CP43.2	2.5 l
		plastic	CP43.3	2.5 l
			CP43.4	5 l
		tinplate	CP43.5	10 l
			CP43.6	25 l
Petroleum ether 40–60 °C	extra pure, DAB	glass	CP44.1	1 l
			CP44.2	2.5 l
		aluminium	CP44.3	5 l
			CP44.4	10 l
		tinplate	CP44.5	25 l
1,2-Propanediol	≥99,5 %, Ph. Eur.	plastic	1LA5.1	1 l
			1LA5.2	2.5 l
			1LA5.3	5 l
			1LA5.4	10 l
			1LA5.5	25 l
2-Propanol	≥99,5 %, Ph. Eur., extra pure	glass	CP41.1	1 l
			CP41.2	2.5 l
		plastic	CP41.3	2.5 l
			CP41.4	5 l
		tinplate	CP41.5	10 l
			CP41.6	25 l
	70 %, USP	plastic	3510.1	1 l
			3510.2	2.5 l
			3510.3	5 l
			3510.4	10 l
Trichloromethane/ Chloroform	≥99 %, DAB, BP, extra pure	glass	6340.4	100 ml
			6340.1	1 l
			6340.2	2.5 l
			6340.5	25 l
			6340.3	25 l
Water	Ph. Eur., USP, purified	plastic	2652.1	1 l
			2652.2	10 l
			2652.3	20 l
Xylene (isomers)	≥98,5 %, extra pure, Ph. Helv.	glass	CN80.1	1 l
			CN80.2	2.5 l
		aluminium	CN80.5	5 l
			tinplate	CN80.3
CN80.4	25 l			

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# Solvents for Synthesis

The solvents for synthesis have a high purity (mostly >99 %) and are suitable for numerous technical applications.

They are mainly used for syntheses in the laboratory and pilot plants and are suitable for production and technical industry as well as in cleaning steps e.g. of components.



Product name	Purity	Pack.	Art. No.	Pack Qty.	
Acetic acid anhydride	≥99 %, for synthesis	glass	4483.1	1 l	
			4483.2	2.5 l	
			4483.3	5 l	
		plastic	4483.4	10 l	
			4483.5	25 l	
Acetic acid benzyl ester	≥99 %, for synthesis	glass	4368.1	100 ml	
			4368.2	500 ml	
			4368.3	1 l	
			4368.4	2.5 l	
Acetic acid <i>n</i> -butyl ester	≥99 %, for synthesis	glass	4600.1	1 l	
			4600.3	2.5 l	
		aluminium	4600.5	5 l	
			tinplate	4600.2	10 l
Acetic acid ethyl ester	≥99,5 %, for synthesis	glass	7338.1	1 l	
			7338.3	2.5 l	
			plastic	7338.5	5 l
			tinplate	7338.2	10 l
Acetic acid isobutyl ester	≥99 %, for synthesis	glass	4370.1	100 ml	
			4370.2	500 ml	
			4370.3	1 l	
			4370.4	2.5 l	
Acetic acid <i>iso</i> -propyl ester	≥99 %, for synthesis	glass	1A9C.1	1 l	
			1A9C.2	2.5 l	
Acetic acid <i>n</i> -propyl ester	≥99,5 %, for synthesis	plastic	1A9A.1	1 l	
			1A9A.2	2.5 l	
Acetone	≥99,5 %, for synthesis	glass	5025.1	1 l	
			5025.2	2.5 l	
			5025.5	2.5 l	
		plastic	5025.6	5 l	
			tinplate	5025.3	10 l
			5025.4	25 l	
Acetonitrile	≥99,5 %, for synthesis	glass	4380.1	1 l	
			4380.2	2.5 l	
		tinplate	4380.3	10 l	
			4380.4	25 l	
<i>tert</i> -Amyl methyl ether	≥99 %, for synthesis	glass	1A92.1	100 ml	
			1A92.2	250 ml	
			1A92.3	1 l	
		plastic	1A92.4	2.5 l	
			1A92.5	10 l	
Anisole	≥99 %, for synthesis	glass	4417.1	100 ml	
			4417.2	500 ml	
			4417.3	1 l	
			4417.4	2.5 l	

Product name	Purity	Pack.	Art. No.	Pack Qty.
Benzaldehyde	≥99,5 %, for synthesis	glass	4372.1	100 ml
			4372.2	500 ml
			4372.3	1 l
			4372.4	2.5 l
Benzene	≥99,5 %, extra pure	glass	5785.3	100 ml
			5785.1	1 l
		tinplate	5785.4	2.5 l
			5785.2	10 l
Benzoic acid benzyl ester	≥99 %, for synthesis	glass	9498.1	250 ml
			9498.2	1 l
			9498.3	2.5 l
Benzyl alcohol	≥98 %, for synthesis	glass	4478.1	500 ml
			4478.2	1 l
			4478.3	2.5 l
1,3-Butanediol	≥99 %, for synthesis	plastic	7473.1	250 ml
			7473.2	500 ml
			7473.3	1 l
			7473.4	2.5 l
			7473.5	10 l
			7473.6	25 l
1,4-Butanediol	≥99 %, for synthesis	glass	4211.1	1 l
			4211.2	2.5 l
		plastic	4211.3	10 l
1-Butanol	≥99,5 %, for synthesis	glass	7724.4	250 ml
			7724.1	1 l
		plastic	7724.3	2.5 l
			7724.6	5 l
				tinplate
			7724.5	25 l
2-Butanol	≥98,5 %, for synthesis	glass	KK02.1	500 ml
			KK02.2	1 l
		plastic	KK02.3	2.5 l
			KK02.4	5 l
				PE/steel
		plastic	KK02.5	25 l
<i>tert</i> -Butanol	≥99 %, for synthesis	glass	4323.1	1 l
			4323.3	2.5 l
		plastic	4323.4	5 l
			tinplate	4323.2
2-Butanone	≥99,5 %, for synthesis	glass	8403.1	1 l
			8403.3	2.5 l
		aluminium	8403.5	5 l
			tinplate	8403.2
			8403.4	25 l

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# Solvents for Synthesis

Product name	Purity	Pack.	Art. No.	Pack Qty.
2-Butoxyethyl acetate	≥98 %, pure	plastic	<b>8009.1</b>	1 l
			<b>8009.2</b>	2.5 l
Butylal	≥99 %, for synthesis	glass	<b>0796.1</b>	100 ml
			<b>0796.2</b>	500 ml
			<b>0796.3</b>	1 l
			<b>0796.4</b>	2.5 l
			<b>8046.1</b>	1 l
Butyldiglycol	≥97 %, pure	glass	<b>8046.2</b>	2.5 l
		tinplate	<b>8046.3</b>	10 l
<i>tert</i> -Butyl methyl ether	≥99,5 %, for synthesis	glass	<b>6746.1</b>	1 l
		glass	<b>6746.4</b>	2.5 l
		aluminium	<b>6746.5</b>	5 l
		tinplate	<b>6746.2</b>	10 l
<i>N</i> -Butyl-2-pyrrolidone (NBP)	≥99,5 %, for synthesis	plastic	<b>1E8A.1</b>	100 ml
			<b>1E8A.2</b>	500 ml
			<b>1E8A.3</b>	1 l
			<b>1E8A.4</b>	2.5 l
Chlorobenzene	≥99,5 %, for synthesis	glass	<b>KK01.1</b>	100 ml
			<b>KK01.2</b>	500 ml
			<b>KK01.3</b>	1 l
Cyclohexane	≥99,5 %, for synthesis	glass	<b>6570.1</b>	1 l
		glass	<b>6570.3</b>	2.5 l
		aluminium	<b>6570.5</b>	5 l
		tinplate	<b>6570.2</b>	10 l
Cyclohexanone	≥99,5 %, extra pure	glass	<b>CP27.1</b>	1 l
		glass	<b>CP27.2</b>	2.5 l
		aluminium	<b>CP27.5</b>	5 l
		tinplate	<b>CP27.3</b>	10 l
Cyclopentane	≥95 %, for synthesis	glass	<b>2191.1</b>	500 ml
			<b>2191.2</b>	1 l
			<b>2191.3</b>	2.5 l
		aluminium	<b>2191.4</b>	5 l
		tinplate	<b>2191.5</b>	10 l
Cyclopentyl methyl ether	≥99 %, extra pure	glass	<b>7763.1</b>	250 ml
			<b>7763.2</b>	500 ml
			<b>7763.3</b>	1 l
			<b>7763.4</b>	2.5 l
<i>n</i> -Decane	≥99 %, for synthesis	glass	<b>3475.1</b>	100 ml
			<b>3475.2</b>	500 ml
			<b>3475.3</b>	1 l
			<b>3475.4</b>	2.5 l
Dibasic ester	≥99 %, pure	plastic	<b>7973.1</b>	1 l
			<b>7973.2</b>	2.5 l
			<b>7973.3</b>	5 l
1,2-Dichlorobenzene	≥98 %, for synthesis	glass	<b>4374.1</b>	100 ml
			<b>4374.2</b>	500 ml
			<b>4374.3</b>	1 l
1,2-Dichloroethane	≥99 %, for synthesis	glass	<b>T869.1</b>	1 l
		glass	<b>T869.2</b>	2.5 l
		tinplate	<b>T869.3</b>	10 l
Dichloromethane	≥99,5 %, for synthesis	glass	<b>T869.4</b>	25 l
			<b>8424.4</b>	100 ml
		tinplate	<b>8424.1</b>	1 l
			<b>8424.2</b>	2.5 l
Diethylamine	≥99 %, for synthesis	plastic	<b>HN99.1</b>	500 ml
			<b>HN99.2</b>	1 l
			<b>HN99.3</b>	2.5 l
Diethylamine	≥99,5 %, for synthesis	glass	<b>HN99.4</b>	5 l
			<b>HN99.5</b>	10 l
			<b>KK00.1</b>	100 ml
			<b>KK00.2</b>	500 ml
Diethylene glycol	≥99 %, for synthesis	plastic	<b>KK00.3</b>	1 l
			<b>KK00.4</b>	2.5 l
			<b>0968.1</b>	1 l
Diethylene glycol monobutyl ether acetate	≥97 %, pure	glass	<b>0968.2</b>	2.5 l
			<b>0968.5</b>	5 l
			<b>0968.3</b>	10 l
			<b>0968.4</b>	25 l
Diethylene glycol monoethyl ether	≥99 %, pure	glass	<b>8021.1</b>	1 l
			<b>8021.2</b>	2.5 l
Diethyl ether	≥99,5 %, for synthesis, stabilised	glass	<b>8686.1</b>	1 l
		aluminium	<b>8686.2</b>	2.5 l
		tinplate	<b>5920.2</b>	1 l
Diethylketone	≥99 %, for synthesis	glass	<b>5920.3</b>	5 l
			<b>5920.4</b>	25 l
		plastic	<b>0262.1</b>	500 ml
			<b>0262.2</b>	1 l
Diisobutyl ketone	≥94 %, pure	glass	<b>0262.3</b>	2.5 l
			<b>0262.4</b>	5 l
			<b>7653.1</b>	100 ml
			<b>7653.2</b>	500 ml
1,4-Diisocyanatobutane	≥99 %, for synthesis	glass	<b>7653.3</b>	1 l
			<b>7653.4</b>	2.5 l
			<b>0660.1</b>	1 g
Diisopropylamine	≥99,5 %, for synthesis	glass	<b>0660.2</b>	5 g
			<b>0660.3</b>	10 g
			<b>4369.1</b>	100 ml
Diisopropyl ether	≥98 %, for synthesis, stabilised	glass	<b>4369.2</b>	500 ml
			<b>4369.3</b>	1 l
			<b>T899.1</b>	1 l
			<b>T899.2</b>	2.5 l
<i>N,N</i> -Dimethylcyclohexylamine	≥99 %, for synthesis	glass	<b>T899.4</b>	5 l
			<b>T899.3</b>	10 l
			<b>T899.5</b>	25 l
			<b>9986.1</b>	500 ml
<i>N,N</i> -Dimethylformamide (DMF)	≥99,5 %, for synthesis	glass	<b>9986.2</b>	1 l
			<b>9986.3</b>	2.5 l
			<b>6251.1</b>	1 l
2,2-Dimethyl-1,3-propanediol	≥99 %, for synthesis	plastic	<b>6251.2</b>	2.5 l
			<b>6251.3</b>	2.5 l
			<b>6251.5</b>	10 l
			<b>6251.4</b>	25 l
<i>N,N'</i> -Dimethylpropylene urea	≥99 %, for synthesis	glass	<b>7349.1</b>	100 g
			<b>7349.2</b>	500 g
			<b>7349.3</b>	1 kg
			<b>7349.4</b>	2.5 kg
Dimethyl sulphoxide (DMSO)	≥99,5 %, for synthesis	glass	<b>0662.1</b>	25 ml
			<b>0662.2</b>	100 ml
			<b>0662.3</b>	500 ml
Diethylamine	≥99,5 %, for synthesis	plastic	<b>0662.70</b>	1 l
			<b>7029.1</b>	1 l
			<b>7029.2</b>	2.5 l
			<b>7029.4</b>	5 l
Diethylamine	≥99,5 %, for synthesis	plastic	<b>7029.3</b>	10 l
			<b>7029.5</b>	25 l

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# Solvents for Synthesis

Product name	Purity	Pack.	Art. No.	Pack Qty.
1,4-Dioxane	≥99,5 %, for synthesis, stabilised	glass	4229.1	500 ml
			4229.2	1 l
			4229.3	2.5 l
		aluminium	4229.5	5 l
			tinplate	4229.6
			4229.4	25 l
1,3-Dioxolane	≥90 %, for synthesis	glass	0447.1	100 ml
			0447.2	500 ml
			0447.3	1 l
			0447.4	2.5 l
Dipropylene glycol	≥99 %, pure	plastic	8656.1	1 l
	8656.2		2.5 l	
Dipropylene glycol monomethyl ether	≥98 %, pure	glass	7656.1	1 l
			7656.2	2.5 l
<i>n</i> -Dodecane	≥95 %, for synthesis	glass	8786.1	100 ml
			8786.2	500 ml
			8786.3	1 l
1-Dodecanol	≥98 %, for synthesis	glass	9853.1	250 ml
			9853.2	1 l
			9853.3	2.5 l
Ethanol	≥99,8 %, denatured	plastic	K928.5	1 l
			glass	K928.1
		plastic	K928.3	2.5 l
			K928.4	5 l
		tinplate	K928.6	10 l
		plastic	K928.7	10 l
		tinplate	K928.2	25 l
plastic	K928.8	25 l		
Bioethanol	96 %, denatured	plastic	6726.1	1 l
			6726.2	2.5 l
			6726.3	5 l
			6726.4	10 l
			6726.5	25 l
Ethanol	≥96 %, denatured	plastic	T171.5	1 l
			glass	T171.1
		plastic	T171.3	2.5 l
			T171.4	5 l
	≥80 %, denatured	tinplate	T171.6	10 l
			plastic	T171.7
		tinplate	T171.2	25 l
			plastic	T171.8
Ethanol	≥80 %, denatured	plastic	9474.1	1 l
			9474.2	2.5 l
			9474.3	5 l
			9474.4	10 l
			9474.5	25 l
	≥70 %, denatured	plastic	T913.1	1 l
			T913.2	2.5 l
			T913.3	5 l
			T913.4	10 l
			T913.5	25 l
Ethanolamine	≥99 %, for synthesis	plastic	4376.1	100 ml
			4376.2	500 ml
			4376.3	1 l
			4376.4	2.5 l
			4376.5	10 l
Ethylal	≥99,5 %, for synthesis	glass	0787.1	100 ml
			0787.2	500 ml
			0787.3	1 l
			0787.4	2.5 l

Product name	Purity	Pack.	Art. No.	Pack Qty.	
Ethylbenzene	≥99 %, for synthesis	glass	0272.1	500 ml	
			0272.2	1 l	
			0272.3	2.5 l	
		aluminium	0272.4	5 l	
Ethylenediamine	≥99,5 %, for synthesis	glass	4218.1	100 ml	
			4218.2	500 ml	
			4218.3	1 l	
		PE/steel	4218.4	2.5 l	
			4218.5	10 l	
Ethylene glycol	≥99 %, for synthesis	plastic	9516.1	1 l	
			9516.3	2.5 l	
			9516.5	5 l	
			9516.2	10 l	
			9516.4	25 l	
Ethylene glycol monobutyl ether	≥99 %, for synthesis	glass	0341.1	1 l	
			0341.2	2.5 l	
<i>N</i> -Ethyl-2-pyrrolidone (NEP)	≥98 %, for synthesis	glass	CN19.1	500 ml	
			CN19.2	1 l	
		tinplate	CN19.3	2.5 l	
			CN19.5	10 l	
			CN19.4	25 l	
Glycerol Formal	≥99 %, for synthesis	glass	0798.1	100 ml	
			0798.2	500 ml	
			0798.3	1 l	
			0798.4	2.5 l	
<i>n</i> -Heptane	≥99 %, for synthesis	glass	8654.1	1 l	
			aluminium	8654.3	2.5 l
			tinplate	8654.2	10 l
				8654.4	25 l
	≥95 %, for synthesis	glass	CP46.1	1 l	
			CP46.2	2.5 l	
		aluminium	CP46.4	5 l	
tinplate			CP46.3	10 l	
			CP46.5	25 l	
Heptane (isomers)	≥98,5 %, for synthesis	glass	7725.2	1 l	
			7725.3	2.5 l	
		aluminium	7725.5	5 l	
			tinplate	7725.1	10 l
			7725.4	25 l	
<i>n</i> -Hexane	≥99 %, for synthesis	glass	CP47.1	1 l	
			CP47.2	2.5 l	
			aluminium	CP47.4	5 l
	PE/steel	CP47.3	10 l		
		tinplate	CP47.5	25 l	
≥95 %, for synthesis	glass	3907.6	100 ml		
		3907.1	1 l		
		3907.2	2.5 l		
	aluminium	3907.5	5 l		
		tinplate	3907.3	10 l	
		3907.4	25 l		
Hexane (isomers)	≥95 % (isomers), for synthesis	glass	7782.1	1 l	
			7782.3	2.5 l	
		aluminium	7782.5	5 l	
			tinplate	7782.2	10 l
			7782.4	25 l	
Isoamyl alcohol	≥98,5 %, for synthesis	glass	8930.1	1 l	
			8930.2	2.5 l	

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# Solvents for Synthesis

Product name	Purity	Pack.	Art. No.	Pack Qty.
Isobutyl methylketone	≥99 %, for synthesis	glass	4371.1	1 l
			4371.2	2.5 l
Isooctane	≥99,5 %, for synthesis	glass	9860.1	1 l
			9860.3	2.5 l
		aluminium	9860.4	5 l
		tinplate	9860.2	10 l
		9860.5	25 l	
2-Isopropoxyethanol	≥99 %, pure	glass	8706.1	1 l
			8706.2	2.5 l
Methanol	≥99 %, for synthesis	glass	8388.1	1 l
			8388.2	2.5 l
		plastic	8388.5	2.5 l
			8388.6	5 l
			tinplate	8388.3
	60 %, for synthesis	plastic	8388.4	25 l
			9976.1	1 l
			9976.2	2.5 l
			9976.3	5 l
			9976.4	10 l
9976.5	25 l			
2-Methoxyethanol	≥99 %, for synthesis	glass	8892.1	1 l
			8892.2	2.5 l
Methylal	≥99,9 %, for synthesis	glass	3154.1	100 ml
			3154.2	500 ml
			3154.3	1 l
			3154.4	2.5 l
			0783.1	100 ml
	≥99,5 %, for synthesis	glass	0783.2	500 ml
			0783.3	1 l
			0783.4	2.5 l
			3927.1	1 l
			3927.2	2.5 l
2-Methylbutane	≥99 %, for synthesis	glass	4379.1	100 ml
			4379.2	500 ml
2-Methyl-1-butanol	≥97,5 %, for synthesis	glass	4379.3	1 l
			0752.1	1 l
Methylcyclohexane	≥99 %, for synthesis	glass	0752.2	2.5 l
			aluminium	0752.3
		tinplate	0752.4	10 l
			0752.5	25 l
			1-Methylimidazole	≥99 %, for synthesis
N-Methylmorpholine	≥98,5 %, for synthesis	glass	N353.2	1 l
			9672.1	100 ml
			9672.2	250 ml
			9672.3	1 l
			9672.4	2.5 l
2-Methyl-2,4-pentanediol	≥99 %, for synthesis	plastic	CN17.1	100 ml
			CN17.2	1 l
			CN17.3	2.5 l
			CN17.4	10 l
2-Methyl-1-propanol	≥99 %, for synthesis	plastic	CP09.1	1 l
			CP09.2	2.5 l
			CP09.3	5 l
N-Methyl-2-pyrrolidone (NMP)	≥99,8 %, for synthesis	glass	4306.1	500 ml
			4306.3	1 l
			4306.2	2.5 l
		tinplate	4306.5	25 l

Product name	Purity	Pack.	Art. No.	Pack Qty.	
2-Methyltetrahydrofuran	≥99 %, extra pure	glass	6845.1	250 ml	
			6845.2	500 ml	
			6845.3	1 l	
		6845.4	2.5 l		
		PE/steel	6845.5	10 l	
n-Nonane	≥99 %, for synthesis	glass	4310.2	100 ml	
			4310.1	250 ml	
			4310.3	500 ml	
			4310.4	1 l	
n-Octane	≥99 %, for synthesis	glass	8753.1	100 ml	
			8753.2	500 ml	
			8753.3	1 l	
			8753.4	2.5 l	
			1-Octanol	≥99 %, for synthesis	glass
N-Octyl-2-pyrrolidone (NOP)	≥99 %, for synthesis	glass	4439.2	500 ml	
			4439.3	1 l	
		plastic	0358.1	100 ml	
			0358.2	500 ml	
			0358.3	1 l	
n-Pentane	≥99 %, for synthesis	glass	0358.4	2.5 l	
			8720.1	1 l	
		aluminium	8720.2	2.5 l	
			8720.3	5 l	
			8720.4	10 l	
	≥95 %, extra pure	tinplate	8720.5	25 l	
			3747.1	1 l	
		glass	3747.3	2.5 l	
			aluminium	3747.5	5 l
			tinplate	3747.2	10 l
			3747.4	25 l	

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# Solvents for Synthesis

Product name	Purity	Pack.	Art. No.	Pack Qty.
Petroleum benzine 30-50	extra pure	glass	3523.1	1 l
			3523.3	2.5 l
		aluminium tinplate	3523.4	5 l
			3523.2	10 l
Petroleum benzine 30-75	extra pure	glass	8961.1	1 l
			8961.3	2.5 l
		aluminium tinplate	8961.4	5 l
			8961.2	10 l
Petroleum benzine 40-60	extra pure	glass	9320.4	500 ml
			9320.1	1 l
			9320.5	2.5 l
		aluminium tinplate	9320.3	5 l
			9320.2	10 l
			9320.9	25 l
Petroleum benzine 40-65	extra pure	glass	8573.1	1 l
			8573.2	2.5 l
		aluminium tinplate	8573.3	5 l
			8573.4	10 l
Petroleum benzine 40-80	extra pure	glass	CP48.1	1 l
			CP48.4	2.5 l
		aluminium tinplate	CP48.2	5 l
			CP48.3	10 l
Petroleum benzine 50-70	extra pure	glass	0969.1	1 l
			0969.4	2.5 l
		aluminium tinplate	0969.5	5 l
			0969.2	10 l
Petroleum benzine 60-70	extra pure	glass	9735.1	1 l
			9735.4	2.5 l
		aluminium tinplate	9735.5	5 l
			9735.2	10 l
Petroleum benzine 60-95	extra pure	glass	8575.1	1 l
			8575.2	2.5 l
		aluminium tinplate	8575.3	5 l
			8575.4	10 l
Petroleum benzine 63-80	extra pure	glass	5649.1	1 l
			5649.3	2.5 l
		aluminium tinplate	5649.4	5 l
			5649.2	10 l
Petroleum benzine 80-110	extra pure	glass	3259.1	1 l
			3259.3	2.5 l
		aluminium tinplate	3259.4	5 l
			3259.2	10 l
Petroleum benzine 100-140	extra pure	glass	9675.1	1 l
			9675.4	2.5 l
		aluminium tinplate	9675.5	5 l
			9675.2	10 l
Petroleum benzine 135-180	extra pure	glass	8576.1	1 l
			8576.2	2.5 l
		aluminium tinplate	8576.3	5 l
			8576.4	10 l
Petroleum benzine 145-200	extra pure	glass	8577.1	1 l
			8577.2	2.5 l
		aluminium tinplate	8577.3	5 l
			8577.4	10 l

Product name	Purity	Pack.	Art. No.	Pack Qty.	
Petroleum benzine 180-220	extra pure	glass	8579.1	1 l	
			8579.2	2.5 l	
		aluminium tinplate	8579.3	5 l	
			8579.4	10 l	
Petroleum benzine 190-245	extra pure	glass	8580.1	1 l	
			8580.2	2.5 l	
		aluminium tinplate	8580.3	5 l	
			8580.4	10 l	
Petroleum benzine 235-265	extra pure	glass	8590.1	1 l	
			8590.2	2.5 l	
		aluminium tinplate	8590.3	5 l	
			8590.4	10 l	
2-Phenoxyethanol	≥99 %, for synthesis	glass	4348.1	250 ml	
			4348.2	1 l	
		tinplate	4348.3	10 l	
2-Phenylethanol	≥99 %, for synthesis	glass	4422.1	5 ml	
			4422.2	250 ml	
			4422.3	1 l	
1,2-Propanediol	≥99,5 %, for synthesis	plastic	0340.1	1 l	
			0340.2	2.5 l	
			0340.3	5 l	
			0340.4	10 l	
			0340.5	25 l	
1,3-Propanediol	≥98 %, for synthesis	glass	0958.1	100 ml	
			0958.2	500 ml	
			0958.3	1 l	
			0958.4	2.5 l	
1-Propanol	≥99,5 %, for synthesis	glass	9169.1	1 l	
			9169.2	2.5 l	
			tinplate	9169.3	10 l
2-Propanol	≥99,5 %, for synthesis	glass	9866.1	1 l	
			9866.2	2.5 l	
			plastic	9866.5	5 l
				9866.6	5 l
2-Propanol	70 %, pure	plastic	9866.3	10 l	
			9866.4	25 l	
			CN09.1	1 l	
			CN09.2	2.5 l	
			CN09.3	5 l	
Propylal	≥99 %, for synthesis	glass	CN09.4	10 l	
			CN09.5	25 l	
			0795.1	100 ml	
			0795.2	500 ml	
			0795.3	1 l	
Propylene glycol diacetate	≥99 %, pure	plastic	0795.4	2.5 l	
			7657.1	1 l	
Propylene glycol methyl ether acetate	≥99 %, pure	glass	7657.2	2.5 l	
			7966.1	1 l	
Propynol ethoxylate	≥98 %, for synthesis	glass	7966.2	2.5 l	
			3285.1	100 ml	
			3285.2	500 ml	
			3285.3	1 l	
Pyridine	≥99 %, for synthesis	glass	CP07.1	500 ml	
			CP07.2	1 l	
			CP07.3	2.5 l	

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# Solvents for Synthesis



Product name	Purity	Pack.	Art. No.	Pack Qty.
2-Pyrrolidone	≥99,5 %, for synthesis	plastic	8779.1	500 ml
			8779.2	1 l
			8779.3	2.5 l
			8779.4	5 l
Styrene	≥99,5 %, for synthesis, stabilised	glass	2641.7	100 ml
			2641.1	500 ml
			2641.2	1 l
			2641.3	2.5 l
Tetrachloroethylene	≥99,5 %, for synthesis	glass	4737.1	1 l
		glass	4737.3	2.5 l
		tinplate	4737.2	10 l
Tetrahydrofuran	≥99,5 %, for synthesis, stabilised	glass	4745.1	250 ml
			4745.2	1 l
			4745.3	2.5 l
		tinplate	4745.4	10 l
			4745.5	25 l
Tetramethylurea	≥99 %, for synthesis	glass	0756.1	100 ml
			0756.2	250 ml
			0756.3	500 ml
			0756.4	1 l
Tetraoxaundecane	≥99 %, for synthesis	glass	0786.1	100 ml
			0786.2	500 ml
			0786.3	1 l
			0786.4	2.5 l
Toluene	≥99,5 %, for synthesis	glass	9558.1	1 l
		glass	9558.3	2.5 l
		tinplate	9558.2	10 l
Trichloroethylene	≥98 %, for synthesis, stabilised	glass	9579.1	1 l
		tinplate	9579.3	2.5 l
Trichloromethane/ Chloroform	≥99 %, for synthesis	glass	Y015.1	1 l
		glass	Y015.2	2.5 l
		tinplate	Y015.3	10 l
Triethylamine (TEA)	≥99,5 %, for synthesis	glass	Y015.4	25 l
			X875.1	100 ml
			X875.2	500 ml
			X875.3	1 l
2,2,2-Trifluoroethanol	>99,8 %, for synthesis	glass	X875.4	2.5 l
			CP29.1	100 ml
			CP29.2	250 ml
			CP29.3	1 l
Tripropylene glycol	≥98 %, pure	glass	8698.1	1 l
			8698.2	2.5 l
<i>n</i> -Undecane	≥95 %, for synthesis	glass	8781.1	100 ml
			8781.2	500 ml
			8781.3	1 l

Product name	Purity	Pack.	Art. No.	Pack Qty.
Water	ISO 3696 Type 3, demineralised	plastic	1E04.1	1 l
			1E04.2	2.5 l
			1E04.3	5 l
			1E04.4	10 l
			1E04.5	25 l
	doubly distilled	plastic	3478.1	1 l
			3478.4	5 l
			3478.2	10 l
			3478.3	30 l
			1CX3.1	1 l
	distilled	plastic	1CX3.2	5 l
			1CX3.3	10 l
			1CX3.4	25 l
			3175.1	10 l
	demineralised, not sterile	plastic	3175.2	30 l
9713.1			1 l	
Xylene (isomers)	≥97 %, pure, for histology	glass	9713.3	2.5 l
		aluminium	9713.5	5 l
		tinplate	9713.2	10 l
		tinplate	9713.4	25 l
		glass	2662.1	1 l
	≥97 %, for synthesis	glass	2662.2	2.5 l
		aluminium	2662.5	5 l
		tinplate	2662.3	10 l
		tinplate	2662.4	25 l
		3791.3	100 ml	
<i>m</i> -Xylene	≥98,5 %, for synthesis	glass	3791.4	500 ml
			3791.1	1 l
			3791.2	2.5 l
<i>o</i> -Xylene	≥98 %, for synthesis	glass	8749.1	100 ml
			8749.2	500 ml
			8749.3	1 l
			8749.4	2.5 l
<i>p</i> -Xylene	≥99 %, for synthesis	glass	8817.1	100 ml
			8817.2	500 ml
			8817.3	1 l
			8817.4	2.5 l
			8817.5	100 ml

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

# Accessoires



## Opening key

For plastic canisters and bottles with DIN thread.

### one-sided

ROTH SELECTION.

Version	Length (mm)	Width (mm)	Art. No.	Pack Qty.
DIN 51	195	80	<b>CNC9.1</b>	1 unit(s)
DIN 61	200	85	<b>TX61.1</b>	1 unit(s)

### two-sided

ROTH SELECTION.

Dimensions: L 220 x W 70/55 mm.

Opener with notching, not for universal application.

Version	Art. No.	Pack Qty.
DIN 45/32	<b>X457.1</b>	1 unit(s)



## Barrel and keg key Tri-Sure®

For taking off tin sealing caps and for unscrewing the screw plugs of Tri-Sure® threads. Suitable for ROTITAINER®.

Dimensions: Narrow side 15 mm, wide side 45 mm.

ROTH SELECTION. Material: steel galvanised.

Length (mm)	Art. No.	Pack Qty.
260	<b>0398.1</b>	1 unit(s)

## Barrel and keg key Tri-Sure® non-sparking

ROTH SELECTION. Material: aluminium, bronze.

Made of non-sparking material, for use in areas with potential fire and explosion risks.

Length (mm)	Art. No.	Pack Qty.
260	<b>1L9H.1</b>	1 unit(s)



## Anti-static set ROTH

ROTH SELECTION.

Protects against fire and explosion due to electrostatic charge when filling from solvent barrels. Consists of two isolated cables (each L 3 m, Ø 3 mm) with clamping tongs on both sides and a blank copper wire (L 3 m, Ø 2 mm) with a clamping tong on one side.

Version	Art. No.	Pack Qty.
ROTH anti-static set	<b>0213.1</b>	1 unit(s)



## Solvent pump SEKUROKA®

Carl ROTH. Material: PTFE, Stainless steel 1.4301 and 1.4305.

For filling of flammable liquids.

- Works according to the piston stroke principle.
- Immersion tube is continuously adjustable to barrel depth.
- Near-complete emptying of the barrels.
- Removable drainage elbow for connecting a drainage hose with stopcock, please order separately.

### Technical specifications:

Art. No.	N502.1	N503.1
Delivery rate	140 ml	200 ml
Immersion depth	570 mm	910 mm
Ø Immersion tube	32 mm	
Conductive	yes	
Drum	up to 50 l	up to 200 l
Weight	1.2 kg	1.8 kg

Note:

The delivery rate refers to one stroke.

The container and the pump must be earthed using the ROTH anti-static set (Art. No. 0213.1) during filling of flammable liquids.

**Delivery incl.** barrel screw joint.

Thread	Length (mm)	Art. No.	Pack Qty.
2" steel fine thread	680	<b>N502.1</b>	1 unit(s)
2" steel fine thread	1,020	<b>N503.1</b>	1 unit(s)

## Accessoires



**A** 121 °C

### Dispensers ROTILABO® II

- Direct displacing piston with wiping PFA lip seal reduces crystallisation of liquids
- Improved volume adjustment due to internal toothed rack, volumes can be set quickly and precisely
- Valve block rotatable by 360° on the bottle, with GL 45 thread
- Swivelling cap does not obstruct dispensing
- Vent valve with safety bulb closes dosing channel if discharge tube is not fitted
- Screwable ventilation stoppers for quick assembly of a drying tube
- Telescopic intake tube, infinitely adjustable to different bottle heights
- Suitable for calibration in conjunction with measuring instrument inspection acc. to ISO 9001 and GLP; change to factory calibration is displayed
- Autoclavable at 121 °C (2 bar), acc. to DIN EN 285, with no need to disassemble

Materials in contact with media: Borosilicate glass, Al<sub>2</sub>O<sub>3</sub> ceramic, ETFE, FEP, PFA, PTFE, platinum-iridium, PP (cap).

Limits of use: Temperature from +15 °C to +40 °C, steam pressure up to max. 500 mbar, kinematic viscosity up to 500 mm<sup>2</sup>/s, density up to 2.2 g/cm<sup>3</sup>.

### Technical specifications:

Art. No.	HAC6.1	HAC7.1	HAC8.1	HAC9.1	HAE0.1	HAE1.1
Nominal volume	2 ml	5 ml	10 ml	25 ml	50 ml	100 ml
Correctness	±10 µl	±25 µl	±50 µl	±125 µl	±250 µl	±500 µl
Variation coefficient	±2 µl	±5 µl	±10 µl	±25 µl	±50 µl	±100 µl
Operating temperature	+15 – +40 °C					
Adapter	GL 25, GL 28/S 28, GL 32, GL 38, S 40			GL 32, GL 38, S 40		
Suction tube length	240 mm			330 mm		

**Delivery incl.** quality certificate, telescopic filling tube, valve mounting tool and PP thread adapter.

### Dispensers ROTILABO® II

Carl ROTH.

Volume (ml)	Graduation	Art. No.	Pack Qty.
0,2–2	0,05	<b>HAC6.1</b>	1 unit(s)
0,5–5	0,10	<b>HAC7.1</b>	1 unit(s)
1–10	0,20	<b>HAC8.1</b>	1 unit(s)
2,5–25	0,50	<b>HAC9.1</b>	1 unit(s)
5–50	1,0	<b>HAE0.1</b>	1 unit(s)
10–100	1,0	<b>HAE1.1</b>	1 unit(s)

## Solvents

### Solvents for Peptide Synthesis

Product name	Purity	Pack.	Art. No.	Pack Qty.
Acetonitrile	≥99,5 %, for synthesis	glass	<b>4380.1</b>	1 l
			<b>4380.2</b>	2.5 l
		tinplate	<b>4380.3</b>	10 l
			<b>4380.4</b>	25 l
Dichloromethane	≥99,9 %, for peptide synthesis	glass	<b>P089.1</b>	2.5 l
N,N-Diisopropylethylamine (DIPEA)	≥99,5 %, for peptide synthesis	glass	<b>2474.1</b>	100 ml
			<b>2474.2</b>	250 ml
			<b>2474.3</b>	1 l
			<b>2474.4</b>	2.5 l
N,N-Dimethylacetamide (DMA)	≥99 %, for synthesis	glass	<b>3617.1</b>	250 ml
			<b>3617.2</b>	1 l
		plastic	<b>3617.3</b>	2.5 l
			<b>3617.4</b>	10 l
N,N-Dimethylformamide (DMF)	≥99,8 %, for peptide synthesis	glass	<b>3617.5</b>	25 l
			<b>A529.3</b>	500 ml
			<b>A529.1</b>	2.5 l
1,1,1,3,3,3-Hexafluoro-2-propanol (HFIP)	≥99 %, for peptide synthesis	plastic	<b>A529.7</b>	10 l
			<b>A529.2</b>	25 l
			<b>2473.1</b>	10 ml
N-Methyl-2-pyrrolidone (NMP)	≥99,8 %, for peptide synthesis	glass	<b>2473.2</b>	25 ml
			<b>2473.3</b>	100 ml
			<b>P052.1</b>	2.5 l
Piperidine	≥99,5 %, for peptide synthesis	glass	<b>A122.1</b>	200 ml
			<b>A122.2</b>	500 ml
			<b>A122.3</b>	1 l
			<b>A122.4</b>	2.5 l
Trifluoroacetic acid (TFA)	≥99,9 %, for peptide synthesis	glass	<b>P088.1</b>	100 ml
			<b>P088.2</b>	500 ml
			<b>P088.3</b>	1 l
Water	doubly distilled	plastic	<b>3478.1</b>	1 l
			<b>3478.4</b>	5 l
			<b>3478.2</b>	10 l
			<b>3478.3</b>	30 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

# ROTISOLV® Ultra LC-MS and LC-MS Solvents

## ROTISOLV® Ultra LC-MS Solvents



Short analysis times in ultrafast HPLC as well as systems coupled to a mass spectrometer require solvents which offer utmost reliability, sensitivity and reproducibility. Our ROTISOLV® Ultra LC-MS solvents are specially suited for meeting these demands and have undergone extremely intensive production and quality controls.

### Properties:

- Filtered through 0.1 µm membrane
- Highest purity (≥99.98 %)
- Filled under inert gas
- High UV transmittance
- Low fluorescence
- Tested for LC-MS suitability
- Evaporation residue of max. 1 ppm
- Metallic contamination max. 100 ppb

Product name	Purity	Pack.	Art. No.	Pack Qty.
Acetic acid ethyl ester	≥99,9 %, Ultra LC-MS	glass	1HP7.1	1 l
			1HP7.2	2.5 l
Acetonitrile	≥99,98 %, Ultra LC-MS	glass	HN40.1	1 l
			HN40.2	2.5 l
Ethanol	≥99,95 %, Ultra LC-MS	glass	1HP8.1	1 l
			1HP8.2	2.5 l
Methanol	≥99,98 %, Ultra LC-MS	glass	HN41.1	1 l
			HN41.2	2.5 l
2-Propanol	≥99,95 %, Ultra LC-MS	glass	0733.1	1 l
			0733.2	2.5 l
Tetrahydrofuran	≥99,9 %, Ultra LC-MS, unstabilised	glass	0739.1	1 l
Water	Ultra LC-MS	glass	HN43.1	1 l
			HN43.2	2.5 l

## ROTISOLV® LC-MS-Grade Solvents



Modern analysis methods such as LC-MS call for a special solvent quality which has the required purity and which has been tested under application-oriented conditions. Very high purity and very low metal concentrations are features of these products which allow exact interpretations of the mass spectra.

### Properties:

- Highest purity (≥99,95 %)
- High UV transmittance
- Low fluorescence
- Excellent gradient baseline
- Trace elements: ≤0.05 ppm per element
- Tested for LC-MS suitability
- Particle filtration (0.2 µm membrane)
- Filled under inert gas

Product name	Purity	Pack.	Art. No.	Pack Qty.
Acetic acid ethyl ester	≥99,9 %, LC-MS Grade	glass	AE69.1	1 l
			AE69.2	2.5 l
Acetone	≥99,9 %, LC-MS Grade	glass	3153.1	2.5 l
Acetonitrile	≥99,95 %, LC-MS Grade	glass	AE70.1	1 l
			AE70.2	2.5 l
Methanol	≥99,95 %, LC-MS Grade	glass	AE71.1	1 l
			AE71.2	2.5 l
2-Propanol	≥99,95 %, LC-MS Grade	glass	AE73.1	1 l
			AE73.2	2.5 l
Water	LC-MS Grade	plastic	AE72.1	1 l
		glass	AE72.3	2.5 l
		plastic	AE72.2	5 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

## ROTISOLV® LC-MS-Eluent Mixtures

### Properties:

ready-to-use

- Ready-to-use solvent blends for easy handling
- High chemical purity of the used raw material: HPLC solvents (≥99.9 %) and acids (≥99.9 %)
- High accuracy of the ratio of ingredients
- High UV-permeability
- Trace elements: ≤0.05 ppm per element
- LC-MS suitability tested
- Filtered through 0.2 µm membrane
- Bottled under inert gas

Product name	Purity	Pack.	Art. No.	Pack Qty.
Acetonitrile with 0.1 % formic acid	≥99,9 %, LC-MS Grade	glass	CP00.1	1 l
			CP00.2	2.5 l
Acetonitrile with 0.1 % trifluoroacetic acid	≥99,9 %, LC-MS Grade	glass	CP02.1	1 l
			CP02.2	2.5 l
Water with 0.1 % formic acid	LC-MS Grade	glass	CP03.1	1 l
			CP03.2	2.5 l
Water with 0.1 % acetic acid	LC-MS Grade	glass	CP04.2	2.5 l
Water with 0.1 % trifluoroacetic acid	LC-MS Grade	glass	CP05.2	2.5 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

► Discover our starting materials for individual eluent mixtures at [www.carlroth.com](http://www.carlroth.com)

# ROTISOLV® HPLC Solvents

Our extensive HPLC solvent range fulfils the highest of requirements and guarantees a large selection for most applications. Consequent production and quality control guarantee consistent high-grade quality from batch-to-batch.



## Properties:

- High chemical purity
- High UV-permeability
- Low fluorescence
- Low residue from evaporation
- Low water and acid content
- Filtered through 0,2 µm membrane
- Bottled under inert gas

Product name	Brand	Purity	Art. No.	Pack Qty.
Acetic acid ethyl ester	ROTISOLV®	HPLC	<b>7336.2</b>	1 l
			<b>7336.1</b>	2.5 l
Acetone	ROTISOLV®	HPLC	<b>7328.1</b>	1 l
			<b>7328.2</b>	2.5 l
Acetonitrile	ROTISOLV®	HPLC Ultra Gradient Grade	<b>T195.1</b>	1 l
			<b>T195.2</b>	2.5 l
	ROTISOLV®	HPLC Gradient Grade	<b>8825.1</b>	1 l
			<b>8825.2</b>	2.5 l
	ROTISOLV®	HPLC Gradient	<b>HN44.1</b>	1 l
			<b>HN44.2</b>	2.5 l
	ROTISOLV®	HPLC	<b>7330.1</b>	1 l
			<b>7330.2</b>	2.5 l
ROTISOLV®	HPLC, isocratic	<b>CN20.1</b>	1 l	
		<b>CN20.2</b>	2.5 l	
ROTISOLV®	≥99,8 %, for preparative HPLC	<b>6827.1</b>	2.5 l	
		<b>6827.2</b>	25 l	
1-Butanol	ROTISOLV®	HPLC	<b>T178.1</b>	2.5 l
<i>tert</i> -Butyl methyl ether	ROTISOLV®	HPLC	<b>T175.2</b>	1 l
			<b>T175.1</b>	2.5 l
Cyclohexane	ROTISOLV®	HPLC	<b>7333.2</b>	1 l
			<b>7333.1</b>	2.5 l
Dichloromethane	ROTISOLV®	HPLC	<b>7334.2</b>	1 l
			<b>7334.1</b>	2.5 l
<i>N,N</i> -Dimethylformamide (DMF)	ROTISOLV®	HPLC	<b>0702.1</b>	2.5 l
Dimethyl sulphoxide (DMSO)	ROTISOLV®	HPLC	<b>0728.1</b>	2.5 l
1,4-Dioxane	ROTISOLV®	HPLC, unstabilised	<b>X949.1</b>	1 l
			<b>X949.2</b>	2.5 l
Ethanol	ROTISOLV®	HPLC Gradient Grade	<b>P076.1</b>	1 l
			<b>P076.2</b>	2.5 l
<i>n</i> -Heptane	ROTISOLV®	≥99 %, HPLC	<b>6828.1</b>	2.5 l
			<b>7337.2</b>	1 l
ROTISOLV®	≥95 %, HPLC	<b>7337.1</b>	2.5 l	

Product name	Brand	Purity	Art. No.	Pack Qty.
<i>n</i> -Hexane	ROTISOLV®	HPLC	<b>7339.2</b>	1 l
			<b>7339.1</b>	2.5 l
Isohexane	ROTISOLV®	HPLC	<b>T176.1</b>	2.5 l
Isooctane	ROTISOLV®	HPLC	<b>7340.1</b>	2.5 l
Methanol	ROTISOLV®	HPLC Ultra Gradient Grade	<b>X948.1</b>	1 l
			<b>X948.2</b>	2.5 l
	ROTISOLV®	HPLC Gradient Grade	<b>7342.2</b>	1 l
			<b>7342.1</b>	2.5 l
	ROTISOLV®	HPLC Gradient	<b>KK39.2</b>	2.5 l
<b>P717.2</b>			1 l	
<b>P717.1</b>	2.5 l			
<i>n</i> -Pentane	ROTISOLV®	HPLC	<b>CN99.1</b>	1 l
<b>CN99.2</b>	2.5 l			
Petroleum ether 40–60 °C	ROTISOLV®	HPLC	<b>0731.1</b>	2.5 l
1-Propanol	ROTISOLV®	HPLC	<b>T177.1</b>	2.5 l
2-Propanol	ROTISOLV®	HPLC	<b>7343.2</b>	1 l
			<b>7343.1</b>	2.5 l
Tetrahydrofuran	ROTISOLV®	HPLC, unstabilised	<b>7344.1</b>	1 l
<b>7344.2</b>	2.5 l			
Toluene	ROTISOLV®	HPLC	<b>7346.2</b>	1 l
			<b>7346.1</b>	2.5 l
Trichloromethane/Chloroform	ROTISOLV®	HPLC	<b>7331.2</b>	1 l
			<b>7331.1</b>	2.5 l
Water	ROTISOLV®	HPLC Gradient Grade	<b>A511.1</b>	1 l
			<b>A511.2</b>	2.5 l
			<b>A511.3</b>	5 l
	ROTISOLV®	HPLC	<b>A511.7</b>	20 l
			<b>1C5K.1</b>	1 l
<b>1C5K.2</b>	2.5 l			

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

# VLSI Solvents

## Products in VLSI quality

Roth's VLSI (Very Large Scale Integration) product line offers solvents and acids for cleaning and etching wafers for the semi-conductor industry. Both processes are essential for chip manufacture. ROTH offers a selected range of products.



### Properties:

- High purity
- Trace metal content generally between 10-50 ppb
- Particle-filtered, maximal 250 particles/ml

Product name	Purity	Art. No.	Pack Qty.
Acetone	≥99,5 %, VLSI Grade	9780.1	2.5 l
		9780.2	5 l
2-Butanone	≥99,5 %, VLSI Grade	0051.1	2.5 l
Isobutyl methylketone	≥99,5 %, VLSI Grade	0061.1	2.5 l
Methanol	≥99,5 %, VLSI Grade	9785.1	2.5 l
		9785.2	5 l
2-Propanol	≥99,9 %, VLSI Grade	9781.1	2.5 l
		9781.2	5 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

VLSI or Very Large Scale Integration means that a large number of transistors (now several 100 million) are located on one chip. Since the gaps are very small, roughly 3 µm, the solvents and acids must be of a correspondingly high purity and be particle-filtered. For VLSI, the number of particles is limited to 250 p/ml.

Further products in VLSI quality as well as additional information and safety-relevant data in the current catalog or on the Internet at [www.carlroth.com](http://www.carlroth.com)

# ROTISOLV® Headspace Grade Solvents

## for analyses of organic volatile impurities (O.V.I.)

### Properties:

- Highest purity (mostly ≥99,99 %)
- High boiling point
- Non volatile matter: ≤0,001 %
- Tested for headspace suitability
- Bottled under protective gas
- Microfiltered



Headspace gas chromatography is a major quality control procedure particularly in the pharmaceutical and food industry. The regulations for this method can be found both in the European as well as the American Pharmacopoeia. High-boiling solvents of excellent purity, which show no background due to organic volatile impurities on the GC-column, are required for determining solvent residue.

Product name	Brand	Purity	Art. No.	Pack Qty.
N,N-Dimethylacetamide (DMA)	ROTISOLV®	≥99,99 %, Headspace Grade	HN45.1	1 l
N,N-Dimethylformamide (DMF)	ROTISOLV®	≥99,99 %, Headspace Grade	HN46.1	1 l
1,3-Dimethyl-2-imidazolidinone (DMI)	ROTISOLV®	≥99,5 %, Headspace Grade	HN48.1	500 ml
Dimethyl sulphoxide (DMSO)	ROTISOLV®	≥99,99 %, Headspace Grade	HN47.1	1 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

- ▶ Headspace vials ROTILABO® with beaded rim ND20 and Crimp caps ROTILABO® ND20 Headspace with borehole see [www.carlroth.com](http://www.carlroth.com)

# ROTISOLV® Solvents

## ROTISOLV® GC Ultra Grade Solvents

### for gaschromatographic and residue analysis

In order to monitor and analyse environmentally relevant substances such as pesticides, dioxins, furans, PAH, PCB etc. in trace analysis, solvents with exceedingly high purity specifications are required.

Carl ROTH's ROTISOLV® GC Ultra Grade solvents have been developed specially for this application area and are produced with the most sophisticated production processes. Extensive quality checks guarantee the same high-grade quality from batch to batch.



### Properties:

- Highest purity
- Very low water content
- Non-volatile matter less than 2 ppm
- Quality control by means of ECD and NPD
- PAH-test
- Filtered through 0,2 µm membrane
- Bottled under protective gas

Product name	Brand	Purity	Pack.	Art. No.	Pack Qty.
Acetic acid ethyl ester	ROTISOLV®	≥99,9 %, GC Ultra Grade	glass	<b>KK42.1</b>	2.5 l
Acetone	ROTISOLV®	≥99,9 %, GC Ultra Grade	glass	<b>KK40.1</b>	2.5 l
Cyclohexane	ROTISOLV®	≥99,9 %, GC Ultra Grade	glass	<b>KK41.1</b>	2.5 l
Dichloromethane	ROTISOLV®	≥99,9 %, GC Ultra Grade	glass	<b>KK47.1</b>	2.5 l
<i>n</i> -Hexane	ROTISOLV®	≥95 %, GC Ultra Grade	glass	<b>KK48.1</b>	2.5 l
Methanol	ROTISOLV®	≥99,9 %, GC Ultra Grade	glass	<b>KK44.1</b>	2.5 l
<i>n</i> -Pentane	ROTISOLV®	≥99 %, GC Ultra Grade	glass	<b>KK45.1</b>	2.5 l
Toluene	ROTISOLV®	≥99,8 %, GC Ultra Grade	glass	<b>KK46.1</b>	2.5 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

## Solvents for MOSH/MOAH Analysis

### For identifying petroleum-derived saturated and aromatic hydrocarbons.

The analysis and quantitative identification of MOSH/MOAH constituents is performed as a sum parameter. The sample is extracted using *n*-hexane and verified using coupled liquid chromatography-gas chromatography.

MOSH: Mineral oil saturated hydrocarbons (paraffins and naphthenes)

MOAH: Mineral oil aromatic hydrocarbons (mono- or polyaromatic rings)



### *n*-Hexane

#### ROTISOLV® ≥99 %, MOSH/MOAH

Suitable for MOSH/MOAH analysis.

C<sub>6</sub>H<sub>14</sub> · M 86,18 g/mol

UN no. 1208 · ADR 3 II · WGK 2

**Danger**

H225-H304-H315-H336-H361f-H373-H411

Art. No.	Pack Qty.	Pack.
0840.1	2.5 l	glass

### Dichloromethane

#### ROTISOLV® ≥99,9 %, MOSH/MOAH

Suitable for MOSH/MOAH analysis

CH<sub>2</sub>Cl<sub>2</sub> · M 84,93 g/mol

UN no. 1593 · ADR 6.1 III · WGK 2

**Warning** H315-H319-H336-H351

Art. No.	Pack Qty.	Pack.
0770.1	2.5 l	glass



# ROTISOLV® Pestilyse® (plus) Solvents

## Pestilyse® plus Solvents

for determination of dioxines, furanes, PCBs, pesticides, hydrocarbons and further pollutants



Carl ROTH created this product line (ROTISOLV® Pestilyse® plus) especially to address the growing requirements in residue analysis. Several relevant parameters are specified for these solvents which allow the use in various applications. With this product line, Carl ROTH sets the benchmark for residue analysis solvents in terms of purity and quality.

### Properties:

- Highest purity
- Controlled by FID, ECD and NP
- PAH tested
- Tested for hydrocarbons C<sub>14</sub>-C<sub>40</sub>
- Tested for fluorescence
- Volatile impurities: max. 5 ppm
- Non-volatile impurities: max. 5 ppm

Product name	Purity	Art. No.	Pack Qty.
Acetic acid ethyl ester	≥99,9 %	7565.1	2.5 l
Acetone	≥99,9 %	7535.1	2.5 l
Acetonitrile	≥99,9 %	1HP5.1	2.5 l
Cyclohexane	≥99,9 %	7542.1	2.5 l
Dichloromethane	≥99,9 %	7562.1	2.5 l
Ethanol	≥99,9 %	1HP6.1	2.5 l
<i>n</i> -Heptane	≥99 %	7566.1	2.5 l
<i>n</i> -Hexane	≥99 %	7573.1	2.5 l
	≥96 %	7567.1	2.5 l
Isooctane	≥99,7 %	7580.1	2.5 l
Methanol	≥99,9 %	7583.1	2.5 l
<i>n</i> -Pentane	≥99 %	7587.1	2.5 l
Petroleum ether 40–60 °C		7588.1	2.5 l
2-Propanol	≥99,9 %	7590.1	2.5 l
Tetrahydrofuran	≥99,9 % unstabilised	1K09.1	2.5 l
Toluene	≥99,8 %	7591.1	2.5 l
Trichloromethane/Chloroform	≥99,9 %	7554.1	2.5 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

## Pestilyse® Solvents

for residue and environmental analysis

Field of application: 'Pesticide Residue Analysis' (via ECD, PND detection) in sectors environment, foodstuff, water, etc. ROTISOLV® Pestilyse® solvents are ideal as extraction agents and for sample preparation.

### Properties:

- Highest purity
- Quality control via ECD and PND
- Non-volatile parts: 5 ppm or less
- Specially purified for application in pesticide residue analysis

Product name	Brand	Purity	Art. No.	Pack Qty.
Acetic acid ethyl ester	ROTISOLV® Pestilyse®	≥99,8 %	T164.2	1 l
			T164.1	2.5 l
Acetone	ROTISOLV® Pestilyse®	≥99,8 %	T161.2	1 l
			T161.1	2.5 l
			T161.3	4 l
Acetonitrile	ROTISOLV® Pestilyse®	≥99,9 %	T168.1	2.5 l
			T168.3	4 l
Cyclohexane	ROTISOLV® Pestilyse®	≥99,5 %	T163.2	1 l
			T163.1	2.5 l
			T163.3	4 l
Dichloromethane	ROTISOLV® Pestilyse®	≥99,8 %	T162.2	1 l
			T162.1	2.5 l
			T162.3	4 l
Diethyl ether	ROTISOLV® Pestilyse®	≥99,8 %, stabilised	T900.1	2.5 l
<i>n</i> -Heptane	ROTISOLV® Pestilyse®	≥99 %	X878.1	2.5 l
<i>n</i> -Hexane	ROTISOLV® Pestilyse®	≥99 %	T861.2	1 l
			T861.1	2.5 l
			T165.2	1 l
			T165.1	2.5 l
			T165.3	4 l
Isohexane	ROTISOLV® Pestilyse®	≥99 %	T904.1	2.5 l
Isooctane	ROTISOLV® Pestilyse®	≥99,5 %	T167.1	2.5 l
Methanol	ROTISOLV® Pestilyse®	≥99,9 %	T169.2	1 l
			T169.1	2.5 l
			T169.3	4 l
<i>n</i> -Pentane	ROTISOLV® Pestilyse®	≥99 %	T903.2	1 l
			T903.1	2.5 l
Petroleum ether 40–60 °C	ROTISOLV® Pestilyse®		T170.2	1 l
			T170.1	2.5 l
			T170.3	4 l
2-Propanol	ROTISOLV® Pestilyse®	≥99,8 %	T902.1	2.5 l
Toluene	ROTISOLV® Pestilyse®	≥99,8 %	T166.2	1 l
			T166.1	2.5 l
			T166.3	4 l
Trichloromethane/Chloroform	ROTISOLV® Pestilyse®	≥99,8 %	T901.1	2.5 l
Water	ROTISOLV® Pestilyse®		T905.1	2.5 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

# ROTISOLV® UV/IR Solvents for Spectroscopy

## Solvents for TLC – ROTISOLV® UV/IR Grade Solvents

### for chromatography and spectroscopy

ROTISOLV® UV/IR-Grade solvents are specially adapted for spectrophotometric processes and other chromatographic applications which require high spectroscopic purity.

#### Properties:

- High chemical purity
- Spectroscopically tested for UV and IR
- High UV-permeability
- Low fluorescence



Product name	Brand	Purity	Max. permeability at	Art. No.	Pack Qty.
Acetic acid ethyl ester	ROTISOLV®	≥99,8 %, UV/IR Grade	280 nm	4442.1	2.5 l
Acetone	ROTISOLV®	≥99,9 %, UV/IR Grade	350 nm	T906.1	2.5 l
Acetonitrile	ROTISOLV®	≥99,9 %, UV/IR Grade	230 nm	T907.1	2.5 l
1-Butanol	ROTISOLV®	≥99,8 %, UV/IR Grade	270 nm	4431.1	2.5 l
Cyclohexane	ROTISOLV®	≥99,9 %, UV/IR Grade	250 nm	CP81.1	2.5 l
<i>N,N</i> -Dimethylformamide (DMF)	ROTISOLV®	≥99,9 %, UV/IR Grade	330 nm	CP79.1	2.5 l
<i>n</i> -Heptane	ROTISOLV®	≥99 %, UV/IR Grade	245 nm	CP78.1	2.5 l
<i>n</i> -Hexane	ROTISOLV®	≥99 %, UV/IR Grade	245 nm	T908.1	2.5 l
Isooctane	ROTISOLV®	≥99,8 %, UV/IR Grade	255 nm	CP80.1	2.5 l
Methanol	ROTISOLV®	≥99,9 %, UV/IR Grade	260 nm	T909.1	2.5 l
<i>n</i> -Pentane	ROTISOLV®	≥99 %, UV/IR Grade	240 nm	4443.1	2.5 l
2-Propanol	ROTISOLV®	≥99,9 %, UV/IR Grade	260 nm	T910.1	2.5 l
Tetrachloroethylene	ROTISOLV®	≥99,9 %, UV/IR Grade	305 nm	CP83.1	2.5 l
Tetrahydrofuran	ROTISOLV®	≥99,9 %, UV/IR Grade, unstabilised	310 nm	CP82.1	2.5 l
Toluene	ROTISOLV®	≥99,8 %, UV/IR Grade	350 nm	4445.1	2.5 l
Trichloromethane/Chloroform	ROTISOLV®	≥99,8 %, UV/IR Grade	280 nm	4432.1	2.5 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

# ROTIDRY® Dried Solvents

## ROTIDRY® – Dried Solvents

Due to their very low water content, ROTIDRY® solvents are ideal for use in organic synthesis, DNA synthesis and analysis. ROTIDRY® solvents can be used wherever a low water content is important, e.g. chromatographic purification methods.

### Properties:

- Very low water content
- Extremely high product purity
- Low evaporation residue
- Filled under inert gas

Product name	Purity	Art. No.	Pack Qty.
Acetic acid ethyl ester	≥99,8 % (≤100 ppm H <sub>2</sub> O)	4424.1	1 l
Acetonitrile	≥99,9 % (≤10 ppm H <sub>2</sub> O)	AE00.1	1 l
		AE00.2	2.5 l
		AE00.3	4 l
Dichloromethane	≥99,8 % (≤50 ppm H <sub>2</sub> O)	AE03.1	1 l
Diethyl ether	≥99,5 % (≤50 ppm H <sub>2</sub> O), stabilised	AE04.1	1 l
Dimethyl sulphoxide (DMSO)	≥99,5 % (≤200 ppm H <sub>2</sub> O)	AE02.1	1 l
1,4-Dioxane	≥99,8 % (≤100 ppm H <sub>2</sub> O)	4429.1	1 l
<i>n</i> -Hexane	≥99 % (≤50 ppm H <sub>2</sub> O)	AE05.1	1 l
Methanol	≥99,9 % (≤50 ppm H <sub>2</sub> O)	AE01.1	1 l
		AE01.2	2.5 l
Tetrahydrofuran	≥99,9 % (≤50 ppm H <sub>2</sub> O), stabilised	AE07.1	1 l
Toluene	≥99,5 % (≤50 ppm H <sub>2</sub> O)	AE06.1	1 l
Trichloromethane/Chloroform	≥99,8 % (≤50 ppm H <sub>2</sub> O)	4423.1	1 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)



## ROTIDRY® plus – Dried Solvents with Molecular Sieves

### Properties:

- Very low water content
- Extremely high product purity
- Good price-performance ratio
- Contains molecular sieve 3Å

Product name	Purity	Art. No.	Pack Qty.
Acetic acid ethyl ester	≥99,8 % (≤50 ppm H <sub>2</sub> O), with molecular sieve	1A9P.1	1 l
Dichloromethane	≥99,9 % (≤30 ppm H <sub>2</sub> O), with molecular sieve	1A9K.1	1 l
Diethyl ether	≥99,5 % (≤50 ppm H <sub>2</sub> O), with molecular sieve, stabilised	1A9X.1	1 l
Methanol	≥99,8 % (≤50 ppm H <sub>2</sub> O), with molecular sieve	1A9L.1	1 l
Tetrahydrofuran	≥99,5 % (≤50 ppm H <sub>2</sub> O), with molecular sieve, stabilised	1A9Y.1	1 l
Toluene	≥99,5 % (≤50 ppm H <sub>2</sub> O), with molecular sieve	1A9T.1	1 l
Trichloromethane/Chloroform	≥99,9 % (≤30 ppm H <sub>2</sub> O), with molecular sieve, stabilised	1A9N.1	1 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)



## ROTIDRY® Sept – Dried Solvents in Septum Bottle

### Advantages of the septum bottle:

- Additional product quality assurance
- No ingress of water during removal
- Ideal for small quantities
- Removable septum for removal of large quantities
- Special cap permits multiple puncture points

Product name	Purity	Art. No.	Pack Qty.
Acetonitrile	≥99,9 % (≤50 ppm H <sub>2</sub> O)	5175.1	250 ml
Dichloroethane	≥99,9 % (≤50 ppm H <sub>2</sub> O)	5176.1	250 ml
Diethyl ether	≥99,5 % (≤50 ppm H <sub>2</sub> O), stabilised	5177.1	250 ml
Dimethyl sulphoxide (DMSO)	≥99,8 % (≤100 ppm H <sub>2</sub> O)	5179.1	250 ml
<i>n</i> -Hexane	≥99 % (≤30 ppm H <sub>2</sub> O)	5180.1	250 ml
Methanol	≥99,9 % (≤50 ppm H <sub>2</sub> O)	5181.1	250 ml
Tetrahydrofuran	≥99,8 % (≤50 ppm H <sub>2</sub> O), stabilised	5182.1	250 ml
Toluene	≥99,5 % (≤30 ppm H <sub>2</sub> O)	5191.1	250 ml

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)



# Drying Agents

## Molecular Sieves

Product name	Purity	Ball diameter	Pack.	Art. No.	Pack Qty.
Molecular sieve 3 Å	activated, under argon, for DNA synthesis		glass	<b>N893.1</b>	100 ml
			glass	<b>8487.1</b>	250 g
	0,3 nm, type 564, beads	1,6-2,5 mm	glass	<b>8487.2</b>	750 g
			plastic	<b>8487.3</b>	2.5 kg
	0,3 nm, type 562 C, beads	2,5-5,0 mm	plastic	<b>8487.7</b>	5 kg
			glass	<b>P729.1</b>	250 g
		glass	<b>P729.2</b>	750 g	
		plastic	<b>P729.3</b>	2.5 kg	
Molecular sieve 4 Å	0,4 nm, type 514, beads	1,6-2,5 mm	glass	<b>8471.1</b>	250 g
			glass	<b>8471.2</b>	750 g
			plastic	<b>8471.3</b>	2.5 kg
Molecular sieve 5 Å	0,5 nm, type 522, beads	1,6-2,5 mm	glass	<b>8475.1</b>	250 g
			plastic	<b>8475.2</b>	750 g
Molecular sieve 10 Å	1,0 nm, type 544, beads	1,6-2,5 mm	plastic	<b>8475.3</b>	2.5 kg
			glass	<b>8483.1</b>	250 g
			glass	<b>8483.2</b>	750 g
			plastic	<b>8483.3</b>	2.5 kg

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)



### Regenerating:

- In drying cabinets at 200-300 °C
- Through pressure change or rinsing



### Desiccant Sachets

Product name	Packaging	Art. No.	Pack Qty.
Silica gel orange – Desiccant Sachets	10 g sachets (4 x 9 cm)	<b>N077.2</b>	75 unit(s)
	25 g sachets (10 x 10 cm)	<b>N078.1</b>	30 unit(s)
	50 g sachets (9 x 12 cm)	<b>N079.1</b>	20 unit(s)

### Regeneration:

Is not possible for the desiccant bags, as the long fiber paper is not temperature-stable.

# Drying Agents

## Silica Gels

Product name	Purity	Text unter Analyse	Regeneration	Pack.	Art. No.	Pack Qty.
Silica gel water resistant	2–5 mm, beads	Regeneration at 130–150 °C.	130–150 °C, approx. 4 hours	plastic	8109.1	500 g
					8109.2	1 kg
					8109.3	2.5 kg
					8109.4	10 kg
Silica gel blue	2–4 mm, with indicator, beads	Filled under protective gas. Change in colour from blue to fuchsia. Regeneration at ca. 80–100 °C, approximately 2–4 hours.	80–100 °C, approx. 2-4 hours	plastic	2440.1	500 g
					2440.2	1 kg
					2440.3	2.5 kg
					2440.4	10 kg
Silica gel yellow/blue	2.5–6 mm, with indicator, fractured	Filled under protective gas. Change in colour from yellow to blue. Regeneration at max. 120 °C, approx. 4 hours.	120 °C, approx. 4 hours	plastic	3650.1	500 g
					3650.2	1 kg
					3650.3	2.5 kg
					3650.4	10 kg
Silica gel orange	2–5 mm, with indicator, beads	Filled under protective gas. Colour change from orange to colourless at approx. 6 weight-% load. Regeneration at 130 °C, approx. 4 hours.	130 °C, approx. 4 hours	plastic	P077.4	500 g
					P077.1	1 kg
					P077.2	2.5 kg
					P077.3	10 kg
Silica gel orange/green	2–5 mm, with indicator, beads	Filled under protective gas. Change in colour from orange to green. Regeneration at max. 110 °C, approx. 3–4 hours.	110 °C, approx. 3–4 hours	plastic	1779.1	500 g
					1779.2	1 kg
					1779.3	2.5 kg
					1779.4	10 kg
Silica gel red/yellow	1–3 mm, with indicator, beads	Filled under protective gas. Change in colour from red to yellow. Regeneration at max. 120 °C, approx. 4 hours.	120 °C, approx. 4 hours	plastic	3955.1	500 g
					3955.2	1 kg
					3955.3	2.5 kg
					3955.4	10 kg
	3–6 mm, with indicator, beads	Filled under protective gas. Change in colour from red to yellow. Regeneration at max. 120 °C, approx. 4 hours.	120 °C, approx. 4 hours	plastic	4111.1	500 g
					4111.2	1 kg
					4111.3	2.5 kg
					4111.4	10 kg
Silica gel white	0,5–1 mm, granules	Regeneration at ca. 130 °C, approximately 4 hours.	130 °C, approx. 4 hours	plastic	9376.1	1 kg
					9376.2	5 kg
	1–3 mm, granules	Regeneration at ca. 130 °C, approximately 4 hours.	130 °C, approx. 4 hours	plastic	T858.1	1 kg
					T858.2	5 kg
Silica gel industry grade	broken beads, w/o indicator	Regeneration at 130–150 °C.	130–150 °C, approx. 4 hours	plastic	CN70.1	1 kg
					CN70.2	5 kg
					CN70.3	10 kg
					CN70.4	25 kg

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

In order to achieve low residual water content over the silica gel, the capacity can only be utilised partially. The less silica gel is loaded with water the more intensively it dries. For example, to achieve a residual water content of 1 mg/l the loading must not be higher than 5,2 g water per 100 g silica gel.



# Deuterated Solvents

## NMR Spectroscopy

Deuterated reagents are used primarily in NMR spectroscopy.

### Application examples:

- Routine tasks such as structure determination and identity verification in research and development laboratories.
- High degree of deuteration
- Defined water content
- Extremely cost effective

Product name	Purity	Pack.	Art. No.	Pack Qty.	
Acetone D6	100 Atom%D	glass ampoule	<b>1K3E.1</b>	7.5 ml	
	99,8 Atom%D	glass ampoule	<b>AE51.3</b>	7.5 ml	
		glass	<b>AE51.1</b>	10 ml	
		septum bottle	<b>AE51.4</b>	10 ml	
		glass	<b>AE51.5</b>	25 ml	
		glass	<b>AE51.2</b>	50 ml	
	99,5 Atom%D	glass	<b>7909.1</b>	10 ml	
			<b>7909.2</b>	50 ml	
	Acetonitrile D3	100 Atom%D	glass ampoule	<b>1K3H.1</b>	7.5 ml
		99,8 Atom%D	glass ampoule	<b>7911.2</b>	7.5 ml
glass			<b>7911.1</b>	10 ml	
glass			<b>7911.3</b>	25 ml	
99,5 Atom%D		glass	<b>AE52.1</b>	10 ml	
		septum bottle	<b>AE52.3</b>	10 ml	
Benzene D6	99,8 Atom%D	glass ampoule	<b>7912.3</b>	7.5 ml	
		glass	<b>7912.1</b>	10 ml	
			<b>7912.2</b>	25 ml	
		glass	<b>AE53.1</b>	10 ml	
		septum bottle	<b>AE53.3</b>	10 ml	
	99,5 Atom%D	glass	<b>AE53.4</b>	25 ml	
		glass	<b>AE53.2</b>	50 ml	
			<b>AE53.5</b>	100 ml	
		glass	<b>HN93.1</b>	10 ml	
		glass	<b>9905.1</b>	5 ml	
Bromobenzene D5	99,5 Atom%D	glass	<b>5200.1</b>	5 ml	
Deuterium oxide	100 Atom%D	glass ampoule	<b>HN81.3</b>	7.5 ml	
		glass	<b>HN81.1</b>	10 ml	
		septum bottle	<b>HN81.4</b>	10 ml	
		glass	<b>HN81.2</b>	50 ml	
		glass ampoule	<b>6672.6</b>	7.5 ml	
	99,9 Atom%D	glass	<b>6672.1</b>	10 ml	
		septum bottle	<b>6672.5</b>	10 ml	
			<b>6672.2</b>	25 ml	
		glass	<b>6672.3</b>	100 ml	
			<b>6672.4</b>	500 ml	
			<b>6672.7</b>	1 l	
1,2-Dichlorobenzene D4	99 Atom%D	glass	<b>HN82.2</b>	1 ml	
			<b>HN82.1</b>	5 ml	
Dichloromethane D2	99,8 Atom%D	glass ampoule	<b>7913.2</b>	7.5 ml	
		glass	<b>7913.1</b>	10 ml	
		glass	<b>AE55.3</b>	5 ml	
	99,5 Atom%D	glass ampoule	<b>AE55.5</b>	7.5 ml	
			<b>AE55.1</b>	10 ml	
		glass	<b>AE55.2</b>	25 ml	
			<b>AE55.4</b>	50 ml	
Diethyl ether D10	99 Atom%D	glass ampoule	<b>9907.1</b>	1 ml	
<i>N,N</i> -Dimethyl-formamide D7	99,5 Atom%D	glass ampoule	<b>CP92.2</b>	1 ml	
		glass	<b>CP92.1</b>	5 ml	
Dimethyl sulphoxide D6	100 Atom%D	glass ampoule	<b>1K3K.1</b>	7.5 ml	
	99,9 Atom%D	glass ampoule	<b>7915.3</b>	7.5 ml	
		glass	<b>7915.1</b>	10 ml	
		septum bottle	<b>7915.2</b>	10 ml	

Product name	Purity	Pack.	Art. No.	Pack Qty.
Dimethyl sulphoxide D6	99,8 Atom%D	glass ampoule	<b>AE56.3</b>	7.5 ml
		glass	<b>AE56.1</b>	10 ml
		septum bottle	<b>AE56.4</b>	10 ml
			<b>AE56.6</b>	25 ml
		glass	<b>AE56.2</b>	50 ml
			<b>AE56.5</b>	100 ml
Dimethyl sulphoxide D6 with TMS (0.03 vol.%)	99,9 Atom%D	glass ampoule	<b>7916.1</b>	7.5 ml
	99,8 Atom%D	glass ampoule	<b>AE60.3</b>	7.5 ml
			<b>AE60.1</b>	10 ml
		glass	<b>AE60.4</b>	25 ml
			<b>AE60.2</b>	50 ml
Ethanol D1	99,5 Atom%D	glass	<b>HN84.1</b>	50 ml
Ethanol D6	99 Atom%D	glass	<b>CP93.2</b>	1 ml
			<b>CP93.1</b>	5 ml
Methanol D1	99,5 Atom%D	glass	<b>HN86.1</b>	25 ml
			<b>HN86.2</b>	100 ml
Methanol D3	99,5 Atom%D	glass ampoule	<b>9910.1</b>	1 ml
		glass	<b>9910.2</b>	5 ml
Methanol D4	100 Atom%D	glass ampoule	<b>7918.2</b>	7.5 ml
		glass	<b>7918.1</b>	10 ml
			<b>AE57.3</b>	7.5 ml
	99,8 Atom%D	glass	<b>AE57.1</b>	10 ml
		septum bottle	<b>AE57.4</b>	10 ml
		glass	<b>AE57.5</b>	25 ml
			<b>AE57.2</b>	50 ml
Methanol D4 with TMS (0.03 vol.%)	99,8 Atom%D	glass ampoule	<b>7919.3</b>	7.5 ml
		glass	<b>7919.1</b>	10 ml
			<b>7919.2</b>	25 ml
Methylcyclohexane D14	99,5 Atom%D	glass	<b>9913.1</b>	5 ml
Nitrobenzene D5	99,5 Atom%D	glass	<b>9914.1</b>	5 ml
			<b>9914.2</b>	10 ml
Nitromethane D3	99 Atom%D	glass	<b>HN91.2</b>	5 ml
			<b>HN91.1</b>	10 ml
2-Propanol D1	98 Atom%D	glass	<b>9917.1</b>	25 ml
2-Propanol D8	99,5 Atom%D	glass	<b>9919.1</b>	5 ml
Pyridine D5	99,8 Atom%D	glass ampoule	<b>7922.2</b>	7.5 ml
		glass	<b>7922.1</b>	10 ml
	99,5 Atom%D	glass ampoule	<b>CP94.3</b>	7.5 ml
		glass	<b>CP94.1</b>	10 ml
		septum bottle	<b>CP94.2</b>	10 ml
Styrene D8	99 Atom%D, stabilised with 4- <i>tert</i> -butylcatechol	glass ampoule	<b>9921.1</b>	1 g
1,1,2,2-Tetrachloroethane D2	99,5 Atom%D	glass ampoule	<b>CP96.2</b>	7.5 ml
		glass	<b>CP96.1</b>	10 ml
		glass	<b>AE58.3</b>	5 ml
Tetrahydrofuran D8	99,5 Atom%D	glass ampoule	<b>AE58.5</b>	7.5 ml
		glass	<b>AE58.1</b>	10 ml
		septum bottle	<b>AE58.2</b>	10 ml
		glass	<b>AE58.4</b>	25 ml
			<b>AE58.6</b>	50 ml
Toluene D8	99,8 Atom%D	glass ampoule	<b>7924.2</b>	7.5 ml
		glass	<b>7924.1</b>	10 ml
	99,5 Atom%D	glass ampoule	<b>CP95.2</b>	7.5 ml
		glass	<b>CP95.1</b>	10 ml
Trichloromethane/ Chloroform D1	100 Atom%D	glass ampoule	<b>CP91.1</b>	7.5 ml
	99,8 Atom%D	glass ampoule	<b>7903.1</b>	7.5 ml
		glass	<b>AE54.4</b>	25 ml
	99,8 Atom%D, stabilised with Ag	glass	<b>AE54.1</b>	100 ml
		septum bottle	<b>AE54.3</b>	100 ml
		glass	<b>AE54.2</b>	500 ml
	Trichloromethane/ Chloroform D1 with TMS (0.03 vol.%)	99,8 Atom%D	glass ampoule	<b>7905.1</b>
99,8 Atom%D, stabilised with Ag		glass	<b>AE59.1</b>	100 ml

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

# Ionic Liquids

## Chemical and physical properties of ionic liquids:

Art. No.	Ionic liquid	Short name	Density	Melting point (°C)	Viscosity (cP)	Conductivity (mS/cm)	Thermal stability / pyrolysis
2010	1-Butyl-3-methyl-imidazolium-chloride	BMIM Cl	n. e.	65	n. e.	n. e.	approx. 200 °C*
2012	1-Butyl-3-methyl-imidazolium-hexafluorophosphate	BMIM PF <sub>6</sub>	1,372 (23 °C)	-8	267,1 (25 °C)	1,373 (20 °C)	approx. 200 °C, with water hydrolysis under HF formation*
2014	1-Butyl-3-methyl-imidazolium-tetrafluoroborate	BMIM BF <sub>4</sub>	1,205 (22 °C)	-75	103,5 (25 °C)	3,145 (20 °C)	approx. 200 °C, with water hydrolysis under HF formation*
2015	1-Butyl-3-methyl-imidazolium-trifluoromethanesulphonate	BMIM OTf	1,299 (24 °C)	16	80 (25 °C)	3,049 (20 °C)	<250 °C*
2021	1-Butyl-1-methyl-pyrrolidinium-bis-(trifluoromethylsulphonyl)-imide	BMPyrr BTA	1,395 (23 °C)	-18	94,4 (20 °C)	2,12 (20 °C)	<250 °C*
2022	1-Butyl-1-methyl-pyrrolidinium-dicyanamide	BMPyrr DCA	1,023 (20 °C)	-55	46,4 (20 °C)	10,83 (30 °C)	<80 °C / >80 °C discolouration*
2025	Butyl-trimethyl-ammonium-bis-(trifluoromethylsulphonyl)-imide	N1114 BTA	1,395 (24 °C)	7	106 (21 °C)	2,861 (30 °C)	<250 °C*
2028	Choline-dihydrogenphosphate	Choline DHP	n. e.	190	n. e.	n. e.	n. e.
2035	Ethylammonium-nitrate	EAN	1,209 (26 °C)	9	36,5 (25 °C)	25,36 (30 °C)	n. e.
2037	1-Ethyl-3-methyl-imidazolium-bromide	EMIM Br	n. e.	91	n. e.	n. e.	approx. 200 °C*
2053	1-Ethyl-3-methyl-imidazolium-dicyanamide	EMIM DCA	1,101 (26 °C)	-21	16,8 (21 °C)	25,3 (21 °C)	<80 °C / >80 °C discolouration*
2054	1-Ethyl-3-methyl-imidazolium-ethylsulphate	EMIM EtSO <sub>4</sub>	1,241 (24 °C)	n. e.	94,2 (25 °C)	5,560 (30 °C)	n. e.
2056	1-Ethyl-3-methyl-imidazolium-methanesulphonate	EMIM OMs	1,242 (23 °C)	n. e.	134,5 (25 °C)	3,693 (30 °C)	<250 °C*
2059	1-Ethyl-3-methyl-imidazolium-thiocyanate	EMIM SCN	1,119 (25 °C)	-6	24,7 (20 °C)	17,87 (20 °C)	<80 °C / >80 °C discolouration*
2062	1-Ethyl-3-methyl-imidazolium-trifluoromethansulphonate	EMIM OTf	1,386 (25 °C)	-9	39,8 (25 °C)	9,842 (30 °C)	<250 °C*
2064	1-Hexyl-3-methyl-imidazolium chloride	HMIM Cl	1,041 (26 °C)	-75	3302 (35 °C)	0,076 (30 °C)	<200 °C*
2069	1-Hexyl-3-methyl-imidazolium-hexafluorophosphate	HMIM PF <sub>6</sub>	1,298 (23 °C)	-61	464,7 (25 °C)	0,076 (30 °C)	<200 °C, with water hydrolysis under HF formation*
2070	1-Hexyl-3-methyl-imidazolium-tetrafluoroborate	HMIM BF <sub>4</sub>	1,148 (24 °C)	-82	288,3 (20 °C)	1,176 (20 °C)	<200 °C, with water hydrolysis under HF formation*
2076	1-Methyl-3-octyl-imidazolium-hexafluorophosphate	OMIM PF <sub>6</sub>	1,237 (24 °C)	-70	608,3 (25 °C)	0,444 (30 °C)	<200 °C, with water hydrolysis under HF formation*
2081	1-Methyl-3-octyl-imidazolium-tetrafluoroborate	OMIM BF <sub>4</sub>	1,106 (19 °C)	-81	760,3 (20 °C)	1,266 (30 °C)	<200 °C, with water hydrolysis under HF formation*
2091	1-Methyl-3-propyl-imidazolium-iodide	PMIM I	1,542 (24 °C)	n. e.	1385 (20 °C)	0,958 (30 °C)	n. e.
2095	1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)-imide	PMPip BTA	1,413 (23 °C)	9	175,5 (25 °C)	2,124 (30 °C)	approx. 250 °C*
2096	Triethylsulfonium-bis-(trifluoromethylsulphonyl)-imide	S222 BTA	1,462 (24 °C)	n. e.	38,9 (20 °C)	5,12 (25 °C)	n. e.

\*Experience values, not guaranteed / n. e. = not evaluated

## Solubility of ionic liquids:

Art. No.	Ionic liquid	Short name	Water	Isopropanol	Acetone	Acetonitrile	Toluene	Heptane
2010	1-Butyl-3-methyl-imidazolium-chloride	BMIM Cl	Y	Y	Y	Y	N	N
2012	1-Butyl-3-methyl-imidazolium-hexafluorophosphate	BMIM PF <sub>6</sub>	N	N	Y	Y	N	N
2014	1-Butyl-3-methyl-imidazolium-tetrafluoroborate	BMIM BF <sub>4</sub>	Y	N	Y	Y	N	N
2015	1-Butyl-3-methyl-imidazolium-trifluoromethanesulphonate	BMIM OTf	Y	Y	Y	Y	N	N
2021	1-Butyl-1-methyl-pyrrolidinium-bis-(trifluoromethylsulphonyl)-imide	BMPyrr BTA	N	Y	Y	Y	N	N
2022	1-Butyl-1-methyl-pyrrolidinium-dicyanamide	BMPyrr DCA	Y	Y	Y	Y	N	N
2025	Butyl-trimethyl-ammonium-bis-(trifluoromethylsulphonyl)-imide	N1114 BTA	N	Y	Y	Y	N	N
2028	Choline-dihydrogenphosphate	Choline DHP	Y	N	N	N	N	N
2035	Ethylammonium-nitrate	EAN	Y	Y	Y	Y	N	N
2037	1-Ethyl-3-methyl-imidazolium-bromide	EMIM Br	Y	Y	N	Y	N	N
2053	1-Ethyl-3-methyl-imidazolium-dicyanamide	EMIM DCA	Y	Y	Y	Y	N	N
2054	1-Ethyl-3-methyl-imidazolium-ethylsulphate	EMIM EtSO <sub>4</sub>	Y	Y	Y	Y	N	N
2056	1-Ethyl-3-methyl-imidazolium-methanesulphonate	EMIM OMs	Y	Y	Y	Y	Y	N
2059	1-Ethyl-3-methyl-imidazolium-thiocyanate	EMIM SCN	Y	Y	Y	Y	N	N
2062	1-Ethyl-3-methyl-imidazolium-trifluoromethansulphonate	EMIM OTf	Y	Y	Y	Y	T	N
2064	1-Hexyl-3-methyl-imidazolium chloride	HMIM Cl	Y	Y	Y	Y	N	N
2069	1-Hexyl-3-methyl-imidazolium-hexafluorophosphate	HMIM PF <sub>6</sub>	N	N	Y	Y	N	N
2070	1-Hexyl-3-methyl-imidazolium-tetrafluoroborate	HMIM BF <sub>4</sub>	N	Y	Y	Y	N	N
2076	1-Methyl-3-octyl-imidazolium-hexafluorophosphate	OMIM PF <sub>6</sub>	N	N	Y	Y	Y	N
2081	1-Methyl-3-octyl-imidazolium-tetrafluoroborate	OMIM BF <sub>4</sub>	N	Y	Y	Y	N	N
2091	1-Methyl-3-propyl-imidazolium-iodide	PMIM I	Y	Y	Y	Y	N	N
2095	1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)-imide	PMPip BTA	N	Y	Y	Y	T	N
2096	Triethylsulfonium-bis-(trifluoromethylsulphonyl)-imide	S222 BTA	N	N	Y	Y	N	N

Y = miscible / N = non miscible / T = partially miscible

# Ionic Liquids

## Ionic Liquids

Ionic liquids are salts which are available in a liquid state over a wide temperature range. Ionic liquids are composed of organic cations and organic or inorganic anions. Due to their fully ionized composition they exhibit no vapor pressure over the entire liquid range.

- Low-melting with melting point under 100 °C
- Thermally, mechanically and electrochemically stable
- Neither volatile nor combustible
- Negligible vapor pressure
- High solubility of many different kinds of chemicals



Product name	Purity	Synonymous	Art. No.	Pack Qty.
1-Butyl-3-methyl-imidazolium-chloride (BMIM Cl)	≥99 %	BMIM Cl	2010.1	25 g
			2010.2	100 g
1-Butyl-3-methyl-imidazolium-hexafluorophosphate (BMIM PF <sub>6</sub> )	≥99 %	BIMI PF <sub>6</sub>	2012.1	25 g
			2012.2	100 g
1-Butyl-3-methyl-imidazolium-tetrafluoroborate (BMIM BF <sub>4</sub> )	>99 %	BMIM BF <sub>4</sub>	2014.1	25 g
			2014.2	100 g
1-Butyl-3-methyl-imidazolium-trifluoromethanesulphonate (BMIM OTf)	≥99 %	BMIM OTf	2015.1	25 g
			2015.2	100 g
1-Butyl-1-methyl-pyrrolidinium-bis-(trifluoromethylsulphonyl)-imide (BMPyrr BTA)	≥99 %	BMPyrr NTf <sub>2</sub> , BMPyrr BTA	2021.1	25 g
			2021.2	100 g
1-Butyl-1-methyl-pyrrolidinium-dicyanamide (BMPyrr DCA)	≥98 %	BMPyrr N(CN) <sub>2</sub> , BMPyrr DCA	2022.1	25 g
			2022.2	100 g
Butyl-trimethyl-ammonium-bis-(trifluoromethylsulphonyl)-imide (N1114 BTA)	≥99 %	N1114 BTA	2025.1	25 g
			2025.2	100 g
Choline-dihydrogenphosphate (Choline DHP)	≥98 %	Choline DHP, Choline DHP	2028.1	25 g
			2028.2	100 g
Ethylammonium-nitrate (EAN)	≥97 %	EAN	2035.1	25 g
			2035.2	100 g
1-Ethyl-3-methyl-imidazolium-bromide (EMIM Br)	≥99 %	EMIM Br	2037.1	25 g
			2037.2	100 g
1-Ethyl-3-methyl-imidazolium-dicyanamide (EMIM DCA)	≥98 %	EMIM N(CN) <sub>2</sub> , EMIM DCA	2053.1	25 g
			2053.2	100 g
1-Ethyl-3-methyl-imidazolium-ethylsulphate (EMIM EtOSO <sub>3</sub> )	≥98 %	EMIM EtOSO <sub>3</sub>	2054.1	25 g
			2054.2	100 g
1-Ethyl-3-methyl-imidazolium-methanesulphonate (EMIM OMs)	≥99 %	EMIM OMs	2056.1	25 g
			2056.2	100 g
1-Ethyl-3-methyl-imidazolium-thiocyanate (EMIM SCN)	≥98 %	EMIM SCN	2059.1	25 g
			2059.2	100 g
1-Ethyl-3-methyl-imidazolium-trifluoromethanesulphonate (EMIM OTf)	≥99 %	EMIM OTf	2062.1	25 g
			2062.2	100 g
1-Hexyl-3-methyl-imidazolium chloride (HMIM Cl)	≥98 %	HMIM Cl	2064.1	25 g
			2064.2	100 g
1-Hexyl-3-methyl-imidazolium-hexafluorophosphate (HMIM PF <sub>6</sub> )	≥99 %	HMIM PF <sub>6</sub>	2069.1	25 g
			2069.2	100 g
1-Hexyl-3-methyl-imidazolium-tetrafluoroborate (HMIM BF <sub>4</sub> )	≥99 %	HMIM BF <sub>4</sub>	2070.1	25 g
			2070.2	100 g
1-Methyl-3-octyl-imidazolium-hexafluorophosphate (OMIM PF <sub>6</sub> )	>99 %	OMIM PF <sub>6</sub>	2076.1	25 g
			2076.2	100 g
1-Methyl-3-octyl-imidazolium-tetrafluoroborate (OMIM BF <sub>4</sub> )	>99 %	OMIM BF <sub>4</sub>	2081.1	25 g
			2081.2	100 g
1-Methyl-3-propyl-imidazolium-iodide (PMIM I)	≥98 %	PMIM I	2091.1	25 g
			2091.2	100 g
1-Methyl-1-propyl-piperidinium-bis-(trifluoromethylsulphonyl)- imide (PMPip BTA)	≥99 %	PMPip BTA	2095.1	25 g
			2095.2	100 g
Triethylsulfonium-bis-(trifluoromethylsulphonyl)-imide (S222 BTA)	≥99 %	S222 BTA	2096.1	25 g
			2096.2	100 g

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)



# SOLVAGREEN® Green Solvents our Brand for Alternative Solvents

## Green Solvents

The sustainable solvents listed below – Green Solvents – serve as substitutes for environmentally hazardous and harmful reagents and help minimize risk.

Sustainability is also achieved through the use of renewable resources or environmentally compatible manufacturing and recycling processes.



### Products from renewable raw materials

Product name	Brand/Purity	Basic material	Pack.	Art. No.	Pack Qty.
Bioethanol	SOLVAGREEN® 96 %, Ph. Eur.	Wheat	glass	6724.1	1 l
				6724.2	2.5 l
			plastic	6724.3	2.5 l
				6724.4	5 l
				6724.5	10 l
	SOLVAGREEN® 96 %, denatured	Wheat	plastic	6724.6	25 l
				6726.1	1 l
				6726.2	2.5 l
				6726.3	5 l
				6726.4	10 l
Glycerol	SOLVAGREEN® ≥98 %, anhydrous, Ph. Eur.	Plants	plastic	6726.5	25 l
				7530.1	1 l
				7530.4	2.5 l
				7530.5	5 l
				7530.2	10 l
	SOLVAGREEN® ~86 %, Ph. Eur., extra pure	Plants	plastic	7533.1	1 l
				7533.3	2.5 l
				7533.4	5 l
				7533.2	10 l
				7533.5	25 l
Succinic acid	≥99 %, for synthesis, made from renewable raw material	Corn	plastic	1N1L.1	250 g
				1N1L.2	1 kg
				1N1L.3	2.5 kg
				1N1L.4	5 kg

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

### Bioethanol

Our bioethanol is manufactured by fermentation of organic wheat followed by distillation and rectification.

#### Advantages:

- Made from wheat grown in a controlled organic environment in accordance with EU organic farming regulation 834/2007
- Non-synthetically manufactured ethanol
- Low toxicity thanks to safe production methods
- Suitable for synthesis and other laboratory applications

Denaturated using a non-organic denaturant (**Art. No. 6726**)

# SOLVAGREEN® Green Solvents our Brand for Alternative Solvents



## Alternative products for environmentally hazardous and harmful reagents

Product name	Brand/Purity	General application	Pack.	Art. No.	Pack Qty.
Acetic acid <i>iso</i> -propyl ester	SOLVAGREEN® ≥99 %, for synthesis	Alternative for dichloromethane	glass	1A9C.1	1 l
				1A9C.2	2.5 l
Acetic acid <i>n</i> -propyl ester	SOLVAGREEN® ≥99,5 %, for synthesis	Alternative for MEK (mixture 40:60 with acetone)	plastic	1A9A.1	1 l
				1A9A.2	2.5 l
<i>tert</i> -Amyl methyl ether	SOLVAGREEN® ≥99 %, for synthesis	Alternative for diethyl ether	glass	1A92.1	100 ml
				1A92.2	250 ml
			plastic	1A92.3	1 l
				1A92.4	2.5 l
				1A92.5	10 l
Anisole	SOLVAGREEN® ≥99 %, for synthesis	Alternative for chlorobenzene, toluene	glass	4417.1	100 ml
				4417.2	500 ml
				4417.3	1 l
				4417.4	2.5 l
<i>N</i> -Butyl-2-pyrrolidone (NBP)	SOLVAGREEN® ≥99,5 %, for synthesis	Dipolar aprotic solvent. Alternative for NMP, NEP, DMSO	plastic	1E8A.1	100 ml
				1E8A.2	500 ml
				1E8A.3	1 l
				1E8A.4	2.5 l
Cyclopentyl methyl ether	SOLVAGREEN® ≥99 %, extra pure	Alternative for diethyl ether, tBME/MTBE, THF.	glass	7763.1	250 ml
				7763.2	500 ml
				7763.3	1 l
				7763.4	2.5 l
Diacetone alcohol	SOLVAGREEN® ≥98 %, for synthesis	Alternative for acetone, chlorinated solvents.	glass	3546.1	250 ml
				3546.2	1 l
				3546.3	2.5 l
Dibasic ester	SOLVAGREEN® ≥99 %, pure	Alternative for acetone, benzene, toluene, dichloromethane.	plastic	7973.1	1 l
				7973.2	2.5 l
				7973.3	5 l
Diethyl carbonate	SOLVAGREEN® ≥99,9 %	Alternative for DMF, phosgene.	glass	2627.1	100 ml
				2627.2	500 ml
				2627.3	1 l
				2627.4	2.5 l
Dihydrolevoglucosenone	SOLVAGREEN® ≥98,5 %, for synthesis	Dipolar aprotic solvent. Alternative for NMP, NEP, DMF, DMAC, DMSO	plastic	1E89.1	100 ml
				1E89.2	500 ml
				1E89.3	1 l
Dimethyl carbonate	SOLVAGREEN® ≥99,8 %	Alternative for DMF, phosgene.	glass	2625.1	100 ml
				2625.2	500 ml
				2625.3	1 l
				2625.4	2.5 l
<i>N,N'</i> -Dimethylpropylene urea	SOLVAGREEN® ≥99 %, for synthesis	Polar aprotic solvent, alternative for DMF and hexamethylphosphoramide (HMPA).	glass	0662.1	25 ml
				0662.2	100 ml
				0662.3	500 ml
Diphenyl carbonate	SOLVAGREEN® ≥99 %	Alternative for DMF, phosgene.	plastic	2626.1	100 g
				2626.2	500 g
				2626.3	1 kg
2-Methyltetrahydrofuran	SOLVAGREEN® ≥99 %, extra pure	Alternative for THF, dichloromethane, DMSO, tBME/MTBE.	glass	6845.1	250 ml
				6845.2	500 ml
				6845.3	1 l
				6845.4	2.5 l
			PE/steel	6845.5	10 l
<i>N</i> -Octyl-2-pyrrolidone (NOP)	SOLVAGREEN® ≥99 %, for synthesis	Alternative for NMP, NEP.	glass	0358.1	100 ml
				0358.2	500 ml
			plastic	0358.3	1 l
				0358.4	2.5 l
Propylene carbonate	SOLVAGREEN® ≥99,7 %, for synthesis	Alternative for acetone, DMF, chlorinated solvents.	glass	5022.2	100 ml
				5022.1	250 ml
				5022.3	1 l
2-Pyrrolidone	SOLVAGREEN® ≥99,5 %, for synthesis	Alternative for NMP, NEP.	plastic	8779.1	500 ml
				8779.2	1 l
				8779.3	2.5 l
				8779.4	5 l

# SOLVAGREEN® – Green Solvents



## Acetals

Acetals are made from an alcohol and an aldehyde. They form a chemical family with linear or cyclic structures that is stable in a neutral and basic environment.

Carl ROTH offers you a wide range of acetals with different properties. All acetals are easily miscible with organic solvents and most surfactants. The water miscibility, on the other hand, varies and depends strongly on the structure of the acetals.

Due to their high solubility, acetals are often used as solvents.

### Fields of application:

- Replacement of more dangerous solvents
- Cleaning
- Synthesis



Product name	Purity	General application	Pack.	Art. No.	Pack Qty.
Butylal	≥99 %, for synthesis	Alternative for D-limonene, cyclic hydrocarbons, perchloroethylene.	glass	0796.1	100 ml
				0796.2	500 ml
				0796.3	1 l
				0796.4	2.5 l
1,3-Dioxolane	≥90 %, for synthesis	Alternative for NMP, NEP, glycols, aromatics.	glass	0447.1	100 ml
				0447.2	500 ml
				0447.3	1 l
				0447.4	2.5 l
Ethylal	≥99,5 %, for synthesis	Alternative for ethanol, MEK, aromatics, butyl acetate.	glass	0787.1	100 ml
				0787.2	500 ml
				0787.3	1 l
				0787.4	2.5 l
2-Ethylhexylal	≥99 %, for synthesis	Alternative for toluene, xylene.	glass	0797.1	100 ml
				0797.2	500 ml
				0797.3	1 l
				0797.4	2.5 l
Glycerol Formal	≥99 %, for synthesis	Solvent for many applications, completely miscible with water.	glass	0798.1	100 ml
				0798.2	500 ml
				0798.3	1 l
				0798.4	2.5 l
Methylal	≥99,9 %, for synthesis	Acetal and protecting group. Alternative for dichloromethane, acetone, MEK.	glass	3154.1	100 ml
				3154.2	500 ml
				3154.3	1 l
				3154.4	2.5 l
	≥99,5 %, for synthesis	Acetal and protecting group. Alternative for dichloromethane, acetone, MEK.	glass	0783.1	100 ml
				0783.2	500 ml
				0783.3	1 l
				0783.4	2.5 l
Propylal	≥99 %, for synthesis	Alternative for aromatics.	glass	0795.1	100 ml
				0795.2	500 ml
				0795.3	1 l
				0795.4	2.5 l
Tetraoxaundecane	≥99 %, for synthesis	Alternative for NMP, NEP, glycols, aromatics.	glass	0786.1	100 ml
				0786.2	500 ml
				0786.3	1 l
				0786.4	2.5 l

Safety-relevant data and further information in the current catalogue and at [www.carlroth.com](http://www.carlroth.com)

### Tip:

Not every alternative solvent is suitable for every application. Carl ROTH offers you a wide range of alternative solvents to address the most diverse solvent problems. The acetals can also be used as an additive to normal, classic solvents.



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