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MRE (Meal Ready to Eat) FAQ

Version: 0.01
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SECTION I - MRE HISTORY

MREs (Meals Ready to Eat) were born on Earth, but grew up on Apollo flights to the moon, in Skylab floating workshops and on every U.S. Space Shuttle flight from Enterprise to Atlantis.

In the 1970s retort pouches (the popular name for thermostabilized, laminated food pouches named after the retort cooker) were put to their first real test by the U.S. Space Program. The Program was looking for delicious, easy to prepare, "normal" food that wouldn't increase human stress the way that freeze dried food and "toothpaste tube food" did. More than any other technology, retort pouches have satisfied the Program's needs. And so, over 20 years ago, retort pouches found a home at NASA, where all their unusual characteristics were much appreciated and they have been successfully feeding astronauts in flight and on the moon ever since.

THE HISTORY OF THE MRE

In the 1980s the U.S. military research labs, which had hatched the pouch technology in the first place, took the lead in its use and development. They enabled the U.S. Military to upgrade its entire field ration program to retort pouches, from the earlier, less workable technologies of canning and freeze drying. Over the past 10 years these high tech research labs have continually upgraded the taste and nutritional profile of the meals.

Over the past 10 years our military has depended on MREs for its field ration requirements. Tens of millions of MRE "full meals" have been produced and eaten. They have gone to Grenada, to the war on drugs, to fight forest fires in Alaska, and to feed the troops in "Desert Shield" and Desert Storm.

SECTION II - POUCH CONSTRUCTION

The big breakthrough was the pouch. Its three special layers allow the food to be sealed and then cooked (opposite from other food processing methods) and never exposed to the air again until opened. Thus, the food is actually sterilized In the pouch and then blocked from future contamination. The result is the almost unbelievable shelf life and food which retains its natural moisture and juice (i.e. it is not freeze dried or dehydrated).

Here Is the breakdown of the breakthrough pouch:

OUTERLAYER: A tough polyester film which provides protection for the middle layer and Is an excellent printing surface.

MIDDLE LAYER: The key to the pouch's shelf stability, aluminum foil, the most effective and economical barrier to moisture, light and oxygen. The result: No refrigeration or freezing will ever be required.

INNER LAYER: Next to the food product is a very special polypropylene film. It Is compatible with the widest variety of foods so that no "canned" or other unwanted taste is added to the food. It also ensures an exceptionally strong heat seal.

SECTION III - SHELF LIFE AND STORAGE/TEMPERATURE CHART

MRE SHELF LIFE

A main concern in the development and testing of rations for our armed forces has always been shelf life. An amazing amount of research has been done in the development of the retort pouch and the MRE to determine the exact length of time and the exact conditions under which it is safe to store the entrees and side dishes.

The main thing we have to work with is the shelf life chart (shown below) compiled by the Army's Natick Research labs. This gives a very good overview and summary of all the findings gathered from all the testing of MRE products. However, it leaves many questions unanswered. Here are additional facts and observations that have been gathered about MRE shelf life:

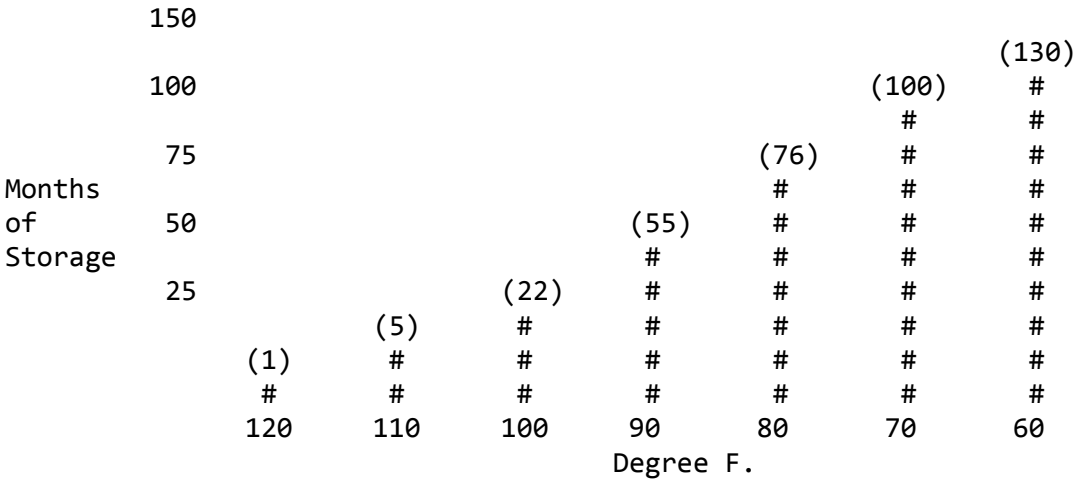
1) The Shelf life ratings shown in the chart above were determined by taste panels, panels of "average" people, mostly office personnel at the Natick labs. Their opinions were combined to determine when a particular component or, in this case, the entire MRE ration, was no longer acceptable.

2) The Shelf life determinations were made solely on the basis of taste, as it was discovered that acceptable nutritional content and basic product safety would extend way beyond the point where taste degradation would occur. This means that the MRE would be safe and give a high degree of food value long after the official expiration of the products as determined by taste.

3) MRE pouches have been tested and redesigned where necessary according to standards much more strict than for commercial food. They must be able to stand up to abuse tests such as obstacle course traversals in field clothing pockets, storage outdoors anywhere in the world, shipping under extremely rough circumstances (such as by half track over rocky terrain), 100% survival of parachute drops, 75% survival of free-fall air drops, severe repetitive vibration (1 hour at 1 G vibration), 7,920 individual pouch drops from 20 inches, and individual pouches being subjected to a static load of 200 lbs for 3 minutes.

4) Freezing an MRE retort pouch does not destroy the food inside, but repeated freezing increases the chances that the stretching and stressing of the pouch will cause a break in a layer of the laminated pouch. These pouches are made to withstand 1,000 flexes, but repetitive freezing does increase the failure rate by a small fraction of a percent.

MRE STORAGE LIFE CHART



BELOW 60 degrees Not enough data yet collected. However, projections are that the 130 months will be surpassed.

This chart contains storage life projections for MRE rations from the U.S. Army's Natick Research Laboratories and does not reflect a manufacturer's or vendor's guarantee.

NOTE: Time and temperature have a cumulative effect. For example, storage at 100 degrees for 11 months moved to 70 degrees would lose one half of the 70 degree storage.

SECTION IV - NUTRITION CHART
(This Area Under Construction)

SECTION V - RECIPES

Here are a few MRE recipes:

CHEESY HAM & POTATOES

1- 8 oz. Escalloped Potatoes w/ham
1- 5 oz. Potatoes Au Gratin
Tobasco Sauce
Pepper

Combine Escalloped Potatoes w/ham and Potatoes Au Gratin. Heat in microwave safe bowl for 2 minutes stir and heat 1 1/2 minutes longer; over open fire heat in skillet until hot. Serve.

SPAGHETTI MEATBALLS

1- 8 oz. Spaghetti w/meat Sauce
1- 8 oz. Meatballs, Beef & Rice

Combine Spaghetti w/meat Sauce and Meatballs Beef & Rice. Heat microwave safe bowl for 2 minutes, stir and continue to heat for 1 1/2 minutes; or heat over open fire in a skillet until hot. Serve.

HAM Omelet w/CHEESE

1 - 6 oz. Omelet w/ham
1-1.5 oz. Cheese Spread

Heat Omelet w/ham in microwave safe bowl for 2 minutes; or heat over open fire in skillet until hot. Mix in cheese spread. Add Tobasco, Salt and Pepper for seasoning.

HAM CASSEROLE

1 - 4.5 oz. Ham Slice
1-1.5 oz. Cheese Spread
1 -1.5 oz. Freeze-Dried Pasta

Reconstitute pasta in water heat until tender. Cut Ham Slice into chunks heat in microwave safe bowl until hot; or heat in skillet over open fire until hot. Combine Pasta, Ham chunks and Cheese Spread. Add Pepper for seasoning.

CHOCOLATE ICING

1-1.5 oz. Cocoa
1- Non-Dairy Creamer
1 - Sugar

Mix Cocoa, Creamer and Sugar. Stir in small amounts of water until desired consistency is achieved. Spread icing over pound cakes crackers or nut cakes.

MOUSSE PUDDING

1-1.5 oz. Cocoa
1 - Non-Dairy Creamer

Mix Cocoa and Creamer together. Slowly add water to get desired consistency.
Serve.

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