

## **For a quick analysis of the problem do :**

### ***(Derived by 5-Why Problem Solving technique)***

(When you have a problem, go to the place where the problem occurred and ask the question "Why" five times. In this way, you will find the root causes of the problem)

1. Question: Why the equipment were late?

Answer: It is currently the peak production season and the delivery delays have been due to an excessive number of paint rejects on the bodies of the EX25 autos.(From normal 1.5% to over 6%)

2. Question: Why are there paint rejects on the bodies?

Answer: Due to lack of paint adhesion.

3. Question: Why is there a lack of paint adhesion?

Answer: Because of contamination from silicone

4. Question: Why is there a contamination?

Answer: Because workers handling the car body have used hand creams that contain Silicone

5. Question: Why does the workers use that hand creams which contain silicone?

Answer: To protect their hands while handling the equipments.

## ***Plan, Do, Check, Act (PDCA)***

The Deming PDCA cycle provides effective guidelines for successful problem solving. The cycle

includes:

### **I.PLAN (P)**

#### *Problem Statement:(P1)*

The problem here is that the workers directly handling the equipment are using hand-lotions that contaminate the car body which in turn result in paint rejects in the cars.

#### *Collect Evidence of Problem (P2)*

Detect the number of rejects due silicone contamination.

1. Can determine this number by utilizing a FTIR, an infrared spectroscope which detects the number of rejects possibly arriving due to silicone contamination

#### *Identification of Impacts or Opportunities (P3)*

1. Number of rejects will be reduced
2. Cost of stripping and repainting the body of the car will be reduced
3. Drastically reduces the shipping delays

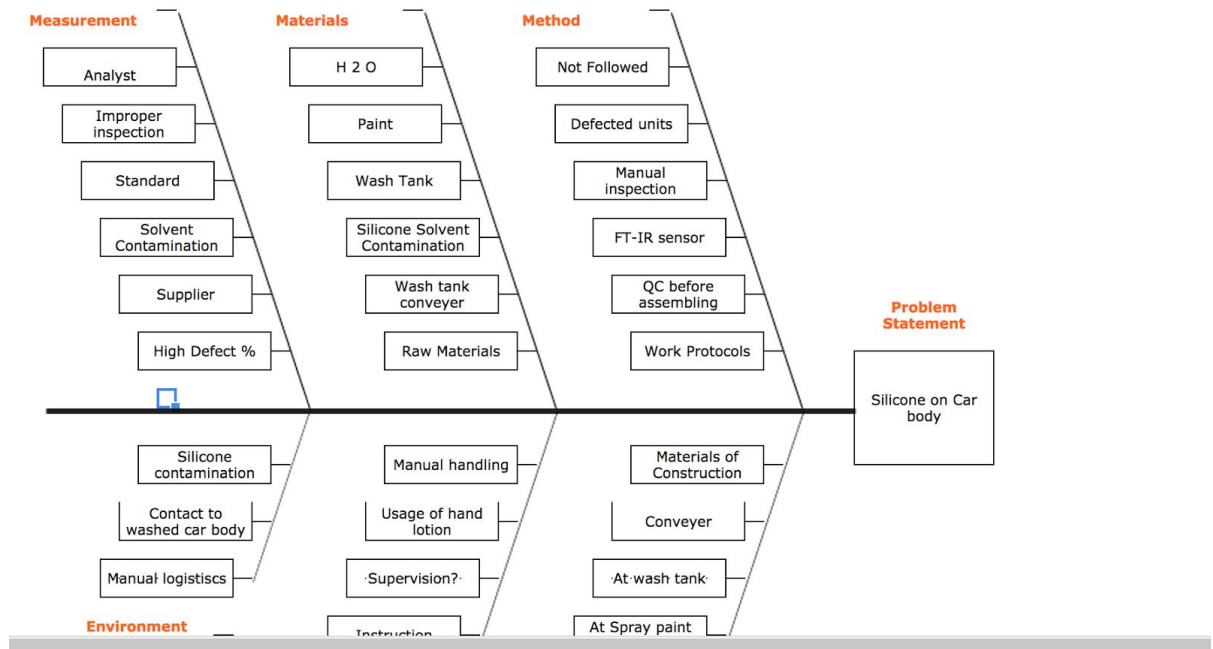
#### *Measurement of Problem (P4)*

1.Increase in reject rate: From 1.5% to 6% a 4.5% increase which is about which 150 units less produced each day(assuming the operation runs 24 hours a day due to peak season)

## 2. Additional cost incurred in repainting

### II.DO (D)

*Generate Possible Causes (D1): Fishbone diagram*



### *Action Plan (D2)*

ACTION PLAN	IMPLEMENTATION
Inspect the workers hand using FT-IR or similar IR spectroscopy to detect silicone presense	Install an IR station before the Water tank station
Quality Control after Paint work in the Line#1 (of EX25 cars)	Install an IR station after the Painting and drying unit
Supervision of manual handling workers	Nominate a Supervisor/CCTV to monitor the activities of the workers
Sanitization of the Water tank unit	Clean the water tank to discard of any trace of silicone

### III.CHECK

*Carry out Experimental Test or Action Plan (C1)*

- Conduct Experimental Test Plan(s) to test and verify root causes

*Analyze Data from Experimental or Action Plan (C2)*

- Analyze the % of defect units after executing the test plan
- Re-evaluate the action plan according to the outcome

### IV.ACT

*Carry out Implementation Plan (A1)*

Know what is changing, why the change is being made and what they need to do specifically to make implementation a success.

*Post-Measure of Effectiveness (A2)*

After all changes have been made and sufficient time has passed for the results of these changes to have an effect, the team needs to go out and gather data on all

of the Measures of Effectiveness. The data then needs to be analyzed to see if a *significant shift has occurred*.

*Analyze Results vs. Team Objectives (A3)*

Measure if the % has really went down or not.

*Team Feedback Gathered (A4)*

Receive feedback to implement this plan more effectively

*Management Team Close-out Meeting (A5)*

*Report to the management regarding your progress or further requirements*