



Emulsifiers for Food & Beverage



Attain Versatile Functionality and Nutrition

Looking for a versatile ingredient that functions in a variety of formulations and applications? ADM's emulsifiers have you covered, with a comprehensive portfolio of highly functional lecithins.

Put them to work as emulsifiers to promote even blending and mixing, as release agents to ensure clean separation, as instantizers to help proteins and other materials disperse in aqueous systems, or as a nutritional source.

Formulate innovative, delicious and nutritious food & beverage solutions using ADM's lecithin portfolio to answer consumers' growing demand for food ingredients derived from plant-based sources.¹

UNPARALLELED QUALITY FOR FOOD & BEVERAGE AND SUPPLEMENT PERFORMANCE

Along with our versatile lecithin product line, ADM's production and technical expertise help get you to market faster and with confidence.

ADM's lecithins offer a variety of functions, working as:

- **Emulsifiers** to promote blending and mixing
- **Release agents** to ensure clean separation
- **Instantizers** to help proteins and other materials disperse in aqueous systems
- **A nutritional source** in food & beverage formulations and supplements

¹Mordor Intelligence

WHY ADM: EMULSIFIERS FOR FOOD & BEVERAGE

Derived from carefully selected renewable plant-based materials including soybeans, rapeseed/canola and sunflowers

Reliable, consistent functionality with unparalleled clarity and a neutral label

Backed by the largest global supply chain and global footprint in lecithin production



In response to the **growing demand for food ingredients derived from plant-based sources**, lecithin usage has risen in bakery and confectionery, dairy, and meat products.

More Functionality

Our lecithin products were created to provide consistent functionality for use as emulsifiers, release agents, instantizers and nutritional supplements. They are also readily customizable to meet your specific needs.

EMULSIFIER

- Simultaneously interacts with oil and water to help form a stable emulsion
- Promotes even blending and mixing
- Facilitates even ingredient distribution

RELEASE AGENT

- Improves separation
- Reduces buildup and product loss
- Creates thin non-stick barrier between foods and cooking surface
- Lowers overall input costs

INSTANTIZER

- Enables difficult-to-disperse materials to dissolve in aqueous solutions
- Maintains integrity of instant food products
- Excellent for instantizing powders

ADM'S LECITHIN AS A NUTRITIONAL SUPPLEMENT

Lecithin is a complex mixture of phospholipids, triglycerides and fatty acids that naturally occur in soybean oil. One of the phospholipids in lecithin is choline. Recent studies have demonstrated that choline is essential under certain dietary conditions as an important building block for human cells.

Lecithin offers a fully bioavailable source of choline for human nutrition and can be taken as a nutritional supplement in the form of capsules or dry granules.

- Provides bioavailable choline, a required nutrient
- Offers essential polyunsaturated fatty acids

A Daily Recommended Intake (DRI) was established for choline in 1998.

Males: >20 yrs.

Recommended Adequate Intake = 550 mg/day

Females: >20 yrs.

Recommended Adequate Intake = 425 mg/day

More Applications, More Benefits

Partner with ADM to gain an edge in more food & beverage, as well as nutritional supplement, applications. Benefit from our years of experience and R&D technical expertise to solve any performance challenge with custom solutions derived from renewable sources.

AS AN EMULSIFIER

Lecithin's structure makes it an effective emulsifier for the interaction with water and oil. Phospholipids, the major component of lecithin, are partly hydrophilic (attracted to water) and partly hydrophobic (repelled by water), enabling interaction with both phases.



Confectionery

- Promoting even blending of all ingredients
- Increasing softness and decreasing tackiness in chewing gum
- Preventing sticking
- For use as cocoa butter sparing agent
- Preventing fat and sugar bloom



Bakery

- Ensuring even mixing
- Facilitating moisture retention
- Improving crumb texture in cakes
- For use as an egg yolk sparing agent
- Improving dough properties



Reduced-Fat Baked Goods

- Improving moisture retention
- Increasing shortening effect
- Decreasing stickiness of doughs
- Aiding in fat sparing



Dairy and Dairy Alternatives

- Enhancing structure and firmness of whipped products
- Improving dispersibility in coffee creamers
- Imparting creamy mouthfeel



Snacks

- Facilitating even distribution of ingredients
- Improving texture and mouthfeel



Canned Foods

- Reducing fat cap during retort process
- Helping bind fat and keep it in suspension



Dry Foods & Beverages

- Improving dispersal of high-fat powders
- Enhancing hydration of high-protein ingredients



Meat & Meat Alternatives

- Binding, prohibiting separation of fat from other ingredients, like proteins



Spreads & Margarines, Dips & Dressings

- Enhancing structure and firmness
- Improving dispersibility
- Reducing spattering



Nutritional Supplements/ Health & Wellness

- Providing bioavailable choline, a required nutrient
- Offering essential polyunsaturated fatty acids



AS A RELEASING AGENT

Lecithin's simultaneous affinity for both oils and water makes it an effective label-friendly ingredient for pan release and other functions.

Pan Release

- Forms fluid lipid barriers
- Ensures quick, clean separation
- Bread pan formulas
- Cakes, cookies, and other high-moisture specialty product formulas

Belt Release

- Useful in continuous cooking and baking processes using belts or conveyors
- Typically included in oil or melted shortening
- Water-dispersible lecithin for use in dip tank systems
- Water-dispersible product provides release and assists in cleanup

Product Separation

- Prevents sticking in finished food products
- Allows for separation of slices of high-moisture pasteurized cheese

Heat-Resistant Applications

- For use during prolonged heating periods
- Modified lecithin resists darkening and build-up
- Mold release, pan sprays, griddle and frying operations

AS AN INSTANTIZER

Lecithin helps solve the challenge of incorporating difficult-to-disperse materials (proteins, fibers, vitamins, minerals, cocoa powders and milk powders) into a product that can be readily dissolved in cold water, milk, or other aqueous solutions.



Beverage Powders



Meal Replacement Shakes



Dry Soups & Mixes



Gravy Mixes



Powdered Dairy Products



ADM's Deoiled Lecithin as a Clean and Reliable Solution

Our deoiled lecithin uses a unique acetone-free production process that results in a better, cleaner and reliable high-quality product.

✓ Performs in a wide range of applications



Bakery



Beverages



Snacks



Confectionery



Margarine

THE RESULT:

A water dispersible product with 50% more phospholipid strength than fluid lecithin and a clean, bland flavor and aroma.

✓ Provides higher phospholipid content

✓ Provides convenient dry form in easy-to-handle 20kg boxes

✓ Improves flowability and enhances dispersibility

ADM's dry lecithin offers a plant-based emulsifier that mixes well, promotes accurate measurement across food & beverage formulas, and eliminates the need for synthetic flow agents.

Our deoiled lecithin is labeled as soy lecithin and is available in convenient powder, granular or fine granular form and is consumable in either its free-flowing form or in tablets.

Particle options to meet your needs:

Ultralec P – Powder form for uniform blending

Ultralec F – Fine granular particle offering improved flowability and low dusting

Ultralec G – Granular particle pieces for ease of handling



EMULSIFIER PRODUCT LINE USAGE

PRODUCT NAME/CODE*	Acids Lubricity	Dough Conditioner	Mixing Aid	O/W Emulsifier	W/O Emulsifier	Release Agent	Viscosity Modifier	Wetting Agent	Shelf-Life Enhancement	Nutritional Supplement	HLB	Color Max
STANDARDIZED FLUID PRODUCTS (IP/NON-GMO AVAILABLE)												
Yelkin T 700170	✓				✓						4	18
Yelkin TS/SS 700160/700155	✓		✓		✓						4	17/14
Adlec 700161	✓		✓		✓						4	17
Yelkin DS/Gold 700150/700350	✓		✓		✓	✓	✓				4	12/14
Yelkin Canola 800120	✓		✓		✓						4	--
Yelkin Sunflower 800168	✓		✓		✓						4	--
SPECIALTY FLUID PRODUCTS (IP/NON-GMO AVAILABLE)												
BLV1 700203	✓		✓		✓	✓	✓	✓			3	14
BLV3 700205	✓		✓		✓	✓		✓			2	14
BLV30 700207			✓	✓		✓		✓			4	14
Cap Series 700311-700317										✓	Variety of options	
Therm 57/200 700403/700407				✓		✓		✓			7	14
Therm WFC 700409			✓	✓		✓		✓	✓		10	13
Yelkin 1018 700402				✓				✓	✓		9	17
PE/PPS 700251/700254		✓		✓		✓		✓			12	14
DEOILED (POWDER) PRODUCTS (IP/NON-GMO AVAILABLE)												
Ultralec P/F 700851/700852	✓	✓		✓	✓		✓	✓	✓	✓	7	--
Ultralec G 700853										✓	7	--

*For IP/Non-GMO products use instead of the 7 in product code an 8. For example: Yelkin TS 700160 while IP Non-GMO Yelkin TS 800160.

LECITHIN PRODUCTS ACROSS THE HYDROPHILIC/LIPOPHILIC BALANCE (HLB)

Water in Oil (1-6) Favors Water-In-Oil Emulsions					Water in Oil or Oil in Water (6-8)		Oil in Water (8-12) Favors Oil-In-Water Emulsions				
1	2	3	4	5	6	7	8	9	10	11	12
	BLV3	BLV1	Yelkin T Yelkin TS Yelkin SS Yelkin DS Yelkin Gold Cap Series BLV30 Yelkin Sun Yelkin Canola			Therm 57 Therm 200 Ultralec F Ultralec P Ultralec G		Yelkin 1018	Therm WFC		PE PPS
Reference Emulsifiers											
		Monodiglycerides				Sorbitan Esters					Ethoxylated Monodiglycerides
		Polyglycerol Esters Sucrose Esters									

CLAIMS & CERTIFICATION OPTIONS

FDA Approved as GRAS | EU Permitted | Halal | PCR Negative | Non-GMO/Not Bioengineered | Allergen Free*
Organic | Kosher | Clean Label | Gluten Free | Whole Food Ingredients

*Negative for allergens means below limit of detection

SHELF LIFE

Standardized Fluid Lecithin: 3 years from date of manufacturing

Specialized Fluid Lecithin: 18 months – 2 years from date of manufacturing

Deoiled (powder) Lecithin: 2 years from date of manufacturing



Partner with a Global Leader Who Gives You an Edge

At ADM, our best-in-class plant-based lecithin ingredients include 85+ years of expertise and the ability to help you innovate. We are a global leader with the technical knowledge to ensure the lecithin products we send to market are the best available. When it comes to emulsifiers for your food & beverage and nutritional supplement products, your edge is our expertise.

APPLICATIONS EXPERTISE

We leverage our best-in-class analytical, biotech, food science and innovation capabilities to create customized solutions that work for your specific products.

RELIABLE OPTIONS

We continually invest in world-class quality systems and utilize our knowledgeable, meticulous quality and technical team to ensure the product we send to market is safe and reliable.

SPEED TO MARKET

By leveraging our world-class technical R&D team, application science & technology, and holistic innovation and partnership approach, your finished product can get to market faster.

ADM DELIVERS FOR YOU

With ADM you have a partner who combines our superior quality, highly functional food-grade lecithin with unmatched technical ingenuity. We bring over 85 years of experience to the table. Our extensive technical and R&D expertise gives you an edge in developing consumer-preferred and safe final products. With the largest supply chain and global footprint and our high processing standards, you are ensured a premium-quality product with the utmost consistency. Count on us to meet any formulation challenge and to deliver for you every time.

Inquire about additional emulsifier solutions. To request samples, email samples@adm.com.

For technical consultation or support email SIQA@adm.com.

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