Technical Leaflet

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n-Hexyl Glycol

Please file this publication in your "Solvents" folder.

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: $C_8H_{18}O_2$

Molar mass: 146.2 g/mol

CAS No.: 112-25-4 EINECS No.: 203-951-1

Delivery specification

Property	Value	Unit	Test method
Mass fraction of			
– n-hexyl glycol	min. 98.0	%	DIN 55688
– water	max. 0.1	%	DIN 51777, part 1
Platinum-cobalt colour	max. 10	–	DIN EN 1557
Acid value	max. 0.1	mg KOH/g	DIN EN ISO 3682

Properties

n-Hexyl glycol is a clear, mobile, neutral, slightly hygroscopic liquid with a mild odour. 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-Hexyl glycol enters into the typical reactions of alcohols, e. g. esterification, etherification, oxidation and the formation of alcoholates. Like all other ethers, it may form peroxides if it comes into contact with atmospheric oxygen.

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.

Boiling range at 1013 mbar (DIN 53171; 95 Vol.-%; 2 – 97 ml)	200 – 212 °C
Density at 20 °C (DIN 51757)	0.887 – 0.890 g/cm^3
Refractive index n_D^{20} (DIN 53491)	1.428 – 1.430
Freezing point at 1013 mbar	– 42 °C (ice flakes)

T [°C]	Vapour pressure P [mbar]	Density ρ [g/cm^3]	Viscosity η [mPa·s]	Refractive index n_D
0	0.009	0.9031	10.8	1.4383
10	0.03	0.8954	7.2	1.4339
20	0.08	0.8875	5.3	1.4295
30	0.2	0.8797	3.8	1.4251
40	0.5	0.8717	2.9	1.4207
50	1.0	0.8639	2.3	1.4162
60	2.0			
80	7.1			
100	20.7			
120	52.6			
140	119			
160	244			
180	462			
200	817			
208.1	1013			

T [°C]	Specific heat C_P [kJ/(kg·K)]	Thermal conductivity λ [mW/(m·K)]
0	1.90	149.6
10	1.94	148.4
20	1.98	147.1
30	2.02	146.0
40	2.05	144.9
50	2.09	143.8
60	2.12	142.8
80	2.19	140.9
100	2.25	139.3

Heat of combustion (ΔH_c)	at 25 °C	33 136 kJ/kg
Enthalpy of vaporization (ΔH_v)	at 25 °C	475 kJ/kg
	at the boiling point	325 kJ/kg
Enthalpy of formation (ΔH_f)	at 25 °C	– 3776 kJ/kg
Dipolar moment (m)		2.08 D
Evaporation rate (DIN 53170; ether = 1)		approx. 1200

Solubility at room temperature:
mass fraction
– of n-hexyl glycol in water: 1.0 %
– of water in n-hexyl glycol: 18.8 %

Hansen solubility parameters at 25 °C

δ_d = 13.8 (MPa) $^{1/2}$
δ_p = 7.2 (MPa) $^{1/2}$
δ_h = 12.1 (MPa) $^{1/2}$

δ_t = 19.7 (MPa) $^{1/2}$

Applications

Selected applications are described below.

Coatings industry

By virtue of its good solvent power, the main applications of n-hexyl glycol 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-Hexyl glycol 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-Hexyl glycol can also be used in printing inks and cleaners.

Safety Data Sheet

A Safety Data Sheet according to EU guideline 91/155/EWG is available for n-hexyl glycol.

Note

The information submitted in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.

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