



Innovative chemical solutions.

STARCHEM LLC.

PART 1
History

PART 2
Markets

PART 3
Product Portfolio

PART 4
Capabilities



Presentation Highlights

About our Company

Long History of Specialty Chemical Expertise

- Specialty Chemicals, Surfactants, and Silicones
- Textiles, Oil & Gas, Consumer Care, Chemical Intermediates



Our Locations

PRODUCTION SITES

- Wellford, SC, USA
- Dalton, GA, USA
- Choloma Cortes, Honduras
- Medellin, Colombia

WAREHOUSE & BLENDING

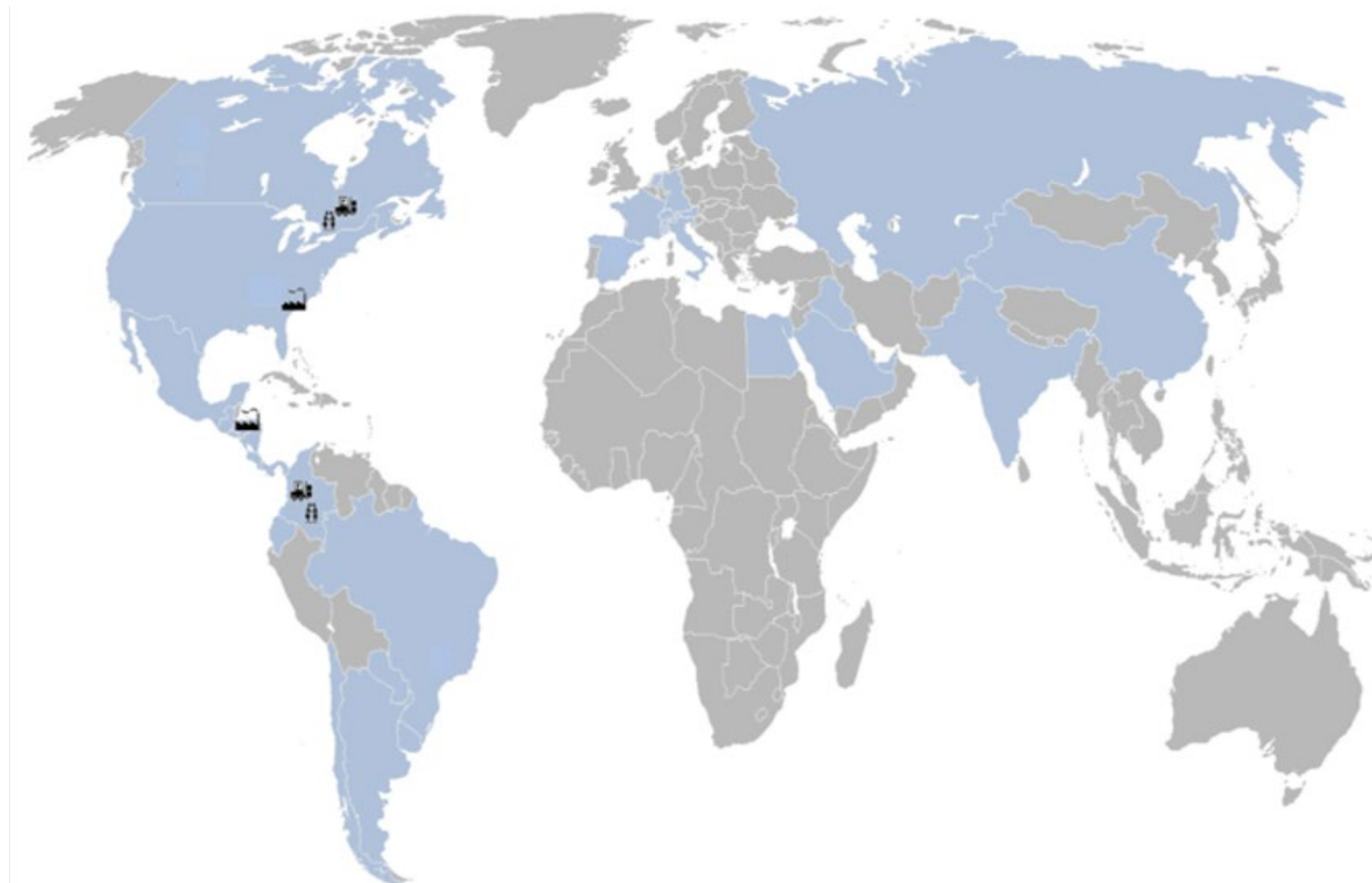
- Wellford, SC, USA
- Dalton, GA, USA
- Choloma Cortes, Honduras
- Medellin, Colombia

SALES OFFICES

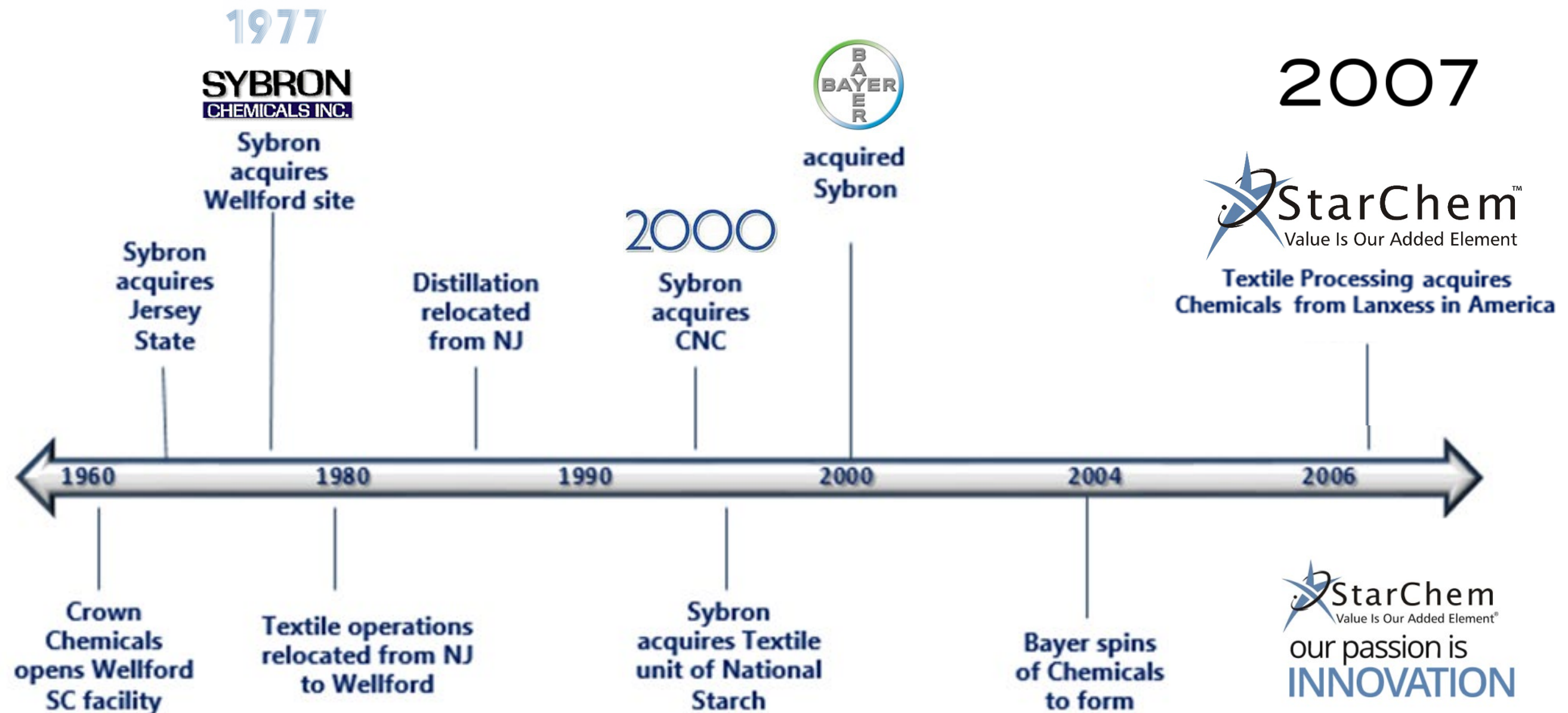
- Wellford, SC, USA
- Choloma Cortes, Honduras
- Medellin, Colombia

SALES

- Americas, Europe
- Middle East, Africa
- Asia



StarChem History



1960



StarChem
Value Is Our Added Element®
our passion is
INNOVATION

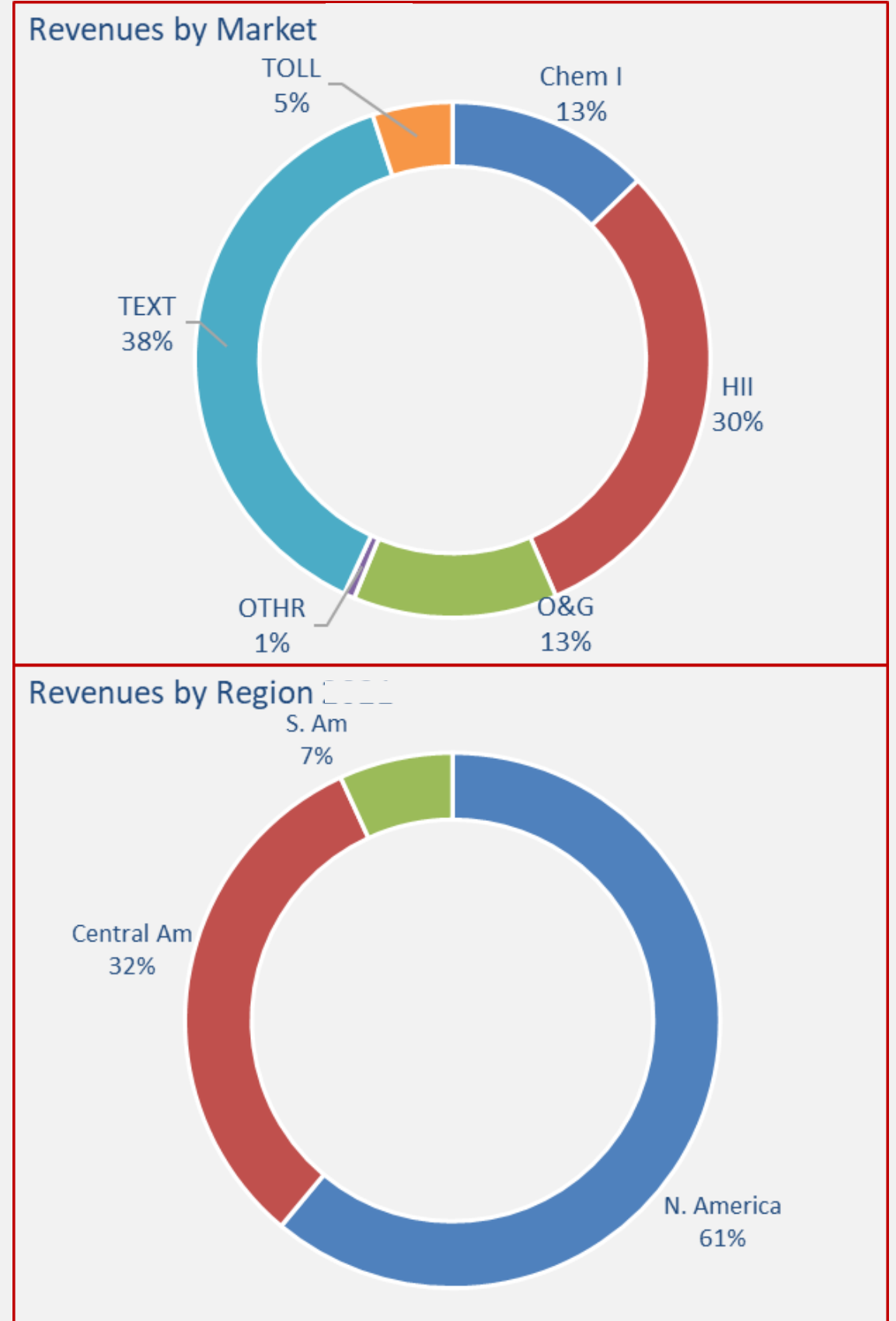
Business Overview

Markets

- Textiles & Nonwovens
- Oil & Gas
- Consumer Care (HI&I / Personal Care)
- Chemical Intermediates
- Tolling & Custom Manufacture

Production Technologies

- Quaternization
- High Temperature/Pressure Wax Emulsion
- Silicon Emulsion
- Amino Silicon Production
- High Temperature Esterification & Imidization
- Ethylene Diamine/Urea Adducts
- Mix Blending Capabilities
- Homogenization
- Flaking Capabilities





Chemistry Groups

- Quaternary Compounds (Alkyl Pyridine-, BzCl-, MeCl-, Silane-, Sulfate- and other Quats)
- Imidazolines
- Triazine Derivatives
- Amphoteric (Betaines, Hydroxysultaines, and Amine Oxides)
- Anionic Surfactants (Sulfonates, Phosphates)
- Alkyl Ether Sulfates
- Siloxanes, organo-modified Siloxanes and Siloxane Emulsions
- Foam Control (Silicone and non-silicone, Mineral Oil, Polymerics)
- PEG Esters, Fatty Amides and Specialty Esters
- Ethylene Urea & Specialty Additives
- Wax Emulsions - (Polypropylene, Polyethylene, Paraffin, and Stearylated Melamine)
- Range of Proprietary Textile products

Wellford, SC - Manufacturing Site

- Site Located on 18 acres
- On site Water Treatment
- Rail Shipment Capabilities
- Batch Manufacture
- Gas Flaring Capabilities
- On Site QC & Product Development
- R&D Group and Formulation Lab
- Management Team



Wellford, SC - Production Capability

23 VESSELS (VOLUMES RANGING 50 – 6,000 GALLONS)

- 13 vessels non-pressure reactors
- 10 stainless steel pressure reactors
 - Most reactors equipped with **condensers** and **receivers**
 - 1 **glass lined** pressure reactor (4,000 gal)
 - 2 stainless steel pressure reactors equipped with **hot oil**

2 PILOT PLANT VESSELS

- 1 GL Reactor/ 1 SS Reactor

DRUM FLAKER





StarChem manufacturing facility - Wellford, South Carolina



Wellford Processing Equipment

Reactor Room

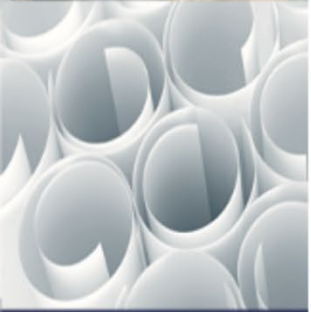
Agitation

Auxiliary Equipment

Confidential

Equipment ID	Capacity (gal)	Mat. of Const.	Design Pressure	HP	RPM	Heat Source	Cooling Source	Condenser	Receiver	Vacuum	Pollut. Ctrl.	Other
RV1301	800	316SS	FV / 200 psig	None	None	STEAM	Cooling Tower	None	None	Yes	None	
RV1302	4000	316SS	FV / 200 psig	40	0-125 VFD	STEAM	Cooling Tower	None	None	None	Yes	APACS
RV1303	4000	316LSSCLD	FV / 300 psig	20	0-68 VFD	STEAM	Cooling Tower	Yes	Yes	Yes	Yes	APACS
RV1304	2000	316LSS	FV / 75 psig	15	84	STEAM & HOT OIL	Cooling Tower	Yes	Yes	Yes	Yes	
RV1305	2000	304SS	Atmospheric	30	40-125	STEAM	Cooling Tower	None	None	None	None	Load cells
RV1306	6000	304SS	Atmospheric	40	28-84 VFD	STEAM	Cooling Tower	None	None	None	None	Load cells
RV1307	6000	304SS	Atmospheric	15	50	STEAM	Cooling Tower	None	None	None	None	Load cells
RV1308	3000	304SS	Atmospheric	25 / 60	0-34 / 0-1360	STEAM	Cooling Tower	None	None	None	Yes	APACS/Load cells
RV1312	2000	316SS	FV / 50 psig	25	0-120 VFD	STEAM	Cooling Tower	Yes	Yes	Yes	Yes	
RV1313	2000	316SS	FV / 50 psig	25	63-190	STEAM	Cooling Tower	Yes	Yes	Yes	Yes	APACS
RV1314	4000	GLASTEEL	FV / 100 psig	40	109	STEAM	Cooling Tower	Yes	Yes	Yes	yes	
RV1315	4000	GLASTEEL	FV / 100 psig	40	109	STEAM	Cooling Tower	Yes	Yes	Yes	Yes	APACS
RV1316	3000	347SSCLD	FV / 50 psig	15	68	HOT OIL	Cooling Tower	Yes	Yes	Yes	Yes	APACS/Dist. Column
RV1317	2500	304SSCLD	75 psig	75	24	HOT OIL	Cooling Tower	Yes	Yes	None	Yes	
RV1318	50	GLASTEEL	FV / 150 psig	2	0-225	STEAM	Cooling Tower	Yes	Yes	Yes	None	
RV1319	100	316SS	FV / 100 psig	3	0-135 VFD	STEAM & HOT OIL	Cooling Tower	Yes	Yes	Yes	None	
RV1322	750	316SS	Atmospheric	5		STEAM	Cooling Tower	None	None	None	None	





StarChem manufacturing facility - Wellford, South Carolina



Formulations Room

Agitation

Auxiliary Equipment

Equipment ID	Capacity (gal)	Mat. of Const.	Design Pressure	HP	RPM	Heat Source	Cooling Source	Condenser	Receiver	Vacuum	Pollut. Ctrl.	Other
RV1401		316SS	Atmospheric	75	Cowles and	STEAM	Cooling Tower	None	None	None	Yes	Silicones
				50	Sweep agitator							compounding w/ solids handling
RV1402	5000	316SS	Atmospheric	30	Cowles and	STEAM	Cooling Tower	None	None	None	Yes	Silicone emulsification
				30	Sweep agitator							vessel
RV1403	2000	304SS	Atmospheric	7.5	55-100	STEAM	Cooling Tower	None	None	None	Yes	
RV1404	4000	316SS	Atmospheric	10	0-66 VFD	STEAM	Cooling Tower	None	None	None	Yes	
RV1405	750	304SS	Atmospheric	10	0-125 VFD	STEAM	Cooling Tower	None	None	None	Yes	
RV1406	750	304SS	Atmospheric	10	0-125 VFD	STEAM	Cooling Tower	None	None	None	Yes	
RV1407	3500	304SS	Atmospheric	10	60	STEAM	Cooling Tower	None	None	None	Yes	
RV1408	3000	316SS	FV / 75 psig	30	0-120 VFD	STEAM	Cooling Tower	Yes	Yes	None	Yes	
RV1410	4000	304SS	Atmospheric	7.5	0-66 VFD	STEAM	Cooling Tower	None	None	None	Yes	
RV1411	250	304SS	Atmospheric	5	40	STEAM	Cooling Tower	None	None	None	Yes	

Homogenizers

3,000 psi, 5,000 psi and 10,000 psi

Drum Flaker

Wellford, SC - Manufacturing Site

- Bulk liquid storage tanks
- Sized from 2,000 to 20,000 gallons.
- Different materials of construction
- Storing of high melting point liquids.

OTHER INFORMATION:

- On-site biological WWTP discharging to a POTW
- EPA registered site
- NPDES permit
- Air pollution control technology
- Active Process Safety Management (PSM) Program
- Class 1 Div. 2 site.(explosion proof)
- FIFRA certified site





Dalton, GA Honduras & Colombia

DALTON, GA



- 25 Stainless steel mix tanks ranging from 130 – 10,000 gallon
- (1)-1800 gal and(2)- 2400 gal reactors with steam, hot oil, & full vacuum
- On site rail capability and truck scale
- Convenient to I-75

STARCHEM HONDURAS



- On-Site Sales & Marketing
- Customer Service & Technical Service
- Mixing capability ranging from 250 – 750 gallon
- High shear vessel with heating and cooling
- 4 stainless steel vessels
- 20,000 ft² Warehouse

STARCHEM COLOMBIA



- Started January 2015
- Sales & Marketing
- Technical Service
- Manufacture of betaines, amine oxides, & quats
- Warehouse



Innovative chemical solutions.