



## Improve Your Concrete Coating's Performance and Sustainability

EMEROX® bio-based polyols are hydrophobic polyesters engineered for a variety of polyurethane applications, providing flexibility, toughness, and abrasion and hydrolysis resistance. EMEROX Polyols are engineered for peak performance while supporting environmental and sustainability objectives.

The EMEROX Polyols listed below are effective bio-based polyester polyols for formulating a range of coatings used in concrete applications. They enhance coating performance by offering superior mechanical properties, high gloss, excellent abrasion resistance, and strong adhesion to concrete substrates. Our range of polyester polyols enable specific tailoring of properties for the resultant coatings. They are compatible with other commercially available polyols to create the desired properties of your system. Whether you are formulating coatings for industrial floors, architectural finishes, or protective layers, EMEROX Polyols are *Engineered for Performance, Sustainable by Nature™*.

PRODUCT NAME	HYDROXYL NUMBER	VISCOSITY cP @25°C	MW (M <sub>w</sub> )	FUNCTIONALITY (CALC.)	BIO-BASED CONTENT (%)*	DESCRIPTION
EMEROX® I 4050	50	9,000	2,700	2.0	78	A branched, ethylene glycol (EG) azelate aliphatic polyester polyol
EMEROX® I 4511	110	1,500	1,000	2.0	78	General purpose 1000 MW linear diol polyol based on ethylene glycol azelate
EMEROX® I 4535	355	400	320	2.0	69	Low viscosity, short chain diol aliphatic polyester polyol
EMEROX® I 4550	50	6,000	2,200	2.0	82	General purpose 2200 MW linear diol polyol based on ethylene glycol azelate
EMEROX® I 4801	105	3,750	1,200	2.2	94	Ethylene glycol dimerate polyol for applications where highly hydrophobic characteristics are required
EMEROX® I 4803	55	16,000	2,200	2.2	95	Ethylene glycol dimerate polyol for applications where highly hydrophobic characteristics are required

\*USDA Certified Bio-based Product

## Starting Formulation Concrete Coating Topcoat

Raw Material	Description	Formula Wt%
<b>Part A</b>		
EMEROX® I 4535 commercial blend	Polyester Polyol blend	73
EMEROX® I 480 I	Polyester Polyol (EG Dimerate)	5
Ethylene-diamine polyol	Crosslinker	10
Methyl ethyl ketone (MEK)	Solvent	3
3A Molecular Sieve	Moisture Scavenger	2
Additives	Antifoam	0.75
	UV Stabilizers	1
	Fumed Silica	1.75
	Wetting and Leveling Agents	2
	Adhesion Promoters	1.5
<b>Part B</b>		
HDT	HDI Timer	100

## Coating Properties

	COMMERCIAL CONCRETE COATING #1*	COMMERCIAL CONCRETE COATING #2**	EMEROX® I 4535 COATING	EMEROX® I 4535 BLEND WITH COMMERCIAL POLYOL***
<b>Mix ratio (I.OI Index for Emery Products)</b>				
Part A /Part B	NA/IK	I/I	I/I.17	I/0.95
<b>Abrasion Resistance (C-17 Taber Abrader, Ware Index)</b>				
1000 Cycles	18.4	17.9	1.9	2.5
<b>Film Mechanical Properties</b>				
Tensile Strain	1700 psi	4450 psi	2250 psi	5500 psi
Elongation (%)	10.0 %	5.5 %	150 %	10.0 %
<b>Adhesion Strength (Positest Pull Off Test)</b>				
Concrete	4.49 MPa	3.99 MPa	3.37 MPa	4.33 MPa
<b>Gloss (Gloss Units)</b>				
60°	84.3 GU	95.2 GU	83.0 GU	91.8 GU
85°	60.3 GU	84.7 GU	91.0 GU	83.0 GU
<b>Film Hardness (Cured Pencil Hardness)</b>				
	F	F	3H	H

\*Commercial Concrete Coating 1 is a white concrete IK hybrid acrylic and aliphatic polyurethane coating

\*\*Commercial Concrete Coating 2 is a white 2K aliphatic polyester polyurethane coating

\*\*\*Commercial Polyol is a common Aromatic Polyester Polyol

To request a sample or to find out more about our EMEROX® Polyols,  
contact [polyols@emeryoleo.com](mailto:polyols@emeryoleo.com) or visit [www.emeryoleo.com/polyols](http://www.emeryoleo.com/polyols)

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