Technical Data Sheet

# DOWANOL™ DPnB Glycol Ether

**Synonyms** Dipropylene glycol n-butyl ether.

**Chemical Formula** $C_4H_90[CH_2CH(CH_3)O]_2H$

**Sustainability Attribute:**

Returna™ Advancing biodegradability with Dow

## Product Description

DOWANOL™ DPnB Glycol Ether is a slow-evaporating, hydrophobic glycol ether with excellent surface tension-lowering ability and coalescing properties. 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.

## 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.

## Typical Physical Properties

| Properties | Unit | Result |
|---|---|---|
| Molecular weight | g/mol | 190.3 |
| Boiling point @ 760 mmhg, 1.01 ar | °C (°F) | 230 (446) |
| Flash point, Setaflash closed cup | °C (°F) | 100.4 (212.7) |
| Vapor pressure @ 20°C — extrapolated | mm Hg | 0.04 |
| Specific gravity (25/25°C) | | 0.910 |

## Typical Physical Properties (Cont.)

| Properties | Unit | Result |
|---|---|---|
| Liquid density @ 20°C | $g/cm^3$ | 0.913 |
| @ 25°C | $g/cm^3$ | 0.907 |
| Vapor density (air = 1) | | 6.6 |
| Viscosity @ 25°C | $mm^2/s$ | 4.9 |
| Surface tension @ 20°C | dynes/cm or mN/m | 28.8 |
| Specific heat @ 25°C | J/g/°C | 1.79 |
| Heat of vaporization at normal boiling point | J/g | 252 |
| Net heat of combustion — predicted @ 25°C | kJ/g | 30.8 |
| Autoignition temperature | °C (°F) | 194 (381) |
| Evaporation rate (n-butyl acetate = 1.0) | | < 0.01 |
| Solubility g/100 or % @ 25°C | | |
| Solvent in water | % | 4 |
| Water in solvent | | 10.4 |
| Hansen solubility parameters | $(J/cm^3)_{1/2}$ | |
| _d (Dispersion) | | 14.8 |
| _p (Polar) | | 2.5 |
| _h (Hydrogen bonding) | | 8.7 |
| Partition Coefficient, n-octanol/water | log Pow | 1.52 |
| Flammable limits | vol.% in air | |
| Lower | | 0.6 |
| Upper | | 20.4 |

**Typical Physical Properties:**
This data provided for those properties are typical values, and should not be construed as sales specifications.

## Classification/ Registry Numbers/Country Inventory[1]

| | |
|---|---|
| CAS# | 29911-28-2 |
| AICS (Australia) | 29911-28-2 |
| DSL (Canada) | 29911-28-2 |
| IECSC (China) | 29911-28-2 |
| ECI (Korea) | 29911-28-2 |
| EINECS (EU) | 249-951-5 |
| MITI (Japan) | 29911-28-2 |
| ENCS/IHSL (Japan) | 7-97 |
| NZIoC (New Zealand) | 29911-28-2 |
| PICCS (Philippines) | 29911-28-2 |
| TSCA (U.S.) | 29911-28-2 |

[1]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.

## How Supplied

| REGION | PACKAGING | TRANSPORT MODE |
|---|---|---|
| Europe/Africa | Bulk/Drum | Tank Truck |
| Latin America | Bulk/Drum | Tank Truck |
| North America | Bulk/Drum | Tank Truck/Tank Car |
| Pacific | Bulk/Drum | Tank Truck |

## Product Stewardship

Dow encourages its customers and potential users to review their applications from the standpoint of human health and environmental aspects. To help ensure that Dow products are not used in ways for which they are not intended or tested, Dow personnel will assist customers in dealing with environmental and product safety considerations. Dow literature, including Material Safety Data Sheets, should be consulted prior to the use.

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