



MONUMENT CHEMICAL
Custom Manufacturing Showcase

SOCMA, February 19, 2025
C. William Gundlach, R&D Director

Every day, our customers bring us



Their toughest chemistry challenges.



Monument is the go-to, leading chemical industry partner for...

- Challenging distillations, high purity fractionations, large-scale esterification, hydrolysis, batch and continuous hydrogenation, and amination
- Flexible scale-ups of ethylene oxide and propylene oxide derivatives
- Cutting-edge solutions for new and challenging chemistries – while operating at industry-leading HSE performance record



Monument At A Glance

American, family-owned company

- Headquartered in Indianapolis
- 650 employees in the US (800 globally)
- Highly **focused on HSE**
- Demonstrated **expertise and scale**
 - ✓ Distillation and fractionation
 - ✓ Challenging chemistries
 - ✓ **SAF and Biodiesel**



>\$250MM
Invest for Growth



1.5+ Billion
Lb per year output globally



Part of:



Related Ownership:



Challenging Chemistries / Broad Applications

**Chemicals, Fuels, Electronics, Personal Care,
Pharma, Defense, Additives, Coatings, and More**



Our Locations

We operate in the heart of the manufacturing hubs of the U.S. and Europe.



Houston, Bayport, and Baytown, TX

Conveniently located on the Houston ship channel, our Texas facilities are close to our customers — and close to their customers.



Port Arthur, TX

Located on the Sabine River intercoastal waterway - just two miles from the Gulf of Mexico – an ideal location between manufacturing hubs in TX and LA



Brandenburg, KY

Located just outside of Louisville, our Brandenburg facility offers one-day truck service to most U.S. customers



Antwerp, Belgium

Located in the heart of the Rotterdam/Antwerp petrochemical center, our Antwerp facility is easily accessible to our customers and their customers.



Our Businesses

Monument Solvents

Monument Solvents is a leading global provider of organic solvents, intermediates and specialty custom manufacturing services.

Locations: Houston TX, Pasadena TX

Monument Oxides

Monument Oxides is a leading global provider of polyether polyols, alkoxyated surfactants, glycols, glycol ethers and specialty custom manufacturing services.

Locations: Brandenburg KY

Renewables & Fuels

Monument Renewables & Fuels serves as a key partner in the transformative shift towards renewables and fuels – and offers a wide range of specialty fluids products and custom manufacturing services

Locations: Port Author TX, Baytown TX

Monument Europe

Monument Europe provides custom manufacturing services for several of the world's largest producers of fine and specialty chemicals – and supplies high purity oxygenated solvents into various industries

Locations: Antwerp Belgium

HOUSTON



Large distillation and fixed bed reactors:

- Continuous and reactive distillation
- Hydrogenation
- Hydrolysis, isomerization, esters, ethers and many more!

BAYPORT



Specialty distillation, hydrogenation, amine chemistries:

- Continuous and batch distillation
- High pressure capabilities (800 psi)
- Cyanoethylation, reductive amination and alkylation, hydroformylation

BAYTOWN



Aromatics based chemistries:

- Distillation
- Alkylation, Friedel Crafts, and isomerization

Modes of Delivery:



Leader in complex separations, reactive distillation, solvent recycling, and hazardous secondary materials (HSM) processing

- Largest distillation capacity of any custom manufacturer
- Continuous and batch capabilities
- Majority stainless steel
- 2'-8' (0.6-2.5 m) diameter
- Steam or hot oil heated up to 550 °F (290 °C)
- Theoretical stages ranging from 25-100
- Rated for full vacuum to 100 psi (~7 bar)



We can supply the product you need — where and when you need it.



Multi-purpose fixed bed and batch reactors

- Up to 800 psi (55 bar)
- Continuous (trans)esterification, hydrolysis, isomerization & hydrogenation
- Experienced in specialty amines production, including handling of acrylonitrile, ammonia, and other RMP raw materials
- Alkylation and reductive alkylation
- Aldol, hydroformylation, aromatics refining and many more?



**Interested in a
different capability?
We can help!**

Largest, most flexible site for EO/PO chemistry in the Midwest and Eastern US

- Alkoxylates/surfactants, polyether polyol, glycols, amination, and specialty chemicals
- On-site pilot plant and customer applications testing lab
- Auxiliary equipment including filtration, dryers, batch distillation and WFE, and more!

Modes of Delivery:





Alkoxylation (EO/PO)

- 21 reactors (2,000-25,700 gal.) with 155 MM lb (70 kt) capacity
- Caustic Filtration capabilities

Polymer Polyol Production (“Graft Polyols”)

- Styrene/acrylonitrile co-polymer dispersed in polyether polyol
- One (1) 3,600 gallons (304SS) Reactor

Aminated Polyol Production

- -OH groups of a polyether polyol converted to amine groups via reductive amination
- Process capable of high MW products
- One (1) 2,600-gallon (304SS) reactor

Glycols & Glycol Ethers

- PO and EO chemistries and distillation capabilities
- 3 Flexible Glycol Ether Trains with 55 MM lb (25 kt) capacity

Custom Electronic Materials Manufacturing

- Glass lined and stainless-steel batch reactors
- Centrifuge filtration; ability to handle a wide range of chemistries including formaldehyde, phenol and xylene

Pilot Plant

- Multipurpose reactors from 10 to 850 gallons
- Vast know-how on PO/EO chemistry process development and scale up

Unrivaled distillation capacity and multipurpose reactors

- Continuous & batch distillation
- Multipurpose reactors:
- SAF, esters, ethers, alkylation, hydrolysis, acetylation, dehydration, and more!
- >100 tanks, 585 bbl of storage

Modes of Delivery:



Our Commitments



QUALITY

- Onsite and 24/7 Lab capabilities
- ISO 9001, Kosher, Halal, cGMP
- First Pass Quality (FPQ) focus
- World-class R&D for simulation science and rapid scale-up



ENVIRONMENT

- 100% compliance in all operating and environmentally-related permits and requirements
- Industry-leading waste management programs (Heritage Environmental Services)



COMMUNITY

- Volunteerism / Philanthropy Programs focusing on STEM education



SAFETY

- Top tier safety performance (OSHA rate and KPI's) across all 5 sites
- Risk Management Program for Hazardous Chemical Handling
- OSHA Process Safety Management

RECOGNITION
Member of
SOCMA and CPI



SOCMA's
ChemStewards®
Program



2024 SOCMA Awards
for all US sites



EcoVadis
Company-wide
Silver Rating



Custom Manufacturing Key Processes

- **Largest distillation capacity** of any custom manufacturer
- **Largest EO/PO consumer** in the Midwest
- Industry leading **technical expertise** and **scale-up support**
- **Flexible assets**
- Dedicated **logistics** and **customer service** support

	HOUSTON (U.S.)	BAYTOWN (U.S.)	BAYPORT (U.S.)	PORT ARTHUR (U.S.)	BRANDENBURG (U.S.)	ANTWERP (BE)
Aldol condensation	☑					☑
Alkylation	☑	☑	☑	☑		☑
Alkoxylation (EO and PO)					☑	
Amination			☑	☑	☑	
Cyanoethylation			☑			
Dehydration	☑			☑		☑
Distillation	☑	☑	☑	☑	☑	☑
Esterification	☑		☑	☑		☑
Etherification	☑			☑		☑
Hydrolysis						☑
Hydrogenation	☑		☑			
Isomerization	☑			☑		☑
Melt crystallization		☑				
Oligomerization	☑			☑		☑
Transesterification	☑			☑		☑
Free Radical Polymerization					☑	
Novolak Synthesis					☑	

Visit us at
BOOTH 515

Griffin Ballroom



Apeiron 906 Lechler 908 Huntsm 912 Akron I 913

Aquase 916 Custom 918

Kurara 920 ProSys 922

Premie 926 SAMOA 928 Sinova 930 Southw 932



GPS
120

Total
118

Unco
110

Powe
102

SGS I
100

Neura 119 CJB I 218
Carpe 117 Boulc 216
3V Te 115 Powd 214
ESIM 113 CREM 212
Rierd 111 CGH- 210
CAS 109 Seate 208
Thale 107 Penna 206
Systr 105 Press 204
Enteg 103 Natio 202

WAB 219 Third 318
Forbe 217 Biddl 316
Hallit 215 Sone 314
Deep 213 ASTE 312
Hoyer 211 Appli 310
InChe 209 GfM- 308
Aztec 207 Hamp 306
Branc 205 Bepe 304
Chem 203 Polys 302

Ivanh 319 Net a 418
Kings 317 Rous 416
AVEK 315 Havi 414
TRCC 313 LCI C 412
Louis 311 Blue 410
MFG 309 Shree 408
Thom 307 ProCl 406
MXD 305 Rock 404
Chevi 303 Optin 402

Koste 419 Calca 518
BUSS 417 Paul 516
Proce 415 EPIC 514
oakw 413 Royal 512
VLS T 411 EMCO 510
COEX 409 Data 508
LBB S 407 J. Ret 506
Aethe 405 Elan 504
Sefar 403 Centa 502

Amer 519 West 618
Amin 517 Treco 616
Monu 515 Aniva 614
Buck 513 SCHV 612
Comp 511 POWI 610
Santo 509 Aropl 608
Adesi 507 AVN C 606
IPP - 505 BSI E 604
Toll S 503 FAR C 602

Exsif 619 Pack 718
Sinoc 617 Wiley 716
Clarik 615 Mott 714
Repu 613 Provi 712
Feder 611 Admi 710
ekato 609 Maus 708
Weyk 607 Ovas 706
Ortec 605 Comp 704
Ascer 603 GFS C 702

Futur 719
B&P 717
Arran 715
CurTe 713
Key I 711
South 709
Gowa 707
Chem 705
Millik 703