



Novolyte Technologies

Novolyte Technologies is a major international producer of performance chemicals and energy storage materials. Novolyte started its operations as Grant Chemical in 1958. The company is one of the world's leading manufacturers of high-performance solvents, aryl phosphines, and technologically demanding custom manufactured products. Novolyte is the largest North American producer, with a substantial global supply position, in glycol diethers (glymes), 1,3-dioxolane (DXL), 1,4-dioxane (DXA), and phenyl phosphinic acid (BZPA). Novolyte has developed a comprehensive offering of both performance-based and built-to-specification production, which are among the highest purity in the industry. It's Purolyte® and Pharmsolve® trademarks are widely recognized as the premier solvent and electrolyte materials for quality and functionality.

QSR-140



Registered Firm
ISO 9001:2000



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Ethyl diglyme – used to maximize color density while producing stable formulation

Tetraglyme – higher boiling to control evaporation and allowing long printer idle times

Higlyme – Highest boiling and emulsification power. Higlyme and Tetraglyme are 6% VOC by method 24 and are non-VOC's in Europe

Proglyme – used alone and with ethyl diglyme

Strong solvency, aprotic, excellent tox profiles:

- Replacements for THF, Diethyl Ether, Methyl Ethyl Ketone, Ethylene Dichloride, NMP, and Methylene Chloride

Use Dioxolane to dissolve resin, to print on polyester, and to maximize water

Blend Ethyl Diglyme, Tetraglyme and 1,3-dioxolane to control evaporation rate



Novolyte GREEN Solvents

For High-performance Inks

Formulate with Novolyte high performance solvents to:

- ◆ Maximize color print quality and durability, and cartridge reliability
- ◆ Eliminate odor and toxic solvents
- ◆ Minimize dispersant and pigment cost



Through the Use of Novolyte Glycol Diethers and Acetals!

Low odor and excellent tox profiles

94% non-VOC offerings Higlyme and Tetraglyme

High solvency to give stable ink

Strongly complexes with pigments

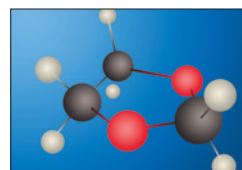
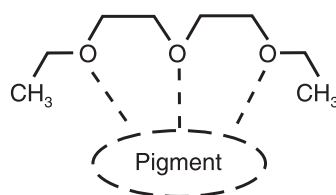
Ethydiglyme and Proglyme prevent inkjet clogging

Flexibility to formulate to maximum color density... for either water-based or solvent-based inks



Ethyl diglyme

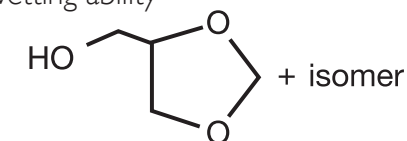
Widely used for high-performance inks
Gives high stability and great print appearance
While optimizing inkjet cartridge performance
Slight ethereal odor – quite pleasant!
Anti clogging properties



Novolyte – 1,3-Dioxolane

New! Bio-based Glycerol Formal

First protic solvent offered by Novolyte
Strong solvent – acetal + alcohol functionality
Again, an excellent tox profile
Good wetting ability



Maximize water, minimize odor
Match the oxygenated solvent to the pigment
Examples of commercial inkjet inks

Specialty Solvent Cyan Ink	
Component	% by weight
Novolyte Proglyme	<30
Other solvents	<70
Blue Pigment	<5
Copolymers	<8.5

Highest quality with advanced magenta pigments Smudge, fade, and water resistant	
Component	% by weight
Novolyte Ethyl diglyme	50-70
Novolyte Tetraglyme	10-20
Other solvents	6-25
Pigment, dyes, or carbon black	1-5
Resins and additives	1-10

Solvents for High Tetraglyme Performance Inks

	Novolyte Proglyme	Ethyl Diglyme	Tetraglyme	Higlyme	1,3 Dioxolane	Glycerol Formal
Chemical Description	P-series glycol diether	Glycol diethyl ether	Glycol dimethyl ether	>C ₈ + methyl glycol diether	Acetal	Acetal-alcohol BIO-BASED
Odor	Mild ethereal	Mild ethereal	Mild ethereal	Mild ethereal	Mild ethereal	Mild ethereal
Rel Evap rate nBuAc=100	13	4	<0.1	<0.1	350	3
BP °C	175	189	275	>300	74	192
Density	0.90	0.908	1.013	0.975	1.067	1.203
Hydrocarbon soluble	Yes	Yes	Yes	Yes	Yes	Yes
%H₂O in	4.5	100	100	100	100	100
% in water	35	100	100	100	100	100

Novolyte's selection of Technologies offers ink formulators the ability to maximize performance, while lowering costs.



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