CRISIS MANAGEMENT PROGRAM

|  |  |  |  |
| --- | --- | --- | --- |
| **Written/Revised by:** |  | **Type of Document:** |  |
| **Reviewed by:** |  | **Document No:** |  |
| **Approved by:** |  | **Version:** |  |
| **Initial Issue Date:** |  | **Effective Date:** |  |

Table of Contents

[a) Purpose of the Plan 2](#_Toc36583303)

[b) Scope of the Plan 2](#_Toc36583304)

[c) Crisis Management Team 2](#_Toc36583305)

[1. Team Leaders 2](#_Toc36583306)

[2. Team Members 2](#_Toc36583307)

[d) Controls of Business Interruption 3](#_Toc36583308)

[1. Kill Step Equipment Failure 3](#_Toc36583309)

[2. Finished product from cooler preservation protocol 5](#_Toc36583310)

[3. Chemical, fire, gas and other contaminants control protocol 6](#_Toc36583311)

[4. Workplace violence or terrorism act protocol 8](#_Toc36583312)

[5. IT incident control protocol 10](#_Toc36583313)

[6. Epidemic/Pandemic protocol 12](#_Toc36583314)

[e) Communication 14](#_Toc36583315)

[f) Plan Review 15](#_Toc36583316)

[g) Related Documentation and Records 15](#_Toc36583317)

# Purpose of the Plan

Plan and prepare to ensure that the organization can continue to operate in the occurrence of a crisis and is able to recover to an operational state within a reasonably short period.

# Scope of the Plan

This crisis management program covers for the following crisis applicable to our geography, industry and process: <kill step equipment breakdown, product contamination, gas leak, fire, earthquake, workplace violence or bio terrorism, food defense incident, IT incident and epidemic/pandemic>

# Crisis Management Team

## Team Leaders

<Company Name>has selected the <Executive Position 1> and <Executive Position 2 if desired> as leaders of the crisis management team. The responsibility of this joint position is to provide decision making, oversight, delegation and initiating actions arising from a crisis incident. The team’s contact information is available in the <Crisis Management Contact List (make sure all team members have everyone’s contact info>.

|  |  |
| --- | --- |
| **Position** | **Role** |
| Executive Position 1 | Decision making, oversight and initiating actions arising from a crisis incident. Communication to employees and media. |
| Executive Position 2 | Decision making, oversight and initiating actions arising from a crisis incident. Communication to employees and media. |

## Team Members

<Company Name> has designated the following directors, managers and supervisors as the members of the Crisis Management Team. The team’s contact information is available in the <Crisis Management Contact List (make sure all team members have everyone’s contact info>.

|  |  |
| --- | --- |
| **Position** | **Responsible for:** |
| QA Manager | Hold, release and recall. Product inspection and analysis. |
| Food Safety Practice Leader | Ensure Food safety is not compromised throughout decision and execution process. |
| Sales Director | Communication with Customers |
| Engineering and Maintenance Director | Repair, Maintenance and Calibration of equipment. |
| Production Manager | Production Operation |
| DC Manager | Shipping, receiving, storage, coolers and packaging area. |
| Purchasing Admin | Communication with suppliers |
| IT Manager | Execute IT plans for IT related issues |

# Controls of Business Interruption

BUSINESS INTERRUPTION CONTROL 1

## Kill Step Equipment Failure

PURPOSE: The goal of this control is to ensure that product that went through or may go through a failed kill-step subject to process interruptions is properly identified and processed to ensure food safety.

**RESPONSIBILITIES**

|  |  |
| --- | --- |
| **Position** | **Role** |
| QA/Production Manager | Detect potential or actual threats to safety of product |
| Production Supervisor | Oversee execution of protocol |
| QA Manager | Identify affected product and authorize release or disposal |

|  |  |  |
| --- | --- | --- |
| **STEP** | **Responsible** | **Procedure** |
| 1 | <QA Manager / Production Manager> | **Notification -** The <supervisor> detects event and alerts <Production Manager> |
| 2 | <Production Manager> | **Product Segregation -** Production manager shall record the exact time of the start of the crisis and conduct product segregation using the following criteria:  1. Segregate/store at a designated tank or area product that presents potential biological contamination.  2. Product that did not finish kill-step - Place on hold any product for evaluation.  If the product cannot be immediately processed, leave on tanks (until possible) or place product in temporary clean packaging, segregate in pallets and place in cooler, leaving space in-between cases and layers whenever possible to facilitate air circulation. Identify segregated product with a hold label to await the release by QA, making sure when multiple products are stored on one pallet, a separate label is used for EACH product. Store collected product in cooler.  3. Product that did not complete the kill step – evaluate if storage is possible or discharge is needed. Control time and temperature. |
| 3 | <Production Manager> | **Product Handling –** Product that is segregated as safe must be promptly processed, boxed and put away making sure identification and temperature are consistent.  The <production manager> must decide course of action once equipment is ready to process the segregated product. Make sure equipment is back to operation and evaluate/test product after processing to ensure kill-step validation. Notify regulatory agency if needed.  Ensure proper cleaning, sanitation and validation/release of equipment before using it back for production. |
| 4 | QA Manager | **Product Release** - Any product that was involved in a crisis, must be inspected by QA department and released or withdrawn using <Non Conformances and Corrective Actions SOP> |

**DOCUMENTATION AND RECORDS**

The Crisis Worksheet must include:

* Names and positions of every person involved
* Reason for crisis and course of action
* Time stamps and temperature checks at each step of the course of action
* Exact count and item id and lot codes of product involved

BUSINESS INTERRUPTION CONTROL 2

## Finished product from cooler preservation protocol

PURPOSE: The goal of this control is to ensure that in the event of loss of cooling capabilities in Cooling equipment the product is properly protected.

**RESPONSIBILITIES**

|  |  |
| --- | --- |
| **Position** | **Role** |
| Warehouse Manager | Monitor temperature and identify crisis. Execute control. |
| Operations Director | Oversee execution of control. Ensure adequate storage facilities are provided for product |

**PROCEDURE**

|  |  |  |
| --- | --- | --- |
| **STEP** | **Responsible** | **Procedure** |
| 1 | Warehouse Manager | **Notification** – The manager detects the event and notifies the Operations Director. |
| 2 | Warehouse Manager | **Product Segregation** – The Freezer’s insulation panels will allow product to hold temperature if the doors remain closed. The warehouse manager must minimize the use of the freezer until the cooler capabilities are restored. |
| 2 | Warehouse Manager | **Monitor temperature** – The warehouse manager will monitor and log product temperature on an hourly basis. If the temperature in the freezer reaches 36-38°F or the length of the disruption is over 72 hours then the warehouse manager must segregate affected product, label on hold, and prepare for transfer to alternative storage. |
| 3 | Warehouse Manager | **Product Handling** – The warehouse manager must promptly organize warehouse workers and drivers to move product from the main cooler to the alternative storage location. This should be done in the fewest trips possible, in temperature-controlled trucks. Detailed logs must be made on which products are being transferred in each truck. |
| 6 | Operations Director/ QA Manager | **Alternate Storage and normal storage location** – the <Operations Director> must decide within 72 hours if the storage cooling facilities in the plant will return to normal in a safe amount of time. If that is not the case, alternate storage must be selected and the product must be moved to maintain its safety. Approved alternative storage facilities are:  **XX Refrigerated Services:**  Name Office: x Cell: xx  Once normal cooling capabilities are restored in the main cooler the product can be returned to its regular location but the hold labels must stay in place until QA approves the products for use. |

**DOCUMENTATION AND RECORDS**

The Crisis Worksheet must include:

* Names and positions of every person involved
* Reason for crisis and course of action
* Time stamps and temperature checks at each step of the course of action
* Exact count and item id and lot codes of product involved

BUSINESS INTERRUPTION CONTROL 3

## Chemical, fire, gas and other contaminants control protocol

**PURPOSE**: The goal of this control is to ensure that product that may have been exposed to contamination is properly discarded.

**RESPONSIBILITES**

|  |  |
| --- | --- |
| **Position** | **Role** |
| Production Supervisor | Detect potential or actual leaks |
| Production Manager | Oversee execution of protocol in the plant |
| Warehouse Manager | Oversee execution of protocol in the warehouse |
| QA Manager | Identify affected product and authorize release or disposal |

**PROCEDURE**

|  |  |  |
| --- | --- | --- |
| **STEP** | **Responsible** | **Procedure** |
| 1 | Supervisor | **Notification –** The supervisor detects the event and alerts the production manager. |
| 2 | Production Manager or designated responsible | **Segregation –** Once the crisis is under control, the production manager shall conduct product segregation for any areas impacted by the leak, using the following criteria:  1. Any **unpackaged** product exposed to the contaminating substance must be immediately discarded.  2. Any unpasteurized **packaged** product must be allowed to complete pasteurization or discarded. Use “Product, Time and Temperature Control” protocol if pasteurizers are affected by event. Once product is pasteurized it must be segregated.  3. air circulation. Identify segregated product with a hold label to await the release by QA, making sure when multiple products are stored on one pallet, a separate label is used for EACH product. Store collected product in cooler.  4. Any contaminated raw material must be discarded.  5. Any exposed food-contact packaging material must be immediately disposed.  6. Any exposed labels or cartons must be disposed.  7. Finished closed cases exposed to the contaminant must be segregated. |
| 3 | Warehouse Manager | **Temperature Control –** The warehouse manager must ensure product that was segregated does not gain temperature. If the leak interrupts cooler operation, access to the cooler must be minimized to reduce loss of temperature. |
| 4 | Production Manager or designated responsible | **Product Handling –** Segregated product must be handled separately and placed on hold. The production manager shall assign packaging operators to finish packaging process according to the following criteria:  1. The plant must receive a full wash to eliminate the possibility of contaminant residue re-contaminating product and packaging materials.  2. The production manager must decide course of action once equipment is ready to process the segregated product:  a. If the core product temperature reaches 50°F while segregated and waiting for equipment to be available, QA must decide the proper course of action. |
| 5 | QA Manager | **Product Release -** QA manager shall assign personnel to oversee product safety throughout the implementation of the protocol. Once the protocol is completed, QA manager must release or withdraw involved. |

**DOCUMENTATION AND RECORDS**

The Crisis Worksheet must include:

* Names and positions of every person involved
* Reason for crisis and course of action
* Time stamps and temperature checks at each step of the course of action
* Exact count and item id and lot codes of product involved

**BUSINESS INTERRUPTION CONTROL 4**

## Workplace violence or terrorism act protocol

**PURPOSE**:

Workplace violence and threats of violence include but are not limited to any acts that are physically assaultive or any threat, behavior, or action that is interpreted by a reasonable person to carry potential to cause harm or endanger the safety of others, to result in an act of aggression or to destroy or damage property. The purpose of this policy is to address the issue of potential workplace violence and to be prepared with those procedures to be followed when violence has occurred.

**RESPONSIBILITES**

|  |  |
| --- | --- |
| **Position** | **Role** |
| Crises Management Team | Prepare and train employees on scenario plan/s on actions to be taken and recovery from interruption and resumption of critical business activities involving workplace violence.  Presents safety and security issues that jeopardizes the welfare of all employees. |
| Department Managers | Testing of the business continuity plan, training of employee to elevate awareness and crisis preparedness. |

**PROCEDURE**

|  |  |  |
| --- | --- | --- |
| **STEP** | **Responsible** | **Procedure** |
| 1 | Crises Management Team | • **Threat of violence –** Internal assessment (Management and HR) and effort made to defuse situation and determines the need for law enforcement involvement.  **• Violence (non-weapon) –** Internal assessment (Management and HR) and effort made to defuse situation and determines the need for law enforcement involvement.  **• Active Shooter –** Defer to local law enforcement response teams and be prepared to support the response with staff information, floor plans, monitoring security camera support   * How to respond - If you hear shots fired, resist the temptation to investigate the cause. * Do not go to the area. Do not attempt to try to determine what is happening. |
| 2 | Crises Management Team | **Information – to provide to Law Enforcement or 911 Operator**  CALL 911 ONLY WHEN IT IS SAFE TO DO SO!   * Location of the active shooter * Number of shooters * Physical description of shooters * Number and types of weapons held by shooters * Number of potential victims at location |
| 3 | Department Managers and Employees | ● Evacuate (Run)   * Have an escape route and plan * Leave your belongings behind * Keep your hands visible   ● Hide out (Hide)   * Hide in an area out of the shooters view * Lock or barricade (file cabinet) entry to your hiding place * Silence your electronic devices   ● Take action (Fight) – as a last resort and ONLY if your life is in danger   * Attempt to incapacitate the shooter * Act with physical aggression and throw items at the active shooter * Or, move quickly away - A moving target is harder to hit; quickly moving laterally and away may be the best option for escape * Seek cover (hide behind things that will stop bullets). |
| 3 | All Employees | When Law Enforcement Arrives remain calm and follow instructions, do not appear as a threat to the police.   * Put down and items in your hands (bags, jackets) * Do not pick up any weapons discarded by the suspect * Raise hands and spread fingers, keep hands visible at all times * Lie flat on the floor and place your hands away from your body so the officers can see that you have no weapons. - STAY DOWN * Keep out of the way; you might interfere with their clear shot at the gunman and be struck by the bullets. * Avoid quick movements towards Officers such as holding onto them for safety * Avoid pointing, screaming, or yelling * Do not stop to ask Officers for help or directions when evacuating |

**DOCUMENTATION AND RECORDS**

The Crisis Worksheet must include:

* Names and positions of every person involved
* Reason for crisis and course of action
* Time stamps and temperature checks at each step of the course of action
* Exact count and item id and lot codes of product involved

**BUSINESS INTERRUPTION CONTROL 5**

## IT incident control protocol

PURPOSE: The goal of this control is to ensure that Information Technology (IT) systems, applications and data can be recovered for business functions and operation continuity.

**RESPONSIBILITIES**

|  |  |
| --- | --- |
| **Position** | **Role** |
| Management, Sales Director, Operations Director, IT Director | Detect potential or actual threats to business interruption due to an IT system, application and/or data failure. |
| Operations Director/ IT Director | Oversee execution of protocol. Determine if plan will be performed with internal or external resources. |
| IT Director | Oversee execution of protocol. Determine if plan will be performed with internal or external resources. Conduct business impact assessment, recovery plan |
| QA Manager | Evaluate and release any potentially affected product |
| Production Manager | Place any affected product on-hold |

|  |  |  |
| --- | --- | --- |
| **STEP** | **Responsible** | **Procedure** |
| 1 | Management, Sales Director, Operations Director, IT Director | **Notification –** Notify immediately to IT Director when failure to any of the following may impact business operation and continuity:   * Computer room environment (security, climate, power supply, etc.) * Hardware (networks, servers, etc.) * Connectivity from service providers (fiber, wireless, telephone lines, etc.) * Software (electronic data, e-mail, ERP, Ignition, etc.) |
| 2 | IT Manager/ Operations Director  Production Manager | **Impact Assessment**   1. IT Manager shall make an initial problem assessment. This assessment shall be done within **30 minutes**. 2. The initial assessment shall include at least the following information: 3. If the problem can be fixed with **internal resources** or if a **3rd party** expert is required. 4. The total estimated time needed to fix problem with internal resources. 5. If a 3rd party service is required, determine who the best option is and how long it would take them to fix it. 6. Impact analysis in the facility and/or operation. 7. IT Director and Operations Director shall determine along based on the initial assessment, if problem should be addressed internally or through a 3rd party.   **Product Handling**   1. If any raw, WIP or finished product is affected because of an IT incident, Production Manager shall place product on hold for further evaluation. |
| 3 | IT Director  Production Manager | **Plan Development**   1. **Computer room environment:** 2. If room temperature reaches **78°F** call Maintenance Department for assistance. 3. If room temperature reaches **80°F** call directly to the external air conditioning service provider. 4. After **1 hr** of power blackout,call 3rd party supplier for power generators. 5. **Hardware and Software (networks, servers, electronic data, e-mail, ERP, Ignition, etc.)** 6. Recover information from virtualization or, 7. Recover information from last backup 8. When all servers got damaged, contact HP for warranty purposes. 9. When information cannot be recovered internally, contact 3rd party service. 10. **Connectivity from service providers (fiber, wireless, telephone lines, etc.)** 11. For internet failure after hook backup network device in router immediately. 12. Contact network service provider for problem resolution report and follow up. 13. For telephone lines failure (e.g. due to power failure), contact telephone service provider and set a cell phone to re-route company calls. 14. For fiber problems that cannot be fixed internally, contact 3rd party service.   **Product Handling**   1. If any raw, WIP or finished product is affected because of an IT incident, Production Manager shall place product on hold for further evaluation. |
| 4 | IT Director  Production Manager  QA Manager | **Test and Implement Solution**   1. IT Director shall conduct any required testing before normal operation and notify department leaders when problems have been addressed. 2. Production Manager/Director shall verify problem resolution.   **Product Release** - Any product that was involved in a crisis, must be inspected by QA department and released or withdrawn using SOP# |

**DOCUMENTATION AND RECORDS**

The Crisis Worksheet must include:

* Names and positions of every person involved
* Reason for crisis and course of action
* Time stamps at each step of the course of action
* Exact count and item id and lot codes of product involved (when applicable)

BUSINESS INTERRUPTION CONTROL 6

## Epidemic/Pandemic protocol

PURPOSE: The goal of this control is to ensure business continuity when possible due to process interruptions/changes because of an epidemic/pandemic to ensure people and food safety.

**RESPONSIBILITIES**

|  |  |
| --- | --- |
| **Position** | **Role** |
| Top Management and Crisis Team/ | Decision-making on an everyday changing environment |
| Sales | Constant communication with Customers to determine the demand, changes in product mix and feedback to production planning. |
| Procurement | Guarantee supply of protective equipment and materials for product demand |
| HR/Safety | Guarantee employee’s safety by establishing new protocols and policies |
| QA/Production Manager | Detect potential or actual threats to safety of product |
| Production Supervisor | Oversee execution of protocol |
| QA Manager | Identify affected product and authorize release or disposal |

|  |  |  |
| --- | --- | --- |
| **STEP** | **Responsible** | **Procedure** |
| 1 | Top Management | **Notification –** Gather leadership team and activate protocol, set priorities, objectives, remind roles and responsibilities, set mind to action and flexibility.  Be aware of environment and regulation changes |
| 2 | Top Management and Sales  HR  Procurement | **Resources:**  **-Demand** – determine de market and customer demand on a daily basis (eliminate, reduce volume, keep volume, increase volume, new product)  -**Staff** - confirm safety of staff and additional protocols for their safety and product safety.  -**Materials** – ensure sourcing of materials. Prepare to stock-up-down on key ingredients or materials. |
| 3 | Production Planning and Production Manager  QA Manager  Top Management | **Operational needs –** determine the operational abilities due to:  -market demand (e.g. bottling companies can setup lines to produce antibacterial gel)  -customer demand (product presentation may shift from bulk to retail presentations or the other way depending on the product shelf life)  -material supply  -staff availability and training  -Ensure employee’s safety protocols and practices are defined and put in place.  -Ensure capabilities for any new needed food safety protocols implementation. Assess current GMPs and strengthen protocols if needed. Train and oversee implementation.  -Ensure additional product testing protocols and practices are in place to fulfill demand.  Evaluate a back-up facility and/or contract manufacturer if challenges arise. |
| 4 | Top Management, HR, Leaders | **Protect employees**  -provide guidelines in case they feel ill  -provide guidelines in case someone in their household is ill  -prepare with backup and cross trained employees  -prepare for a shortage of employees  -minimize the number of employees at the same time  -avoid gatherings and/or big group meetings  -meet and communicate labor regulatory compliance  -keep contact with all employees (if they have been in the facility in the last xx amount of days related to incubation period). |
| 5 | <Production Manager>  QA Manager | **Product Segregation in case product may be compromised-** Production manager shall record the exact time of the start of each product batch and employees assigned to each batch in all steps of the process.  In case product might have been compromised:    Segregate/store at a designated area product that presents potential biological/chemical contamination.  Identify segregated product with a hold label to await the release or disposition decision by QA, making sure when multiple products are stored on one pallet, a separate label is used for EACH product.  Disposition needs to be compliant with regulation. |
| 6 | Production Manager | **Product Handling –** Product that is segregated as safe must be promptly processed, boxed, put away and records kept. |
| 7 | QA Manager | **Product Release** - Any product that was involved in a crisis, must be inspected by QA department and released or withdrawn using <Non Conformances and Corrective Actions SOP>  Disposition needs to be compliant with regulation. |

**DOCUMENTATION AND RECORDS**

The Crisis Worksheet must include:

* Names and positions of every person involved
* Reason for crisis and course of action
* Time stamps and temperature checks at each step of the course of action
* Exact count and item id and lot codes of product involved

# Communication

In the event of a business interruption communication with the appropriate stakeholders is required. The people in charge of communications are:

|  |  |  |
| --- | --- | --- |
| Type of Communication | Responsible | Role |
| Internal Communication | <Position> | Plant Representative |
| External Communication | <Position> | Public and Media Representative |

Communication to appropriate stakeholders will take place as soon as is practically possible after a crisis event is recognized. Those in charge of communications will are personally responsible to ensure the targets of the communication have confirmed the receipt of all messages.

The following matrix illustrates the minimum communication requirements and the type of communication of reach control:

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Internal Communication** | | | | **External Communication** | | | | | | | **Notes** |
|  | **All employees** | **Customer Service/ Warehouses** | **SQF Practitioner/ QA Manager** | **Internal departments (Maintenance, IT, Production)** | **Insurance Company** | **Utilities Company** | **Fire department** | **Police/ 911** | **Customers** | **Certification Body** | **Business Attorney (legal advise)** |  |
| Kill-step failure protocol |  | **V** | **V** | **V** | **W** |  |  |  | **W** | **W** |  | Evaluate if external communication is needed |
| Cooler product preservation protocol |  | **V** | **V** | **V** | **W** |  |  |  | **W** | **W** |  | Evaluate if external communication is needed |
| Chemical, fire, gas and other contaminants control protocol | **V** | **V** | **V** | **V** | **W** | **V** | **V** |  | **W** | **W** |  | Evaluate if external communication is needed |
| Workplace violence or terrorism act protocol | **V** | **V** | **V** | **V** |  |  |  | **V** | **W** |  | **W** | Evaluate if external communication is needed |
| IT incident control protocol |  | **V** | **V** | **V** |  |  |  |  | **W** |  |  | Evaluate if external communication is needed |
| Epidemic/ Pandemic protocol | **V** | **V** | **V** | **V** | **W** | **W** | **W** | **V** | **W,V** | **W** | **W** | Evaluate if external communication is needed |

Note: V = Verbal communication W= Written

# Plan Review

<Position> shall ensure that the Crisis Management Program is effective through an annual review and mock. When needed, findings of the annual test shall be followed as non-conformances to ensure the plan’s continuous improvement.

The team leaders and designated crisis management team shall annually review:

1. That the plan is up to date
2. They will declare a mock surprise crisis event selecting a random crisis incident from the ones listed in the procedure
3. The crisis management team must complete the procedure as described in this plan and all activities and decisions will be recorded in the <Crisis Management Form>
4. After the mock crisis, the team will analyze the outcome and discuss any recommendations to improve the effectiveness plan
5. It the plan is revised, the team will coordinate a retraining of involved personnel.

# Related Documentation and Records

* Crisis Management Form
* Crisis Management Contact List

**Crisis Management Form**

1. **General Information:**

|  |  |  |  |
| --- | --- | --- | --- |
| Crisis Scenario: |  | Date: |  |
| Start time: |  | End time: |  |
| Description: |  | | |

1. **Time and event registration:**
2. Describe all events and decisions taken upon

|  |  |  |
| --- | --- | --- |
| **Date and time** | **Event description** | **Responsible** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. **Details of affected product**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Product** | **Lot code** | **Quantity** | **Released / discarded?** | **Reason** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

1. **Communication logs**
2. Document any outside communication and/or statements released.

|  |  |  |
| --- | --- | --- |
| **Date/Time** | **Communication type and target** | **Responsibility** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. **Post-control analysis, root cause**
2. Document root cause of the crisis and any preventative measures that need to be put in place.

|  |  |  |
| --- | --- | --- |
| **Effect** | **Cause** | **Preventative solution** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |