



# 2019 SIPA Annual Meeting

---

Mark Vlasisavich

March 2019

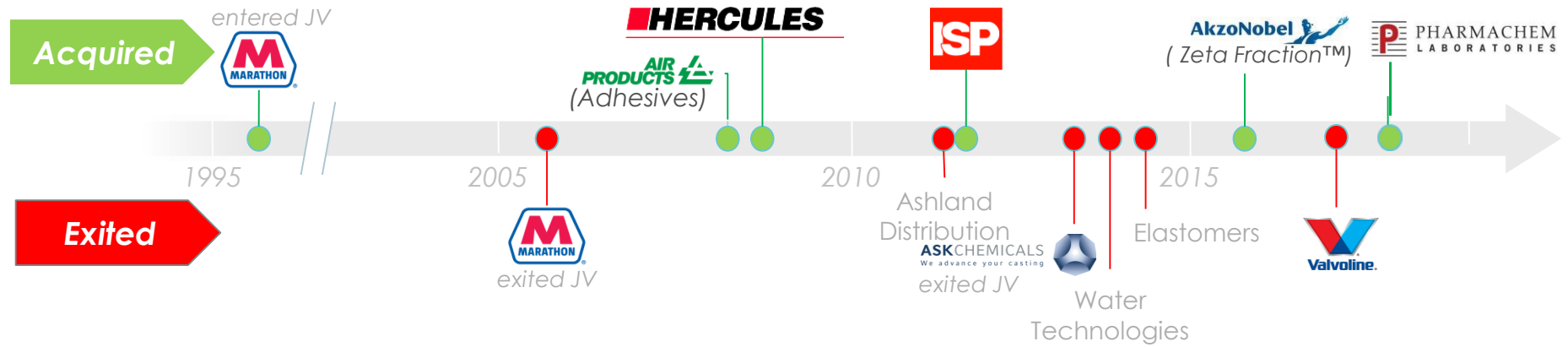


# Agenda

---

- Transformation into specialty chemicals
- Ashland profile
- Isogrip™ and Isoset™

# Transformation from oil to specialty chemicals

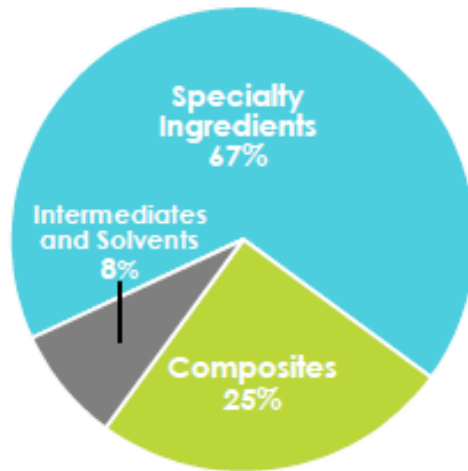


- Ashland has a long history of successfully executing challenging strategic plans
- A decade ago, management and the board set the objective to transform from an oil refiner to a premier specialty chemical company
- Completed numerous transformative transactions
- Created a highly differentiated leading specialty chemicals portfolio

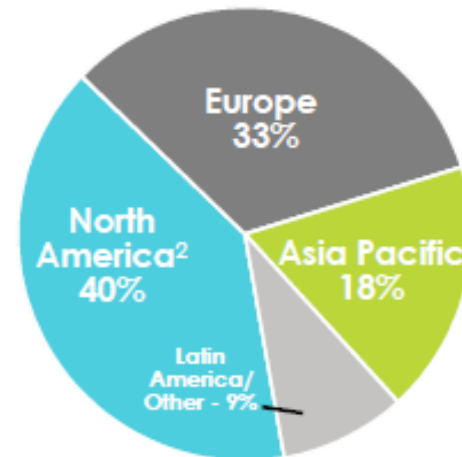
# Corporate Profile

Sales<sup>1</sup> - \$3.4 Billion

By business unit










By geography



NYSE ticker symbol	ASH
Total employees	~6,500
Countries in which Ashland has sales	100+

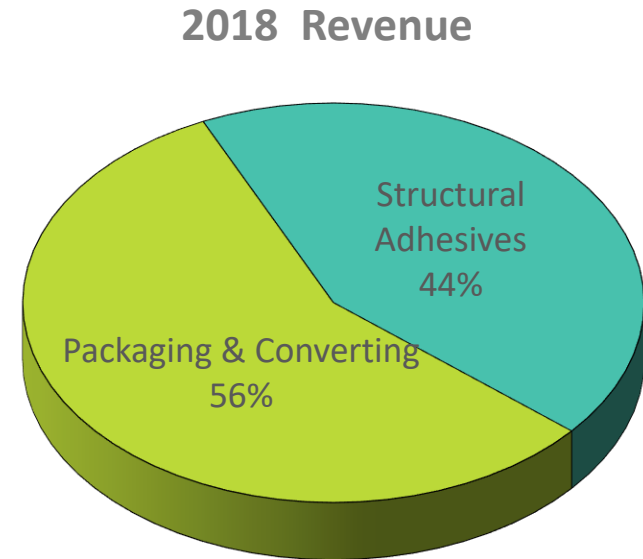


# Specialty Ingredients End-Market Diversity

consumer specialties			industrial specialties			
						
pharma	personal care	nutrition	coatings	adhesives	construction	energy
binders	skin care	food	paint and coatings	transportation	additives	drilling
<ul style="list-style-type: none"> <li>o tablets</li> <li>o capsules</li> <li>o wound care</li> </ul>	<ul style="list-style-type: none"> <li>o skin lotions</li> <li>o anti-aging products</li> <li>o body washes</li> <li>o suncare</li> </ul>	<ul style="list-style-type: none"> <li>o food—texturant</li> <li>o custom food blends</li> </ul>	<ul style="list-style-type: none"> <li>o water based architectural paints</li> </ul>	<ul style="list-style-type: none"> <li>o light-weighting</li> <li>o structural integrity</li> </ul>	<ul style="list-style-type: none"> <li>o dry mortar</li> <li>o gypsum</li> <li>o joint compound</li> </ul>	<ul style="list-style-type: none"> <li>o fluids</li> <li>o muds</li> </ul>
coatings	hair care	beverage	emulsion polymerization	packaging and converting		cementing
<ul style="list-style-type: none"> <li>o tablets</li> </ul>	<ul style="list-style-type: none"> <li>o shampoos</li> <li>o conditioners</li> <li>o mousses/gels</li> <li>o hairspray</li> </ul>	<ul style="list-style-type: none"> <li>o clarification</li> <li>o stabilization</li> </ul>	<ul style="list-style-type: none"> <li>o paints</li> <li>o adhesives</li> </ul>	<ul style="list-style-type: none"> <li>o pressure sensitive</li> <li>o laminating adhesives</li> </ul>		<ul style="list-style-type: none"> <li>o mortar additives</li> </ul>
disintegrants/ time release	oral care			building and construction		stimulation/ production
<ul style="list-style-type: none"> <li>o tablets</li> <li>o capsules</li> </ul>	<ul style="list-style-type: none"> <li>o toothpaste</li> <li>o mouthwash</li> <li>o denture adhesives</li> </ul>			<ul style="list-style-type: none"> <li>o engineered wood</li> </ul>		<ul style="list-style-type: none"> <li>o proppants</li> <li>o yield enhancers</li> </ul>

# Ashland Adhesives Business

- Business Segments
  - Structural Assembly
    - Engineered wood
    - Automotive
    - Heavy truck
  - Packaging & Converting
    - Pressure sensitive
    - Flexible packaging
    - Narrow web label
- Predominantly North America (90+%), expanding globally
- Diverse product portfolio
- #1 or #2 player in our market segments



# Isogrip™ & Isoset™

---

## Structural adhesives for high performance bonding

- Isogrip – moisture cured urethanes
- Isoset – water-based emulsion systems



# Isogrip™ structural adhesives overview

---

- Single component
- 100% solids
- Moisture cured urethane
- Exterior, structural & load bearing performance
- Excellent resistance to water, heat, chemicals and humidity
- No formaldehyde
- Non-flammable

Versatile product line with robust performance  
on a wide variety of substrates



# Isogrip™ adhesives substrate overview

---

- OSB (Oriented Strand Board)
- Plywood
- Particle Board
- Cement Board
- Mineral / Hard Board
- Honeycomb
- Foam
- Metal (Coated/Primed)
- FRP
- PVC
- ABS
- Polyolefins

# Isogrip™ 3000 Series

---

- CAT range: 30 to 35 min.
- Press time range: 1 to 2 hrs.
- Versatile bond performance on a number of substrates
- Best choice for composite materials such as ABS, HDPE, HDPP, FRP, vinyl and Kydex
- Developed for architectural panels, patio enclosures, structural insulated panels
- ICC-ES code approval
- Winter and summer versions available

# Isogrip™ 5000 Series

---

- CAT 40 min.
- Press time range: 1hr. to 1 hr. 5 min.
- Offers the best combination of closed assembly time and press time
- One adhesive for coated metals and composite materials
- Works great with vinyl
- Developed for patio enclosures to enable production of panels with larger spans
- ICC-ES code approval
- Winter and summer versions available

# Isoset™ value proposition

---

- Two-component urethane structural adhesives
- Higher ambient strength performance
- Environmental friendly
- Faster cure rate
- Ability to cure at a wide range of temperature & condition
- Moisture & solvent resistant
- High tolerance to the moisture content of wood
- Neutral (wood) colored bond lines
- Extensive code recognition & industry recognized technical services
- Easy clean-up & disposal

# Isoset™ technology

Emulsion Polymer Isocyanate (EPI)	Polyurethane Emulsion Polymer (PEP)
<ul style="list-style-type: none"><li>- Water based latex resin</li><li>- Reacted with isocyanate crosslinker</li><li>- 100 parts of resin to 15 parts of crosslinker</li><li>- Room temperature curable</li><li>- Full cure in 24 hours at room temperature</li><li>- Product example - WD3-A322 / CX-47</li></ul>	<ul style="list-style-type: none"><li>- Unique two component system<ul style="list-style-type: none"><li>- Polyurethane based chemistry</li><li>- Reacted with water based latex resin (emulsion polymer)</li></ul></li><li>- 4 parts polyurethane to 1 part of latex resin</li><li>- Room temperature cure</li><li>- Full cure in 24 hours at room temp.</li><li>- Significant performance advantages</li><li>- Product example – ux-100 / wd3-a322</li></ul>
<ul style="list-style-type: none"><li>- Isoset EPI and PEP contain no phenol, resorcinol, or formaldehyde</li><li>- Neutral adhesive color to blend in with wood substrate</li><li>- Room temperature curing ability offers the potential for energy savings due to reductions in oven temperature</li></ul>	

Thank you for  
your time!