



## Polyols for Flexible Foam, Rigid Foam and CASE Applications

Engineered for Performance and Sustainability



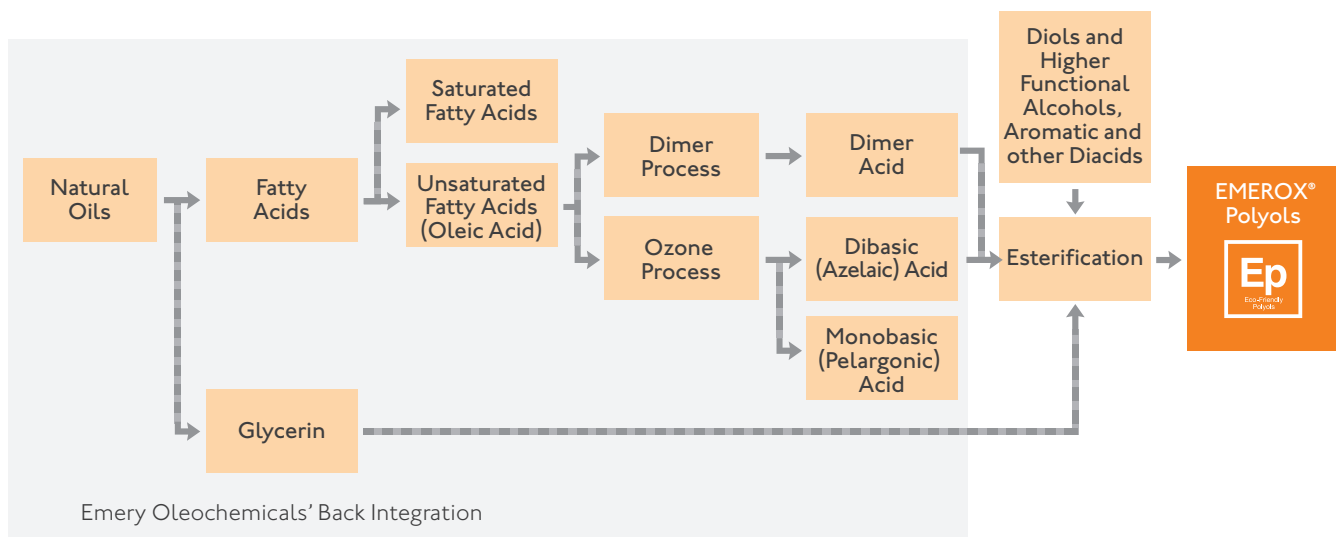
# Your Preferred Partner in Performance-Oriented and Sustainable Polyurethanes

## Gain a Competitive Advantage: Achieve Performance and Sustainability Objectives with EMEROX® Polyols

EMEROX Polyols are engineered to provide the polyurethane industry with economical solutions that easily integrate to improve your formulation. Key performance benefits include:

- hydrophobic backbone for superior moisture resistance,
- enhanced low temperature performance, and
- improved solvent and blowing agent solubility.

The high bio-based content will also help you meet your sustainability objectives. We offer a comprehensive portfolio of polyol grades to address a broad range of flexible foam, rigid foam and CASE application requirements. Contact us to learn more about what EMEROX Polyols can do for you and to request a sample. Experience the difference firsthand.



Process flow chart of EMEROX® polyols. Gray box demonstrates Emery Oleochemicals' long history and consistency with this process, including our back integration and unique process technology. The esterification process allows for the design freedom to customize value-added solutions for our customers and partners while combining the benefits of our long history, consistency and quality.

## About Emery Oleochemicals

Founded in 1840, Emery Oleochemicals has a rich heritage developing and manufacturing natural-based chemicals made predominantly from renewable oils and fats. Emery Oleochemicals' philosophy of 'Creating Value' for our customers is evident through our wide-ranging product portfolio that caters to the diverse and unique needs of an evolving marketplace.

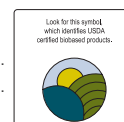
Today, 180 years later, Emery Oleochemicals is known for world-leading, in-depth technical expertise and the production of high-quality specialty chemicals. Through our global operations that span North America, Europe and Asia Pacific, we provide our customers with best-in-class sustainable products and solutions.

## EMEROX® Polyols – Product Line Overview

	PRODUCT NAME	HYDROXYL VALUE	VISCOSITY CP @25°C	ACID VALUE	FN (CALC.)	BIO-BASED CONTENT	DESCRIPTION
FLEXIBLE GRADES	EMEROX® I4001	50	2,400	≤ 1.5	1.1	99*	Aliphatic polyester polyol with low viscosity and low functionality. Used as an additive for improved mold flow efficiency. Also for CASE applications.
	EMEROX® I4050	50	9,000	≤ 1.5	2.4	80*	Branched EG azelate polyester polyol. For ester foams with high elongation. Offers improved mechanical properties and bio-content for ether based flexible foams (molded, visco, conventional, HR). Also for CASE applications.
	EMEROX® I4060	60	20,000	≤ 1.5	3.1	82*	Branched EG azelate polyester polyol for ester foams with increased load bearing and / or "clickability" properties. Also for CASE applications.
	EMEROX® I4090	86	5,000	≤ 1.5	2.5	80**	Branched EG azelate polyester polyol with lower MW and lower viscosity for flexible foam and CASE applications.
ALIPHATIC RIGID GRADES	EMEROX® I4270	355	1,800	≤ 1.5	2.7	99*	Workhorse polyol. Functionality performs similar to SG 360 type polyether polyol. Low viscosity. Hydrophobic. Excellent in geotechnical applications.
	EMEROX® I4280	280	3,700	≤ 1.5	2.7	99*	Lower hydroxyl version of EMEROX® I4270. Used in water blown formulations to maintain A: B ratio. Low viscosity with good functionality.
	EMEROX® I4355	355	1,800	≤ 1.5	2.7	99*	Similar to EMEROX® I4270, but with improved low temperature stability. Functionally performs similar to SG 360 type polyether polyol. Hydrophobic.
	EMEROX® I4371	370	15,000	≤ 1.5	3.7	99*	Higher functionality version of EMEROX® I4270. Designed to be used as the sole polyol in PIP and spray foams. Hydrophobic.
	EMEROX® I4372	370	30,000	≤ 1.5	4.7	99*	Very high functionality. Used primarily as a co-polyol with enhanced functionality to provide improved foam mechanical properties. Hydrophobic.
AROMATIC RIGID GRADES	EMEROX® I4701	230	7,500	≤ 1.5	2.3	48*	Designed for hydrocarbon blown PIR foam. Excellent pentane compatibility and efficiency. Excellent low temperature insulation performance.
	EMEROX® I4725	260	6,600	≤ 1.5	2.3	48**	Designed for hydrocarbon blown PIR foam. Excellent pentane compatibility and efficiency. Excellent low temperature insulation performance.
	EMEROX® I4730	305	8,000	≤ 1.5	2.3	48*	Designed for PIR/PUR, PiP and other rigid foam applications. Excellent fire performance with good volume/weight retention and char stability.
	EMEROX® I4733	320	5,300	≤ 1.5	2.4	64*	Designed for PIR, PiP and other rigid foam applications. Very good fire performance with enhanced functionality and foam mechanical properties.
	EMEROX® I4735	265	6,500	≤ 1.5	2.3	48*	Designed for PiP applications. Good hydrocarbon solubility. Good fire performance with foam swelling.
	EMEROX® I4737	370	4,000	≤ 1.5	2.3	45**	Designed for PiP and other rigid foam applications. High functionality / low viscosity.
CASE GRADES	EMEROX® I4511	110	1,500	≤ 1.5	2.0	78*	General purpose, 1,000 molecular weight, linear diol polyol based on ethylene glycol (EG) azelate chemistry.
	EMEROX® I4535	355	400	≤ 1.5	2.0	69*	Low viscosity, short chain linear diol based on ethylene glycol (EG) azelate chemistry.
	EMEROX® I4550	50	6,000	≤ 1.5	2.0	82*	General purpose, 2,200 molecular weight, linear diol polyol based on ethylene glycol (EG) azelate chemistry.
	EMEROX® I4555	50	Waxy solid (500 Cp @ 75°C)	≤ 1.5	2.0	82*	A 2,200 molecular weight, linear diol polyol based on ethylene glycol (EG) azelate chemistry. More hydrophobic than EMEROX® I4550.
	EMEROX® I4637	370	1,700	≤ 1.5	2.7	99*	Low molecular weight branched azelate polyol targeting coating and adhesive applications.
	EMEROX® I4801	105	2,600	≤ 1.5	~2.2	90**	A 1,000 molecular weight, EG dimerate polyol for applications where highly hydrophobic characteristics are required.
	EMEROX® I4803	55	16,000	≤ 1.5	~2.2	90**	A 2,200 molecular weight, EG dimerate polyol for applications where highly hydrophobic characteristics are required.

\*USDA Certified Biobased Product.

\*\*Bio-based content is an estimate, pending final testing.



Emery Oleochemicals is the largest global producer of azelaic acid and the largest oleochemicals manufacturer in the Americas. Our site located in Cincinnati, Ohio, USA spans over 35 acres and has been operational since 1885. It is home to our pioneering high pressure splitting, ozonolysis and solvent separation technology as well as a new purpose-built polyols plant which supports high-volume production and is back integrated, ensuring security of supply to our customers. Our Polyols Technical Development Center is also located at our Cincinnati site, helping speed new product development time to market in order to meet the ever-evolving needs of the polyurethane industry.



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