



DOWANOL PGDA

Propylen glycol diacetate

Description

DOWANOL™ PGDA, propylene glycol diacetate, is a highly pure chemical product (more than 99.5% pure). It is a clear, colorless, practically odorless liquid with a comparatively high boiling point.

The high flash point, the high ignition temperature and a favorable toxicological profile make it a relatively safe solvent, from the point of view of industrial hygiene. DOWANOL PGDA is listed in the US pharmacopoeia NF XVI.

Uses for DOWANOL PGDA include:

- Can/coil coatings, acrylic paints, epoxy and polyurethane coatings, general paint and varnish formulations, high quality thinners, high gloss enamels, etc.
- Printing inks, silk-screen printing ink
- Agricultural products
- Plasticizers for cellulose acetate
- Evaporation retardant for a wide range of products

The hydrolysis stability of DOWANOL PGDA has been investigated under the following conditions, in (a) alkaline, (b) neutral and (c) acid media:

- a) pH = 11 at room temperature. A 5% solution of DOWANOL PGDA in water, with the pH modified using NaOH. After 21 days a percentage of 8.8 moles was hydrolyzed.
- b) A 5% solution of DOWANOL PGDA in pure distilled water. After 21 days a percentage of 8.35 moles was hydrolyzed.
- a) pH = 3 at room temperature. A 5% solution of DOWANOL PGDA in water, with the pH modified by HCl. After 21 days no hydrolysis was recorded (detection threshold 0.1 mol%).

TA – Luft¹ – Class III WHC² – 1

¹ Technical Instructions on Air Quality Control

² Water hazard classification

Classification

CAS #	623-84-7
EWG #	210-817-6

Chemical properties

Product Name	Propylene glycol diacetate
Chemical formula	C ₇ H ₁₂ O ₄
Structural formula	CH ₃ -CO-O-CH ₂ -CHCH ₃ -O-CO-CH ₃
Molecular Weight (g/mol)	160

Physical Properties⁽¹⁾

Boiling Point (°C)	190 (at 1013 mbar) / 90 (at 13 mbar)
Melting Point (°C)	< -75
Flash Point (°C)	95 (COC) / 86 (PMCC)
Autoignition temperature (°C)	431
Explosive limits ⁽²⁾ (% V/V)	2.8 - 12.7
Vapor pressure@ 20 °C (mbar)	< 2.5
Evaporation rate	0.04 (n-Butyl Acetate = 1) ca. 250 (Diethyl Ether = 1)
Heat of evaporation (J/g)	259
Specific Heat @ 25 °C (J/g°C)	3.22
Solubility – in water (g/100g)	8
Solubility – Water in Solvent (g/100g)	4.3
Hansen – Parameter (√J/cm ³)	
δD	15.8
δP	3.5
δH	8.8

	@ 20 °C	@ 25 °C
Density (g/cm ³)	1.056	1.050
Viscosity (mPa.s)	2.82	2.47
Molar ratio ⁽²⁾	151.5	152.4
Refractive Index	1.415	1.412
Electrical Conductivity (μS/cm)	0.04	0.04
Surface Tension (mN/m)	32.9	32.6

⁽¹⁾ Typical values; which do not in any way represent sales specifications.

⁽²⁾ Calculated value.

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