

	 MEAT	 CHEESE	 VEGETABLES	 SOUP, SAUCES, LIQUIDS AT 80 CELSIUS	 SOUP, SAUCES, LIQUIDS AT 40 CELSIUS	 SOUP, SAUCES, LIQUIDS ROOM TEMPERATURE	 NON FOOD
<b>VACUUM LEVEL (%)</b>	99.5	99-94	85-792	792	93	94	-
<b>VAC PLUS</b>	2	2			2	2	-
<b>VACUUM LEVEL (MBAR)</b>	5	10-50	150-200	200	65	55	40-80

**Note 1:** When using liquid products, the vacuum lowers the boiling point of liquids so they will boil at a lower temperature, which is noticeable by the formation of bubbles in the pouch. If your vacuum packaging machine has a clear lid you can see this process. A good vacuum setting will not allow the liquid to boil (approximately 10 MBAR over boiling point).

**Note 2:** To pack liquid products like soup, sauces, etc., use an inclined insert.

## VACUUM

1. If possible, products should be cold.
2. It is not recommended to pack hot products unless necessary.
3. For less residual pressure inside the pouch, the product needs to be cool and dry. Less oxygen (air) in the finished package and a low pressure will provide a better vacuum.
4. After sealing a package under vacuum, check if the product is completely wrapped tight in the pouch. If it is not the case, there could be a leak (sealing area or pouch damage) or vacuum setpoint is too low.

## POUCHES

1. It is essential to select the proper pouch size to lower costs and waste, provide an attractive presentation, and optimize product shelf life.
2. Avoid contamination of package sealing area or clean it if needed. This will prevent problems with sealing quality, which could be the cause of slow leaks, bubbles, or holes in the seal.

## SEALING

1. Sealing time will depend on the quality of the package, its thickness and if contamination is present on sealing area.
2. Standard pouch PA/PE thickness is 100 MICRONS which is best suited for most food products.
3. Sealing time should be approximately 1.5 seconds.
4. If you have a leak in the seal, either the package is dirty in the sealing area, the sealing time is too short or the package has been damaged by a sharp product or a sharp corner.
5. You can determine a good quality seal if the sealing seam is transparent and secure and cannot be torn open by hand.
6. If the machine is equipped with the electric cut off option to remove excess pouch, the sealing time will be set correctly if the excess film can be removed easily but not detaching from the bags by itself.

## FILLER PLATES AND POUCHES IN THE CHAMBER

1. Filler plates should reduce volume of the chamber. This will allow a faster vacuum since less air needs to be pumped out of the chamber. It will also help to correctly position the product on the sealing bar.
2. Pouch collar must go over the sealing bar by approx. 2-3 cm.
3. Pouch collar must not protrude outside the chamber, otherwise the air in the pouch will not be evacuated.

## GAS FLUSH (MAP = MODIFIED ATMOSPHERE PACKAGING) FOR MACHINES EQUIPPED WITH GAS FLUSH OPTION

1. The most common gasses used to gas flush are nitrogen (N<sub>2</sub>) and carbon dioxide (CO<sub>2</sub>). They are sterile, considered harmless and replace the previously removed air in the packages to avoid shrinking.
2. There is a risk of explosion if more than 21% Oxygen (O<sub>2</sub>) is used in the gas mixture. Contact Sipromac if a machine with a higher oxygen concentration is needed.
3. Pull pouch opening over gas nozzles so that the inert gas can flow directly into it.

## WORKING CYCLE OF MANUAL VACUUM CHAMBER MACHINES

1. Place the product inside the pouch(es).
2. Position the pouch(es) on the sealing bar.
3. Close the lid (press down until held down by vacuum).
4. The air is removed from the chamber at the same time as the pouch(es). The vacuum % displayed on the control panel will increase.
5. If the machine is equipped with a gas flush option, the gas is injected into the pouch(es).
6. The pouch(es) is sealed.
7. The air is returned inside the chamber (venting).
8. The lid opens.

# VACUUM GUIDELINES

## Table Tops



**350D**

VACUUM LEVEL %	MBAR	VAC PLUS	SEALING TIME (SECONDS)	TOTAL CYCLE TIME	PUMP
99,5%	5	0	2	36	20 m <sup>3</sup> /hr
99,2%	9	0	2	32	20 m <sup>3</sup> /hr
99,0%	10	0	2	30	20 m <sup>3</sup> /hr
98,8%	12	0	2	29	20 m <sup>3</sup> /hr
98,5%	15	0	2	28	20 m <sup>3</sup> /hr
98,2%	18	0	2	27	20 m <sup>3</sup> /hr
98,0%	20	0	2	26	20 m <sup>3</sup> /hr
97,8%	21	0	2	25	20 m <sup>3</sup> /hr
97,5%	24	0	2	25	20 m <sup>3</sup> /hr
97,2%	26	0	2	24	20 m <sup>3</sup> /hr
97,0%	29	0	2	23	20 m <sup>3</sup> /hr
96,8%	31	0	2	23	20 m <sup>3</sup> /hr
96,5%	33	0	2	23	20 m <sup>3</sup> /hr
96,2%	36	0	2	23	20 m <sup>3</sup> /hr
96,0%	38	0	2	22	20 m <sup>3</sup> /hr
95,8%	40	0	2	22	20 m <sup>3</sup> /hr
95,5%	42	0	2	22	20 m <sup>3</sup> /hr
95,2%	46	0	2	21	20 m <sup>3</sup> /hr
95,0%	47	0	2	21	20 m <sup>3</sup> /hr
94,8%	49	0	2	21	20 m <sup>3</sup> /hr
94,5%	53	0	2	21	20 m <sup>3</sup> /hr
94,2%	55	0	2	21	20 m <sup>3</sup> /hr
94,0%	57	0	2	20	20 m <sup>3</sup> /hr
93,0%	66	0	2	20	20 m <sup>3</sup> /hr
92,0%	76	0	2	20	20 m <sup>3</sup> /hr
91,0%	87	0	2	19	20 m <sup>3</sup> /hr
90,0%	94	0	2	18	20 m <sup>3</sup> /hr
89,0%	103	0	2	17	20 m <sup>3</sup> /hr
88,0%	114	0	2	17	20 m <sup>3</sup> /hr
87,0%	124	0	2	17	20 m <sup>3</sup> /hr
86,0%	132	0	2	16	20 m <sup>3</sup> /hr
85,0%	143	0	2	16	20 m <sup>3</sup> /hr
84,0%	151	0	2	16	20 m <sup>3</sup> /hr
83,0%	160	0	2	15	20 m <sup>3</sup> /hr
82,0%	171	0	2	14	20 m <sup>3</sup> /hr
82,0%	184	0	2	14	20 m <sup>3</sup> /hr
80,0%	192	0	2	14	20 m <sup>3</sup> /hr
79,0%	200	0	2	14	20 m <sup>3</sup> /hr

## Double Chambers



**600A**

VACUUM LEVEL %	MBAR	VAC PLUS	SEALING TIME (SECONDS)	TOTAL CYCLE TIME	PUMP
99,5%	4	0	2	31	100 m <sup>3</sup> /hr
99,2%	7	0	2	29	100 m <sup>3</sup> /hr
99,0%	9	0	2	27	100 m <sup>3</sup> /hr
98,8%	11	0	2	26	100 m <sup>3</sup> /hr
98,5%	13	0	2	25	100 m <sup>3</sup> /hr
98,2%	16	0	2	24	100 m <sup>3</sup> /hr
98,0%	17	0	2	24	100 m <sup>3</sup> /hr
97,8%	20	0	2	23	100 m <sup>3</sup> /hr
97,5%	22	0	2	22	100 m <sup>3</sup> /hr
97,2%	26	0	2	22	100 m <sup>3</sup> /hr
97,0%	27	0	2	21	100 m <sup>3</sup> /hr
96,0%	37	0	2	20	100 m <sup>3</sup> /hr
95,0%	46	0	2	19	100 m <sup>3</sup> /hr
94,0%	55	0	2	18	100 m <sup>3</sup> /hr
93,0%	66	0	2	17	100 m <sup>3</sup> /hr
92,0%	74	0	2	17	100 m <sup>3</sup> /hr
91,0%	84	0	2	16	100 m <sup>3</sup> /hr
90,0%	95	0	2	16	100 m <sup>3</sup> /hr
89,0%	106	0	2	16	100 m <sup>3</sup> /hr
88,0%	113	0	2	15	100 m <sup>3</sup> /hr
87,0%	122	0	2	15	100 m <sup>3</sup> /hr
86,0%	134	0	2	14	100 m <sup>3</sup> /hr
85,0%	144	0	2	14	100 m <sup>3</sup> /hr
84,0%	153	0	2	13	100 m <sup>3</sup> /hr
83,0%	159	0	2	13	100 m <sup>3</sup> /hr
82,0%	171	0	2	12	100 m <sup>3</sup> /hr
81,0%	178	0	2	12	100 m <sup>3</sup> /hr
80,0%	185	0	2	12	100 m <sup>3</sup> /hr
79,0%	199	0	2	11	100 m <sup>3</sup> /hr