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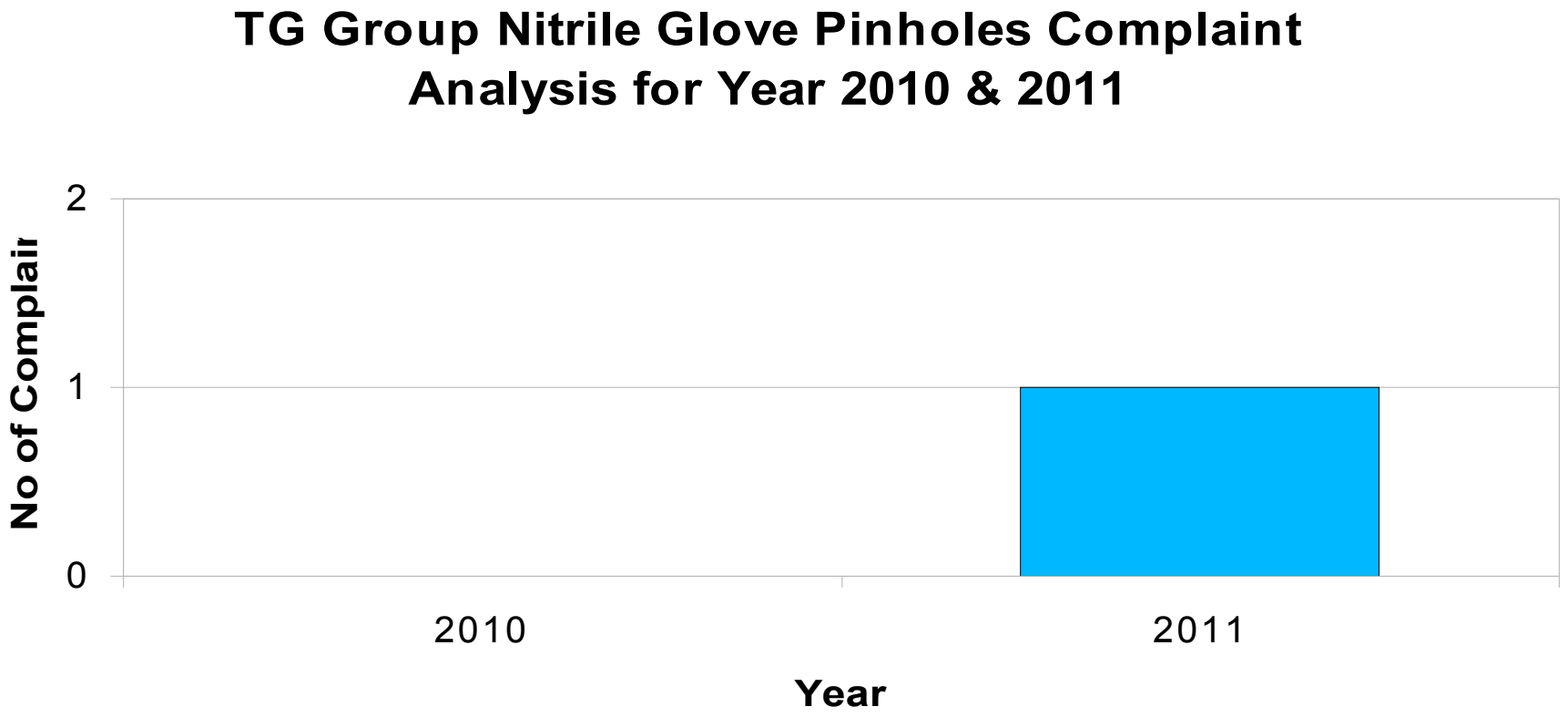
TITLE: NITRILE PINHOLE - ROOT CAUSE & CORRECTIVE / PRESENTATION ACTION

Date : 15 August 2011

Presenter : Ng Li Xin

Kelvin Lee

CUSTOMER COMPLAINT ON NITRILE PINHOLES

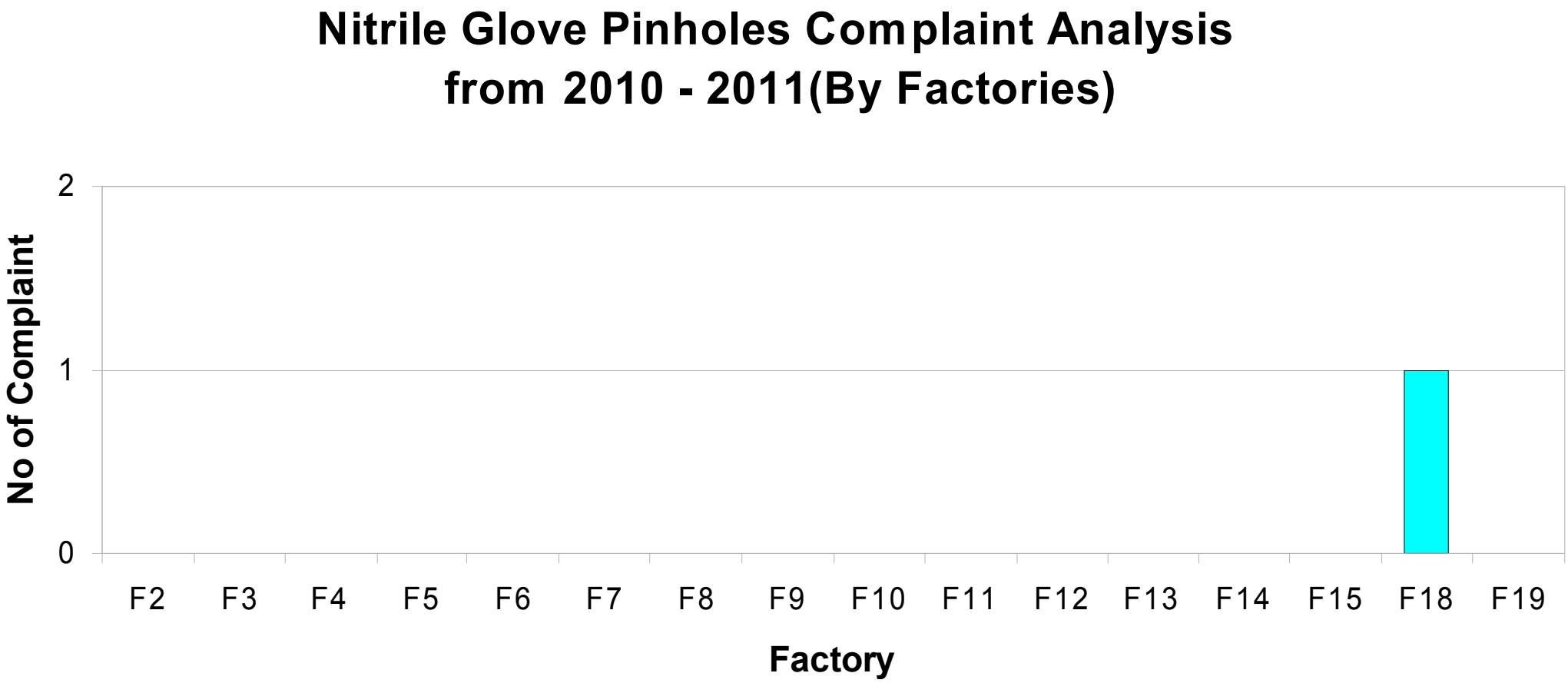


Remark:

Year 2010 – 0 Nitrile Pinholes Complaint Received by TG group

Year 2011 – 1 Nitrile Pinholes Complaint Received by TG Group

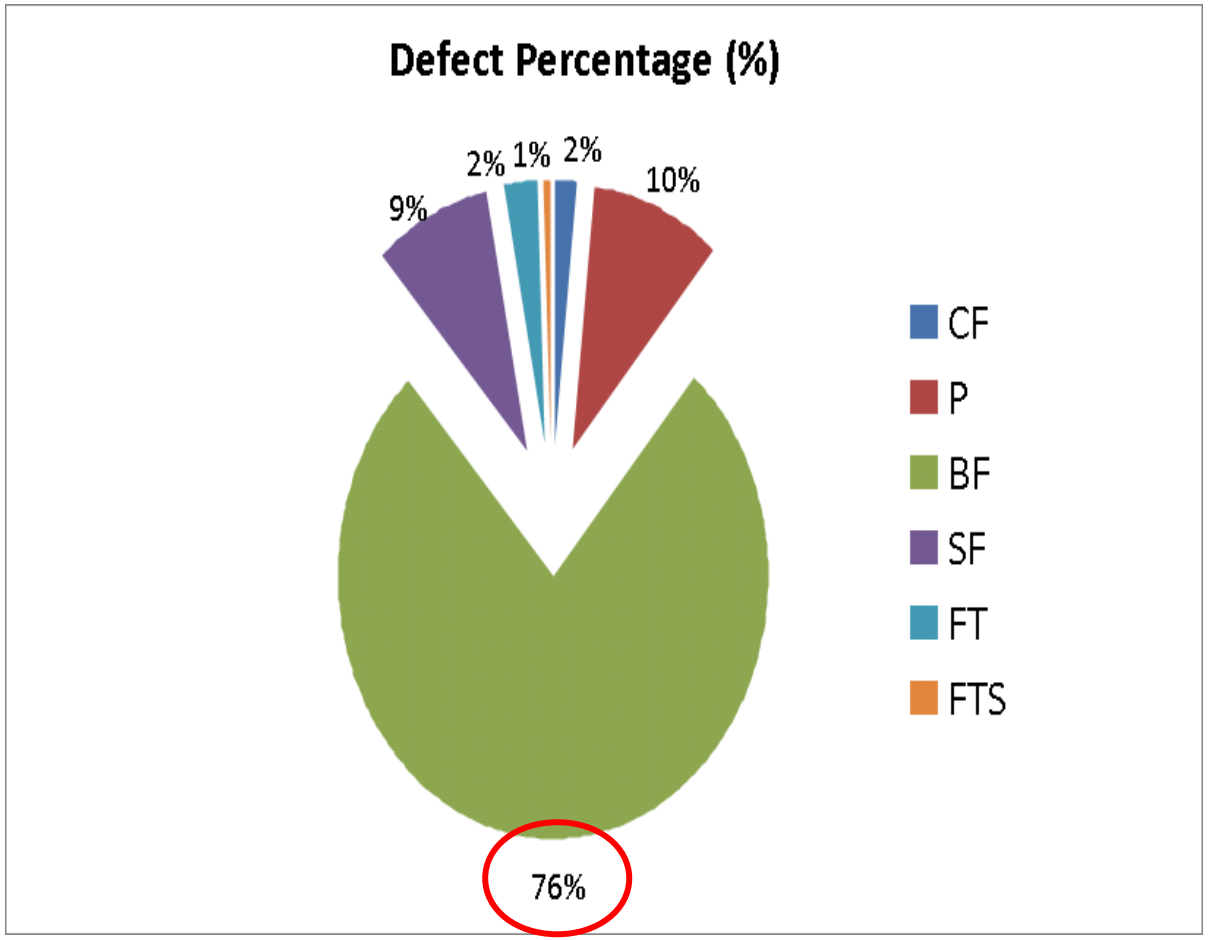
CUSTOMER COMPLAINT ON NITRILE PINHOLES

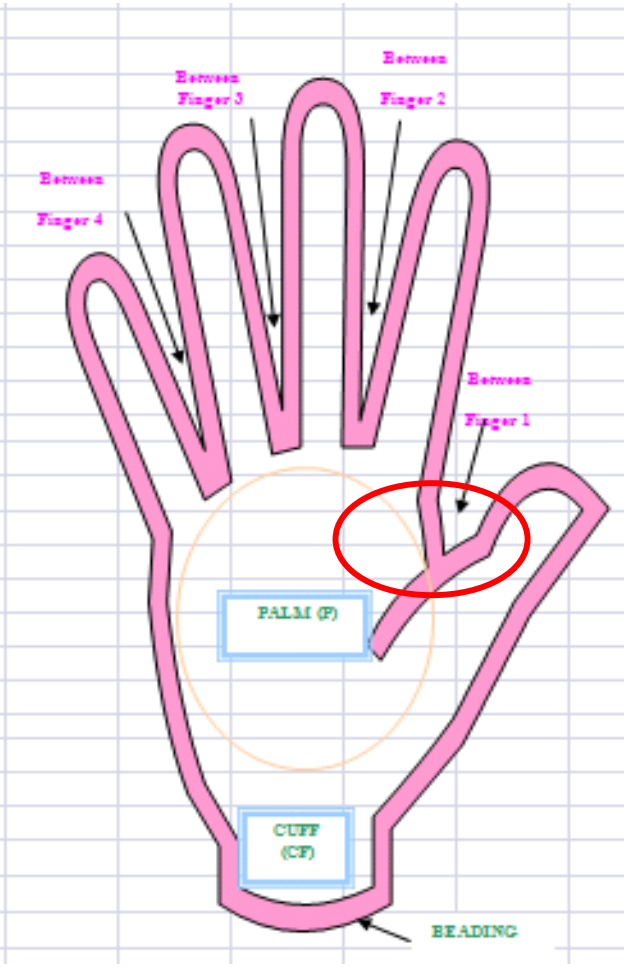


Year 2010 – 0 Complaint received from F2/9/11/18 (Nitrile Manufacturer)

Year 2011 – 1 Nitrile Pinholes Complaint Received by F18

MAJOR HOLE DEFECT ANALYSIS





From the defect analysis for nitrile gloves, BF has the highest defect amongst with the average percentage of 76.92%.

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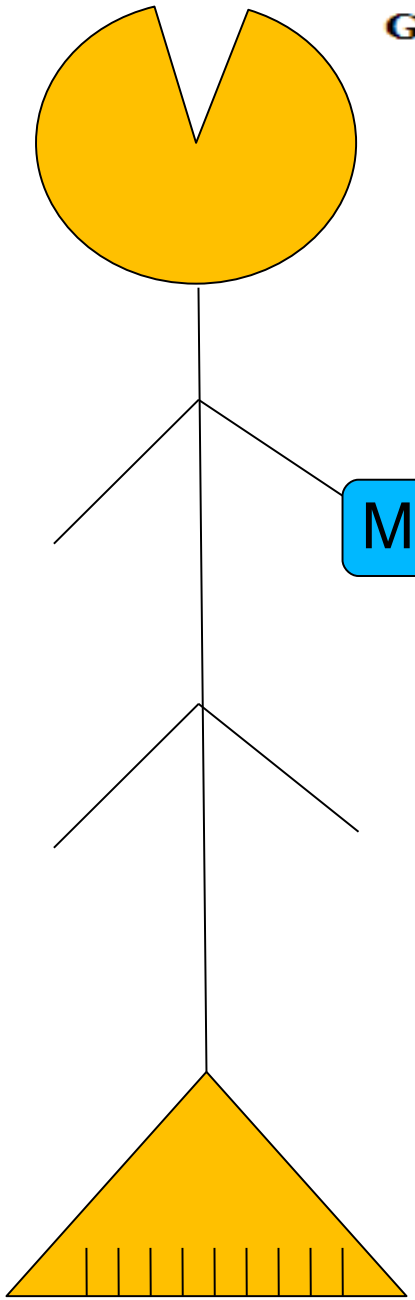
FISH BONE CHART FOR BF DEFECT F11



Man

Root Cause

1.Poor monitoring of the control parameters.

2.Human error in process control and parameter checking.

Corrective Actions

1.To provide **more trainings to line operators** on quality troubleshooting.

2.To **scan defect samples** under microscope to identify the roof cause of the defect.

3.To **automate chemical topping up and parameter checking** to reduce human error.

Prepared by:
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Verified by:
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Approved by:
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General Manager (Manufacturing)

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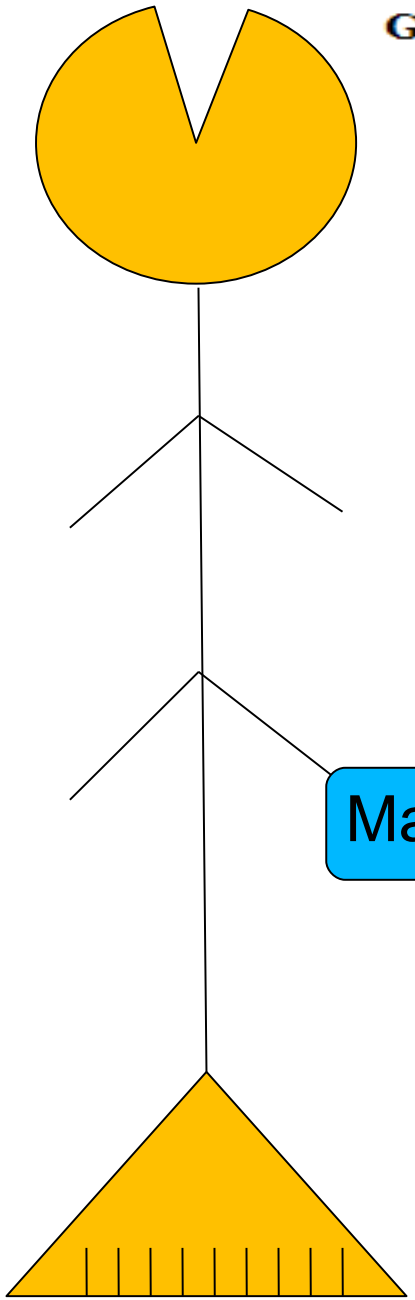

Machine

Root Cause

1.Inconsistent washing efficiency at washing system.

1.Inconsistent drying efficiency at Coagulant Oven especially for double former line.

Corrective Actions

1.Modify the IR burners type **coagulant oven** to **blower system.**

2.**Modify the track in the washing brush system** where the inclined angle for formers modified from previous 45° to 30° for better washing especially at crotch area.

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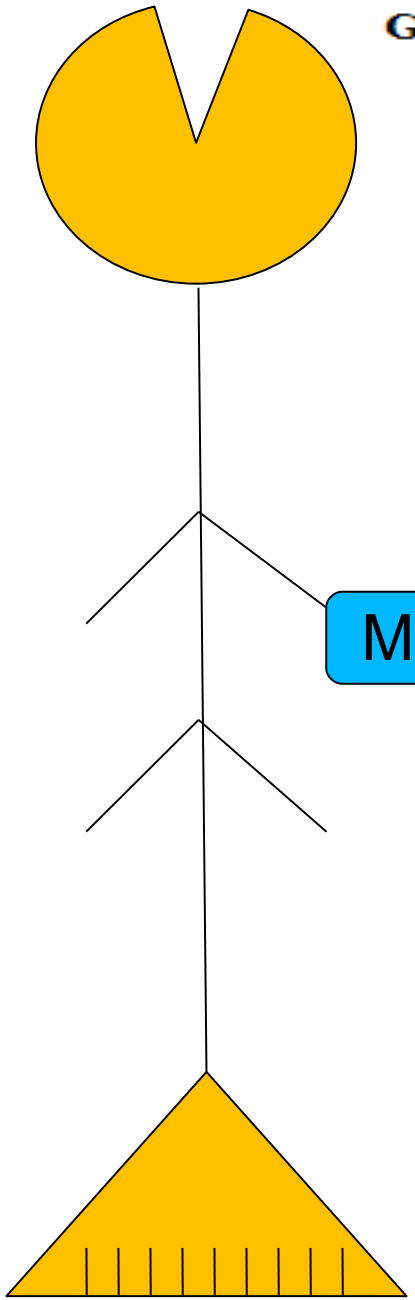

Method

Root Cause

1.Poor pick up of latex cause the coverage of pinhole at crotch area is weak.

2.Poor pick up of coagulant especially at crotch area.

3.High latex temperature forced the former temperature to be controlled at lower side.

Corrective Actions

1.Use **double nitrile latex dipping** instead of single nitrile latex dipping.

2.Apply **coagulant spraying or latex dripping** method.

3.To **improve the latex chiller system** in order to maintain the latex tank temperature at lower side.

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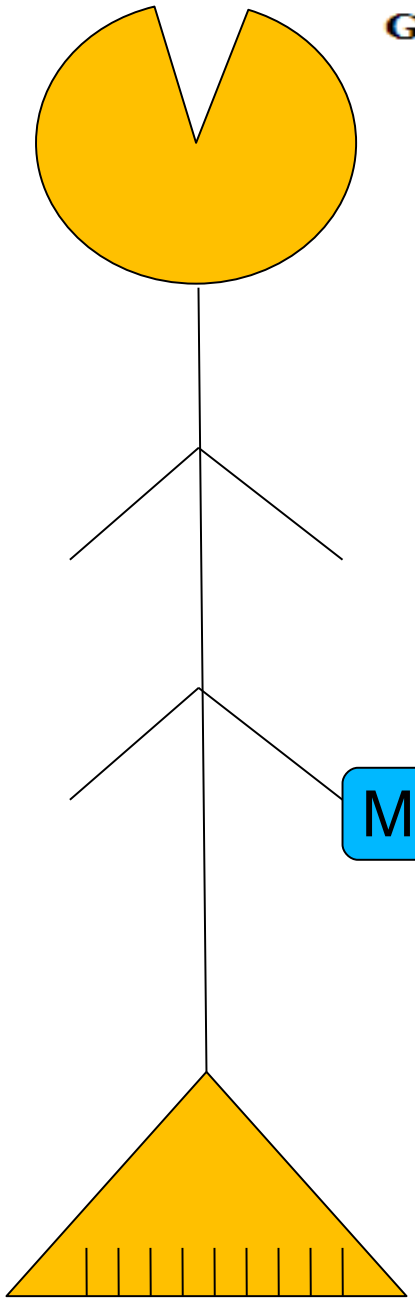

Material

Root Cause

1.Type of coagulant used.

2.Type of nitrile raw latex used.

3.Type of former used and former design.

Corrective Actions

1.Replace Liquid Nitrate with **Crystal Nitrate** for better drying efficiency.

2.Use **better gelling nitrile latex** such as Polymer Latex.

3.To use **size XL formers with wider spacing between fingers** for instance, Shinko brand, which can reduce surface tension and has better pick up.

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CONCLUSION

- In order to have more consistent quality, automation in process control is a must to reduce human error and avoid parameter fluctuations.

- Coagulant oven ought to be modified to blower system so that each side of formers in double former lines has more even and better drying efficiency.

- Choice of nitrile latex is vital as better gelling nitrile latex gives better consistency in terms of pinhole performance.

- Further study on former design is important so that with the best design of formers, continuously good quality gloves can be produced.

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Thank you