



DOWANOL™ DPnB

Dipropylene Glycol n-Butyl Ether



Description

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 tension lowering 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.

Typical Physical Properties

These properties are typical but do not constitute specifications.

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 mPa•s @ 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

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 coupling agent in waterbased agricultural formulations.

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.

NOTICE: No freedom from any patent owned by Seller or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Seller assumes no obligation or liability for the information in this document. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.



™ Trademark of The Dow Chemical Company ("Dow") or an affiliated company of Dow.

March 2004
Form No. 110-00620-0304