



**FUELS &  
INDUSTRIALS**

CONSTRUCTION

HOUSEHOLD  
PRODUCTS

INDUSTRIAL  
CHEMICALS

MINING &  
DRILLING

PACKAGING

PAINTS, INKS, &  
COATINGS

PETROLEUM

PLASTICS

PULP & PAPER

ETHANOL

BIODIESEL

# INDUSTRIALS





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# ARCHER DANIELS MIDLAND COMPANY



ADM'S RANGE OF industrial ingredients is as broad as the industries we serve. That's because we know the true breadth of industry—that industry spans an array of applications as diverse as construction, paints, household cleaners, personal care products, and more.

We're dedicated to understanding the intricacies of those applications and developing innovative ingredients that meet both customers' and consumers' needs. We've created acidulants for biodegradable plastics and starches that help produce fast-drying adhesives. Our line includes high-viscosity emulsifiers and stabilizers that perform at low concentrations.



# ADM® SERVICES

## R&D EXPERTISE

Our comprehensive global network of research-and-development professionals can help you put our ingredients to work in your products. Skilled researchers and chemists worldwide are your partners in application and product development support and assist with your formulation challenges. From fermentation research and process development to product applications and analytical support, look to ADM.



## GLOBAL DISTRIBUTION NETWORK

ADM's quality ingredients are backed by one of the world's largest transportation systems. We're shipping our products by rail, river, road, and ocean, and leveraging thousands of barges, tractor-trailers, railcars, and tow boats.

Delivering more than 400,000 loads annually, we maintain relationships with a variety of service providers to ensure the most competitive transportation pricing possible and get the right product to the right place at the right time.



## ADVANCED LABORATORIES

We maintain laboratories equipped with the latest technology for performance and rheology testing, fermentation research, and paint and coatings development. Our scientists are pioneering new uses for the commodities we process and developing new ways to use our ingredients in your applications.

## ONLINE INVENTORY SERVICES

Optimize your on-hand inventory with ADM's Online Inventory Services (OIS). This value-added system monitors bulk ADM ingredients at your locations, giving you timely inventory monitoring. OIS reads tank levels, then delivers hourly updates on inventory levels. Access your inventory information, including usage reports and historical data, through e-ADM.com.



## ONLINE COMMERCIAL SERVICES

Through e-ADM.com, we offer real-time news and information that's available 24 hours a day, seven days a week. e-ADM.com simplifies business with round-the-clock access to online reports; billing and invoicing; a product search database; web order entry; logistics management that lets you track railcar and barge orders and pickup times; and PayADM, our Internet-based automated clearinghouse.

## QUALITY ASSURANCE, QUALITY CONTROL

Should you desire, part of ADM's world-class technical support includes product quality testing and assistance. Our experts can help you review and establish specifications files; identify your product quality parameters; and develop product testing methods to provide objective, detailed data.

# ETHANOL

**W**HETHER YOU NEED fuel or industrial ethanol, ADM has the quality, distribution, and technical solutions to deliver for you.

Refiners looking to reduce emissions and boost octane ratings turn to ADM, a pioneer in the fuel ethanol industry. As increasing numbers of states ban MTBE (methyl tertiary butyl ether) and environmental and economic concerns grow, ADM has responded by increasing production of this clean-burning fuel. As the world's largest producer of the gasoline industry's oxygenate of choice, we deliver high-quality product to refiners through our comprehensive net-



work of trucks, railcars, barges, and terminals.

For high-purity industrial ethanol, the choice is ADM. Our completely denatured, specially denatured, and pure ethanols are the highest quality—each flows through sophisticated distillation columns that remove impurities, leaving less than 2 ppm of any impurity.

Whether you're looking for a chemical intermediate to produce ethyl lactate or the right solvent for your coating, adhesive, or personal care product, as a leading industrial ethanol producer, ADM has what you need.

## GLOBAL DISTRIBUTION NETWORK

When you buy ADM ethanol, you get the confidence of our global distribution system of railcars, tractor-trailers, ships, and barges. This extensive network ensures dependable supply—you get the right product at the right place and the right time.

## WORLD-CLASS R&D SUPPORT

ADM's fuel and industrial ethanols are backed by our comprehensive global research and development network. From technical support to application assistance, we have the skills and expertise to help you succeed.

### ADM ETHANOL

#### *For Fuel*

**Fuel ethanol**

#### *For Industrial*

**Specially denatured alcohols**

**Completely denatured alcohols**

**Synasol® solvents**

**Anhydrol® solvents**

**Inksolv® solvents**

For more on ethanol, see the industrial ingredients matrix on page 18, or use our product search function at [admworld.com](http://admworld.com).





# INDUSTRIAL OILS

**F**OR HIGH-QUALITY, high-performance industrial oils, turn to ADM's multifunctional portfolio. You'll find a broad range of products for paints, inks, coatings, varnishes, alkyd resins, and plasticizers, delivered where and when you need it through our vast global transportation network.

For nearly a century, we've focused on the needs of industry with natural-source products designed for high performance. From our roots as a small linseed processing company, we've grown into a market leader offering linseed oils, soybean oils and copolymer oils.

## LINSEED OILS

Manufacturers are using our raw linseed oil for maintenance primers and putting our varnish oils to work in kettle-bodied oils and varnishes.

Our heat-bodied linseed oils—the OKO™ and Alinco™ series—are the finest on the market. OKO series vacuum-bodied oils offer low acid numbers and

exceptionally light color for varnishes and aluminum paints. And the Alinco series delivers closed-kettle oils in a medium acid range for varnishes, inks, and house paints and primers.

For a more varnish-like performance, our specialty oils selection includes copolymers with good solubility in petroleum-type thinners and solvents. Or choose from fast-drying oils and anti-spalling compounds for other high-performance applications.

## SOYBEAN OILS

Our soybean oils are providing natural, biodegradable options for a variety of industries and applications.

In the printing industry, our soybean oils are the basis for inks that deliver high-gloss, good color-quality production comparable to petroleum-based inks. Printers particularly like them for their non-toxic, environmentally friendly qualities.



And candle makers are using soybean oil instead of paraffin to make cleaner-burning, natural candle wax.





## GLOBAL DISTRIBUTION NETWORK

When you buy ADM industrial oils, you get the confidence of our global distribution system of railcars, tractor-trailers, ships, and barges. This extensive network ensures dependable supply—you get the right product at the right place and the right time.

## WORLD-CLASS R&D SUPPORT

ADM's industrial oils are backed by our comprehensive global research and development network. Our chemists and scientists can help with polymer synthesis or work with any of your paint and coatings applications. From technical support to application assistance, we have the skills and expertise to help you succeed.

## ADM INDUSTRIAL OILS

### *Linseed oils*

Raw and boiled

Grinding

Varnish

Oxidized

Heat bodied—OKO™ and Alinco™ series

### *Copolymer oils*

### *Soybean oils*

For more on industrial oils, see the industrial ingredients matrix on page 18, or use our product search function at [admworld.com](http://admworld.com).

# ACIDULANTS

**M**ANUFACTURERS LOOKING FOR high-functionality, consistently high-quality acidulants choose ADM.

From citric acid to lactates to GDL, we offer a range of natural-source, biodegradable products. Each is designed for maximum performance, whether adjusting pH or acting as a chelating agent.

Our citric acid effectively chelates metal ions without damaging the metal, and in textile applications, it acts as a buffer to facilitate multiple dyings of nylon carpet. In agricultural chemicals, ADM citric acids make phosphate soluble for better uptake into crops.

Detergent makers put our citrates to work as environmentally friendly phosphate substitutes, and in cement, sodium citrate helps with curing and setup, acting as a retarding agent to slow down the process.



Our lactic acid can be used to produce plastics for the future, as manufacturers develop biodegradable plastics. And in lotions and soaps, it acts as a moisturizer and adjusts pH.

In polymers, resins, paint, strippers, and coatings, our ethyl lactate performs as a solvent. And in the electronics industry, it's removing flux and salt from circuit

boards.

Whether you want a sequestering product for bottle washing, a chelating agent for electroless plating, or an acetic acid replacement, our high-performance GDL, sodium gluconate, and gluconic acid deliver for you.



## GLOBAL DISTRIBUTION NETWORK

We don't stop with an incredible range of products for many applications—we also operate one of the world's largest distribution networks, ensuring your acidulants get to the right place at the right time for consistent, dependable supply.

## WORLD-CLASS R&D SUPPORT

ADM's acidulants are backed by our comprehensive global research and development network. Our chemists and scientists can help with any of your applications. From technical support to application assistance, we have the skills and expertise to help you succeed.

### ADM ACIDULANTS

*Citric acid*

*Citrates*

*Lactic acid*

*Lactates*

*Gluconates*

For more on acidulants, see the industrial ingredients matrix on page 18, or use our product search function at [admworld.com](http://admworld.com).



# EMULSIFIERS & THICKENERS



**F**OR HIGH PERFORMANCE in any application, you can't top ADM's naturally derived emulsifiers and thickeners. From xanthan gum to lecithin and monoglycerides, you'll find a broad range of biodegradable products in our portfolio.

**OPTIXan™**  
FOR CLEAR RESULTS

## XANTHAN GUM

A standout ingredient in a myriad of applications, OptiXan™ xanthan gum delivers high viscosity at low concentrations.

Try OptiXan xanthan gum in paints and coatings for its thickening and stabilizing abilities and to prevent settling. It prevents pigment separation, improves sprayability, and enhances resistance. And with typical use levels at lower percentages of total formulation than other products, it's one of the most cost-effective thickeners available.



Put it to work in the oil field for its excellent shear thinning and suspension properties, and experience the benefits of higher penetration rates, less formation damage, and fewer circulation pressure losses.

OptiXan products are also effective in a variety of personal care applications. They thicken shampoo and body wash, help suspend particles in novelty and glitter makeup, and improve mouthfeel in toothpaste.

In addition, OptiXan xanthan gum is a key ingredient in advanced no-drip and slow-release cleaners and an important component in ceramics, where it promotes thick, even glazes on both regular and irregular surfaces.

## LECITHIN-BASED EMULSIFIERS

Whether you're looking to improve pigment dispersion for your paint, improve mold release in your polymer preparation, or increase throughput in your plastics extrusion, our extensive lecithin-based product line has what you need for a broad range of applications.



Our selection includes Stablec™, R&R 551™, Yelkin®, and Ultralec® lecithins that act as instantizers and wetting agents in both oil- and water-based paints, reducing mixing times and increasing covering power at lower costs.

In oil well drilling muds, they're lubricating drill bits and reducing friction for lower maintenance costs, and their emulsifying capabilities enhance active ingredients in herbicides, pesticides, and fungicides for better transport to plants or insects.

Added to personal care products like cosmetics, bath foams, and shaving gels, our lecithins provide stable emulsions and help soften skin without a greasy skinfeel.

And by blending our lecithins with diluents such as soy oil, mineral oil, water, and alcohol or by using pre-diluted versions, our lecithins help create superior release formulations, giving them new, stronger functionality for plastic, rubber, fiberglass, concrete forms, and ceramics applications. Thanks to our ingredients, manufacturers are reducing energy requirements, improving internal release, and reducing downtime.

## GLOBAL DISTRIBUTION NETWORK

We don't stop with an incredible range of products for many applications—we also operate one of the world's largest distribution networks, ensuring your emulsifiers and thickeners get to the right place at the right time for consistent, dependable supply.

## WORLD-CLASS R&D SUPPORT

ADM's emulsifiers and thickeners are backed by our comprehensive global research and development network. Our chemists and scientists can help with product development, stability testing, or formulation challenges. From technical support to application assistance, we have the skills and expertise to help you succeed.

### ADM EMULSIFIERS AND THICKENERS

*Xanthan gum*

*Lecithin*

**Standard**

**Modified**

**Blended/complexed**

**Deoiled**

For more on emulsifiers and thickeners, see the industrial ingredients matrix on page 18, or use our product search function at [admworld.com](http://admworld.com).

# STARCHES

**W**HETHER YOU'RE PRODUCING glossy color copy paper, gypsum wallboard, or price-sensitive corrugated containers, ADM's incredible range of natural-source starches has renewable, high-quality products that perform for you.

Use our cationic wet-end corn starches to increase your paper's dry strength so you can add more fillers or secondary fiber. They're effective in all papermaking systems: acid, neutral, alkaline, and secondary fiber.

Our hydroxyethyl corn starches' film-forming abilities make them ideal for size press coating and calendar sizing. They form continuous films that stay on substrate surfaces and have more transparency and flexibility and less tendency to shrink, crack, or craze.

Excellent adhesive strength helps our starches perform well in corrugating and solid-fiber applications, and they're excellent for textile applications such as warp sizing and laundry starch.

When you want fast-drying seal adhesive for envelopes, high-quality gumming adhesives for labels and stamps, and paper tape adhesives that absorb moisture evenly, yet provide quick tack and slow set, choose ADM dextrins. We also have the products you need for laminating, wallpaper, bags, corrugated boxes, and tube winding. And we even offer highly soluble dextrins that act as iron oxide flocculants, depressants, and flotation agents for mining.

The construction industry puts our acid-modified starches to work as protective colloids for gypsum wallboard and uses our starch blends to seal gypsum wallboard edges. Our phosphate starches are thickening and binding joint compounds, paints, and finishing textures, and our unmodified starches are effective internal binders in woodfiber, waferboard,





fiberboard, and ceiling tiles.

## STARCHES FOR ADVANCED DRY STRIPPING

For fast, economical coatings removal that won't compromise integrity on commercial, private, and military aircraft and parts, look to ADM's EnviroStrip™ dry stripping media. Our wheat starch media, corn hybrid polymers, and wheat and corn starch-g-acrylics replace labor-intensive, time-consuming mechanical grinding, chemicals, and hand sanding or scraping. Get nose-to-tail coating removal

in one particle-blasting process, maximizing time and cost efficiency.

## GLOBAL DISTRIBUTION NETWORK

When you buy ADM starches, you get the confidence of our extensive distribution system of railcars, tractor-trailers, ships, and barges. This network ensures dependable supply—you get the right product at the right place and the right time.

## WORLD-CLASS R&D SUPPORT

ADM's starches are backed by our comprehensive global research and development network. Our chemists and scientists can help with product development or work with any of your formulations. From technical support to application assistance, we have the skills and expertise to help you succeed.

### ADM STARCHES

#### *Corn starch*

Acid modified

Cationic wet end

Hydroxyethyl

Oxidized

Unmodified

#### *Wheat starch*

Acid modified

Classified

Dextrin

Extruded

Oxidized

Phosphate

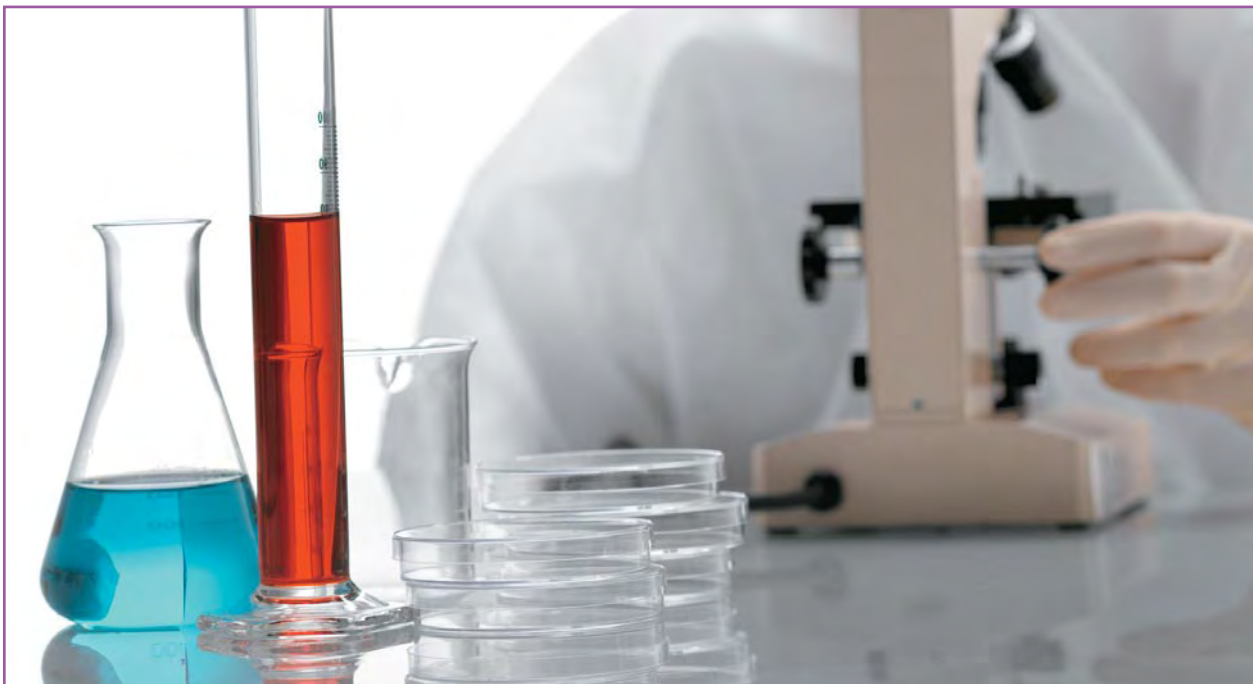
Pregelatinized

Unmodified

Blends

For more on starches, see the industrial ingredients matrix on page 18, or use our product search function at [admworld.com](http://admworld.com).

# POLYMERS



**W**ITH ADM AS your partner, plastics and coatings made from renewable, sustainable resources may soon be reality.

Through an alliance with Metabolix, Inc., ADM is developing a family of versatile, biologically derived polyesters (polyhydroxyalkanoates or PHAs). These cost-effective polymers will revolutionize plastics manufacturing as we know it.



In fact, *Forbes* magazine called PHA “one of five molecules that will change the world.”

PHAs biodegrade rapidly, even in anaerobic environments. Stable in water, they also biodegrade in fresh water, marine, soil, and composting environments.

ADM is exploring the use of glucose from corn to produce PHAs through an innovative, fully biological fermentation method Metabolix developed.

The broad-ranging PHA family is expected to include polymers and copolymers with a variety of properties for high performance in a variety of applications, from rigid and flexible plastic to rubbery and adhesive materials. Potential applications range from water-resistant paper coatings, composting films, and geotextile netting to injection molding, non-woven fabrics like flushable wipes, and more.

## ADM POLYMERS

### *PHA Natural Polymers*

For more on polymers, see the industrial ingredients matrix on page 18, or use our product search function at [admworld.com](http://admworld.com).

# CHEMICAL INTERMEDIATES

**M**ANUFACTURING YOUR HIGH-QUALITY products requires only the finest chemical intermediates, and you'll find them at ADM. Whatever your application, we offer a functional, sustainable product to meet your needs.

Created from renewable resources, our products are versatile and highly functional, performing in fuels, solvents, surfactants, plasticizers, and other industrial chemicals.



Is your primary finished product alkyd resins? Our wide range of industrial oils and polyols such as sorbitol has the products to make your chemicals perform.

From isolates to flours, our soy proteins are used in particle board, resins, wallboard, and other wood composites and are providing additional strength to the resins used in wood applications like wallboards and wood veneers.

Whatever you're producing, ADM has the sustainable products to help you create quality industrial chemicals.

## GLOBAL DISTRIBUTION NETWORK

We don't stop with an incredible range of products for many applications—we also operate one of the world's largest distribution networks, ensuring your chemical intermediates get to the right place at the right time for consistent, dependable supply.



## WORLD-CLASS R&D SUPPORT

ADM's chemical intermediates are backed by our comprehensive global research and development network. From technical support to application assistance, our chemists and scientists have the skills and expertise to help you succeed.

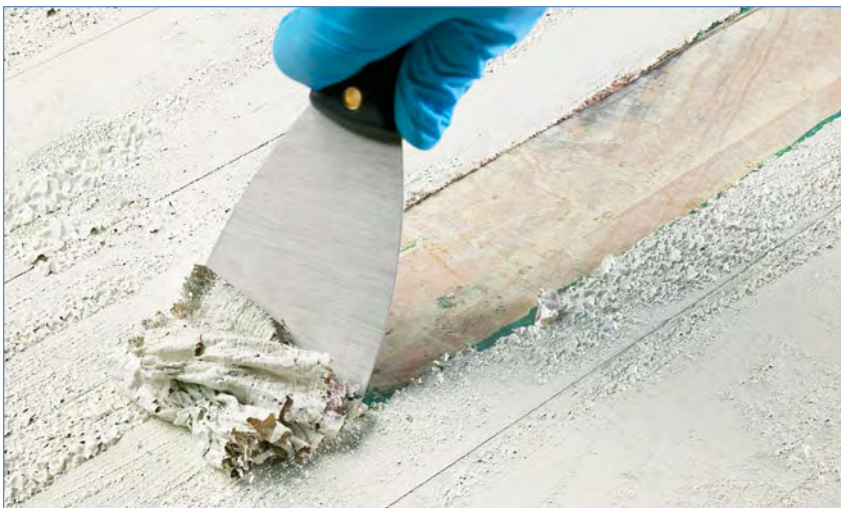
## ADM CHEMICAL INTERMEDIATES

For more on chemical intermediates, see the industrial ingredients matrix on page 18, or use our product search function at [admworld.com](http://admworld.com).



# SOLVENTS

ADM IS REVOLUTIONIZING the solvents market with sustainable alternatives that have as much power as their predecessors. Experience the benefits of natural-source solvents that protect the environment while still providing high performance for you.



ADM's ethyl lactate helps you address environmental concerns without compromising product performance. Biodegradable, it breaks down into ethanol and lactic acid, both non-toxic to humans.

With a Kauri-Butanol Value of more than 1,000, ethyl lactate easily replaces chlorinated solvents in a wide range of industrial applications. Use it to effectively dissolve and soften plastics or remove flux and salt from circuit boards. Through ultrasonic treatment, immersion, or wiping, ethyl lactate removes lithium greases, inks, silicone oils, flux, solder paste, and fingerprints. In paint, paint strippers, and coatings, it's an excellent solvent for polymers and resins.

Mix our ethyl lactate with both water and oil-based products—it's effective in multiple types of solvent systems.

## GLOBAL DISTRIBUTION NETWORK

When you buy ADM solvents, you get the confidence of our extensive distribution system of railcars, tractor-trailers, ships, and barges. This network ensures dependable supply—you get the right product at the right place and the right time.

## WORLD-CLASS R&D SUPPORT

ADM's solvents are backed by our comprehensive global research and development network. Our chemists and scientists can help with product development or work with any of your formulations. From technical support to application assistance, we have the skills and expertise to help you succeed.

### ADM SOLVENTS

#### *Ethyl lactate*

For more on solvents, see the industrial ingredients matrix on page 18, or use our product search function at [admworld.com](http://admworld.com).





# ADM INGREDIENTS FOR INDUSTRIAL APPLICATIONS

	CONSTRUCTION	HOUSEHOLD PRODUCTS	INDUSTRIAL CHEMICALS
ETHANOL	Fuel		
	Specially denatured	X	X
	Completely denatured	X	X
	Solvents	X	X
INDUSTRIAL OILS	Linseed oils	X	
	Conjugated linseed oils	X	
	Soybean oils	X	
ACIDULANTS	Citric acid	X	X
	Citrates	X	X
	Lactic acid		X
	Lactates		X
	Gluconates		X
EMULSIFIERS & THICKENERS	Lecithin	X	X
	Xanthan gum	X	X
STARCHES	Hydroxyethyl corn starch		X
	Cationic wet end corn starch		
	Dextrin wheat starch		
	Phosphate wheat starch	X	
	Pregelatinized wheat starch	X	
	Extruded wheat starch		
	Unmodified corn and wheat starch	X	
	Acid-modified corn and wheat starch	X	
	Oxidized corn and wheat starch		
POLYMERS		X	X
CHEMICAL INTERMEDIATES			X
SOLVENTS	Ethyl lactate		X

MINING & DRILLING	PACKAGING	PAINTS, INKS, & COATINGS	PETROLEUM	PLASTICS	PULP & PAPER	PERSONAL CARE	PHARMA-CEUTICALS	CERAMICS	AVIATION	TEXTILES
			X							
	X	X				X	X			
	X	X				X	X			
	X	X				X	X			
		X				X	X			
		X								
		X		X						
X				X		X	X			X
X				X		X	X			X
		X		X	X	X	X			X
		X		X		X	X			X
X	X	X		X	X	X		X		
X	X	X			X	X		X		
	X				X					
					X					
X	X				X					
	X									X
									X	
	X				X					
	X									
										X
	X	X		X	X	X		X		
		X		X						
X		X			X					





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For customers around the world, ADM draws on its resources—its people, products, and market perspective—to help them meet today's consumer demands and envision tomorrow's needs.

**RESOURCEFUL BY NATURE™**

**ADM SPECIALTY OILS & FATS**

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Decatur, IL 62526  
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Technical Services 217-451-2471  
Technical Services fax 217-451-2693  
ArcherRC@admworld.com

**ADM CORN PROCESSING  
(ETHANOL SALES)**

4666 Faries Parkway  
Decatur, IL 62526  
Toll Free 800-637-5843  
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Fax 217-424-5978  
ethanol@admworld.com

**ADM SPECIALTY FOOD INGREDIENTS**

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Fax 217-451-3941  
specialtyingredients@admworld.com

**ADM SPECIALTY FOOD INGREDIENTS  
(STARCHES DIVISION)**

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service@admworld.com

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Toll Free 800-637-5864  
651-388-7111  
Fax 651-388-9488  
technicaloils@admworld.com



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