

n-Hexylglycol

Clear, mobile, high-boiling, low-volatility liquid for use as a solvent, flow promoter and coalescent.

Chemical nature

Ethylene glycol mono-n-hexyl ether, 2-hexoxy-1-ethanol

Molecular formula	C ₈ H ₁₈ O ₂
Molar mass	146.23 g/mol
CAS-No.	112-25-4
EC-No.	203-951-1

Delivery specification

Property	Value	Unit	Test method
- n-Hexylglycol	98.0 min.	%	GC-Method BASF
- Water	0.1 max.	%	DIN 51777, Part 1
Pt/Co color value (Hazen)	10 max.	-	DIN EN ISO 6271
Acid value	0.1 max.	mg KOH/g	DIN EN ISO 2114

Properties

n-Hexylglycol is a clear, mobile, neutral, slightly hygroscopic liquid with a mild odor. It is miscible with all common solvents, e. g. alcohols, ketones, aldehydes, ethers, glycols and aromatic and aliphatic hydrocarbons. Its miscibility with water, however, is limited.

n-Hexylglycol enters into the typical reactions of alcohols, e. g. esterification, etherification, oxidation and the formation of alcoholates. Since n-Hexylglycol may react with the oxygen in the air to form peroxides, BASF supplies it inhibited with 2.6-di-*tert*-butyl-*para*-cresol (butylated hydroxytoluene – BHT).

Physical data

The following physical data have been compiled from the literature as well as from BASF measurements and calculations. They provide no guarantee of properties in the legal sense, however.

Property	Condition	Value	Test method
Boiling range	at 1013 hPa; 95 Vol.-%; 2 – 97 ml	200 – 212°C	DIN 51751
Density	at 20°C	0.887 – 0.890 g/cm ³	DIN 51757
Refractive index n_{20D}		1.428 – 1.430	DIN 51423
Solidification point		-42°C (ice flakes)	
Evaporation rate	ether = 1	Approx. 1200	DIN 53170
Enthalpy of combustion (ΔH_c)	at 25°C	33 136 kJ/kg	
Enthalpy of vaporization (ΔH_v)	at 25°C	475 kJ/kg	
Enthalpy of vaporization (ΔH_v)	at boiling point	325 kJ/kg	
Enthalpy of formation (ΔH_f)	at 25°C	-3 776 kJ/kg	
Dipole moment (μ)		2.08 D	
Solubility:		Mass fraction of	
- n-Hexylglycol in water		1.0%	
- Water in n-Hexylglycol		18.8%	
Hansen solubility parameters		$\delta_d = 13.8 \text{ (MPa)}^{1/2}$ $\delta_p = 7.2 \text{ (MPa)}^{1/2}$ $\delta_h = 12.1 \text{ (MPa)}^{1/2}$ $\delta_t = 19.7 \text{ (MPa)}^{1/2}$	

T [°C]	Density r [g/cm ³]	Viscosity η [mPa·s]	Refractive index n _D
0	0.9031	10.8	1.4383
10	0.8954	7.2	1.4339
20	0.8875	5.3	1.4295
30	0.8797	3.8	1.4251
40	0.8717	2.9	1.4207
50	0.8639	2.3	1.4162

T [°C]	Vapor pressure P [hPa]	Specific heat C _p [kJ/(kg·K)]	Thermal conductivity λ [mW/(m·K)]
0	0.009	1.90	149.6
10	0.03	1.94	148.4
20	0.08	1.98	147.1
30	0.2	2.02	146.0
40	0.5	2.05	144.9
50	1.0	2.09	143.8
60	2.0	2.12	142.8
80	7.1	2.19	140.9
100	20.7	2.25	139.3
120	52.6		
140	119		
160	244		
180	462		
200	817		
208.1	1013		

Applications

Selected applications are described below.

By virtue of its good solvent power, the main applications of n-Hexylglycol are as a solvent, flow promoter and coalescent aid.

For instance, it improves the flow of many baking finish systems. Added in small proportions to formulations for electrodeposition paints, it greatly improves film formation and levelling. n-Hexylglycol is also eminently suitable as a mild, low-odour co-solvent in low-aromatic mineral spirit blends for dissolving polymer binders such as Acronal® 260 F.

n-Hexylglycol can also be used in printing inks and cleaners.

Storage & Handling

n-Hexylglycol should be stored under nitrogen. The storage temperature must not exceed 40°C and moisture are excluded. Under these conditions, a storage stability of 12 months can be expected.

Safety

When using this product, the information and advice given in our Safety Data Sheet should be observed. Due attention should also be given to the precautions necessary for handling chemicals.

Note

The data contained in this Technical Information is based on our current knowledge and experience as well as our investigations according to the today's state-of-the-art. In view of the many factors that may affect processing and application of the Product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the Product for specific purpose. No liability of BASF can be derived therefrom. It is the responsibility of the recipient of the Product to ensure that any proprietary rights and existing laws and legislation are observed.

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