

EQUIPMENT NAME	PROCESS	SPECIFICATIONS	DESCRIPTION	PICTURE
Bag filler		2232 Series Single-Head Semi-Automatic Compact Aseptic Filler	It is ideal for use in market research sample production and pilot scale product development plants. The filler is available with 16mm fill head and can fill bags from 2 to 30 litres in capacity. The 32 mm gland format can fill: Approximately 5 litre bags at up to 3 bags per minute. Approximately 10 litre bags at up to 2 bags per minute.	
Balance		SARTORIUS : COMBICS LITE	This balance/scale accurately weighs between 400 grams and 150 kilograms.	
Balance		METTLER TOLEDO : SB16000		
Balance		METTLER TOLEDO : PB50001-L		
Blentech		CheeszTherm Cooking system	This system is ideal thermal processor for dairy, processed cheese and analog cheese applications. Design of high and low velocity steam injectors allows custom control of 360° radial steam addition and share force into the product. Applications: Blending, cooking, vacuum cooking/cooling, evaporation/concentra	

			<p>tion, de-aeration. It can be used for low to high viscosity products such as cheese and dairy products, cheese slurries, sauces, cheese spreads, flavoured cream cheese, starch slurries, tomato paste brix standardization, etc.</p>	
Can Seamer		DIXIE:UVGMD-ALCC	<p>Steam, gas, vacuum and multi-flush options. It is a manual operation.</p>	
Capper		TSM-2005	<p>The semiautomatic mechanic capping machine can be used for a range of bottles.</p>	
Carbonator		MORAVEK CFT S.R.O : CW400G CH		
Cheese Vat			<p>To form, cut and break cheese during cheese making. Has a capacity of approximately 100 litres.</p>	

Coating Drum				
Bematek Colloid mill		CZ-60-PB	This colloid mill applications including primary particle size reduction and particle deagglomeration for a wide range of solid-in-liquid dispersions.	
Data Logger		ALLEN-BRADLEY		
Experimental Vats				
Glatt		WSG-1	The Granu-Glatt has a 8.5 litre capacity and the motor size is 2.5 KW. Air capacity is 325 cfm. Temperature range up to 70 °C.	
Heat Sealer		MERCER CORPORATION : ME-6010FD		

Ice Machine		HOSHIZAKI : FM-251AFE		
Ice-cream machine		TETRA PAK: KF 80	Small, pilot scale, automate ice-cream maker. Fully controlled for temperature. Capable of handling a wide range of frozen and aerated food products such as gelatos, sorbets and ice-creams. This ice-cream maker has a through put of 20 to 100 L/hr.	
Oven		INOXTREND	Convection hot forced air (temperature range of 20 of 270° C) Combined hot forced air and steam (temperature range of 20 of 270° C) Steam (temperature range of 20-100° C)	
Patti former		FORMATIC	Suited to a variety of mixtures of numerous textures and consistence, the formatic uses synchronised paddles to gently press mixture into the required form shape.	
Pin Mill (impact mill)		B Series Impact Mill	Widely used for milling dried fragile materials. It is not suitable for milling low-soft melting point or heavy viscose materials. The production capacity is 10-50 kg/hr. The feed size is less than 6 mm.	

Sausage Stuffer			Used to make sausages and a capacity of 3 to 5 kg.	
Screw press		Model TOR/027	Capacity depends on the type of product.eg. Fresh grape juice 200-300 kg/hr. Other fruits, residuals, peel 150-200 kg/hr.	
Steam Jacketed Pan		MERCER	Used to heat food products and a range of different sizes, 20,30,100, 300 litre.	
Vacuum Packer		MULTIVAC: C200	This vacuum packer is programmable, operates at variable pressure of 5 to 984 mbar, and has a chamber size of 140 mm×440 mm× 485 mm (D×W×L).	
Xenos aseptic bottle filler.		X250 Aseptic Filler		
Abrasive Peeler	Chopping & Mincing		This abrasive peeler may be used to remove the surface skin of vegetables such as carrots, potatoes, beetroot, celery and other hard vegetables.	
Bowl Chopper	Chopping & Mincing	HOBART: 84186	This bowl chopper has a vertical cutter and a 10 litre capacity.	

Bowl Chopper	Chopping & Mincing	TALSA : C-35 STP	This bowl chopper has a vertical cutter, a 40 litre capacity, a knife 2 speed of 1420/2840 rpm, and a bowl 2 speed of 690/1370 rpm.	
Meat band saw	Chopping & Mincing	MAINCA: BM-2000	Used to cut meat.	
Meat Slicer	Chopping & Mincing	BERKEL : 933	Accurately cuts meat to 0-25mm infinitely adjustable thicknesses.	
Mincer	Chopping & Mincing	MAINCA: PM-98	With a range of plate sizes. For mincing food.	
Pulper/ Finisher	Chopping & Mincing		This pulper/finisher is continuous, and has screen sizes of 0.75 mm, 1.55 mm and 6 mm.	
Spray Dryer	Evaporation & Drying	NIRO	The largest spray dryer at the food pilot. Has a 20 to 30 litres/hour water removal capacity. Compact and multi stage dryer (MSD) configuration. Compact configuration uses dryer and baghouse. MSD uses dryer, cyclone, fines return and baghouse. Spray drying chamber with pressure spray nozzle and integral fluid bed. Options to use a range of nozzles.	

Evaporator	Evaporation & Drying		Used to remove water from liquid food products typically prior to spray drying. A maximum milk feed capacity of 150 litres/hour with good turndown. Preheat options. Three thermally independent stages in four passes. Simulate Mechanical Vapour Recompression (MVR), Thermal Vapour Recompression (TVR), or MVR TVR.	
Evaporator	Evaporation & Drying	TETRAPAPAK: CONTHERM/CO NVAP	This evaporator is scrapped surface and can be used for heating and concentration of viscus product. Has a 20 litres/hour water removal capacity.	
Freeze Dryer	Evaporation & Drying	CUDDON FD18LT	This is a vacuum freeze-drier that has a plate temperature -40 degrees celcius to 70 degrees celcius, and a capacity 20 litres. It has eight trays. Each tray holds about 2-3 litre of product.	
Spray Dryer	Evaporation & Drying	NIRO: 093-199800 mobile minor	This spray dryer has a 1 litre/hour water removal capacity at inlet/outlet temperatures of 200/85 °C. Spray drying chamber with spinning atomiser or spray nozzle (counter current, co-current). Has one nozzle option for use.	

<p>Spray dryer <i>(available in Albany campus)</i></p>	<p>Evaporation & Drying</p>	<p>SAURIN : SL-10</p>	<p>A bench-top spray dryer that has a water removal capacity of 1L/hour at inlet/outlet temperatures of 200/85C. Operates with an inlet temperature range of 150 - 250C. Uses a unique twin fluid nozzle.</p>	
<p>Climbing film Evaporators</p>	<p>Evaporation & Drying</p>	<p>APV</p>	<p>This is a rising film, batch (non-continuous) evaporator; it has an evaporation capacity of approximately 30 kg/hr.</p>	
<p>Falling film Evaporators</p>	<p>Evaporation & Drying</p>		<p>3 effect, 4 passes, capacity of approximately 150 litre/hr.</p>	
<p>Extruder-Twin Screw</p>	<p>Extrusion & Puffing</p>	<p>Clextral : BC21</p>	<p>Small, lab scale, research, twin screw extruder. This extruder mimics high performance, industrial extruder units and is complementary to the EVO32 pilot scale extruder at the Food Bowl. This extruder will handle all foods including dry crispy snacks, pet foods, confectionary, pasta and meat analogues. The screw diameter is 25 mm, and there are seven barrels that are each temperature controlled at temperatures between ambient and 250 degrees celcius. The maximum throughput is 20 kg/hr, and the minimum amount</p>	

			processed is 1.5 kg.	
Freezers	Freezing & Chilling		There are three rooms with temperature ranges of between -18 to -30 degrees celcius.	
Plate/immersion Freezer	Freezing & Chilling		This plate/immersion freezer has a plate surface area of 0.4m ² , a maximum pressure of 100 bar, maximum temperature of -15 °C, and a minimum temperature of -40 °C.	
Laminar Flow Cabinet	Heat Treatment	Air Care Technology Ltd : AC 1100	This laminar flow cabinet circulates filtered air to prevent the contamination of food products during packaging (ie. after collection from the ultra-high temperature pasteurizer).	
UHT/Pasteuriser	Heat Treatment		Ultra-high temperature pasteurisation plant. Rated milk products 100 litre/hour at between 20 to 145 °C with a range of different holding times, 5,15, 20 sec. An external holding tube with a holding time up to 30 min.	
Batch Rotary Retort	Heat Treatment	STERIFLOW: MICROFLOW 911R	Static, rotational and rocking batch retort, with the potential use of a multiprobe. Static retort has a maximum volume capacity of 0.1 cubic meter, with the dimensions of 680 x 380 x 370 mm. Rotational and rocking retort has the capacity to process up to 30	

			<p>pouches per run. The dimensions of cage holder for each pouch are 185 x 125 x 35 mm. The maximum temperature is 140 degrees celcius.</p>	
<p>High Pressure Processor</p>	<p>Heat Treatment</p>	<p>ThyssenKrupp Uhde/Multivac : HPP 002 R&D</p>	<p>This high pressure processor is suitable for small-scale, research and development projects. Pressures of up to 7000 Bar, and temperatures of up to 90C can be exerted on packaged food products to increase their shelf-life, as an alternative to other sterilization processes such as retort, ultra-high temperature (UHT) and pasteurization. The chamber capacity is approximately 2000 cubic centimeters. Both liquid and solid foods may be processed. Packaging must be able to deform by at least 15 percent to be suitable for processing.</p>	
<p>Meat injector</p>	<p>Injecting, Mixing & Blending</p>	<p>FORMACO</p>	<p>This meat injector has a 20 needle operation, and is used to inject flavours and marinades into meat.</p>	
<p>Mixer</p>	<p>Injecting, Mixing & Blending</p>	<p>LIMITECH</p>	<p>This 10 litre batch mixer/cooker operates at high speeds, with vacuum, at temperatures of up to 140 degrees celcius, and has indirect and direct steam injection.</p>	

Smoker/ Cooker	Mixing & Blending	WHITLOCK : DE- MSC-10	This cooker has an air heated cabinet dryer with a wood burning smoker. The air is electrically heated. The tray area is 3m ² .	
Wet Disintegrator	Mixing & Blending Size Reduction & Homogenisation	JEFFCO: C200	This wet disintegrator can be used to pulp, puree and mix food ingredients and it has a capacity up to 5 kg.	
Mixer (Bakery)	Mixing & Blending	THUNDERBIRD: ARM-02	For mixing of ingredients for bakery food products, about 3kg batch sizes.	
Ultrafiltration	Separation	KOCH	This ultrafiltration unit has spiral wound membranes, with a membrane area of 0.28 m ² , a capability of 5000 to 250,000 MWCO, an inlet pressure of 240 kPa, and an outlet of 160 kPa. Capacity of 20 litres per day depending on membrane or product.	
Ultrafiltration	Separation		This ultrafiltration unit has a membrane area of approximately 5 m ² , and a flow rate up to 400 litres per day depending on membrane or product.	

Separator	Separation	WESTFALIA HSD1-06-107	Self desludging Capacity 100 litre/hr	
Clarifier	Separation	Westfalia : CTC- 03-107	This clarifier has a solid bowl and a capacity of 100 litres/hour. It may be used to remove solids and particles from food suspensions.	
Homogeniser	Size Reduction & Homogenisation	Rannie : Serial # 1.88234	This is a two stage homogeniser that exerts pressures of up to 500 bar, at a flow rate of up to 100 litres/hour.	
Grinding Mill	Size Reduction & Homogenisation	RETSCH:ZM200	This grinding mill has a 300 ml capacity. Maximum feed grain size is up to 10 mm. Maximal end fineness achievable is less than 40 µm, and depends on the feed material and ring sieve (0.25 mm, 0.5 mm, 0.75 mm).	
Colloid Mill	Size Reduction & Homogenisation	PREMIER	This colloid mill uses carborundum stones, that have a diameter of 75 mm, to exert high hydraulic shear forces on solids suspended in a liquid, thereby breaking-down the solid particles. The suspended solids can be decreased to a diameter of between 0.075 and 2.0 mm. This process may be useful for increasing the	

			stability of suspensions and emulsions, or to prepare food suspensions for homogenisation and spray drying.	
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