



**Hydrocarbons 99 %**

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Our range of hydrocarbons 99% offers a wide selection of high-grade quality products, which meet the highest requirements. The physical properties are specified very precisely with close correspondence to the literature values of these products. The hydrocarbons 99% product line comprises aliphatic, alicyclic and aromatic hydrocarbons with a minimum purity of 99% and covers a chain length range of C5 to C16. Products in the range of n-C18 to n-C20 are available on request. Qualities with minimum purities of 99.75% are commercially available. On request, additional customer-specific quality parameters can be agreed upon to ensure optimum performance in the product's application.

Hydrocarbons 99% are used as laboratory reagents and in industrial processes, where their high purities combined with their physical properties offer particular benefits. They are excellently suited as process adjuvants in crystallisation, extraction, HPLC and SMB chromatography processes, as reaction media or in specific applications as latent heat storage. The data above represents typical values. Specifications and Certificates of Analysis can be provided on request. All products are supplied in 200 litre drums and bulk. Other packages are available on request.

Hydrocarbons 99 %	CAS-No.	Molecular weight	Density	Boiling Point	Solidification point	Refractive index
Typical Properties			at 20°C kg/m <sup>3</sup> ISO 12185	at 101.3 kPa (1013 mbar) °C	°C	n <sub>D</sub> 20 DIN 51423-2
<b>iso-Pentane</b>	78-78-4	72.1	620	27.8	-160.0	1.3540
<b>n-Pentane</b>	109-66-0	72.1	626	36.0	-131.0	1.3575
<b>n-Hexane</b>	110-54-3	86.2	660	68.7	-95.3	1.3750
<b>n-Heptane</b>	142-82-5	100.2	684	98.4	-90.6	1.3875
<b>iso-Octane (2,2,4-Trimethylpentane)</b>	540-84-1	114.2	692	99.3	-71.8	1.3915
<b>n-Octane</b>	111-65-9	114.2	705	125.7	-56.8	1.3975
<b>n-Nonane*</b>	111-84-2	128.3	718	150.8	-53.5	1.4054
<b>n-Decane</b>	124-18-5	142.3	730	174.1	-29.7	1.4120
<b>n-Undecane*</b>	1120-21-4	156.3	740	195.9	-26.0	1.4172
<b>n-Dodecane</b>	112-40-3	170.3	749	216.3	-12.0	1.4216
<b>n-Tridecane*</b>	629-50-5	184.4	755	235.4	-5.0	1.4256
<b>n-Tetradecane*</b>	629-59-4	198.4	763	253.6	+5.8	1.4289
<b>n-Pentadecane*</b>	629-62-9	212.4	769	270.6	+9.7	1.4319
<b>n-Hexadecane</b>	544-76-3	226.4	773	286.8	+18.0	1.4345
<b>Cyclopentane*</b>	287-92-3	70.1	745	49.3	-93.9	1.4065
<b>Methylcyclopentane*</b>	96-37-7	84.2	749	71.2	-142.5	1.4097
<b>Cyclohexane</b>	110-82-7	84.2	779	80.7	+6.6	1.4262
<b>Methylcyclohexane</b>	108-87-2	98.2	769	100.9	-126.2	1.4231

Purity > 99% m/m • \*On request

Notice: The information and data contained herein do not constitute sales specifications. The product properties may be changed without notice. No liability, warranty or guarantee of product performance is created by this document. It is the Buyer's responsibility to determine whether Haltermann Carless products are appropriate for Buyer's use and to ensure that Buyer's workplace and disposal practices are in compliance with applicable laws and regulations. No freedom from any patents or other industrial or intellectual property rights is granted or to be inferred (November 2015).

## Products and Markets

Haltermann Carless offers an ideal combination of decades of experience in the field of multiphase fractional distillation and production. A high level of customer orientation and flexibility ensures our customers receive skilled assistance and attention at all times. A high level of consistent quality is

the hallmark of our products. Haltermann Carless is ISO 9001 and ISO 14001 certified. Before using the referenced products, please refer to the relevant Safety Data Sheets or contact your Haltermann Carless representative.

Heat of fusion Hf (J/g)	Flash point °C ISO 13736/ISO 2719	Specific heat cp kJ/kg.K at 20°C (1kj = 0.239 kcal)	Heat of vaporization ΔH kJ/kg (1 kJ = 0.239 kcal)	Vapour pressure		Surface tension at 20°C mN/m (dyn/cm)	Kinematic viscosity mm <sup>2</sup> /s (cSt) at 20°C ISO 3104
				in kPa (1kPa = 10mbar)			
				25°C	100°C		
-	< -35	2.258	339.0	91.74	-	15.0	0.36
-	< -35	2.372	357.5	68.39	-	16.0	0.38
-	-23	2.263	335.1	20.24	-	18.4	0.47
-	-1	2.208	316.5	6.26	-	19.3	0.61
-	-12	2.074	271.6	6.04	-	18.8	0.70
-	+12	2.196	301.1	2.00	-	21.8	0.78
-	+31	2.108	286.5	0.66	-	22.9	1.00
-	49	2.103	276.3	0.23	-	23.9	1.27
-	+68	2.099	265.9	-	4.66	24.7	1.61
-	+86	2.095	256.7	-	2.33	25.4	2.01
-	> +100	2.091	247.5	-	1.48	26.1	2.49
230.3	> +100	2.082	240.8	-	0.49	26.6	3.07
162.4	> +100	2.082	232.8	-	0.24	27.1	3.74
234.1	> +100	2.078	227.4	-	0.12	27.6	4.51
-	< -35	1.873	389.2	42.30	-	21.8	0.59
-	< -10	1.880	344.1	18.33	-	21.6	0.68
-	-18	1.810	357.6	13.01	-	24.3	1.26
-	-4	1.875	323.2	6.18	-	23.8	0.95

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