

## Eastman TamiSolve™ NxG is a next-generation, high performance, safer co-solvent for water-based polyurethanes.

### An effective co-solvent and coalescent for the PUD market

- Improved coalescence and dispersibility at lower solvent concentration
- Favorable safety, health and environmental profile
- Formulation flexibility



### PUD coatings & adhesives applications

#### Formulation flexibility

TamiSolve NxG allows formulators to reduce both DMPA (dimethylolpropionic acid) content and co-solvents while maintaining end properties similar to those of NMP-based formulations. Reducing DMPA and co-solvents can be advantageous as formulators look to achieve specific safety profiles without negatively impacting performance. Improvements in coalescence and dispersibility have been demonstrated, while maintaining viscosity control in the final PUD system as compared with NMP-based systems.



#### Processing

TamiSolve NxG is a high purity, inert solvent with a high boiling point. As a result it does not interfere in the polymerization process to produce PUDs.



#### PUD properties

The improvement in formulation flexibility allows a broader choice of end property selection, potentially enlarging the performance window of waterborne PUD coatings. TamiSolve NxG, even at reduced levels, aids in improved film formation, while providing the possibility to reduce VOC levels. TamiSolve NxG has no permanent plasticizing effects beyond what would be considered normal for an NMP-based system.

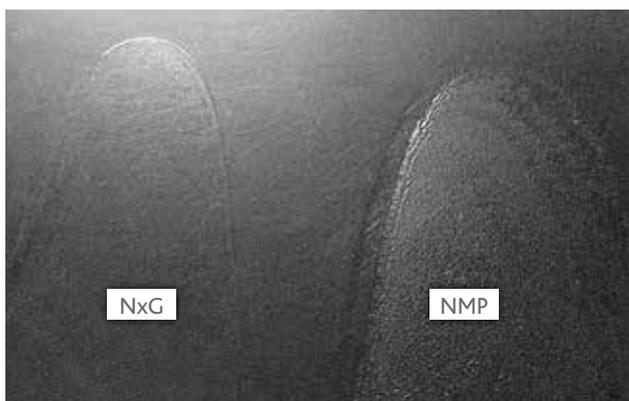


# Improved coating performance with TamiSolve™ NxG



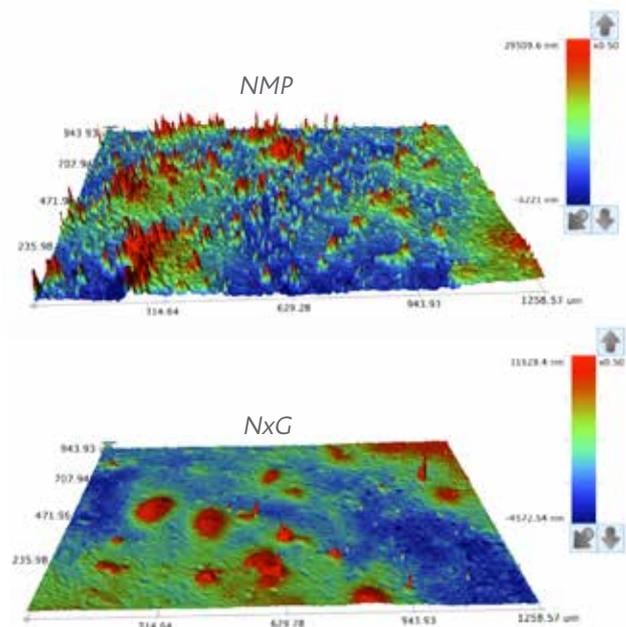
## Improved coalescence\*

Improved coalescence of PUD formulation with TamiSolve NxG. (1 week cured at RT, 10 mil wet on Leneta paper)



Optical topography

(Bruker Contour GT optical profilometer)



\* Hard aliphatic PUD - H12MDI/500BA/TMP/DMPA/HYD in ratio 1.70/0.67/0.030/0.30/0.7 (stoich. amounts)

## Reduced dry-to-touch time\*

### Dual co-solvent coalescence

Co-solvent 1	Co-solvent 2	Dry-to-touch	Coalescence
3% NxG	3% glycol ether	12 min	Excellent
3% NMP	3% glycol ether	17 min	Acceptable
3% NEP	3% glycol ether	20 min	Acceptable - mudcracking

Table 1: Gardner dry time & coalescence of dual co-solvent PUD formulations

The PUD formulation containing TamiSolve NxG shows improved coalescence and reduced dry-to-touch time.

### Single co-solvent coalescence

Co-solvent	Dry-to-touch	Dust free	Dry through
7.3% NxG	8 min	27 min	28 min
11.0% NMP	38 min	58 min	66 min
11.8% NEP	35 min	60 min	70 min

Table 2: Gardner dry time of PUD formulations with co-solvent added up to film coalescence level

The PUD formulation containing TamiSolve NxG shows lower co-solvent requirement (reduced VOC) and decreased dry-to-touch time.

## Product attributes of TamiSolve NxG in PUDs

Low color ( $\leq 50$ apha)
High boiling point (241°C)
Free of NCO reactive contaminants
Excellent solvency for PUD prepolymers
Allows lower hydrophilic content (relative to NMP)
Improved dispersibility
Lower VOC content (relative to NMP)
Testing demonstrates that TamiSolve™ NxG is not classified for developmental or genotoxicity and is inherently bio-degradable.

## Contact:

solvents@eastman.com  
www.tamisolvenxg.com