

# Coagulant dipping and drying marketing essay

[Business](#), [Marketing](#)



1. 0 Introduction The company that we did the research is YTY Industry (Manjung) Sdn Bhd. which locates in Sitiawan, Perak and founded in 1996. This new huge factory was officiated and attended by the executive chairman Oh Tiam Sing. This company is established as manufacturer and specification developer. We had made a trip for the purpose of study and research on their operation process and facilities layout. YTY Group has producing a diversified range of high quality and innovative medical examination gloves for the world market, such as Latex Exam Gloves, Nitrile Examination Gloves and others. This high quality gloves can used in medical, dental, laboratories, food and beverage service and other fields. Then, the gloves are mainly distributed in USA, United Kingdom, Germany, Italy, Norway, Japan, Singapore and Korea. The production capacity exceeds 8. 2 billion pieces of gloves a year and even increased to 10. 5 billion pieces a year in 2012. YTY Group gains this high sale because they are concern on the innovation. They have a Research and development team that continuously design and design new products and manufacturing processes to fulfil the customer needs and always working closely with the customers. The research of new equipment and technologies as well as productive new manufacturing processes is constantly carried out in order to improve the efficiency of the plant and the quality of the manufactured products. Besides that, YTY Group developing new operation processes helps to reduce the amount of waste and allows contribute to being environmentally friendly. They create a good design of facilities layout. YTY Group always considered high utilization of space, equipment and people. That's way YTY can produce the high volume of gloves (10. 5 billion pieces per years). Then, a clean and

healthy workplace is provided to care for the welfare and health of all the employees.

## 2.0 Company's Production / Operation Processes & Facility Layout

### (a) Production / Operation Process

#### (i) Description

In this segment, making of gloves is a multi-stage process. To be market as a quality gloves, the gloves must meet the required Accepted Quality Level (AQL). For those gloves that did not meet the AQL, the gloves will be downgrade or general use. The differences between manufacturing natural rubber and synthetic gloves are minimal. In the process of gloves manufacture, there is always have no one size fits all means that although the glove may be seem similar of the outlook but the physical properties, glove donning feel, strength, and many more may different from one manufacture to another. Moreover, when the process started, the raw materials such as latex and chemical will examined within required specification. Next, latex, chemicals, and colour pigments will be compounded accordingly to required gloves specification.

#### Formers Cleaning and Drying

Automated brushing mechanism nowadays is implemented in dipping lines. Throughout this process, the formers are clean and also to ensure the latex adhesion to the formers during latex dipping is in excellent result. In the cleaning process, acid bath is to remove organic materials from the formers whereas alkaline bath is to remove inorganic materials. Then, formers will pass through series of brushes to scrub the former surface and the former finger gap before rinse in clean water. After formers are cleaned, it would be enter a dryer oven before coagulant dipping.

#### Coagulant Dipping and Drying

In this process, after formers dry in dryer oven, it will be dipped into coagulant solution as the first chemical that consists. The quality of latex adhesion and the thickness of the gloves are

determined by the coagulant. Before proceed to latex dipping, formers will enter to dryer oven again to dry the coagulant chemicals. Latex DippingThe formers that are coated with coagulant chemical will now dip into latex tank. Pre-Vulcanization OvenFormers that coated with latex will now enter a pre-vulcanization oven with the minimum temperature at which the polymer particles will coalesce together. BeadingGloves are generally beaded and this process provide better aesthetic look to the gloves and the adjustment of beading mechanism will enhance the cuff strength. Pre-LeachingDuring this process, formers will pass through a series of hot water tank around 40-50°C, it is to dissolving out the water-soluble residues and other chemicals. ChlorinationPowder free gloves produced, when the gloves are dipped into chlorination solution. The function of chlorine is to hardening the gloves surface and reduces the surface friction, thus facilitate easier donning. Post-LeachingIn this process it serves two major purposes, neutralize gloves from chlorination and remove additional chemical residue. In short, this is the last process to thoroughly clean the gloves. StrippingNow semi automated with partial stripping capability is implemented in dipping lines, thus enable the line to run at speed that create high productivity rate.(ii) AnalysisStrengthIn production area, the strength is the process is work in flow. The process which is continuous and run 24-hour, this is to cope the productivity daily and monthly. For instance, when gloves are finished produce, some of the gloves are damage, this is because of machine error that some time cannot be avoid and the only way to maintain gloves quality is by adjusting the machine in the production area. Therefore, YTY Industry which allocates 1 member of supervisor, 2 members of assistant supervisor, and 4 members of

employee in each production blocks. This is to ensure the machine that runs 24-hours nonstop is under good condition. Besides that, production manager will have a briefing every morning, this is to make sure their work is in flow and in order and follow up the daily task. Weaknesses A weakness that occurs in production process is the environment that cannot be avoid. For example, unavoidable situation is the insects or bugs which sometime will fly into the latex tank. When the former is dip inside the latex, former will dip into latex and the probability to dip up the insects or bugs might occur. This situation is occurring in the glove that has an insect or bug that stick in the glove. Besides, other weakness is the machine error that also cannot be avoided. In this situation, two weaknesses which will occur that will lower the quality of gloves that are knocking and touching. Knocking happened when the distance between former and former are adjusting too near to each other. When this happened, the finger tips of former will knock each other and create a hole on the glove. Touching happened when the former is adjust not accurate and the former " touch" the machine or around the machine. This will create holes on the gloves and dirty the gloves too. Last, the weakness is double dipping of gloves, which will occur in two situations: human error (concentration of employees while working) and housecleaning (production block stopped process for cleaning process or to change the size of former). When the two situations occurs, some of the gloves will sure dipped in twice because workers in under adjusting the machine temperature, adjusting the beading machine, or checking for the former condition.

(b) Facility Layout (i) Description In this segment, we will talk about the facility layout that after the gloves is produce; they will come to a room

which called stripping room. Stripping room has two models that is either auto strip or manual strip machine. Manual strip machine still functioning in YTY Industry Block A area, while auto strip machine is implement in Block D, F, G, and H. Manual strip which required six workers in a line, this is to prevent some uncertainty situation. Whereas for auto strip, it only required four workers in a line because auto strip machine is work with the help of air pump machine that blow out the gloves for easy pulled out. In this room, after gloves are collect, put in a basket, there are two workers will in charge the basket weighing. Which they will ensure each basket only can put 4000 pieces of gloves. After that, they will pull the basket to an area called storage area (an opened area in the room which let quality control members and quality assurance to do checking for the gloves). After that, the gloves will be cooling down in the storage area around few minutes, quality control (QC) members and quality assurance (QA) members will start to inspect the gloves. QC members who will slot the gloves again, this is to ensure the gloves are not stick together, while slotting they will have a quick check to each piece of glove for any damage. QA members will randomly choose 20 pieces of gloves in a basket for gloves quality inspection. QA will measure their palm length, gloves weight, the gloves length, any damage such as hole, stain, visible hole gap, former defect (FD), and so on. If any problems occur, they will immediately report to production area, so that they will immediately take actions. Besides that, there also have an area for water leak test. Water leak test is the final test for the gloves. Sometimes, some defect that cannot be seeing, water leak test can find out the problems. QA will cover the inspection glove to each pipe to fill up with water. The test can

see the result of the quality of gloves elasticity, any small minute hole on the gloves and the strength of the glove's bead. After all process is done, the basket will certified by the QA members and ready for packing. One workers which work as work in process (WIP), will responsible to transfer the basket of certified gloves to packing area.(ii) AnalysisStrengthAs we can see, the strength is the process is work in a flow. In the description, we can know that, after the gloves have been produce out, the first thing to do is weighing the basket, next will move to storage area for cooling down, QC and QA members take action to start inspection on the quality of gloves. All the process which done in one area (or inside a block), this which show the productivity rate and efficiency rate. The facility layouts which show at YTY Industry is fully utilize the space, improvement the flow of physical movement and people. In addition, the layouts also reduce the movement time. Moreover, YTY also utilize the material handling equipment. Inside the stripping room, most of the workers which work for the physical movement such as transfer the basket to another site, they will use pallet jet as their prima equipment to help them carry the baskets. Although the pallet jet is slightly big and not too flexible, but it allow a worker can handle sixteen baskets in one time to transfer from one place to another place.

WeaknessesWeakness that occurs in the area is when bigger volume is produce, sometimes baskets do not have enough place to put. When this situation happens, they will move the balance baskets to basement floor for storage. When have enough place to put at the floor, workers will transfer again from basement to ground floor. The situation increases the unnecessary time movement and increase the work of workers. Therefore, it

will reduce the efficiency and productivity. In addition, it might affect the workers strike. Moreover, poor lighting, ventilation and air cleaning arrangement also another weakness that occur in stripping room. Poor lighting which will affect the visual of employees to detect the defect and this might reduce the percentage of quality checking to the gloves. In general, ventilation which is a control that available to reduce the concentration of fumes in the air, smoke, vapours, and dusts. Poor ventilation which will cause the area lack of oxygen (headache, fatigue, asphyxiation) and this will cause the gloves become sticky because of increase carbon dioxide. Last the air cleaning arrangement too, which will affect the environment become more dusts and lower the quality of gloves. The poor arrangement, will affect the gloves stick to dust and this will affect the quality of checking.

### 3. 0 Literature Review

Glove is a covering for the hand worn for protection against cold or dirt and typically having separate parts for each finger and the thumb. Glove Factory is factory where the gloves make. There are many type of glove factory in this world. For example, rubber glove factory and latex glove factory. In this assignment, we will introduce you one of the glove factory in Malaysia. Glove manufacturing sector in Malaysia

#### History

The growth of the latex gloves industry in 1990s because the AIDS outbreak and the 1987 'universal precautions' as mandated by the Centre for Disease Control and Prevention (CDC) of the U. S. A. when dealing with blood and bodily fluids. In U. K., Healthcare institutions began demanding large quantities of latex medical gloves, which offered the best available protection, to those whose occupations necessitated exposure to and protection from pathogens. The



increases in the consumption of latex for the manufacture of medical gloves have giving a big opportunity to East Asia. The latex-based industry from the USA and Europe have relocated their factory to natural rubber producing countries to take advantage of close proximity to latex supply, cheaper labour and attractive government incentives.

### 3. 1. 2 History of the glove

Glove manufacturing sector in MalaysiaMalaysia is one of the producing countries which seized the opportunity to expand the latex based industry. In the early 1970's, Malaysia was the largest exporter of latex concentrate supplying about 80% of the total global needs while domestic consumption was as less than 5% of the local output. However by 1989, Malaysia became the world's largest user of latex concentrate. In Malaysia, Natural Rubber latex consumption increased at very low rates in the 1970s and first half of the 1980s. Statistics show that the natural rubber latex consumption by the various types of latex products showed that the uptake by the glove sub-sector registered the highest growth from a mere 18 178 tonnes in1987 to 201 478 tonnes in 1999 to register an eleven-fold growth and account for a 77. 7 % of the sector's uptake and 54. 2% of the industry total (Table 1). In 2000 the uptake dropped to 190 703 tonnes. Falling prices of latex gloves and rising demand for alternative gloves for protein-sensitised users have led to more manufacturers venturing into nitrile glove production. Consumption of the material by the sector had increased to almost 12 000 tonnes in 1999. Over here is the data that show that how was the Malaysia state in this industry in 2009In 2012, there are many factors that cause the growth of the glove industry in the Malaysia. The factors areBarrier protectionMedical gloves are a necessity in the healthcare industry because

they serve as a protective barrier against infection and disease. B) Increased awarenessThe developed nations also have more stringent requirements now to improve healthcare quality. C) Ageing populationThe elderly is more susceptible to higher-risk diseases and a greater proportion of them are living longer, therefore requiring more healthcare services. D) Health threatsBreakouts of pandemics such as H1N1, SARS and the avian flu as well as terrorist threats (Anthrax)Over here is the statistic data that show that the causes of the disease growth of the latex glove in MalaysiaProduct strategyIntroductionThe company that we interview is YTY Industry Manjung Sdn Bhd. YTY Industry Manjung Sdn Bhd is a latex glove manufactory factory. The factory applies the product oriented strategy. It is general approach to business that focuses on the manufacturing and production processes. Companies that make these processes primary focuses tend to make operational efficiencies and production optimization key objectives in improvement processes. This orientation was prominent during the industrial era and in the capitalism period of the 1950s. The reasons that apply the strategy are the company only produces two type of the products, that is rubber glove and latex glove with difference sizes. In order to reduce the cost and increase the product the company applies the product oriented strategy. Advantage and disadvantage of the strategy3. 2. 2. 1 AdvantageA) ResponsivenessWith this strategy it can let the factory focus on the few products only and respond fast on the problem that causes by the environment. For example, there is bug mixed with the latex glove, if the operation team realise it easily brc the factory just need to focus on two products only, the team can immediately take off the defected product to

control the quality. B) Constant Improvement Beside that just because we only focus on two type of product, so the R&D department of the factory can focus on these two products on how to modify the machine of the factory to produce more high quality glove and more quantity of the glove to supply the increase need of the market. C) Costs The variety cost of the product will decrease just because we only need a few types of raw materials with large amount to produce the product with lower cost. D) External Influences With this strategy, the factory can focus on the problem will affect the production of the two products with faster speed and more efficient. 3. 2. 2. 2

Disadvantage Missed Opportunities The factory only focus on latex glove produce and it no consider that actually still got other raw material that can replace latex and make more quality and less cost product. For example, Neoprene can replace the latex and as the material of making glove. Obsolescence The factory only focus on the latex glove product may be one day there got a new technology to produce a new product that can replace the glove with more cheaply and useful. So that time the factory may face the crisis because of the development of new technology. Facility Layout Introduction The company that we interview is YTY Industry Manjung Sdn. Bhd. YTY apply the product oriented layout. Product layout is used for systems with high production volumes and a low variety of products. Facilities are organized according to the sequence of the successive manufacturing operations. In the factory it's consist of the 6 product line which is all are producing the same product that is latex gloves. In these Six product line its contain two type of the product line. One of the product line is with auto strip system, another one is with the manual system.

**Advantage**The low variable cost per unit usually associated with high-volume, standardized products and low material handling costs. This facility layout will allow the low variable cost for the latex glove produce and the volume of production for the glove will remain constant in high volume to supply the need of the market. Reduced work-in-process inventories. With this layout it can reduce the human error that can be formed, because almost all the process is automated already. So less labor is needed than less technical is required controlling the machines. Easier training and supervision. The Factory is increasingly becoming more automated as a result of technology advances. Almost all the process is controlled, so less labour is needed and less training provided because almost all the process is programmed and just need to press or click the button. The only challenge they faced is management must know the tools, equipment, and work methods used. Then the timing requirements for each assembly task must be determined. Management also needs to know the precedence relationship among the activities, which is the sequence in which various tasks must be performed. Rapid throughput. With the automation of the factory, almost all the process is done by the machine and without any delay. The time consuming for producing a glove will decrease because of the existing advance machine technology.

**Disadvantage**High volume is required because of the large investment needed to establish the process. Because of the high fixed cost in the process of making gloves by using the existing machines in the factory, so the factory will have a minimum order limit in order to make profit and reduce the cost of each glove produced.

**Work stoppage** at any one point ties up the whole operation. When one of the machines breaks down in

a line, the whole line of the production will be stopped down. At the same time, it needs the engineer to check the entire machine in the line, to identify the problem it will delay the schedule for production and some time will make loss to the company. There is a lack of flexibility when handling a variety of product or production rates. With this type of layout, it can only produce the same type and same size of the latex glove in a line only. If want to change the size of glove to produce it needs a day to change the equipment in the machine and after that almost all the worker will stop working because of waiting the process to change the equipment.

**Challenge** Latex Allergy Latex allergy is a medical term encompassing a range of allergic reactions to natural rubber latex and synthetic rubber. So some of the user they cannot use the latex glove because of the allergy. So the challenge for the factory is to develop the latex glove that can use by any one including the allergy patient. **Human Error** Although there almost all the process is automated already, but still got some time that defect product is produce because of the human error. For Example, when in the striping process, if the worker cannot manage to strip all the glove on time, that will caused the unstirred glove flow back to production line and cause the defect product is produce.

#### 4.0 Discussion

The production processes, facility layout and managing facility layout of a factory; these three things are very important for a factory or company. YTY Industry is a glove company whom making glove. Firstly, the production process of gloves is very important, in YTY industry there is no "One Size Fits All" for their glove, although the glove may be seem similar outside but the physical properties, glove donning feel, strength, and many more may vastly differ from other

manufacture. YTY industry is using product focus strategy to implement their daily production task and monthly production task. The reasons that applied the strategy is because YTY industry just focus on 2 types of the products that are rubber glove and latex glove with different sizes, in order to reduce their cost and increase the quality of the product. Next, the facility layout of YTY Industry is product oriented layout. The product oriented layout is used for systems with high production volumes and low variety products. Facilities are organized according to the sequence of the successive manufacturing operations. It does can fully utilize all the machines and facilities in the company. Besides that, YTY Industry no need spend extra money to provide training for their company's workers. In other way, YTY industry is invested more automated equipment to handle their production instead of only depends on labour only. Finally, managing facility layout for a company is a very tough work. The top management able to manage their facility layout in proper way, it can increase their company efficiency and effectiveness. For example, minimization of production delays, improved quality control, minimum equipment investment, avoidance of bottlenecks and so on. Therefore, YTY Industry is trying to make their company more and more efficiency and effectiveness by using automated machine, and allocates 1 member of supervisor, 2 members of assistant supervisor, and 4 members of employee in each production blocks. Hence, YTY Industry able to handles production process, facility layout and managing facility layout in proper way. It's can help YTY Industry grow faster in the future and become more efficiency and effective glove factory in Malaysia. Our recommendation is to improving the production process, one of the alternative ways needs to find

out is how to prevent the insects or bugs fly into the latex tank. Research and development department can create a closed-tank with good ventilation in the tank. Latex which boiled in around 30-40°C, therefore if closed-tank is create; they must ensure that there have a good ventilation process inside the tank. Besides, they can put more capital to invest in the upgrading of machine. For example, they can upgrade the beading machine instead adjusting by employees.

### 5. 0 Conclusion

The YTY Industry Manjung Sdn. Bhd. is a latex glove manufactory factory. The factory applies the product oriented strategy. Making of gloves is a multi-stage process which include Formers Cleaning and Drying, Coagulant Dipping and Drying, Latex Dipping, Pre-Vulcanization Oven, Beading, Pre-Leaching, Chlorination, Post-Leaching, and Stripping. The strength of the Company's Production or Operation Processes is the process is work in flow. Besides that, production manager will have a briefing every morning, this is to make sure their work is in flow and in order and follow up the daily task. However, the weakness is the environment that cannot be avoided. Then for the facility layout, the gloves will be cooling down in the storage area around few minutes, quality control (QC) members and quality assurance (QA) members will start to inspect the gloves. QC members who will slot the gloves again, this is to ensure the gloves are not stick together, while slotting they will have a quick check to each piece of glove for any damage. The strength of this facility layout is the gloves have been produce out, the first thing to do is weighing the basket, next will move to storage area for cooling down, QC and QA members take action to start inspection on the quality of gloves. However the weakness is bigger volume is produce that occur in the area sometimes baskets do not

have enough place to put. When this situation happens, they will move the balance baskets to basement floor for storage. When have enough place to put at the floor, workers will transfer again from basement to ground floor. The situation increases the unnecessary time movement and increase the work of workers. As a conclusion, managing facility layout for a company is a very tough work. The top management able to manage their facility layout in proper way, it can increase their company efficiency and effectiveness. For example, minimization of production delays, improved quality control, minimum equipment investment, avoidance of bottlenecks and so on. Therefore, YTY Industry is trying to make their company more and more efficiency and effectiveness by using automated machine, and allocates 1 member of supervisor, 2 members of assistant supervisor, and 4 members of employee in each production blocks.