Meats, Canned

Revised 2024

Storage Conditions

Temperature:	Non-Perishable	30 to 50°F (-1 to 15.5°C)
	Perishable	26 to 30°F (-3 to -1°C)
Relative Humidity		75% or below
Storage Period		Variable with the product
Freezing Point		22 to 25°F (-6 to -4°C)

Temperature

Temperature is the most important variable in the warehousing of canned foods. The beneficial effects of reduced temperatures have been well established by science and in practice. Generally, the speed of chemical reactions will double with each 18°F (10°C) rise in temperature. The importance of this general relationship is evident when one considers the many ways in which chemical reactions may alter the flavor, texture, and/or nutritive value of canned foods. For example, chemical reactions occurring at 50°F (10°C) during storage are likely to take place about twice as rapidly at 68°F (20°C). Therefore, the effect of storage temperature is well recognized and is a highly effective means of maintaining food product quality.

Temperature is also a limiting factor in bacteriological changes that occur in canned products during storage. Because of microbial changes, it is highly desirable to maintain accurate and constant temperature control in the warehouse. In this case, as for chemical changes, the lowest practical temperature will provide longer shelf-life for the products in question.

Internal Can Corrosion

Internal can corrosion occurs when the food product reacts with the metal of the can. Can corrosion is speeded by high temperatures and retarded by low temperatures. Food quality, nutritive value, and microbial changes will all change more quickly at high storage temperatures.

External Can Corrosion

External can corrosion in storage can cause large losses to the warehouse. The presence of moisture at the surface of the can will facilitate rust formation. The common way for moisture to occur is condensation from the surrounding air. A dry warehouse atmosphere with low relative humidity and constant temperature is important in this regard. This reinforces the importance of proper air circulation and adequate temperature control.

Effect of Freezing

Chilled storage is desirable for all canned foods, but they should not be allowed to freeze. Most canned foods are not subject to major changes in flavor, color, or nutritive value, but the texture of some products may change with freezing. Products such as corned beef hash will show a marked change in physical consistency when frozen. Hard (low temperature) freezing is likely to break can seams, causing leakers and microbial spoilage.

Retorted Flexible Containers

Retortable flexible laminated structures that are thermally processed at retort temperatures are typically shelf stable. High barrier plastic containers are capable of withstanding thermal processing temperature and are used for many meat items. A significant source of warehouse damage of these products is from physical abuse by forklifts or from stacking too high. In both cases, damage occurs from leakers and microbial spoilage.

Perishables

The "Perishable—Keep Under Refrigeration" types of canned meats are usually limited to canned, whole or part hams, picnics and loins, plus canned luncheon meats of various sizes. These items are not completely sterile because the full sterilization process would change the flavor and texture. Consequently, these meat items are only heated to pasteurizing temperatures of 160 to 180°F (71 to 82°C), similar to fresh milk, and must be kept under refrigeration to prevent spoilage. In general, they should be stored at 32 to 38°F (0 to 3°C).

Ham cooked in see-through packages is referred to as cook-in, packaged ham. The type of material used in packaging the ham is important. For best results, the cook-in material should contain a barrier material such as saran. When the cook-in ham is sealed and placed directly into a carton, it has a shelf-life expectancy of up to 6 months at 38 to 40°F (3 to 4.4°C). A longer storage life may be maintained when the product is stored at 28 to 29°F (-2 to -1°C). If the cook-in ham is removed from the multiple-packed carton and exposed to light, color loss may occur; consequently, limiting the light exposure for these kinds of cured meats can be an important consideration.

The storage period for perishable canned meat items varies with the amount and purity of seasonings used. If properly pasteurized and held under refrigeration, canned meats spoil very slowly. Information

on the recommended storage period of each item should be obtained from the canner, and storage conditions should follow the processor's specifications.

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