



Magic Chef Shortening & Oil Operation and Training Resource Guide



Made in USA



Frying shortening defined

Frying shortening is a medium which transmits heat from the source to the food and becomes a part of the fried food.

Fried foods may contain from 7% to over 35% shortening, based on weight, the food being fried, and the frying conditions.

An ingredient making up such a large percentage of the finished product is of prime importance to your operation.

The shortest distance from harvest to market

Magic Chef Oils, the experts in shortening and oil

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The information contained in this Resource Guide is a general interpretation of shortening and oil processing and technical terms. It is intended to provide a non-scientific summary to enhance your understanding of the subject matter.



CHOOSING THE RIGHT FRYING SHORTENING

Magic Chef Foods offers a complete line of value added frying shortenings and oils that address the five key factors that allow you to serve high quality fried foods.

Magic Chef®



FIVE KEY FACTORS

- Fried Food Flavor & Appearance
- Fried Food Eating Quality
- Nutrition
- Fry Life / Economics
- Liquid or Solid



A FEW QUESTIONS TO ASK YOURSELF

What do you want your food to look and taste like when the frying is complete?

Liquid frying products, like Magic Chef Super Fry, and Magic Chef Clear Choice have low melting points. As a result, foods fried in clear liquids or creamy liquids will have a shiny appearance and a “melt in your mouth” feel even when cold.

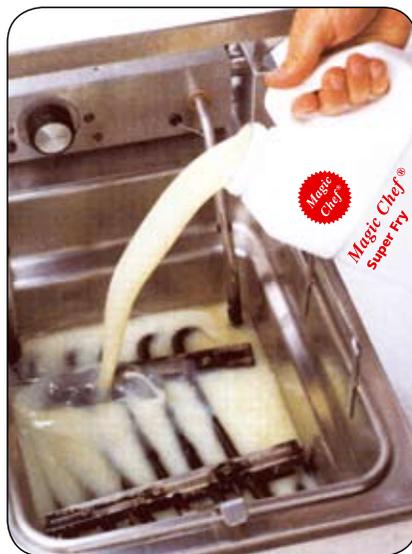
Meat fats and peanut oil can have definite flavor characteristics that, depending on what you are frying, enhance or detract from the flavor of your food. Other types of oils such as canola oil, soybean oil and cottonseed oil tend to be bland.

Solid shortenings tend to “set up” on the food as it cools. Foods fried in solids will have a drier, less shiny appearance. Try Magic Chef Super Fry for this effect.

How much “quality time” can you spend with your frying oil?

Creamy and clear oils are the most convenient to work with. They can be poured from the container directly into your fry kettle with ease. They can also be filtered at cool temperatures.

Solid shortenings take more time and training to use properly. For example, solid shortenings need to be slowly melted over low heat when first introduced into the fry kettle. There are multiple methods on how to pack a fryer properly, see pages 7-11. Also, solid shortenings must be filtered warm because the shortening solidifies as it cools. However, the benefits of excellent frylife may outweigh the inconvenience.



Creamy and clear oils are the most convenient products to work with. They can be poured directly from the container.



Solid shortenings need to be melted over low heat when first introduced into the kettle. See pages 7-11 on how to pack a fryer for a step by step guide.

A FEW QUESTIONS TO ASK YOURSELF

How do you extend frylife in your operation?

Perhaps you have an operation that is heavily involved in frying. You have reliable, skilled employees that can handle most any kitchen task. A heavy duty solid or creamy liquid would make sense for you since you have the labor expertise to optimize frylife. However, you may have trouble optimizing your frylife due to business fluctuations and lack of structure. This is why many operations change their oil routinely even though the oil may last longer. We can assist you in developing operational efficiencies to maximize frylife. This is the ideal situation for Magic Chef Superfry, Clear Fry and Ultra Fry. Your customers will come to your restaurant because you have great fried food.



FRYING SHORTENINGS ARE MADE FROM A WIDE VARIETY OF BASE OILS ALONG WITH SPECIALIZED MANUFACTURING PROCESSES

Frying shortenings can be made from a wide variety of vegetable oils and animal fats. The type of base oil used will affect the finished product in terms of performance, flavor, nutrition profile, and form. Base oils can be blended to enhance nutrition and performance.

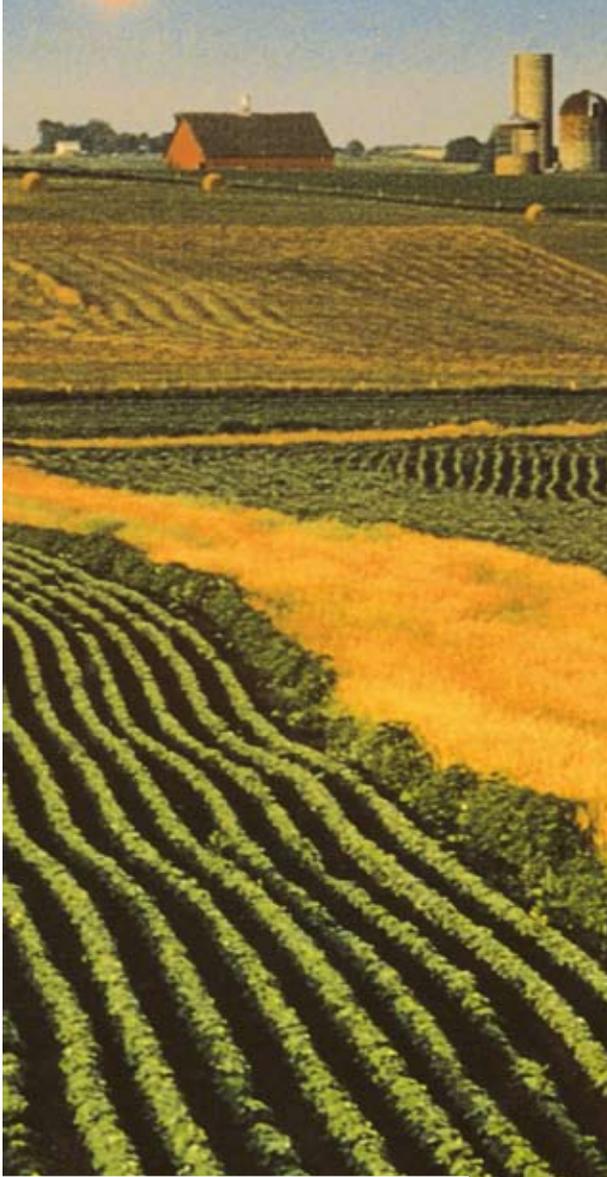
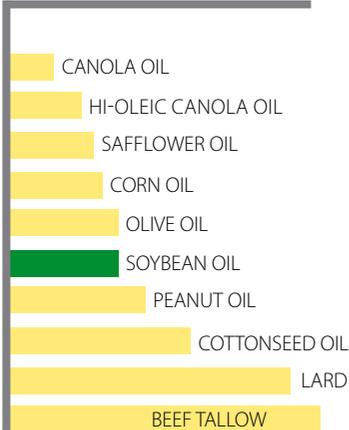


SOYBEAN OIL

Soybean oil is the most commonly used base oil due to its reasonable cost and good domestic supply. It can be made into a variety of forms from a clear liquid oil to a solid. It is often labeled “vegetable oil”.

As a frying medium, soybean oil has a bland, neutral taste which allows the natural flavor of food to come through.

SATURATED FAT COMPARISON



MAGIC CHEF DRYING SHORTENING & OIL IS AVAILABLE IN THREE FORMS

CLEAR LIQUID FRYING OIL



Clear liquid vegetable frying oil appears clear and is pourable at room temperature.

ADVANTAGES

- Convenient to pour, safer to handle
- Filter shortening when cold
- Shiny appearance of food, good nutrition profile

DISADVANTAGES

- Tends to be more expensive than solid
- Tends to have less frylife
- More packaging to discard

CREAMY LIQUID FRYING SHORTENING



Partially hydrogenated all vegetable frying shortening. It appears creamy white and is pourable at room temperature.

ADVANTAGES

- Convenient to pour, safer to handle
- Filter shortening when warm
- Shiny appearance of food, good nutrition profile
- Excellent frylife

DISADVANTAGES

- Tends to be more expensive than solid
- More packaging to discard

SOLID FRYING SHORTENING



Hydrogenated all vegetable and meat fat cubes are solid at room temperature

ADVANTAGES

- Gives food a dry appearance
- Tends to be economical, excellent frylife
- Meat fat product provides excellent flavor

DISADVANTAGES

- More difficult to handle, inconvenient
- Meat fat products may limit customer appeal
- Requires employee training
- Poor nutrition profile

With so many frying shortenings available on the market, how do you choose the one that's right for your operation?

The following pages will help you make an informed decision

CLEAR LIQUIDS

- Magic Chef, Clear Fry (Soybean)
- Magic Chef Canola Fry (Canola)



CREAMY LIQUIDS

- Magic Chef Super Fry (Soybean)
- Magic Chef Canola Super Fry (Canola)



SOLIDS

- Elite Pro-Fry (soybean)
- Stabico® Meat Fat (tallow/vegetable)
- Magic Chef Ultra Fry
- Magic Chef Fry Rite



LOADING, FILTERING & CLEANING THE FRYER





LOADING THE FRYER—SOLID SHORTENINGS

**USE EXTREME CAUTION WHEN LOADING A FRYER!
A FLASH FIRE MAY OCCUR IF NOT PROPERLY HANDLED.
ONLY LOAD FRYER PER YOUR MANAGEMENT
INSTRUCTIONS.**

Solid shortenings need to be handled carefully when being introduced to the fryer. Be sure to understand and follow either of the two methods for loading presented on the following pages. Remember that solid shortenings must be filtered warm because the shortening solidifies as it cools. The excellent frylife that solid shortening provides will prove a benefit for your operation.

LOADING SOLID SHORTENINGS – METHOD 1



METHOD 1

Solid shortening should be melted in a separate container before placing it in the fryer. Care should be taken while melting the shortening to avoid overheating it. When a sufficient amount has been melted to cover the heating elements of your fry kettle, pour the melted shortening into the fryer. Turn the heat on and begin placing small pieces of solid shortening in the fryer until the fill mark of your kettle has been reached.



STEP 1 – Pour melted shortening into fryer, covering coils.



STEP 2 – Carefully add solid pieces to liquid without splashing.

LOADING SOLID SHORTENINGS - METHOD 2



An alternate method of melting solid shortenings, though not as beneficial to the shortening, is to pack it around the heating elements prior to turning the fryer on. Set the fryer thermostat on its minimum setting so you don't scorch the shortening.

Why take this much care with a solid shortening? Shortening begins to break down when it is heated. Shortening dropped onto a hot element will smoke and darken. This extreme heat will reduce the frylife of the shortening considerably, even before you have finished loading the fryer.

**USE EXTREME CAUTION WHEN LOADING A FRYER!
A FLASH FIRE MAY OCCUR IF NOT PROPERLY HANDLED.
ONLY LOAD FRYER PER YOUR MANAGEMENT INSTRUCTIONS.**



STEP 1 – Carefully pack the top of the coils with shortening. Push the shortening into any open spaces eliminating any air pockets.



STEP 2 – Turn fryer to "on" position



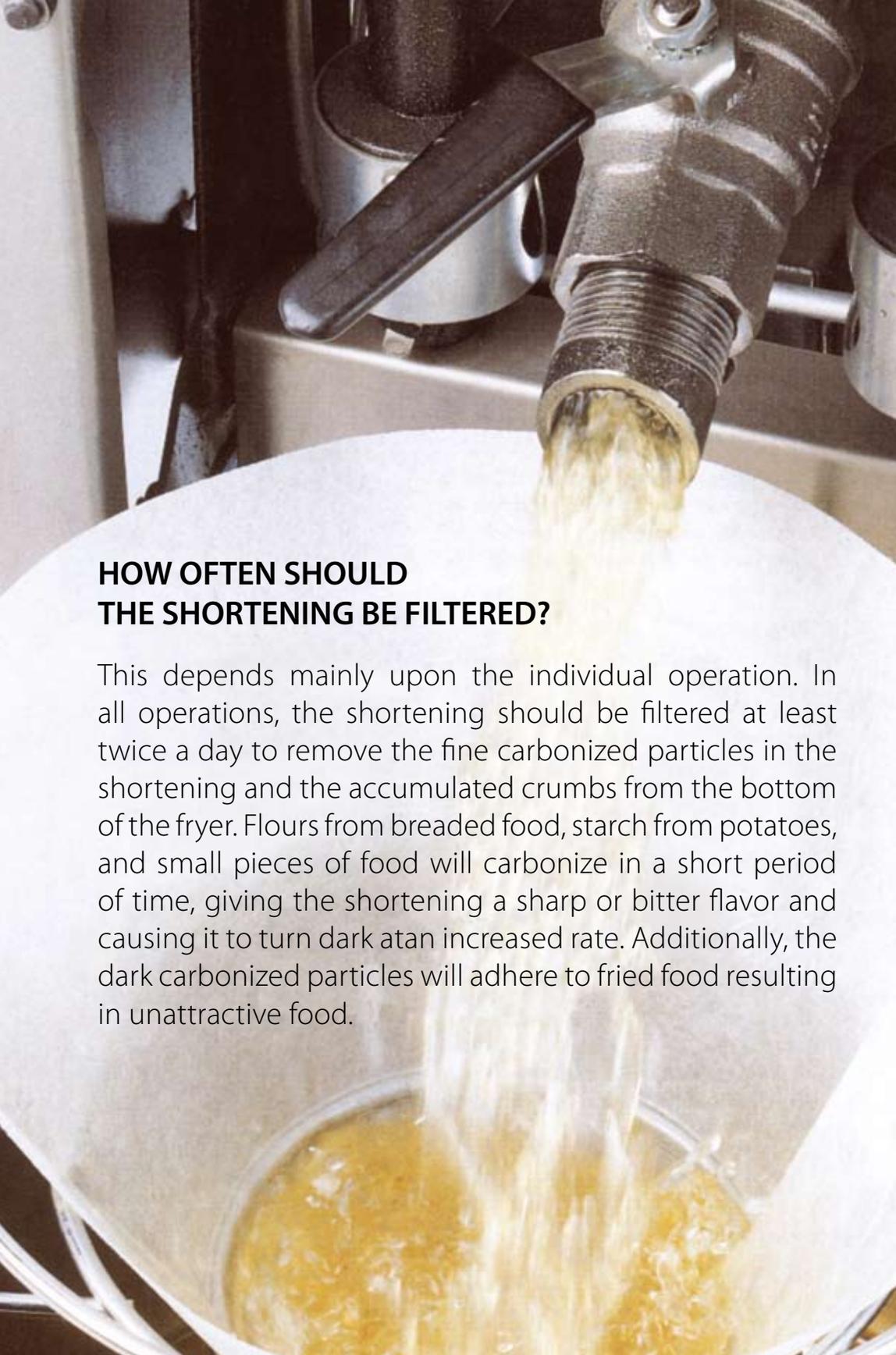
STEP 3 – Carefully add solid pieces to liquid without splashing.

LOADING THE FRYER— LIQUID SHORTENINGS



It is not necessary to melt liquid shortenings prior to use. Simply pour them into the fryer slightly below the full mark before turning the heat on.

It is very important that the shortening be maintained at the level specified by the manufacturer of the fryer to insure proper operation of the unit. A deep fat fryer is designed to operate at maximum efficiency with a given amount of shortening. When the shortening level is too low or high, uneven frying and excessive browning may result.



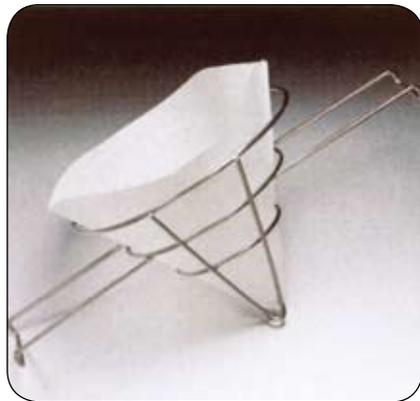
HOW OFTEN SHOULD THE SHORTENING BE FILTERED?

This depends mainly upon the individual operation. In all operations, the shortening should be filtered at least twice a day to remove the fine carbonized particles in the shortening and the accumulated crumbs from the bottom of the fryer. Flours from breaded food, starch from potatoes, and small pieces of food will carbonize in a short period of time, giving the shortening a sharp or bitter flavor and causing it to turn dark at an increased rate. Additionally, the dark carbonized particles will adhere to fried food resulting in unattractive food.

FILTERING THE SHORTENING

The following points should be observed when the shortening is filtered manually:

1. For best results, allow the shortening to cool to 82°C–107°C before filtering.
2. Disposable filters are preferred over washable filters. With washable filters, if all the soap is not removed and if the filter is not dry prior to use, the shortening may be damaged rather than helped by filtration. **Note: Do not reuse disposable filters**
3. Filtering aids are quite effective in the removal of fine particles from the shortening when used as directed, but care must be exercised in selecting the right one.
4. Every precaution must be taken to insure that no unnecessary aeration of the shortening occurs during filtering. Do not pour or drain shortening from too great a distance. Aeration, splashing, or blowing air through the shortening with a pump will promote rapid oxidation, decreasing the shortening's frylife.
5. Rinse out the residual crumbs from the fryer with a portion of the filtered shortening if the fryer is not to be washed at this time.
6. When the fryer is refilled, check to ensure the correct shortening level is maintained for optimal results. It is very important that this be kept at the level specified by the manufacturer to ensure proper operation of the unit.



Use disposable filters.



Do not pour or drain shortening from too great a distance.



Quality shortening produces quality foods.

PORTABLE AND BUILT-IN FILTERING SYSTEMS

Many fryer manufacturers offer portable filtering units which make it safer, faster and more convenient to filter your shortening regularly.

Fryer manufacturers offer detailed instructions that explain the proper usage and cleaning procedures.

When melting a solid shortening in a portable unit:

1. Clean filter tub and remove all accessories
2. Place a solid cube of shortening in the filter tub.
3. Turn shortening melter on.
4. Do not allow shortening to solidify in filter as it will also solidify in the pipes.
5. Do not turn shortening melter on without shortening in the filter tub.

If you experience filter pump failure, the shortening may have solidified and plugged up the pipes. If this occurs, turn on the shortening melter for 20 minutes. This will heat the filter tub and pipes to free the system of solidified shortening. Always reset motor before attempting filtering. Built-in filtering units may also clog up with solidified shortening. Manufacturers offer heating coils which go around the pipes inside the fryer to keep the shortening in a liquid form.



BENEFITS OF DAILY FILTRATION

- Removes particulate matter
- Makes cleaning fryers easier
- Improves fried food appearance and taste
- Maintains shortening color and clarity
- Reduces build up in the fryer
- Extends the life of your shortening!

SHORTENING TURNOVER

Maintaining your shortening and frying equipment is crucial to high quality fried foods. Select frying equipment that will assure a rapid turnover of shortening and will fit in well with your fried food volume requirements. Maintaining rapid shortening turnover is an area where you can have considerable control. «Turnover» is the amount of time, or rate, it takes to use and replace the shortening in the frying kettle. For instance, if your kettle holds 50 lbs. of shortening, and it takes you 1 day to use this and add in another 50 lbs. of shortening, you have one-day (or 1 to 1) turnover. The more rapid the turnover (such as 1:1, 1:2 or 1:3) the less time the shortening will be exposed to heat, oxygen, and water. It follows that, with a more rapid turnover, your shortening will be in better condition... and fried food quality will be optimized.

Using the proper size kettle can greatly help in your efforts to control shortening turnover. Obviously, the smaller the kettle capacity, the faster the turnover. Excessively large kettles reduce turnover rate, which means the same shortening will be used for extended periods. Breakdown (foaming, smoking, darkening, gumming, and bad flavors) will occur sooner. For this reason, two small kettles (9.07 kg each) are often better than one large kettle (22.68 kg). One of the small kettles could be set on a low temperature and used as backup during rush periods or for extremely large orders. All this will insure a more fresh and flavorful shortening for better appearing fried foods.



SHORTENING ROTATION



Many Foodservice operators offer a wide variety of fried foods on their menu. Some operators are forced to fry multiple foods in one fryer. Fried food flavor transfer may occur when using inexpensive shortening and frying multiple foods in one fryer. Products such as Magic Chef Shortenings & Oils resist flavor transfer under such operating conditions.

The convenience of having several fryers in your operation allows you to rotate your shortening. That is, to dedicate one fryer to french fries for an allotted period of time and then use this shortening for products which impart flavors such as chicken and onion rings

CLEANING THE FRYER

Fryers should be boiled out with commercial fryer cleaner before filling the fryer with fresh shortening.

1. DRAIN THE FRYER WHILE SHORTENING IS STILL WARM and properly dispose of used oil/shortening. Rinse the fryer with hot water until all crumbs are flushed out.

2. BOIL OUT FRYER, BASKETS, SKIMMERS, ETC. with a good commercial cleaner designed for cleaning deep fat fryers and follow the manufacturer's instructions for use. (An initial 30 minute boil out is the usual recommendation.) Clean the metal baskets simultaneously by immersing them in the solution—this will loosen the polymerized material (gum) that has formed on them. Turn the heat off and remove all the loosened deposits with a nylon scrub pad. Do not use metal scrub pads or wire brushes as these will scratch the finish and possibly leave metal shavings in the fryer. All traces of polymerized material should be removed.

3. DRAIN. Rinse the fryer, baskets and skimmers several times with clear tap water.

4. FILL FRYER WITH A SOLUTION OF 1 PART VINEGAR TO 20 PARTS HOT WATER. This vinegar rinse neutralizes any cleaner residues that remain.

20# Fryer = 475ML vinegar

35# Fryer = 830ML vinegar

50# Fryer = 1.1855ML vinegar

75# Fryer = 1.775ML vinegar

5. DRAIN, RINSE AND THOROUGHLY DRY with lint free towels. Paper towels are best, as laundered towels may contain traces of soap. Air drying overnight is another option. Remember that water is a prime cause of shortening breakdown.

6. CHECK DRAIN VALVES. Many drain valves are made of copper. Ensure that shortening is not coming in contact with copper. Copper will assist in oxidation and impart an off flavor to your fried food.

7. REFILL THE FRYER TO THE CORRECT LEVEL with a Magic Chef Elite Shortening or Oil. New fryers should be cleaned following the above procedures.



STEP 1 – DRAIN



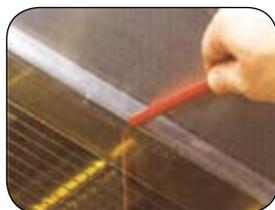
STEP 2 – BOIL OUT



STEP 3 – DRAIN



STEP 4–5–6
FILL WITH SOLUTION, DRAIN,
RINSE & DRY.



STEP 7
REFILL TO CORRECT LEVEL

FRIED FOOD QUALITY CONTROL



FRIED FOOD QUALITY CONTROL

Good Frying Practices

FILL BASKETS ONLY HALF FULL: Completely filling the basket will result in greasy, soggy food. Do not exceed manufacturer's recommended load maximum; as a rule of thumb, 453 gr. of food for every 3.6 – 4.5 kg. of shortening. Load baskets away from the fryer.

SKIM FREQUENTLY: Be sure to skim off floating food particles as frequently as possible for best results.

ALLOW FOODS TO DRAIN: When lifting fryer baskets out of the shortening, allow food to drain before emptying.

KEEP FRYER FILLED: Frying shortening should be kept at the fill line marked on the inside of the fryer.

SEASON AWAY FROM FRYER: Salt and seasonings contain small quantities of natural metallic contaminants. When introduced into the shortening, they speed up the rate of shortening "breakdown" to cause foaming, dark color and off flavors.

FILTER FREQUENTLY: See pages 16-18 for a complete description of filtering procedures.



FILL BASKETS HALF FULL



SKIM FREQUENTLY



ALLOW FOODS TO DRAIN



DO NOT SEASON OVER THE FRYER



DO NOT FILL OVER THE FRYER

THE GOLDEN RULES OF FRYING

1. Quality shortenings & oils produce quality fried foods.
2. Inferior shortenings & oils produce inferior fried foods.
3. Good frying practices produce good quality fried foods.
4. Buying quality oil is as important as buying quality food. Remember, the oil is both a cooking medium and an ingredient.

FRIED FOOD QUALITY CONTROL

Good frying shortening will enhance the qualities of properly prepared foods

FROZEN FOODS – It is always best to follow manufacturers directions as closely as possible when preparing frozen foods. Most frozen foods today are processed so they may be taken directly from the freezer to the fryer without thawing. Care should be exercised when purchasing frozen foods to ensure that they have not been allowed to partially thaw and refreeze. Alternate thawing and refreezing causes frozen foods to lose some of their natural juices and will allow more of these juices to be lost in the fryer. The additional moisture will speed shortening breakdown.

MEATS, SEAFOOD, AND CHICKEN – Whenever possible, trim excess fatty tissue. Reducing the amount of these unprocessed, unstable fats, which render out during frying, will help increase the frylife of your shortening.

BREADED FOODS – Frozen foods are usually pre-breaded, but if you prepare your own breading, remove excess breading before frying. This will reduce the amount of contamination in the fryer. The flours in breading, when heated at high temperatures for a period of time, burn. This results in the shortening and finished food having a sharp, bitter, undesirable burned flavor. Very fine flour particles blacken easily, darken the shortening, and are difficult to remove during filtration.

EXCESSIVE MOISTURE – Too much water can result in inferior fried food with high shortening absorption and poor texture. The moisture should be drained from these foods by placing them on a wire rack or blotting food before frying.



BLOT FOODS TO REMOVE MOISTURE BEFORE FRYING



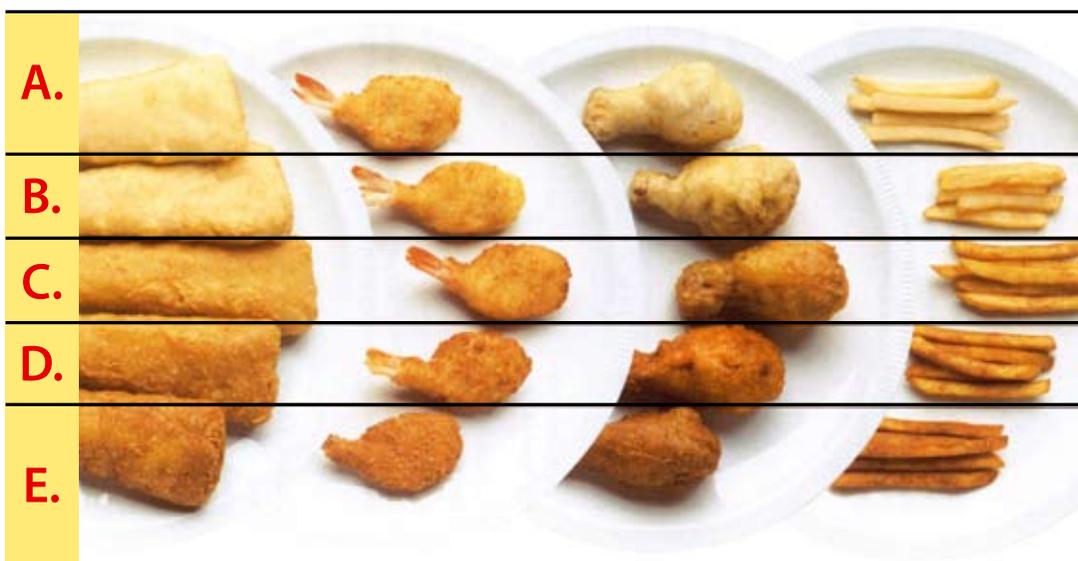
REMOVE ALL EXCESS FATTY TISSUE



REMOVE EXCESS BREADING BEFORE FRYING

WHEN SHOULD YOU CHANGE YOUR SHORTENING?

- The color of your shortening alone is not an indicator of when it should be changed. Use the fried food comparison chart as an indicator. **Food quality should determine when shortening is changed.**
- When food reaches (D) or darker use the Magic Chef Test Kit to insure the usability of the frying shortening.
- Check for excess smoking of the shortening.
- Change the shortening when both the test results and this visual guide meet the managements expectations for changing shortening.



- A.** Food is very light in color, unappealing and may be undercooked.
- B.** Food is light in color. Although probably cooked thoroughly, food is not as appealing as it could be.
 - C.** Food is golden brown and delicious, perfect for serving.
- D.** Food looks darker than it should be and may be retaining the flavor of other fried foods. A good time to check the shortening.
- E.** Food is too dark and is unappealing. Flavor transfer is occurring. It's definitely time to change the shortening.

SHORTENING & OIL “DO’S & DON’TS”

DO THIS:

- Do select the highest quality shortening such as Magic Chef Super Fry.
- Do select the proper equipment to match fried food volume (maximize turnover)
- Do calibrate the thermostat regularly
- Do check oil temperature daily with a calibrated thermometer
- Do fry at the lowest possible temperature
- Do turn fryer down when not in use
- Do cover the fryer after turning off and after the shortening has cooled.
- Do choose the right shortening for your operation
- Do drain/blot wet foods before frying
- Do shake/remove loose breading before frying
- Do filter the shortening at least twice a day
- Do filter at the lowest temperature possible
- Do skim the shortening frequently
- Do maintain the proper shortening level
- Do thoroughly wash and rinse the fry kettle when totally replacing the shortening
- Do scrub fryer with a non-abrasive pad
- Do store shortening at room temperature
- Do keep the hood and exhaust system clean
- Do wear protective gear — handling hot shortening can be dangerous

SHORTENING & OIL “DO’S & DON’TS”

DO NOT DO THIS:

- Do not stir, agitate or aerate the shortening unnecessarily
- Do not contaminate the shortening with:
 - Sprays
 - Polishes
 - Cleansers
 - Insecticides
 - Plastics
- Do not use salt or seasonings over or near the fryer
- Do not load baskets over fryer
- Do not over-fill fry baskets with food
- Do not use copper or copper alloys (bronze/brass) in contact with the fryer
- Do not overheat the shortening—especially when loading the fry kettle
- Do not scratch or wear-out the fry kettle surface by using scouring pads, wire brushes, etc.
- Do not use rusty/worn kettles
- Do not add discarded shortening back into the kettle
- Do not transfer bad oil into good oil
- Do not discard the shortening without a reason
- Do not pour or drain oil from too great a distance; this will cause oxidation
- Do not allow frozen foods to thaw prior to placing in fryer
- Do not fry anything over 195°C

TROUBLESHOOTING

Problems and Possible Causes

GREASY FOOD

Problem: Food is limp with greasy taste and shortening is dripping from it.

- Causes:**
1. Temperature of shortening is too low (check thermostat).
 2. Overloading the basket.
 3. Allowing food to remain in the fryer or over the fryer after it is done
 4. Failure to allow the food to drain properly.
 5. Shortening has broken down and is foaming.
 6. Fryer temperature recovery is too slow.
 7. Shortening frylife has ended; change shortening.

INTERIOR OF FOOD RAW

Problem: Exterior of food looks done while the interior is partially raw.

- Causes:**
1. Temperature of shortening is too high (check thermostat).
 2. Size of piece of food is too large.
 3. Frying time is too short.
 4. Center of food was frozen while outside portion thawed, prior to frying
 5. Shortening has broken down and is foaming
 6. Fryer temperature recovery is too slow.

OBJECTIONABLE FLAVORS IN FOODS

Problem: Foods have objectionable taste.

- Causes:**
1. Poor filtration practices that allow crumb build-up.
 2. Low turnover of shortening.
 3. Drip-back from exhaust system.
 4. Use of poor quality shortening.
 5. Excessive shortening absorption (See Greasy Food).
 6. Shortening has surpassed its frylife.
 7. Low frying volume and low turnover.

TROUBLESHOOTING

Problems and Possible Causes

OIL FOAMS EXCESSIVELY

Problem: A layer of fine yellow bubbles builds up on the surface of the shortening.

- Causes:**
1. Temperature of shortening is too high (check thermostat).
 2. Failure to reduce heat in slack periods
 3. Hot spots in the heating system.
 4. Poor quality shortening initially or through abuse.
 5. Soap and/or gum formation not removed entirely during the cleaning operation.
 6. Excessive filtration through filter aid.
 7. Low frying volume and low turnover

OBJECTIONABLE ODOR OR FLAVOR OF SHORTENING

Problem: Fryer odor is unappealing and the shortening has an off flavor.

- Causes:**
1. Poor filtration practices that allow crumb build-up
 2. Drip-back from the exhaust system.
 3. The shortening has broken down due to initial poor quality or abuse.
 4. Poor quality of food being fried.

FOODS DO NOT BROWN PROPERLY

Problem: Food is not cooked or browned in the usual amount of time.

- Causes:**
1. Temperature of shortening is too low (check thermostat).
 2. Overloading the fry basket.
 3. Fryer temperature recovery is too slow.
 4. Excessive foam build-up as shortening is breaking down.
 5. Short frying time..

TROUBLESHOOTING

Problems and Possible Causes

EXCESSIVELY DARK OIL

Problem: Oil takes on “tar-like” appearance.

- Causes:**
1. Overheating the shortening (check thermostat).
 2. Poor filtration practices that allow crumb build up.
 3. The shortening is breaking down due to initial poor quality or abuse.
 4. Hot spots in the heating system (uneven temperature in fryer).
 5. Soaps from the cleaning operation entering the shortening system.
 6. Low frying volume and low turnover

SMOKING OIL

Problem: Smoke visibly coming off shortening.

- Causes:**
1. Temperature of shortening is too high (check thermostat).
 2. Poor filtration practices that allow crumb build-up.
 3. The shortening is breaking down due to initial poor quality or abuse.
 4. Hot spots in the heating system.
 5. Soaps from the cleaning operation entered the shortening system.
 6. Drip-back from the exhaust system.
 7. Shortening has exceeded its frylife.
 8. Low frying volume and low turnover.

SUMMARY

Each operator should strive to maintain the shortening so it will be::

1. LIGHT IN COLOR.
2. FREE OF BURNT PARTICLES
3. BLAND IN ODOR AND FLAVOR.
4. FREE FROM SMOKE AND FOAM.

REMEMBER... do not discard shortening until you view a noticeable difference in the quality of your fried food.

Darkening shortening does not necessarily mean the shortening is beyond its frylife

GOOD KITCHEN PRACTICES

Preventing Food Poisoning

Health regulations concerning “safe” Foodservice operations vary from state to state. The reason for regulations is clear: prevent food contamination and food poisoning. Symptoms of food poisoning are often mistaken for an upset stomach, headache, common cold or the flu. In fact, more than 25 communicable diseases can be passed from one person to another through careless food handling. Improper food storage and sanitation conditions cause bacteria to thrive and quickly multiply. Under the right conditions, 3.5 to 4 hours is all it takes for bacteria to accumulate in large enough numbers to cause serious or fatal illness.

FIVE COMMON TYPES OF FOOD POISONING

SALMONELLA BACTERIA – “SALMONELLOSIS”

Symptoms: Nausea, cramps, diarrhea, fever and occasional vomiting. Symptoms appear within 24 hours. Usually not fatal, but can be very serious.

Causes: Eating raw or undercooked meat, fish, poultry, eggs, dairy products or foods prepared with them.

STAPHYLOCOCCUS BACTERIA – “STAPH”

Symptoms: Nausea, cramps, diarrhea, fever and occasional vomiting. Symptoms appear within 2-4 hours and persist 24 to 48 hours. Rarely fatal, but can cause serious illness.

Causes: Eating Staph contaminated meat, tuna, poultry, egg products, cream and sandwich fillings, potato, bean or macaroni salads. Staph organisms are found in human and animal respiratory passages and on skin. They are transmitted to food by handling.

CLOSTRIDIUM PERFRINGENS – “CLOSTRIDIUM”

Symptoms: Diarrhea and cramps. Occurs 4-22 hours after eating. Usually not fatal

Causes: Eating meat, poultry and other high protein foods. Transmitted to food by handling or through the air.

SALMONELLA TYPHI – “TYPHOID FEVER”

Symptoms: Abdominal pain, fever, constipation and headaches. 10% of reported cases are fatal.

Causes: Eating food that has been contaminated by infected individuals who have not thoroughly washed their hands after using the bathroom. Can be transmitted by people who show no symptoms.

CLOSTRIDIUM BOTULINUM – “BOTULISM”

Symptoms: Fatigue, dizziness, double vision, throat constriction, coated tongue, lower than normal body temperature, respiratory and heart rates. Symptoms appear within 8 to 36 hours. Usually fatal. Death will occur within 3-6 days.

Causes: Eating improperly canned or packaged meats and low acid vegetables. Contamination can also occur in improperly stored meat, meat by-products, poultry, poultry by-products, and foods such as fish, eggs, smoked fish and white fish.

GOOD KITCHEN PRACTICES / FOOD SAFETY

Proper food storage and handling

RAW PRODUCT

1. Keep food on shelves or racks, not on the floor.
2. Keep raw food separated from cooked foods. NOTE: If separate areas are not available, place raw food below cooked food.
3. Store poultry in containers that are deep enough to contain liquid "run off".
4. Do not mix poultry, meats or seafood.
5. Keep refrigerator/cooler between 1°C (34°F) and 4°C (40°F).
6. Keep freezer temperature between -18°C (0°F) and -23°C (-10°F).
7. Keep poultry moist and chilled at all times.
8. Do not allow product to sit at room temperature over two hours.

COOKED PRODUCT

1. Keep food on shelves or racks, not on the floor.
2. Keep cooked foods separated from raw foods.
3. Keep food refrigerated between 1°C (34°F) and 4°C (40°F).
4. Refrigerate in small or shallow container to assure proper chilling throughout.

DRY PRODUCT

1. Store on shelves or racks, not on the floor.
2. Keep humidity level at less than 50%, if possible.
3. Keep storage area clean and free of rodents and insects.
4. Keep storage area as close to 21°C (70°F) as possible.

ALL FOOD PRODUCTS

1. Rotate on first in, first out basis.
2. Keep food covered or wrapped to prevent drying.
3. Remove spoiled product from storage area immediately and then discard.
4. Store sanitation products (soaps, cleaner, etc.) separate from foods and packaging.

GOOD KITCHEN PRACTICES / FOOD SAFETY

Proper food storage and handling

SANITATION DO'S

1. Wash hands with soap and water before handling or preparing food.
2. Wash hands after handling raw foods.
3. Wash hands with soap and water after using the bathroom, eating or smoking.
4. Keep clothes and body clean.
5. Remove aprons before using the bathroom.
6. Never chew gum, use tobacco, eat or drink around food preparation and display areas.
7. Sick employees should stay home.
8. Cover coughs and sneezes, then wash hands.
9. Hats or hair nets should be worn.
10. Do not touch hair, face, mouth and nose while working around food.
11. Keep fingernails clean and short.
12. Employees with open sores, cuts, boils, or rashes should not handle food.
13. Never use the same utensils, cutting boards, or counter tops for cooked and raw food unless the surfaces have been thoroughly cleaned and sanitized between usage.
14. Always use sanitary disposable gloves when handling and preparing food.
15. Never serve food with fingers. Use a clean spoon or utensil each time you sample, serve or taste food.
16. Provide plenty of clean kitchen linens and soap.
17. Keep dirty linens in separate storage container.
18. Wash hands after using cleaning solutions.
19. Clean all food work areas daily (opening and closing) and at regular intervals.
20. Keep cooler and freezer floors and storage containers cleansed and sanitized.
21. Keep all foods covered or wrapped and remove old or spoiled food.
22. Keep fresh liners in garbage containers and lids in place.
23. Clean filter screen in exhaust hood on a regular schedule.

RECOMMENDED FRYING TEMPERATURES

Chicken	– small pieces	185°C
	– large pieces	170°C
Chops		176°C
Clams		185°C
Croquettes		185-196°C
Cutlets		176°C
Donuts		185-196°C
Eggplant	– french fried	182-190°C
Fish Fillets		185°C
Fritters		182-190°C
Onion Rings	– french fried	182-190°C
Oysters		185°C
Potato Chips		176-190°C
Potatoes	– french fried	176-190°C @ 3 minutes
	– frozen, pre-blanchd	
Scallops		185°C
Shrimp	– frozen	176°C
	– fresh	185°C

Major Factors Affecting Shortening Breakdown

- WATER
- POLYMERIZATION
- OXYGEN
- TURNOVER/TIME
- EXTRACTABLES
- HEAT (Fry Temperature)
- CONTAMINATION

Water Reaction or Hydrolysis

This is the reaction of the shortening with moisture wherein the triglyceride or fat molecule is broken down. Technically this change is expressed as the percentage of free fatty acids. As more molecules are broken up, free fatty acids begin to make the shortening objectionable. It will begin to smoke and darken.

Excessive water is unacceptable for several reasons:

1. Water reacts with shortening to cause faster breakdown. This will be evidenced by smoking and a dark unacceptable shortening color.
2. Water causes kettle temperatures to drop which means a longer frying time than is desired, the potential for undercooked food, and a need for more energy to bring the temperature back up to an acceptable frying range.
3. Spattering can occur around the frying area creating a dangerous safety hazard.

Oxidation

During the frying operation, the surface of the shortening is protected by a blanket of steam rising from the foods being fried. During slack periods, air comes in contact with the surface of the shortening. The oxygen in the air reacts with the shortening and speeds up its deterioration. Vigorous pouring from container to container when filling the fryer or filtering, for example, can also over-expose your shortening to oxygen.



HYDROLYSIS – Practically speaking, you should combat water introduction by draining or blotting foods before placing them in the fryer, particularly if the foods are frozen and have a buildup of ice crystals on them. Dry fryer completely after the boiling out process.



OXIDATION – Oxygen in the air reacts with shortening and speeds up deterioration. Reducing kettle temperatures to 65°C from 95°C when the shortening is not being used will reduce the rate of oxidation, allowing for longer fry life.



EXTRACTABLES - Floating particles of food and crumbs will reduce the shortening frylife, skim often throughout the day.

AVOID CONTAMINATION



DO NOT SALT or season over the fryer! **DO NOT FILL BASKETS** over the fryer! Doing so will reduce your frylife.



Polymerization

This is the accumulation and combination of chemical by-products formed by shortening oxidation reactions. You will notice this when “gummy” substances build up appears on your fryer. Polymerization imparts a bad flavor to your food, darkens the color of your shortening, contributes to foaming and ultimately deteriorates the shortening. Clean and boil out fryers routinely to avoid polymerization.

Turnover/Time

Another factor when selecting a frying shortening is turnover. This is roughly defined as the amount of time it takes to completely replace the shortening in the fry kettle with new shortening. Shortening is used up through the absorption (or “soaking up”) of the shortening by the foods fried. Generally, the longer it takes to replace shortening in the kettle, the more stable the frying shortening should be. (See page 19 for a detailed discussion of turnover.)

Extractables

Fine particles of food and crumbs in your shortening will quickly become carbonized in your fry kettle. These particles will give the shortening a sharp bitter flavor and cause it to turn dark at an increased rate. Extractables increase when frying breaded and battered foods. To combat this, skim your shortening throughout the day. Also filter your shortening at least twice a day. (See pages 16-18 for a detailed description of good filtering practices.)

Contamination

Salt and seasonings contain small quantities of natural metallic contaminants. When introduced into the shortening, they speed up the rate of shortening breakdown to cause foaming, dark color and poor flavor. For this reason, always season foods away from the fryer. Another common source of contamination is detergent left over from cleaning. A vinegar rinse will neutralize detergent left over from washing. (See page 21 for cleaning/rinse procedures.)

Heat/Fry Temperatures

Heat also causes shortening to breakdown more quickly. Of course, heat is necessary for frying, but frying your foods at recommended temperatures and turning your kettle temperature down during slack times will prolong the life of your shortening.

Shortening & Oil Processing Terms

REFINERY – Food processing plants which convert crude vegetable oil to shortenings and salad oils are called “refineries”. Some of these plants also process fat from beef (tallow) and fat from pork (lard).

The name “refinery” undoubtedly comes from the first process used in converting crude vegetable oil to shortening. Crude vegetable oil is very dark and generally contains “free fatty acids”. The very first step that is made when a tank of crude vegetable oil is received at a refinery is to have a sample of the crude oil analyzed at the laboratory to determine the quantity of free fatty acids. An adjustment is made on the price paid for the crude oil based on the quantity of free fatty acids present. This material represents a loss during refining, so the more of it present, the less the value of the crude oil. This is an important step in our Total Quality Process.

After the amount of free fatty acids in the crude oil is determined, the quantity of caustic soda required to react chemically with the fatty acid is calculated. The caustic (alkali) is added and forms soap when it combines chemically with the free fatty acid. High speed centrifuges are used to separate the refined oil from the soap. A “soap” is formed which settles to the bottom of the tank as “foots”.

BLEACHING – It is desirable to reduce the color of oils even further. Oils are subjected to a process known as “bleaching.” A quantity of very fine powder known as “bleaching clay” is stirred into the oil. The oil together with the clay is heated under very carefully controlled conditions and kept under constant agitation for a specific period of time.

This process permits intimate contact between the very fine particles of bleaching clay and “color bodies” that give the oil its dark color. The color bodies tend to adhere to the clay particles. Then when the oil is passed through fine mesh filters which do not permit passage of the clay particles, the color bodies together with the clay particles are separated from the oil.

HYDROGENATION – For many purposes, it is advantageous to use fats which are solid or semi-solid at room temperature. Peanut oil, cottonseed oil, soybean oil and corn oil are examples of vegetable oils, all of which are liquid at room temperature. These liquid oils can be changed chemically so that they become firmer. The oil is placed in a large closed container. A catalyst is added and stirred into the oil. The oil is heated and hydrogen gas is bubbled through the oil under pressure. Under these controlled conditions the chemical reaction called hydrogenation takes place. The liquid oils may become solid fats. After the hydrogenation process has been completed, the oil is filtered to remove the catalyst.

DEODORIZATION – Vegetable oils have an unappealing flavor and odor in their crude state. Lard and tallow have strong meat flavors and odors. Odors and flavors

from vegetable oils or meat fats remaining after the refining process, can be removed by a process called “deodorization.” Fats or oils are deodorized by heating them under a vacuum with steam bubbling through the oil to strip out the flavors and odors.

During deodorization the “free fatty acid” content of the oil is reduced to less than 0.05% and the peroxide value is reduced to less than 0.5%. Since free fatty acid and peroxide value can be measured very precisely, the free fatty acid and peroxide levels are used as a measure of the quality of deodorization.

CHILLING – We expect packaged shortening to be white in appearance, smooth in texture and uniformly plastic (or workable) in firmness. If fats are packaged without chilling, the color will vary from a pale yellow mottled with white specks to a creamy off-white. The texture will vary from gritty to very slightly grainy, and the firmness will vary from quite firm to soupy.

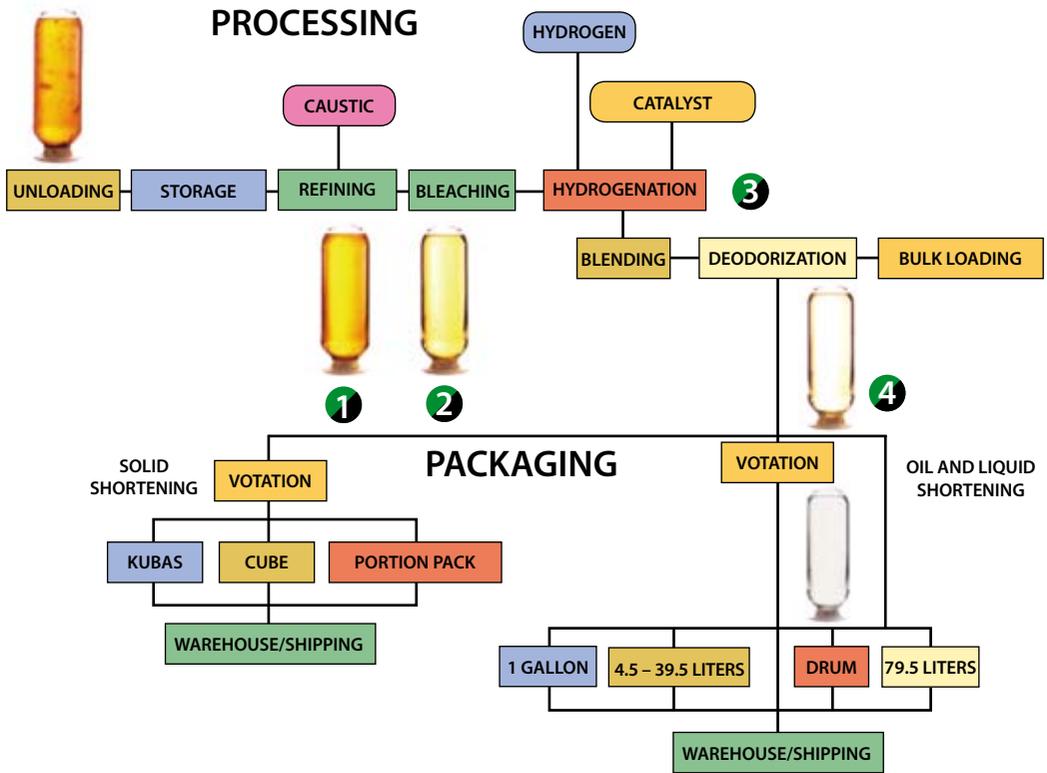
In order to control appearance, texture, and the firmness of finished shortening, it is necessary to control the manner by which fat crystals are formed as the fat cools. This control is established by “quick-chilling” the fat through a scraped surface heat exchanger, commonly referred to as a “Votator” after the brand name of an equipment manufacturer. In the votator, a thin film of fat comes in contact with a cold wall surface and solidifies quickly. The fat is continually scraped off the cold surface thus cooling the entire mass of fat. In the case of solid shortening, gas, usually air or nitrogen, is injected during chilling. This gas is dispersed evenly to give a white appearance to the shortening and to modify its appearance. The chilled shortening is then packaged.

TEMPERING – Whenever a liquid is solidified, crystal formation causes the temperature to rise. This phenomenon starts occurring in the votator and as the fat is worked. It continues to occur for as long as 24 hours after the fat is packaged. In order to control crystal growth for optimum characteristics, the packaged shortening is held in temperature controlled rooms for a period of time. These rooms are called “tempering rooms” and the process of holding shortening in these rooms is called “tempering.” Shortenings not tempered or improperly tempered are likely to be non-uniform in firmness. They could develop a grainy texture, and they could be deficient in their ability to cream, which is an important requirement in making cakes, cookies, and icings.

WINTERIZATION – Salad oils made from cottonseed oil or from slightly hydrogenated soybean oil must have the harder, higher melting point fractions of fats removed. If these hard fats are not removed, they interfere with the making of salad dressing by crystallizing and causing the dressing to separate.

The process of removing the harder fractions of fat from the salad oil is called winterization. The oil is refrigerated to 5°C. The harder, higher melting point fractions separate, leaving the “winterized” oil. A properly winterized oil will remain clear at refrigerated temperatures for long periods of time.

VOTATING – A process that mixes, cools & whips air or other gas into a shortening.



After each step in processing, Magic Chef completes analytical tests of the oil assuring operators of products that will save on frying costs by requiring fewer shortening changes.

- 1 **REFINING:** Magic Chef Elite products take longer to break down and to develop color during frying because specially designed high speed centrifuge equipment separates the free fatty acids and other impurities from crude oil.
- 2 **BLEACHING:** Operators find that products fried in Magic Chef shortenings develop less off flavors, foam and color because Magic Chef products are bleached in a closed system which reduces the exposure of the oil to oxygen.
- 3 **HYDROGENATION:** Operators appreciate the consistent viscosity and frylife performance of Magic Chef shortenings. Magic Chef technicians accomplish this by producing their own exceptionally pure hydrogen which enables them to precisely control the end point in the hydrogenation vessel.
- 4 **DEODORIZATION:** While frying with Magic Chef products, operators find that premature breakdown and off flavor development is eliminated. Magic Chef's unique deodorization vessels and computerized operator controls maximize the removal of off-flavors and off-flavor precursors.

Commonly Used Shortening & Oil Processing Terms

A.O.M. (Active Oxygen Method) – An accelerated rancidity test in which the fat to be tested is held constantly at an elevated temperature while air is bubbled at constant rate upward through the hot fat. Active Oxygen Stability (A.O.M.) is expressed as hours of heating until peroxide value of 100 milliequivalents (m.e.) has been reached. This method has been replaced by the Oil Stability Index (see O.S.I., on page 42)

ABSORPTION – The “soaking up” of a frying shortening by the food fried in it. Absorption is affected by frying temperature and porosity of the fried food.

ANTIOXIDANTS – Compounds that can inhibit the development of oxidation.

BAKER'S MARGARINE – A product similar in composition to butter but containing hydrogenated vegetable oil rather than butterfat.

BASESTOCKS – Fats with certain composition and melting characteristics that are mixed in order to get desirable melting properties in a margarine or shortening.

BREAKDOWN – Any detrimental chemical or physical change which occurs in the frying shortening — such as foaming, off flavor, dark color, smoking, gumming.

CANOLA – The seed of *Brassica napus* or *Brassica campestris*, the product of plant breeding to obtain a variety with low levels (less than one per cent) of the fatty acid; erucic acid and low levels of glucosinolates (sulphur compounds). Canola oil contains the lowest saturated fat, and highest unsaturated fat (primarily monosaturated) of any edible oil, with moderate levels of polyunsaturates, including the essential fatty acids linoleic and alpha-linolenic acids. Canola oil is a vegetable oil and a cholesterol free food.

CHOLESTEROL – A sterol found in animal tissue; synthesized in the body (endogenous cholesterol) and consumed in the diet (exogenous cholesterol). High intake of dietary cholesterol has been positively associated with high serum cholesterol which in turn increases coronary heart disease (CHD) risk.

ELAIDIC ACID (T-18:1) – The predominant trans fatty acid formed during hydrogenation; the transform of oleic acid.

EMULSIFIER – A material which can be used to promote the formation and stabilization of a water and oil mixture. Usually containing both a water-loving group and an oil-loving group chemically combined in the same molecule.

ENROBING – The process of covering a base food material with a melted coating that hardens to form a solid surrounding layer.

ESSENTIAL FATTY ACIDS – Polyunsaturated fatty acids that cannot be synthesized by the body, including linoleic and alpha-linoleic, and that are needed for human growth and development.

FAT – Fats are chemical compounds (lipids) found in both plants and animals that are necessary for life. They are predominately made from a glycerol molecule and three fatty acids. This compound is commonly called a «triglyceride».

FATTY ACIDS – Chains of carbon and hydrogen atoms with a carboxyl and methyl group

at either or opposite ends; the degree of saturation and thus the physical properties of a fat depend on the number of double bonds present between the carbon atoms.

FIRE POINT – The temperature at which a heated oil burns with a flame when ignited.

FLASH-POINT – The temperature at which an oil sample, when heated under set conditions, will flash when a flame is passed over the surface but will not sustain a constant flame.

FLAVOR – A sensation aroused by taste. Flavor variations may be described as bland, neutral, nutty, tallowy, fruity, reverted, rancid, etc.

FOAMING – A persistent layer of fine bubbles which forms on the surface of the frying shortening during use. It is an indication of shortening breakdown.

FREE FATTY ACIDS – Fatty acids characterize the identity of the oil. When an oil is abused by heat, oxygen, moisture or light, or is aged to a great extent, two things can happen to the fatty acids. They can break off from the glycerol molecule and exist in the oil as «free fatty acids.» They can be attacked at the site of the double bond, which is far more fragile than a single bond, resulting in one or more compounds which impart objectionable flavors and odors to the oil. We recognize this as rancid oil.

FRY LIFE – The length of time a frying fat continues to produce acceptable quality fried foods.

GUMMING – A sticky material which forms when oil or shortening is heated for long periods of time. It is produced by oxidation and polymerization of the fat. Gumming material on the heating surfaces is a sign the oil or shortening is breaking down.

HARD FLAKE – A hard fat hydrogenated to an iodine value of about 5 and having a melting point of about 57°C (135°F).

HDL – High-density lipoproteins. Molecular complexes found in the blood that carry cholesterol. Cholesterol bound to HDL is being transported and is considered a good type of cholesterol.

HYDROGENATION – Liquid oil is converted into a creamy liquid, semi-solid or solid shortening by this process. Using pressure, heat and agitation in the presence of a catalyst, hydrogen gas is forced into the oil and it converts the double bonds into single bonds. The more hydrogen added, the higher the melting point, or more solid, the product becomes. The addition of hydrogen atoms to double-bond carbons are used to stabilize fats and oils to result in greater utility and reduce susceptibility to heat, oxidation, and rancidity.

HYDROLYSIS – A chemical reaction that occurs between water and the frying shortening. It speeds breakdown of the shortening and is most pronounced in pressure frying kettle use.

INTERESTERIFICATION – Changing the positions of the fatty acids on triglycerides. This is a commercial processing step to change the physical properties of a fat.

IODINE VALUE – A measure of the degree of saturation of a fat. Saturation is effected by selection of the proper starting oil and by the extent of hydrogenation. Saturation correlates directly with oxidative stability and indirectly with pourability of a fat. An IV of 96.5 - 101 is usually considered ideal for a fluid frying fat.

LAMINATED DOUGH – A dough system that has horizontal layer of dough separated by layers of fat, resulting in a flaky baked product.

LAURIC FATS – A group of fat sources that rate high in lauric acid as a component of the triglycerides.

LDL – Low-density lipoproteins. Molecular complexes found in the blood that attach to cholesterol. Cholesterol bound to LDL is considered bad cholesterol because it deposits on the walls of arteries.

LOVIBOND RED – A measure of the color of the fat. Fat color is indicative of how well a fat has been processed and handled. Red colors below 1.0 are considered best.

LIPOPROTEIN (A) – A type of cholesterol-carrying molecule found in the blood; high levels of Lp(a) appear to increase risk for developing coronary heart disease.

MELTING POINT – There are many different tests that determine the speed and/or degree of melting. However, for simple frying applications, melting point is merely the temperature at which a solid shortening becomes liquid.

MONOUNSATURATED FATTY ACID – Contains one double bond between carbon atoms; epidemiologic studies suggest that diets rich in monounsaturated fatty acids can lead to lower blood cholesterol levels.

ODOR – The sensation produced when various components act on the olfactory nerves in the nose.

“OFF” FLAVOR AND/OR ODOR – Any flavor or odor that is not typical of either a particular frying shortening or the food being fried.

OLEIC ACID – A monounsaturated fatty acid found abundantly in all fats.

O.S.I. (Oil Stability Index) – An index which uses a new computerized instrument for measuring the stability of oil when subjected to heat and oxygen. Has replaced A.O.M. as the oil stability standard by The American Oil Chemist Society.

OXIDATION – The most common cause of shortening breakdown. It is a chemical reaction between oxygen and shortening. A chemical reaction involving the addition or combination of oxygen with the other reacting material. Oxidation in fats or food products containing fat eventually results in development of rancidity and its accompanying objectionable flavors and odors.

PEROXIDE VALUE – A number that indicates the level of peroxides in a fat or oil that has developed as a result of oxidation. Peroxides are considered intermediates in the lipid oxidation reaction scheme.

PEROXIDES – Oxidized fat molecules that eventually degrade to off-flavors.

RANCIDITY – Characterized by development of easily recognized sharp, acrid and pungent off-flavors and odors. True rancidity is a description of sensory reactions and may be determined only by flavor and odor.

RBD OIL – Refined, bleached, and deodorized oil. These three treatments are frequently applied in series to convert extracted oils into more desirable products.

ROTATION – A system of rotating oil from one fryer to another to avoid flavor transfer from foods which impart an off flavor such as onion rings. Most operators use fresh oil to fry french fries and then rotate it to a chicken fryer.

SATURATION – Fats also vary by the number of double bonds they possess. The more double bonds, the more unsaturated or «polyunsaturated» a fat is. A product with fewer double bonds is more «saturated». As a product becomes saturated its melting point increases and it becomes solid at room temperature. A solid shortening is more saturated. A clear liquid oil is primarily unsaturated.

SATURATED FATTY ACID – Does not contain any double bonds between carbon atoms; with the exception of stearic acid, saturated fatty acids raise blood cholesterol levels.

SERUM – The liquid fraction of the blood that remains after clotting. Cholesterol is measured in the serum portion of the blood.

SMOKE POINT – The temperature at which the frying shortening will give off a continuous column of smoke above the fryer while being heated.

SOLID FAT INDEX – A measure of the amount of solid fat in a fat at various temperatures. It is determined by the volume changes that occur as a result of melting or crystallization. This index relates the proportion of liquid to solid fractions.

STABILITY – The ability of a frying shortening to resist chemical and/or physical changes. The relative resistance of a fat, oil or food product to any undesirable type of breakdown or change in character. For fats and oils, stability may refer to resistance to oxidation, hydrolysis, rancidity and the formation of off-odors and flavors.

STEARIC ACID – A saturated fatty acid; has a neutral effect on blood cholesterol levels.

TALLOW – A hard white fat obtained from beef or sheep.

T-16:1 – A trans fatty acid of palmitic acid that occurs naturally in meat and dairy products.

TEMPERING – The process in which one produces the most stable crystal forms.

TRANS FATTY ACIDS - Occur naturally in meat and dairy products and commercially prepared partially hydrogenated vegetable oils; hydrogen atoms are located on opposite sides of the double bond. Trans fatty acids are geometric forms of fatty acids. Some occur naturally in animal fats, others are artificially created during the hydrogenation of vegetable oils. While naturally occurring trans fatty acids have never been implicated in raising serum cholesterol there is data to suggest that man-made trans fatty acids (from hydronation of vegetable oils) raise levels of LDL- cholesterol (bad) and lower levels of HDL- cholesterol in the blood.

TOCOPHEROL – A class of fat soluble compounds that have vitamin E activity and function as antioxidants. Tocopherol is a natural ingredient in vegetable oils.

TURNOVER – The time required to completely replace the capacity of the frying kettle with new shortening. Shortening is used up by the absorption (or «soaking up») of the shortening by the product being fried. A rapid turnover rate would be two days or less. Rapid turnover ensures fresher shortening quality. The rate at which fat is used up during a frying operation. This rate will be affected by the amount of fat absorbed per unit of fried food, the number of units fried during the heating period and the ratio of amount of fat to fried food in the kettle at one time. Rapid turnover is desirable so that an amount of fresh fat equivalent to the original fat load will have been added to maintain the fat level and replace the absorbed fat in a relatively short time. Only the minimum amount of fat required to fry the desired amount of food should be used to assure rapid turnover.

VEGETABLE FATS – Fats and oils derived from plant sources. **VISCOSITY** - The thickness of a liquid or semiliquid material.

WINTERIZATION – Processing refined bleached oils by a chilling process to bring about the solidification and separation of the portion of fats which have higher melting points. Removal of the high melting point fats results in a “Winterized” oil which contains only that type of fat which will not easily cloud and separate when the oil is exposed to low temperature, such an oil is a good salad oil.



Depend on Magic Chef Foods... The Experts in Shortening & Oil.

Magic Chef Foods is the premier crusher and refiner of vegetable oils and meat fats. We have oil refineries in Alabama, Illinois, Nebraska, Tennessee, Texas and a repacking operation in California. Our line of high quality Foodservice shortenings and oils is available to operators throughout the nation and beyond.

This manual has been created to help you improve employee training, operational efficiencies, fried food quality and shortening and oil selection. Our professional sales team is dedicated to satisfying all your needs.

Magic Chef FOODS – A leading supplier of Shortenings & Oils, Mixes, Toppings & Fillings



QUALITY, CONSISTENCY AND VERSATILITY FOR ALL YOUR MENU NEEDS.

FRYING SHORTENINGS	<p>Magic Chef Pour N Fry Ultra-Life® Vegetable Liquid Frying Shortening</p> <p>Magic Chef Marathon® Liquid Deli Frying Shortening</p> <p>Magic Chef Nutra-Fry® Canola Liquid Frying Shortening</p> <p>Magic Chef Pro Formance Ultra-Life® Canola Liquid Frying Shortening</p> <p>Magic Chef Clear Choice® Clear Vegetable Liquid Frying Shortening</p> <p>Magic Chef Peanut Select® Liquid Frying Shortening</p> <p>Magic Chef Pro-Fry® Heavy Duty Vegetable Solid Frying Shortening</p>
LIQUID BUTTER ALTERNATIVES	<p>Magic Chef Golden Award®</p> <p>Magic Chef Garlic®</p> <p>Magic Chef Summit®</p>
PAN & GRILL OIL	Magic Chef Golden Griddle Fry®
SPRAY OILS	Magic Chef E-Z Coat® Fan Releases
SALAD OILS	<p>Magic Chef Nutra-Clear Oil®, Pure Canola Oil</p> <p>Magic Chef Custom Imperial Oil® Vegetable Salad Oil</p> <p>Magic Chef Bunicci® Olive Oils®</p>
MIXES	<p>Buttermilk Pancake & Biscuit Mixes</p> <p>R&H Cake & Muffin Mixes</p>
FROZEN BAKERY PRODUCTS	Magic Chef frozen Dough Dansk Frozen Baked Products
OLIVE OILS	Bunicci® Olive Oils
FROZEN BAKED BUN	Magic Chef Frozen Dough



**FEATURES & BENEFITS OF Magic Chef
FRYING SHORTENINGS AND OILS**

CLEAR LIQUIDS

MAGIC CHEF CLEAR CHOICE® CLEAR VEGETABLE LIQUID FRYING SHORTENING



Features	Benefits
<ul style="list-style-type: none">• Clear at room temperature	<ul style="list-style-type: none">• Gives food a fresh fried appearance
<ul style="list-style-type: none">• Long Frylife	<ul style="list-style-type: none">• Fewer shortening changes• Lower cost
<ul style="list-style-type: none">• Made from American grown soybeans	<ul style="list-style-type: none">• Consumer appeal, supports American farmer

An excellent shortening for operations that serve a varied menu and desire a fresh fried appearance for all fried foods.



CLEAR LIQUIDS

MAGIC CHEF NUTRA-FRY® CANOLA LIQUID FRYING SHORTENING

Features

- Contains 50% Less Saturated Fat Than Typical Soybean Liquid Frying Shortenings
- Meets FDA Requirements For “Low In Saturated Fat”
- Nutra-Fry Contains 1 g Saturated Fat Per Serving Compared To 2.5g In Typical Soybean Liquid Frying Shortening
- Made From 100% Canola Oil
- Canola Oil Is A Cholesterol Free Food
- Nutra-Fry Contains 14 g Of Fat Per Serving

Benefits

- Appeals to health conscious consumers



An excellent shortening for operations specializing in healthy, upscale, delicate foods. Nutra-Fry was the first canola frying shortening in the Foodservice industry.



CLEAR LIQUIDS

MAGIC CHEF PEANUT SELECT® CLEAR LIQUID FRYING SHORTENING



An excellent shortening for operations specializing in seafood and fries.

Features

- A Unique Blend Of Premium Peanut And Soybean Oils
- Clear Blend Of Specially Processed Premium Oils
 - Less Flavor Transfer
 - Low Melt Point

Benefits

- Authentic peanut flavor with attractive golden fried food color
- Partially hydrogenated for greater frylife
- Fry more than one food in the same fryer without rotating oil
- Your foods will have great flavor with a shiny, fresh, fried-food appearance and no greasy aftertaste



CREAMY LIQUIDS

MAGIC CHEF POUR 'N FRY® ULTRA-LIFE VEGETABLE LIQUID FRYING SHORTENING

Features

- Guaranteed Frylife Advantage*
"Take The Challenge"
- Low Melt Point
- High OSI/AOM

Benefits

- No risk to try Pour 'N Fry
- Outfries the competition or your money back
- Fewer shortening changes, lower cost
 - Foods have a "melt-in-mouth" feel
- Stable flavor in package, kettle and in fried foods

* If any vegetable liquid frying shortening produces top quality fried foods (of a longer period of time than Pour 'N Fry, under an Magic Chef Foods supervised fry-test, Magic Chef Foods will refund your full purchase price up to three cases of Pour 'N Fry, the Benchmark of Stability.



An excellent shortening for operations devoting the majority of their menu to fried foods which need maximum frylife quality fried food and convenience.



CREAMY LIQUIDS

MAGIC CHEF PRO-FORMANCE® ULTRA-LIFE CANOLA LIQUID FRYING SHORTENING



An excellent shortening for operations specializing in healthy, upscale, foods and which need maximum frylife.

Features

- Made From 100% Canola Oil
- Guaranteed Frylife Advantage*
"Take The Challenge"

Benefits

- Appeals to health conscious customers
- No risk to try Performance
- Outfries the competition or your money back
- Fewer shortening changes, lower cost
- High OSI/AOM
- Stable flavor in package, kettle and in fried foods

* If any vegetable liquid frying shortening produces lop quality fried foods for a longer period of time than Pro'Formance, under an Magic Chef Foods supervised (fry-test, Magic Chef Food will refund your full purchase pt ice up to three cases of Pro* Formance.



SOLID FRYING SHORTENING

MAGIC CHEF PRO-FRY®

HEAVY DUTY SOLID FRYING SHORTENING



Features

- Long Frylife

- Low Melt Point

- Solid At Room Temperature

Benefits

- Fewer shortening changes
- Lower cost

- Foods have a "melt-in-mouth" feel

- Designed for heavy duty frying

Exceptional performance for high volume operations frying heavily spiced and battered foods.



Magic Chef Oils, the experts in shortening and oil



MAGIC CHEF FRYING SHORTENINGS

- Nutra Clear NT™ High Oleic, Low Linolenic Canola Liquid Frying Shortening
- Amaizing Fry NT™ Corn / High Oleic Canola Oil Blend, Liquid Frying Shortening
- Pour'N Fry® Creamy Soybean Liquid Frying Shortening
- Marathon® Creamy Soybean Liquid Frying Shortening with Solid Flakes
- Nutra-Fry® Clear Canola Liquid Frying Shortening
- Elite Pro-Formance® Creamy Canola Liquid Frying Shortening
- Clear Choice® Clear Soybean Liquid Frying Shortening
- Peanut Select® Clear Peanut / Soybean Liquid Frying Shortening
- Bakery Shortenings and Margarines

MAGIC CHEF LIQUID BUTTER ALTERNATIVES

- Golden Award®
- Summit®

PAN & GRILL OIL

- Golden Griddle Fry®

OLIVE OILS

- Bunicci® Olive Oils

MAGIC CHEF SALAD OILS

- Nutra-Clear Oil®, Pure Canola Oil
- Custom Imperial Oil® Vegetable Salad Oil

MAGIC CHEF SPRAY OILS

- Amaizing Coat® Ultra Performance Pan Spray
- EZ Coat® Clear Pan Spray
- EZ Coat® Foaming Pan Spray
- Nutra Coat® Pan Spray
- Amaizing Coat® Pan Spray
- Quick Coat® Pan Spray



Magic Chef is the proud recipient
of the 2007 Chef Award from
the American Tasting Institute

Magic Chef®



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