



DOWANOL TPnB

Tripropylene Glycol n-Butyl Ether

$C_4H_9-O-C_3H_6-O-C_3H_6-O-CH_2-CHOH-CH_3$ (Major isomer)

A very slow-evaporating, hydrophobic glycol ether with outstanding surface tension-lowering ability; ideal where high polymer solvency and residence time are required

Introduction

DOWANOL* TPnB (Tripropylene Glycol n-Butyl Ether) is the slowest-evaporating member of the family of DOWANOL glycol ethers. DOWANOL TPnB is a high boiling, colorless solvent with low viscosity and practically no odor. Due to its length and hydrophobic structure, DOWANOL TPnB has a high organic solubility, low water solubility, and a high boiling point.

Its unique properties make it suitable for a number of water-borne resins where a powerful coalescent is needed for proper film formation. Its solvating characteristics combined with low water solubility ensure that DOWANOL TPnB will almost completely partition into the resin phase, thus providing superior coalescence. The extremely low odor of DOWANOL TPnB makes it suitable for indoor decorative paints.

Physical properties†

Molecular weight (g/mol)		248.4
Boiling point @ 760 mmHg, 1.01 bar	525.2°F	274.0°C
Flash point (Setaflash Closed Cup)	259°F	126°C
Freezing point	<-103°F	<-75°C
Vapor pressure@ 20°C — extrapolated		<0.01 mmHg <0.01 mbar
Specific gravity (25/25°C)		0.930
Density @ 20°C	7.76 lb/gal	0.930 g/cm ³
@ 25°C	7.73 lb/gal	0.927 g/cm ³
Viscosity (cP or mPa.s @ 25°C)		7.0
Surface tension (dynes/cm or mN/m @ 25°C)		29.7
Specific heat (J/g°C @ 25°C)		1.80
Heat of vaporization (J/g) at normal boiling point		2220
Net heat of combustion (kJ/g) — predicted @ 25°C		30.4
Autoignition temperature	529°F	186°C
Evaporation rate	(n-butyl acetate = 1.0) (diethyl ether = 1.0)	0.0004 >1200
Solubility, g/100 g @ 25°C		
Solvent in water		3 (2.5 wt%)
Water in solvent		8.5 (8 wt%)

Hansen solubility parameters (J/cm^3) ^{1/2}	
_d (Dispersion)	14.8
_p (Polar)	1.7
_h (Hydrogen bonding)	7.9
Flammable limits (vol.% in air)	
Lower	-
Upper	-

†The physical property data listed here are considered to be typical properties, not specifications.

Classification/Registry Numbers††

CAS Number	55934-93-5
AICS (Australia)	Pending – contact a Dow representative
DSL (Canada)	Pending – contact a Dow representative
ECL (Korea)	94.7
EINECS (EU)	259-910-3
MITI (Japan)	7-97
TSCA (U.S.)	55934-93-5

†† **NOTE:** Classifications apply only to this glycol ether product. It is the responsibility of the formulator to ensure that the final finished product complies with the regulations of a given country prior to its sale or distribution in that country.

Suggested Applications

- Excellent solvent for heavy duty cleaners.
- Possible additive for floor wax strippers.
- Plasticizer in selected resin systems.
- Coupling agent and grease penetrant in oven cleaners.
- Solvent for inks in ball point and felt tip pens, stamp pads, and textile printing pastes.
- Coalescent for water-borne architectural and industrial coatings.

Features

- High organic solubility
- Low water solubility
- Extremely low odor
- Superior coalescence
- Low viscosity
- High boiling point

NOTE: Consult the appropriate Material Safety Data Sheet for safety and handling guidelines for this product.

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