Technical Data Sheet

Propylene Carbonate

Revision: July 2026

Product Description

Propylene Carbonate is a cyclic organic ester made from the reaction of propylene glycol with carbon dioxide. It is a polar solvent with a clear appearance, low odor, and low toxicity.

Application Areas

Propylene Carbonate has found use in numerous applications that require outstanding solvency combined with high flash points, high boiling points, low evaporation rates, low VOCs, low toxicity, and low odor.

Propylene carbonate utilizations can be summarized as the following list:

- ✓ Safe Solvents
  - ○ Electrochemical
  - ○ Cosmetics & Personal Care
- ✓ Cleaners/Degreasers
- ✓ Paint Strippers or Removers
- ✓ Chemical Intermediates
- ✓ Woodbinder Resins
- ✓ Foundry Sand Binders
- ✓ Lubricants / Greases
- ✓ Photochromic
- ✓ Plasticizer
- ✓ Gas Treating
- ✓ Epoxy Resins
- ✓ Water Scavenger
- ✓ Antipilling
- ✓ Textile Dyeing
- ✓ Superabsorbent polymers
- ✓ Tail Solvent

“Safe” Solvents

Propylene Carbonate can be used as a "safe" and environmentally friendly solvent, replacing harsh products such as methylene chloride, acetone, aromatic solvents, MEK, and other highly volatile and hazardous solvents.

Cleaners / Degreasers

Formulators are being challenged to replace traditional solvents in cleaners and degreasers because of volatility and toxicity concerns. The search for both "safe" solvents and high performance in solvent-based, water-based, and water-rinseable systems has led to the use of materials such as Propylene Carbonate.

In addition to reducing VOC levels and offering outstanding performance, it provides exceptional compatibility and solubility properties to aid in formulating cleaners.

Propylene Carbonate is effective in reducing surface tension and so promotes cleaning by improving wetting and soil removal.

Paint Strippers / Removers

Propylene Carbonate can be replaced with the traditional methylene chloride in paint remover formulations.

Benefits

- High solvency
- High boiling point
- High flash point
- Low toxicity
- Low evaporation rate
- Low odor
- Not damaging to the atmosphere
- Readily biodegradable
- Reasonable cost

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Safety, Storage & Handling

Propylene carbonate is stable under ordinary storage conditions. However, there is evidence that in the presence of an acid, base, metal oxide, or salt, the carbonates will decompose with the evolution of carbon dioxide. This may lead to pressure buildup in closed containers to the point that the container may rupture, possibly with explosive force.

Propylene carbonate has a high flash point; however, it can be ignited and must be protected from sources of ignition or static electrical discharge. All vessels containing these materials should be adequately grounded.

Tanks, pumps, and lines may be cleaned with low-pressure steam, rinsed with water, and blown or wiped dry.

Product Specification

Property	Unit	Value	Test Method/Standard
Appearance	-	Colorless Transparent Liquid	Visual
Color	Pt-Co	≤ 20	ASTM D1209
Assay	%	≥ 99.5	ASTM D5830
Viscosity at 25 °C	mPa.s	2.5 – 3	ASTM D445
Density at 25°C	g/ml	1.20 – 1.23	ASTM D792
Boiling point	°C	242	ASTM D5399
Melting point	°C	- 49	ASTM D1015
Flash point	°C	270	ASTM D93
Refractive index (20 °C)	-	1.41 – 1.43	ASTM D1218
Evaporation Rate	%	< 0.005	@25°C, n-BuAc = 1.0
Water Content	ppm	≤ 200	ASTM D7546
Solubility	-	Soluble in water, lightly soluble in ethanol & other organic solvents	-

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