

The recommendations made in putting together this risk assessment for the safety and shelf life of vacuum-packed foods have been made considering current government legislation and guidance. The controls, monitoring and corrective action suggested are to help you get started. You will need to look at what you are doing in your food business and delete those that don't apply or write down additional controls if necessary.

What is vacuum packing?

Vacuum packing involves removing air from the packaging that surrounds the food and preventing its return by an airtight seal.

In a typical vacuum pack, the packaging material is moulded closely around the food. Vacuum packing food can help maintain freshness, flavour, appearance, and texture and extend the shelf-life to 10 days [except for beef lamb and pork at 13 days] to help with wastage and food production.

It is important that if the shelf life is extended to more than 10 days that an addition preservation method to chilling is applied to the food e.g. pH, reduced water content, brining etc. as detailed in the HACCP plan below.

What are the microbiological hazards in vacuum packing?

1. Clostridium Botulinum

Clostridium Botulinum bacteria is widely available in the environment and in food. It can grow at chilled temperatures of +3 °C which is below the legal temperature of 8 °C for chilled food. Some non-proteolytic strains of clostridium botulinum can produce toxins at these low temperatures before the food is perceived to be un fit to eat due to spoilage bacteria.

2. Listeria Monocytogenes

Listeria bacteria is an environmental contaminant and found in many foods. It can grow at low temperatures, a wide range of pH values [acid/alkali] and low water availability [dehydrated foods]. Listeria monocytogenes is of particular concern in ready to eat foods and requires controls, such as chilling and limiting shelf life, to be in place to prevent it growing in most foods including vacuum packed foods

3. Yersinia enterocolitica

This bacterium is commonly found in contaminated water and food and has been linked to insufficiently cooked pork, milk and ready to eat vegetables. It can grow in vacuum packed food at temperatures as low as -1 °C.

4. Bacillus Cereus

Bacillus Cereus is commonly associated with rice but also dairy products and vegetables. It can produce toxins at low temperatures of +4 °C in vacuum packed and other foods.

It is very important that the food safety and cross contamination controls are followed when vac packing food to ensure that food is safe to eat.

AN INTRODUCTION TO VACUUM PACKING SAFELY FOR FOOD BUSINESSES

HAZARDS	CONTROLS	CCP/CRITICAL LIMIT	MONITORING	CORRECTIVE ACTIONS
What can go wrong?	What can I do?	What standard must I achieve?	How can I check?	What can I do if something goes wrong?
<p>Presence and growth in VP foods:</p> <ul style="list-style-type: none"> -Non-proteolytic clostridium botulinum -Listeria monocytogenes***** -Yersinia enterocolitica -Bacillus cereus 	<p>Label VP pouches for chilled food with a 'use by' date of 10 days or less including the day of packing <i>unless an additional control is added – see Critical Limits below. For raw beef, pork, or lamb 13 days or less.</i></p> <p>If chilled VP food is re wrapped or re vacuum packed clearly labelled with a 'use-by' date that does not exceed the shelf life given to the original product.</p> <p>Store chilled or ready to eat VP food pouches between 0-5°C</p>	<p><i>Give chilled VP foods a maximum shelf life of 10 days [or 13 days for raw beef, pork, or lamb]*</i></p> <p><i>Store chilled VP food below 8°C**</i></p>	<p>Check 'use-by' date on all Vac pack pouches</p> <p>Observe staff practices</p> <p>Monitor fridge temperatures</p>	<p>Reject food if 'use by' date on vacuum packed food has passed***</p> <p>Review staff training on date labelling of vacuum-packed food.</p> <p>Check the core or surface temperature of the food and if below 8°C move to another working fridge.</p> <p>If food is above 8°C decide if food is safe to use or if it should be rejected, refer to head chef/manager.</p>
<p>Growth of non-proteolytic clostridium botulinum in vacuum packed foods with a shelf life of more than 10 days</p>	<p>Apply one (or more) of the additional critical controls to the food prior to VP. [specify here and delete critical limits as required]</p>	<p><i>Heat treatment of 90°C for ten minutes or equivalent lethality, OR</i></p> <p><i>pH of 5 or less throughout the food and throughout all components of complex foods, OR</i></p> <p><i>A minimum salt level of 3.5% in the aqueous phase throughout the food and throughout all components of complex foods, OR</i></p> <p><i>Water activity (a_w) of 0.97 or less throughout the food and throughout all components of complex foods, OR</i></p> <p><i>Combination of factors</i></p>	<p>Observe staff practices when producing and vac packing food with a shelf-life of more than 10 days</p>	<p>Reject food that has not been produced following the correct procedures</p>

			<i>What can I refer to later?</i>	<i>Where can I find further advice?</i>
			<p>VP Guidance (FSA) published December 2020*</p> <p>VP food recorded on Vacuum packing monitoring form if used.</p> <p>Staff training records</p>	<p>Refer to operating instructions from manufacturer of VP machine</p> <p>Food Standards Agency Vacuum packing online training course Food Standards Agency - Home</p>
<p>Cross contamination from raw to ready to eat/cooked foods from harmful bacteria when vac packing food****</p>	<p>Use separate labelled or colour coded VP machines for raw and RTE or cooked food and keep in separate designated areas of the kitchen</p>	<p>Yes</p>	<p>Check raw and ready-to-eat vac pack machines are labelled and kept in separate designated areas.</p> <p>Check raw and cooked/RTE vac pack machines are not dual used.</p> <p>Check separate packing bags are used for raw and RTE food</p> <p>Observe staff practices when vac packing food</p> <p>Check wrapping and packaging material including VP pouches for signs of damage and/or contamination</p> <p>Check VP machines are cleaned between uses</p> <p>Observe staff practices when cleaning VP machines</p> <p>Check the VP machine is working properly before and during use</p>	<p>Reject food that may have become contaminated</p> <p>Review staff training</p> <p>Dispose of any damaged or contaminated pouches or packaging material</p> <p>Reclean dirty or contaminated VP machines</p> <p>Review staff training</p> <p>Contact the VP machine manufacturer and replace if necessary</p>
	<p>Use separate VP bags clearly marked for RAW FOOD ONLY and COOKED/READY-TO-EAT FOOD ONLY to reduce the risk of cross-contamination</p> <p>Make sure that the VP food pouches are intact without holes or breakages, and the seal is intact.</p> <p>Source VP wrapping and packaging material including pouches from an approved supplier.</p> <p>Clean the VP machines after each use using a chemical disinfectant or heat treatment to kill bacteria following the operator cleaning procedure.</p> <p>Ensure the VP machine is fully sealing the pouches</p>			

<p><i>Insert manufacturer's instructions and/or internal Safe Operating Procedure for VP machines here.</i></p>	<p>How can I prevent it happening again?</p> <p>Arrange a 3rd party supplier audit of packaging supplier if appropriate and review or change supplier</p> <p>Review staff training on operator instructions of VP machines. Staff to complete free online FSA training course Food Standards Agency food allergy online training</p> <p>Review/update Safe Operating Procedure for VP Machines in use</p>	<p>Legislation/Best Practice:</p> <p>*Produce VP chilled food safely in compliance with Article 5 of Regulation (EC) No 852/2004. Refer to new Guidance published in December 2020 the-safety-and-shelf-life-of-vacuum-and-modified-atmosphere-packed-chilled-foods-with-respect-to-non-proteolytic-clostridium-botulinum_1.pdf</p> <p>**Chilled Food shall not be stored above 8°C. Food Safety (Temperature Control) Regulations 1995</p> <p>***Chilled food must be within its 'use-by' date. Regulation EU 1169/2011</p> <p>****Raw and cooked/ready to eat food must be kept separate. Regulation (EC) No 852/2004 Refer to copy of E-Coli cross contamination guidance in Reference Library</p> <p>***** refer to guidance when setting shelf life with regards to Listeria Monocytogenes Guidelines for Assessing the Microbiological Safety of Ready-to-Eat Foods Placed on the Market (publishing.service.gov.uk)</p> <p>E. coli O157 cross-contamination guidance (food.gov.uk)</p>
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<p>Chemical contamination</p>	<p>Correct use of cleaning chemicals when cleaning and disinfecting VP Machine Follow safe handling practices</p>	<p><i>absence</i></p>	<p>Check VP machine has been cleaned and disinfected correctly Check safe handling practices</p>	<p>Stop vac packing and quarantine or dispose of food. Clean and flush VP machine to remove any chemical residue from cleaning chemicals. Following chemical contamination complete visual/odour check Review staff training</p>
			<p>What you need to do: Complete cleaning schedule Complete corrective action</p>	<p>What can I refer to later? Manufacturer’s instructions for cleaning VP machine</p>
<p>Physical Contamination</p>	<p>No glass allowed in the kitchen</p>	<p><i>absence</i></p>	<p>Visual check</p>	<p>Remove glass/physical contamination Review staff training</p>
			<p>What you need to do: Complete corrective action</p>	<p>What can I refer to later? Manufacturer’s instructions for VP machine</p>
<p>Allergen Contamination</p>	<p>Follow allergen management controls</p>	<p><i>absence</i></p>	<p>Check staff allergen awareness and practices</p>	<p>Improve staff awareness improve supervision Retraining of staff in allergen awareness/management</p>
			<p>What you need to do? Complete corrective action</p>	<p>Where can I find further advice? Refer to guidance Allergen guidance for food businesses Food Standards Agency</p>

I confirm that the above controls are in operation:

Name of Business:			
Name:		Position:	
Signature:		Date:	