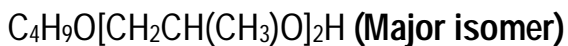




DOWANOL DPnB

Dipropylene Glycol n-Butyl Ether



A slow-evaporating, hydrophobic glycol ether with excellent surface tension-lowering ability and coalescing properties

Introduction

DOWANOL* DPnB glycol ether is a relatively slow-evaporating solvent which is one of our most efficient coalescents in water-borne latex systems. DOWANOL DPnB glycol ether combines a number of properties that contribute to very high latex film quality: 1) high polymer plasticizing efficiency, 2) large molecular size and therefore greater polymer mobility contribution, 3) strong partitioning to the polymer phase, and 4) relatively slow evaporation rate. This product is compatible with many different resin types. DOWANOL DPnB glycol ether also provides excellent surface tensionlowering ability, and is useful in cleaning products by itself or when blended with other products such as DOWANOL DPM glycol ether. Used alone in cold metal cleaning, DOWANOL DPnB glycol ether is a good solvent for removing oils and greases.

Physical properties†

Molecular weight (g/mol)		190.3
Boiling point @ 760 mmHg, 1.01 bar	446°F	230°C
Flash point (Setaflash Closed Cup)	212.7°F	100.4°C
Freezing point	<-103°F	<-75°C
Vapor pressure@ 20°C — extrapolated		0.04 mmHg 0.06 mbar
Specific gravity (25/25°C)		0.910
Density @ 20°C	7.60 lb/gal	0.911 g/cm ³
@ 25°C	7.57 lb/gal	0.907 g/cm ³
Viscosity (cP or mPas @ 25°C)		4.9
Surface tension (dynes/cm or mN/m @ 25°C)		28.4
Specific heat (J/g°C @ 25°C)		1.79
Heat of vaporization (J/g) at normal boiling point		252
Net heat of combustion (kJ/g) — predicted @ 25°C		30.8
Autoignition temperature	381°F	194°C
Evaporation rate	(n-butyl acetate = 1.0) (diethyl ether = 1.0)	0.006 >1200
Solubility, g/100 g @ 25°C		
Solvent in water		4.5 (4.5 wt%)
Water in solvent		14 (12 wt%)

Hansen solubility parameters (J/cm ³) ^{1/2}	
_d (Dispersion)	14.8
_p (Polar)	2.5
_h (Hydrogen bonding)	8.7
Flammable limits (vol.% in air)	
Lower (measured @ 145°C)	0.60
Upper (measured @ 180°C)	20.40

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

Classification/Registry Numbers††

CAS Number	29911-28-2
AICS (Australia)	29911-28-2
DSL (Canada)	29911-28-2
ECL (Korea)	9212-948
EINECS (EU)	249-951-5
MITI (Japan)	7-97
TSCA (U.S.)	29911-28-2

†† 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

- Coupling agent and solvent in household and industrial cleaners, grease and paint removers, metal cleaners, and hard surface cleaners.
- Effective coalescent for lowering minimum film formation temperature (MFFT) in water-borne latex coatings.
- Active solvent for solvent-based coatings.
- Chemical intermediate for the production of epoxides, acid ester derivatives, solvents, and plasticizers.
- Effective solvent for water-reducible coatings.

Features

- Excellent solvency
- Good oil solubility
- Effective surfactant properties
- Excellent coupling ability
- Good evaporation rate control
- Greater formulating flexibility
- Low viscosity
- Low odor
- Wide range of applications
- Low toxicity
- Practical alternative to DB (diethylene glycol butyl ether)
- High dilution ratio

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

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