

BioAmber BIO-BASED SUCCINIC ACID FOR INNOVATIVE POLYURETHANE FORMULATIONS



CREATING VALUE WITH DIFFERENTIATED FORMULATIONS
WITH IMPROVED PROPERTIES AND SUSTAINABILITY PROFILE.

→ TPU Elastomers



VALUE PROPOSITION

- Solvent resistance
- Strength & elongation
- Tear & abrasion resistance
- Higher bio-content

POSSIBLE POLYOLS

SA + PDO
SA + AA + PDO
SA + BDO
SA + Se + BDO

→ CPU Elastomers



VALUE PROPOSITION

- Solvent resistance
- Strength & elongation
- Good hydrolysis stability
- Broad range of rebound

POSSIBLE POLYOLS

SA + AA + PDO
SA + PDO + BDO
SA + MPD + BDO
SA + HDO + BDO

→ PU Leather



VALUE PROPOSITION

- Softness
- Tear resistance
- Abrasion & solvent resistance
- Higher bio-content

POSSIBLE POLYOLS

SA + AA + PDO
SA + AA + BDO
SA + PDO
SA + PDO + BDO

→ PU Coating



VALUE PROPOSITION

- Hardness
- Solvent & abrasion resistance
- Good adhesion
- Higher bio-content

POSSIBLE POLYOLS

SA + HDO
SA + PDO
SA + PDO + HDO
SA + PDO + BDO

→ ADHESIVES



VALUE PROPOSITION

- High crystallinity
- Solvent resistance
- Green strength
- Bio-content

POSSIBLE POLYOLS

SA + BDO
SA + PDO
SA + MPD + BDO
SA + AA + PDO

→ INSULATION Foam



VALUE PROPOSITION

- Storage stability
- Higher sustainability
- Stiffness
- Compression set

POSSIBLE POLYOLS

SA + recycled PET
SA + MEG + DEG
SA + MEG + MPG
SA + Aromatics



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BioAmber

BIO-BASED SUCCINIC ACID FOR INNOVATIVE POLYURETHANE FORMULATIONS

You no longer need to choose between performance and sustainability, now you can have both.

BioAmber's technical expertise can help you choose the right bio-based succinate polyester polyol for your next innovation in polyurethanes. Whether it is a polyurethane application in synthetic leather, textiles, adhesives, coatings or thermoplastics, bio-based succinate polyester polyols made with BioAmber succinic acid can help you reach both your sustainability and performance goals. Just ask us how...



POLYURETHANE FORMULATION¹

| POLYOLS 50%-50% in mol | Bio-content* | Tm peak °C | Tg mid point °C | Viscosity at 70°C | Stiffness at 100% strain | Solvent resistance | Hydrolytic stability | Rebound Dampening | Tear |
|---------------------------|--------------|---------------|--------------------|----------------------|-----------------------------|-----------------------|-------------------------|----------------------|------|
| SA-MEG | 100% | ~80 | -12 | solid | + | +++ | --- | --- | ++ |
| SA-MEG / DEG | 100% | ND | -24 | 2800 | + | +++ | -- | --- | ++ |
| SA-PDO** | 100% | 35-38 | -36 | 2900 | + | +++ | + | ++ | ++ |
| SA-BDO | 100% | 104-110 | ND | solid | +++ | +++ | + | - | +++ |
| SA-HDO | 40% | 50-52 | ND | 1000 | + | ++ | +++ | +++ | ++ |
| SA-MPD | 50% | ND | -35 | 5100 (60°C) | - | ++ | + | - | -- |
| SA-MPD / BDO | 75% | 42 | -41 | 3100 (60°C) | + | ++ | + | - | + |
| SA-PDO / BDO | 100% | 56 | -44 | 2000 | ++ | ++ | + | + | ++ |
| SA-PDO / HDO | 64% | ND | -48 | 1475 | - | ++ | + | ++ | ++ |
| SA-BDO / HDO | 67% | 56 | -52 | 2360 (60°C) | ++ | ++ | + | ++ | ++ |
| SA / AA - PDO | 62% | ND | -51 | 1450 | - | ++ | ++ | ++ | ++ |
| SA / AA - BDO | 67% | ~60 | -57 | 1400 | ++ | ++ | +++ | +++ | ++ |
| SA / Se - BDO | 100% | 42 | ND | 550 | + | ++ | +++ | +++ | ++ |

* Bio-content based on bio-based MEG, DEG, PDO and BDO

** PDO = Susterra® 1,3-propanediol from DuPont Tate & Lyle Bio Products Company, LLC

1) When synthesized into a 34% MDI hard block polyurethane system based on 2000MW polyols and BDO Chain extender, bio-based succinic acid leads to a wide range of properties giving performance in coatings, elastomers plastics for use in synthetic leather, molded elastomer, tubing and coating for upholstery, wood, textiles and leather.

While BioAmber does not produce or commercialize succinate polyols, BioAmber offers succinate polyol samples, to facilitate the evaluation of these materials in your applications.



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