



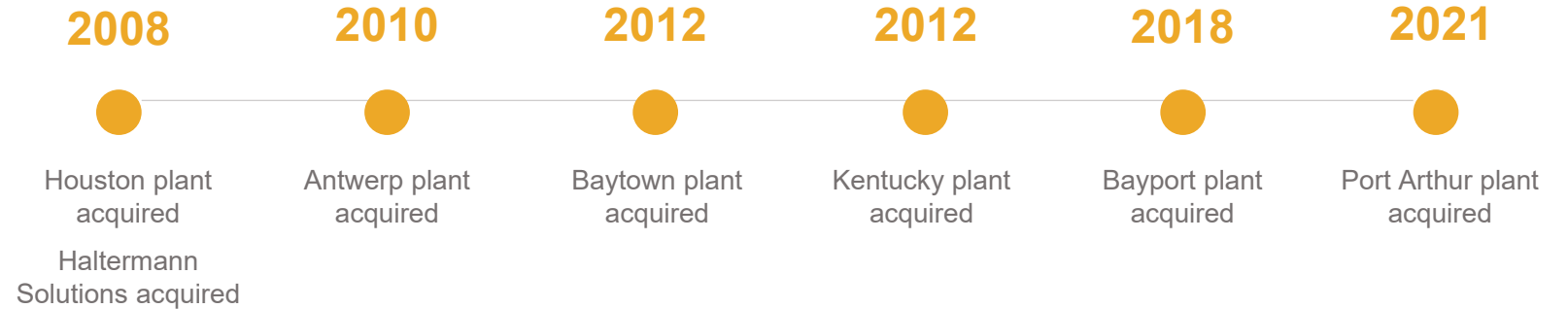
Monument Chemical  
Custom Manufacturing Overview  
2023



# OUR STORY



Monument was founded by The Heritage Group and the Grube Family, both of Indianapolis, with the objective of building long-term value through a growing presence in specialty chemicals.



## Other companies that have related ownership:

- Calumet Refining
- Haltermann Solutions

Monument has grown quickly, and will continue to grow, through a combination of product line additions, acquisitions, and investments in expanding our current assets. Through every change, we maintain a **constant focus on quality, our customer relationships, and doing the right thing.**



# MONUMENT OVERVIEW



**650**

employees globally



**>\$350MM**

in growth capital



**>1.5 Billion lb**

(680 kt) per year output globally



We manage a steady pipeline of **new products and chemistries**

## 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 chemistry needs – while operating at industry-leading HSE performance record



# OUR LOCATIONS

We operate in the heart of manufacturing hubs in 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 Texas and Louisiana.



## Brandenburg, KY

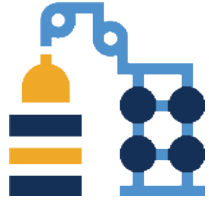
Located just outside of Louisville, our Brandenburg facility offers one-day truck service to most U.S. customers.



## Antwerp, Belgium

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

# CUSTOM MANUFACTURING FAST FACTS



Largest distillation capacity of any custom manufacturer



Flexible, multipurpose assets



Dedicated lab and technical expertise at each Monument site



Support services available: Procurement, Logistics, and Waste disposition



Operational Excellence-focused

## Build Team

Every project has a dedicated cross-functional team of chemists, production engineers, and quality, planning and logistics specialists.

## Assessment

We ensure full understanding of your unique needs.

## Qualification

We produce a sample for qualification and testing in your facility.

## Proposal

We review (and adjust) all project details with you.

## Deliver

We produce the first successful campaign!

## Optimization

Continuous improvement is key, and we never stop optimizing our process to meet your evolving needs.

1

2

3

4

5

6



# HOUSTON, TX AREA CAPABILITIES



PRODUCTION  
SITES

HOUSTON



## Large scale distillation and fixed bed reactions:

- Continuous and reactive distillation
- Hydrogenation
- Alkylation, hydrolysis, isomerization
- Esters, transesterification, ethers

BAYPORT



## Specialty distillation, high pressure hydrogenation, amine chemistry:

- Continuous & batch distillation
- High pressure hydrogenation
- Reductive amination & cyanoethylation
- Alkylation, dehydration, esterification

BAYTOWN



## Aromatics based chemistries:

- Distillation
- Alkylation, Friedel Crafts and isomerization

## Modes of Delivery:



- **Continuous and batch capabilities**
- Majority stainless steel (few carbon steel)
- 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.**

- **Fixed bed and batch (batch, semi-batch, CSTR)**
- Hydrogenation – Up to 800 psi / 55 bar
- Continuous (trans)esterification, hydrolysis, isomerization & hydrogenation
- High pressure batch hydrogenation up to 800 psi / 55 bar
- Cyanoethylation and amination
- Alkylation & reductive alkylation
- Aldol reaction
- Aromatic refining
- Melt crystallization

“

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



- **Unrivalled distillation capacity**
  - 650 MM lb annual capacity
  - Up to 60 theoretical stages
- Acquired in 2021; considerable capital invested
- Multipurpose reactors and isomerization beds
  - Esters, ethers, alkylation, hydrolysis, acetylation, dehydration, and more!
- **>100 tanks, 585,000 barrels of storage**



Modes of Delivery:



# BRANDENBURG, KY – OVERVIEW



- **Largest, most flexible site for EO/PO chemistry in Midwest and Eastern US**
- Alkoxylates/surfactants, polyether polyols, glycols, amination and specialty chemicals
- On-site pilot plant (multiple reactors, glass-lined and stainless steel) and customer applications testing lab
- Auxiliary equipment including filtration, dryers, batch distillation, WFE and more!



## Modes of Delivery:



- **Polyols plant**
  - Stainless steel reactors ranging from 2,000 to 25,700 gallons (approx. cap: 155 million lbs.)
- **Polymer Polyol Production**
  - Styrene/acrylonitrile co-polymer dispersed in polyether polyol
- **Aminated Polyol Production**
  - Via reductive amination
  - Process capable of higher MW products
- **Glycols & Glycol Ethers**
  - EO / PO chemistries and distillation capabilities
  - Propylene Glycol Production (approx. cap: 55 million lbs.)
  - 3 Flexible Glycol Ether Trains
- **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

# SUMMARY OF KEY PROCESSES



	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					✓	



# OUR COMMITMENTS



OUR COMMITMENTS

## Customers



Third-party quality certifications  
Onsite and 24/7 Lab capabilities  
First Pass Quality (FPQ) focus  
World-class R&D for simulation science and rapid scale-up  
Security of Supply Chain commitments/initiatives

## Community



Volunteerism / Philanthropy Programs  
focusing on STEM education

## Environment



Committed stewardship  
100% compliance in all operating and environmentally-related permits and requirements

## Safety



Top tier safety performance  
(OSHA rate and KPI's) across all 5 sites

## RECOGNITION



SOCMA's ChemStewards® Program  
SOCMA Awards for all US sites including the 2020 Gold Performance Improvement Award for Houston



2021 rating of Silver achieved by our Kallo site  
2023 rating of Bronze achieved by our Bayport site

Make decisions and behave in ways that assure the long-term sustainability of our business

# Visit Monument Chemical at Booth 515

Griffin Ballroom

		Apeiron 906	Lechler 908	Equipm 910	ASTEC 912		Texmar 918		Kurara 920	ProSys 922		Revtec 926	Sinova 930	Net at 932	
Crod 120															
Ceka 118	Treco 119	CJB I 218		WAB 219	Third 318	Ivan 319	NETZ 418	Koste 419	Flott 518	Sege 519	Deep 618	Bern 619	Clari 718	Futu 719	Sefar 818
	Peter 117	Boul 216		Grup 217	Biddl 316	King 317	Rous 416	Perry 417	Amer 516	Sege 517	Rhin 616	Sinoc 617	Bren 716	Snyd 717	SGS I 816
	John 115	Powd 214		Hall 215	Impo 314	AVEK 315	Havil 414	Proc 415	LCI C 514	Monu 515	Sc o 614	BCS 615	Air P 714	Enteg 715	Buck 814
	eschl 113	Iwaki 212		SIAM 213	US G 312	Tiarc 313	Butte 412	Creat 413	Roya 512	King 513	MERC 612	CurT 613	Chem 712	Polys 713	812
	Sulze 111	ORG 210		Sofix 211	Appli 310	Louis 311	Blue 410	Texas 411	Data 510	Comp 511	POWI 610	611	Amer 710	REO I 711	810
	B&P 109	Seate 208		Aaron 209	Tedia 308	MFG 309	Valer 408	TIMA 409	Hoye 508	Chem 509	MBA 608	Relia 609	Notcl 708	Shree 709	808
	Cust 107	Penn 206		Paul 207	Myer 306	Noble 307	Chen 406	Anch 407	J. Rel 506	Adesi 507	AVN 606	Weyl 607	Nov 706	JULA 707	806
	Fedel 105	Press 204		Bran 205	Prism 304	MXD 305	The C 404	Aeth 405	Elan 504	IPP - 505	Steri 604	Ortec 605	Comp 704	Chen 705	Spec 804
ekato 102	Amer 103	Natio 202		Chem 203	La Pe 302	Chev 303	Optin 402	oakw 403	Cent 502	Toll S 503	FAR 602	Asce 603	GFS 702	Milli 703	Powe 802
Ritek 100															

Griffin Prefunction West

# LET'S CONTINUE THE CONVERSATION

We deliver the advantages of a large chemical company –  
with the personalized attention you expect from a specialty partner.



## Houston Area

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