

## Products of Corn

<b>Cornstarch</b>	<b>Corn Syrup</b>	<b>Industrial Uses</b>
<p><b><i>Industrial Uses</i></b></p> <p>Abrasive paper and cloth                      Adhesives (glues, mucilages, gums, etc.)                      Batteries, dry cell                      Binder or binding agents                      Board (corrugating, laminating, solid fiber-board, cardboard)                      Boiler compounds                      Bookbinding                      Briquettes Ceramics (as clay binder)                      Chemicals Cleaners, detergents                      Coatings on wood, metal and paper                      Color carrier (in paper and textile printing)                      Cord polishing, sizing                      Cork products                      Crayon and chalk (as a binder)                      Dispersing and standard-izing agent                      Dressing, surgical                      Dyes (as a bodying agent, carrier diluent, etc.)                      Fermentation processes                      Fiberglass size                      Fireworks                      Insecticide powders                      Insulating material (glass wool, rock wool, etc.)                      Lubricating agents                      Oilcloth                      Oil-well drilling (drilling mud)                      Ore refining (electrolytic reduction process, flotation process, etc.)                      Paints (cleaning compounds, cold-water and latex paints, poster lacquers, etc.)                      Paper and paper products manufacture                      Plastics (molded)                      Plywood (interior)                      Printing                      Protective colloids (emulsions)                      Textiles (warp sizing and finishing)                      Tile, ceiling                      Tires, rubber                      Wallboard and wallpaper                      Water recovery, industrial</p> <p><b><i>Food, Drug or Cosmetic Uses</i></b></p> <p>Antibiotics                      Aspirin                      Baby foods                      Bakery products (bread, rolls cakes, pies, crackers and cookies)                      Baking powder                      Beverages, brewed (beer, ale, etc.)</p>	<p><b><i>Industrial Uses</i></b></p> <p>Adhesives (plasticizing agent)                      Chemicals                      Dyes and inks                      Explosives                      Leather tanning (chrome process)                      Metal plating                      Paper, glassine and parchment                      Plasticizer                      Polish, shoe                      Rayon (viscose process)                      Textiles, for finishing                      Theatrical makeup                      Tobacco and tobacco products</p> <p><b><i>Food, Drug Uses; liquid or dried form</i></b></p> <p>Baby foods                      Bakery products (bread, rolls, biscuits, doughnuts, pies, cakes, cookies, pretzels, etc.)                      Beverages, brewed (beer, ale, etc.)                      Beverages, carbonated                      Breakfast foods                      Catsup, chili sauce, tomato sauce                      Cereals, prepared                      Cheese spreads and foods                      Chewing gum                      Chocolate products                      Coffee whiteners                      Condensed milk, sweetened                      Confectionery                      Cordials and liqueurs                      Desserts                      Eggs, frozen or dried                      Extracts and flavors                      Frostings and icings                      Fruit butters and juices                      Fruit drinks                      Fruits (canned, candied, fillings, frozen, etc.)                      Ice cream, water ices and sherbets                      Jams, jellies, marmalades and preserves                      Licorice                      Malted products                      Marshmallows and related products                      Meat products (sausage, etc.)                      Medicinal preparations (drugs, pharmaceuticals)                      Mixes, prepared (cakes, infant foods, pie fillings, pudding, powders, ice cream, etc.)                      Peanut butter                      Pickles and pickle products                      Salad dressing                      Sauces (seasoning, specialty, etc.)</p>	<p><b><i>Industrial Uses</i></b></p> <p>Acids, commercial (lactic, acetic, gluconic, etc.)                      Adhesives                      Amino acids                      Chemicals (calcium, lactate, sodium lactate, etc.)                      Citric                      Dyes                      Electroplating and galvanizing                      Enzymes                      Lactic acid polymers                      Leather tanning                      Lysine                      Mannitol                      Paper manufacturing                      Rubber (cold process)                      Sizing materials                      Sorbitol                      Textiles, dyeing and finishing                      Threonine                      Tryptophan</p> <p><b><i>Food, Drug Uses</i></b></p> <p>Antibiotics                      Baby foods                      Bakery products (biscuits, bread, crackers, fillings, icings, macaroons, pretzels, cookies, crackers, wafers, etc.)                      Berries, canned and frozen                      Beverages, brewed (beer, ale, etc.)                      Beverages, carbonated                      Breakfast foods                      Caramel color                      Cheese foods and spreads                      Chewing gum                      Chocolate products                      Citric acid                      Citrus juices                      Coloring, pure food mix                      Condensed milk                      Confectionery                      Cordials, liqueurs and brandy                      Cream, frozen                      Dairy products                      Desserts                      Dietetic preparations                      Distillation products                      Doughnuts (cake, yeast)                      Drugs (fermentation process)                      Eggs, frozen or dried                      Fish, pickled                      Flavoring extracts                      Food acids (citric, etc.)                      Fruit juices                      Fruits and vegetables (canned)                      Fruits (candied, glace, frozen)</p>



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<p>Chewing gum                  Chocolate drink                  Confectionery                  Cosmetics                  Desserts (puddings, custards, etc.)                  Drugs and pharmaceuticals                  Flours, prepared (including prepared mixes)                  Food and drug coatings                  Gravies and sauces                  Meat products                  Mixes, prepared (pancake, waffle, cake, candy, etc.)                  Mustard, prepared                  Pie filling                  Precooked frozen meals                  Salad dressing                  Soaps and cleaners                  Soups                  Sugar, powdered                  Vegetables, canned                  Dextrins                  Industrial Uses                  Adhesives (glues, pastes, mucilages, gums)                  Bookbinding                  Briquettes                  Candles                  Ceramics                  Cord polishing                  Core binder (castings, molds, etc.)                  Cork products                  Crayon and chalk (as a binder)                  Dyes (dry, cake, etc.)                  Envelopes                  Fireworks                  Inks, printing                  Insecticides                  Insulation, fiberglass                  Labels                  Leather                  Linoleum                  Magazines                  Matches (on head and side of box)                  Oil-well drilling                  Ore separation                  Paints (cold-water, poster, etc.)                  Paper and paper products                  Plastics (molding)                  Plywood                  Sandpaper                  Shoes (counter pastes, polish, etc.)                  Silvering compounds                  Soaps                  Straws (drinking)                  Textiles, sizing, finishing and printing                  Twine (cord, string, etc.)                  Wallboard and wallpaper                  Window shades and shade cloth</p>	<p>Seafood, frozen                  Soups, dehydrated                  Syrups (table, chocolate, cocoa, fruit, medicinal, soda fountain, cordials, etc.)                  Toppings                  Vinegar</p> <p><b>High Fructose Corn Syrup</b></p> <p><b>Food Uses</b>                  Bakery products                  Canned fruits                  Canned juices                  Condiments                  Confectionery products                  Frozen desserts                  Jams, jellies and preserves                  Soft drinks                  Wine                  Yeast</p> <p><b>Maltodextrins</b>                  Food Uses                  Bakery mixes                  Beverage powders                  Condiments                  Dehydrated foods                  Dry soup mixes                  Gum confections                  Icings and glazes                  Instant tea                  Instant breakfast foods                  Low calorie sweeteners                  Marshmallows                  Nougats                  Pan coatings                  Sauce and gravy mixes                  Snack foods</p>	<p>Gelatin desserts                  Ice cream, water ices and sherbets                  Infant and invalid feeding                  Jams, jellies, marmalades and preserves                  Lactic acid                  Meat products (bacon, bologna, hams, sausage, frankfurters, mincemeat)                  Medicinal preparations and intravenous (injections, pills, tablets, drugs, etc.)                  prepared (cake, icings and frosting, infant foods, pie fillings, toppings, etc.)                  Peanut butter                  Peas, canned                  Pectin, fruit                  Pickles and pickle products                  Prepared mixes                  Powders (ice cream, prepared dessert, pudding, summer drink, powders, etc.)                  Sauces (catsup, tomato, etc.)                  Seasoning mixes, dry                  Sorbitol (in candies, toothpaste, etc.)                  Soups, dehydrated                  Spices and mustard preparations                  Syrups (table, fountain, medicinal, etc.)                  Vinegar                  Wine                  Xanthan gums                  Yeast</p> <p><b>Hydrol</b></p> <p><b>Corn-sugar molasses</b>                  Leather tanning                  Livestock feed                  Organic acids                  Organic solvents                  Tobacco</p> <p><b>Ethanol</b>                  Alcoholic beverages                  Industrial alcohol                  Octane enhancer                  Oxygenate in motor fuels</p> <p><b>Personal care products</b>                  Mouthwash                  Toothpaste</p>
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## Co-Products of Corn

SOLUBLES	GLUTEN AND HULLS	GERM
<p><b>Steepwater</b> Antibiotics Chemicals Pharmaceuticals Yeast</p>	<p><b>Steepwater for Feed</b> <b>Gluten Feed and Meal</b> <b>Oil Meal</b></p> <p>Products Used by Livestock, Poultry and Dairy</p> <p>Corn germ meal Corn gluten feed Corn gluten meal Corn oil by-products Corn sugar (crude and refined) Hydrol (corn-sugar molasses) Steepwater for feed (condensed fermented corn extractives) Corn Germ Meal, Corn Gluten Feed, Corn Gluten Meal Other Uses</p> <p>Amino acids Fur cleaner Zein and other protein products</p>	<p><b>Corn Oil</b></p> <p><b>Corn Oil, Refined</b> <i>Food, Drug Uses</i> Carriers for vitamins and other medicinal preparations in capsule form Cooking oil Margarine Mayonnaise Potato chips Salad dressing Sauces, seasoning Shortening Soups</p> <p><b>Corn Oil and Free Fatty Acids</b> <i>Industrial Uses</i> Chemicals and insecticides Lecithin (for pharmaceuticals, cosmetics, linoleum, printing inks, etc.) Paint and varnish Rubber substitutes Rust preventative (surface coatings) Soap Soluble oil (leather and tanning use) Textiles</p>



## Word Scramble

Unscramble the following list of food items that contain corn.

nroc sekalf	c _ _ _ f _ a _ _ _
cei earcm	_ c _ _ _ _ m
oads	s _ _ _
nuteap ttreub	_ e _ _ u _ _ u _ _ e _
upchket	k _ _ _ h _ _
alads ingsserd	s _ l _ _ d _ e _ _ _ _ g
ylelj	_ e _ _ _
mallmarowssh	_ a _ s _ _ _ _ l _ _ s
meanrirga	m _ _ g _ _ _ _ _
tcoa hipcs	_ a _ o _ _ i _ _



## The Four Parts of a Kernel of Corn

### THE ENDOSPERM

The endosperm is about 82 percent of the kernel’s dry weight and is the source of energy (starch) and protein for the germinating seed. There are two types of endosperm, soft and hard. In the hard endosperm, starch is packed tightly together. In the soft endosperm, the starch is loose. When corn dries in the field before harvest, the moisture loss causes the soft endosperm to collapse and form a dent in the top of the kernel, thus the term “dent” corn.



### THE PERICARP

The pericarp is the outer covering of the kernel that protects it from deterioration. It resists water and water vapor and is undesirable to insects and microorganisms.

### THE GERM

The germ is the only living part of the corn kernel. It contains the essential genetic information, enzymes, vitamins and minerals for the kernel to grow into a corn plant. About 25 percent of the germ is corn oil. Corn oil is the most valuable part of the corn kernel. It is high in linoleic fatty acid (polyunsaturated fat) and has a bland taste.

### THE TIP CAP

The tip cap is the only area of the kernel not covered by the pericarp. It was the attachment point of the kernel to the cob.

Corn Components	
Starch	61.0%
Feed	19.2%
Oil	3.8%
Water	16.0%



## Connect The Dots

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