- مسئولية كل من يحتفظ بهذه الوثيقة التأكد من أنها أحدث إصدار و تحتوى على كل التعديلات.
- كل وثيقة غير مختومة بختم "CONTROLLED" تعتبر غير معتمدة و لا يعمل بها.
- لا يسمح بالتغيير في هذه الوثيقة بدون تصديق مسبق من مسئول مراقبة الوثائق.
- يلتزم صاحب العملية بإخطار كل من يستلزم إطلاعه داخل نطاق إدارته على هذا الإجراء.

	الإعداد	المراجعة	الإعتماد
الإسم :	م/ أحمد رضوان	م/ أحمد رضوان	د. ربيع النجار
الوظيفة :	مدير توكيد الجودة	مدير توكيد الجودة	ممثل الإدارة العليا
التوقيع :			
التاريخ :			

بيان التعديل

م	رقم الفقرة	عنوان الفقرة	رقم التعديل	تاريخ التعديل	بيان التعديل
1	13	forms	1	22/4/2024	تم اجراء نسخه جديده من الاجراء لدمج متطلبات iso 9001 ويشمل الاصدار اعاده صياغه وتحديث , ,22000,14001,45001 كامل للمحتوي
2					
3					
4					
5					

Section 1: HACCP Establishment Procedure

1- Purpose

The procedure describes how to implement HACCP based food safety management system.

2- Scope

All Food activities

3- Responsibilities

HACCP Team

5- Policy

5.1 HACCP INTRODUCTION

5.1.1 DEFINITIONS & ABBREVIATIONS

Food safety
Concept that food will not cause harm to the consumer when it is prepared and/or eaten according to its intended use

NOTE 1 Food safety is related to the occurrence of **food safety hazards** and does not include other human health aspects related to, for example, malnutrition.

Food chain
Sequence of the stages and operations involved in the production, processing, distribution, storage and handling of a food and its ingredients, from primary production to consumption

NOTE 1 this includes the production of feed for food-producing animals and for animals intended for food production.

NOTE 2 the food chain also includes the production of materials intended to come into contact with food or raw materials.

Food safety hazard

Biological, chemical or physical agent in food, or condition of food, with the potential to cause an adverse health effect

NOTE 1 The term "hazard" is not to be confused with the term "risk" which, in the context of food safety, means a function of the probability of an adverse health effect (e.g. becoming diseased) and the severity of that effect (death, hospitalization, absence from work, etc.) when exposed to a specified hazard. Risk is defined in ISO/IEC Guide 51 as the combination of the probability of occurrence of harm and the severity of that harm.

NOTE 2 Food safety hazards include allergens.

NOTE 3
In the context of feed and feed ingredients, relevant food safety hazards are may be present in and/or on feed and feed ingredients and that may subsequently be transferred to food through animal consumption of feed and may thus have the potential to cause an adverse human health effect. In the context of operations other than those directly handling feed and food (e.g. producers of packaging materials, cleaning agents, etc.), relevant food safety hazards are

those hazards that can be directly or indirectly transferred to food because of the intended use of the provided products and/or services and thus can have the potential to cause an adverse human health

Food safety policy
Overall intentions and direction of an organization related to **food safety** as formally expressed by top management

End product
Product that will undergo no further processing or transformation by the organization

NOTE A product that undergoes further processing or transformation by another organization is an end product in the context of the first organization and a raw material or an ingredient in the context of the second organization.

Flow diagram
Schematic and systematic presentation of the sequence and interactions of steps

Control measure
Food safety action or activity that can be used to prevent or eliminate a **food safety hazard** or reduce into an acceptable level

PRP
Prerequisite programme
food safety basic conditions and activities that are necessary to maintain a hygienic environment throughout the **food chain** suitable for the production, handling and provision of safe **end products** and safe food for human consumption

NOTE The PRPs needed depend on the segment of the food chain in which the organization operates and the type of organization. Examples of equivalent terms are: Good Agricultural Practice (GAP), Good Veterinarian Practice (GVP), Good Manufacturing Practice (GMP), Good Hygienic Practice (GHP), Good Production Practice (GPP),Good Distribution Practice (GDP) and Good Trading Practice (GTP).

Operational PRP

Operational prerequisite programme
PRP identified by the hazard analysis as essential in order to control the likelihood of introducing **food safety hazards** to and/or the contamination or proliferation of food safety hazards in the product(s) or in the processing environment

CCP
Critical control point
Food safety step at which control can be applied and is essential to prevent or eliminate a **food safety hazard** or reduce it to an acceptable level

Critical limit
Criterion which separates acceptability from unacceptability

NOTE 1 Critical limits are established to determine whether a **CCP** remains in control. If a critical limit is exceeded or violated, the products affected are deemed to be potentially unsafe.

Monitoring
Conducting a planned sequence of observations or measurements to assess whether **control measures** are operating as intended

Correction
Action to eliminate a detected nonconformity

NOTE 1 for the purposes of this International Standard, a correction relates to the handling of potentially unsafe products, and can therefore be made in conjunction with a **corrective action**

NOTE 2 A correction may be, for example, reprocessing, further processing, and/or elimination of the adverse consequences of the nonconformity (such as disposal for other use or specific labeling).

Corrective action
Action to eliminate the cause of a detected nonconformity or other undesirable situation

NOTE 1 there can be more than one cause for nonconformity.

NOTE 2 Corrective actions include cause analysis and is taken to prevent recurrence.

Validation
Food safety obtaining evidence that the **control measures** managed by the HACCP plan and by the
Operational PRPs are capable of being effective

NOTE this definition is based on Reference [11] and is more suitable for the field of **food safety** than the definition
given in ISO 9000.

Verification
Confirmation, through the provision of objective evidence, that specified requirements have been fulfilled

Updating
Immediate and/or planned activity to ensure application of the most recent information

5.1.2 BACKGROUND TO HACCP

The World Health Organization (WHO) Codex Aliment Arius Commission developed the seven HACCP principles. The HACCP system is the standard used throughout the EU Food Industry and is recognized by several legislative bodies.

THE PURPOSE OF HACCP

To identify hazards that can occur at any stage in the production of the food, to determine their severity, to put in place preventive/control measures with limits outside which the process should not be operated, to monitor these control points and identify corrective action to be taken when limits are exceeded.

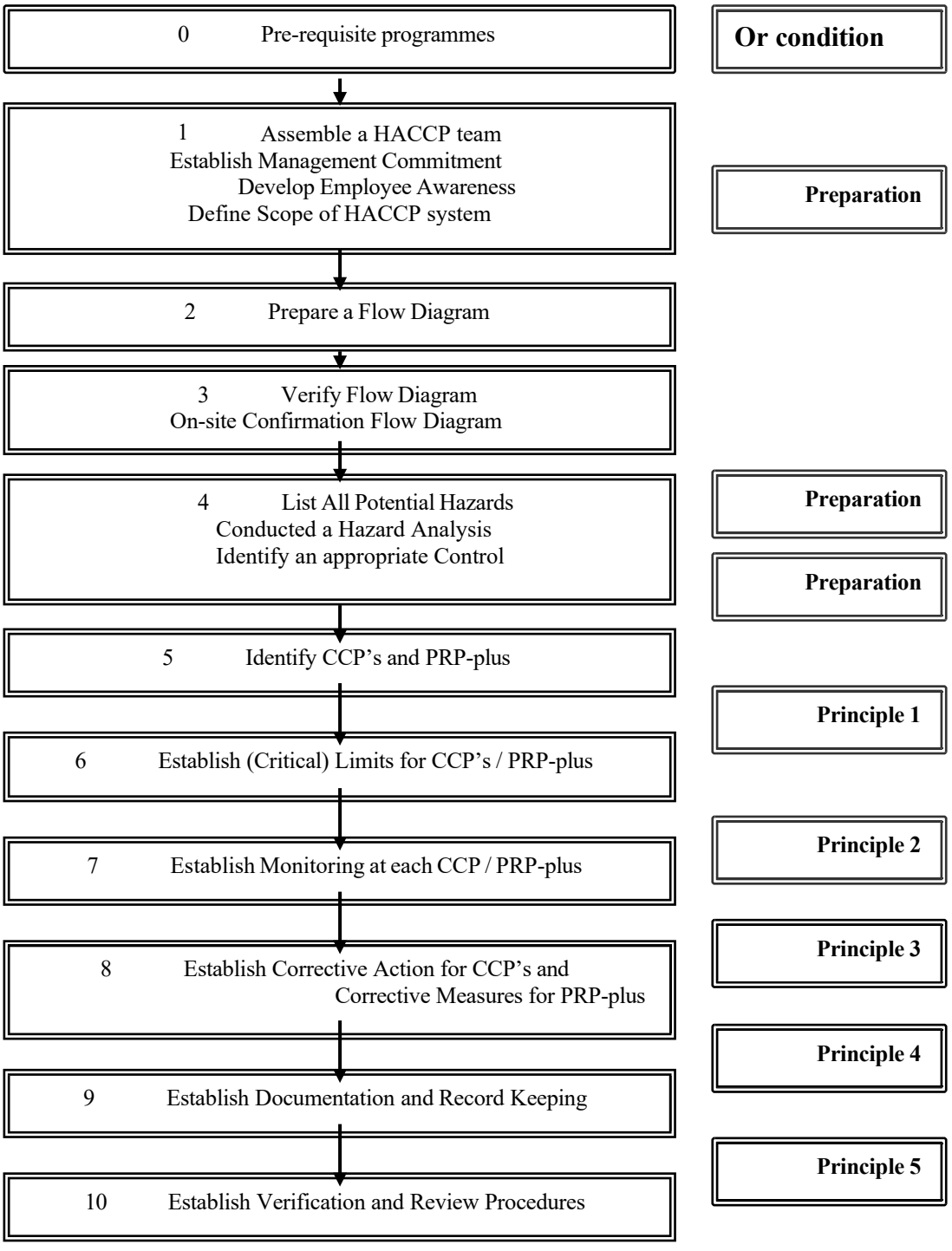
THE PRINCIPLES OF THE HACCP SYSTEM

The HACCP system consists of the following seven principles:

Principle 1 Conduct a hazard analysis
Principle 2 Determine the Critical Control Points (CCP)
Principle 3 Establish critical limit(s)
Principle 4 Establish a system to monitor control of the CCP
Principle 5 Establish the corrective action to be taken when monitoring indicates that a particular CCP is not under the control
Principle 6 Establish documentation concerning all procedures and records appropriate to these principles and their application
Principle 7 Establish procedures for verification to confirm that the HACCP system is working effectively

STAGES OF HACCP IMPLEMENTATION

The HACCP Principles are implemented in stages outlined in the diagram below



5.2 IMPLEMENTATION OF HACCP

Stage 1

5.2.1 HACCP PREPARATION

5.2.1.1 ASSEMBLE A HACCP TEAM

Management support is essential for the effective implementation of HACCP. A multidisciplinary group of individuals at each site needs to be established to carry out HACCP studies. Ideally, the team should comprise a minimum of two people qualified in application of the HACCP principles. Some large companies use central teams or have a person responsible for overall HACCP policy and implementation or team leader. The team leader of a HACCP study should have technical knowledge of the process and plant covered by the HACCP study, expert knowledge of hazards associated with brewing and experience within the scope of hazard analysis, developing HACCP plans and implementing and reviewing HACCP.

5.2.1.2 ESTABLISH MANAGEMENT COMMITMENT

All management including senior management need to be aware that HACCP is necessary to comply with legislative requirements. The HACCP team must gain support and commitment from top management. It must be part of their job description to undertake HACCP studies, set up a HACCP plan and conduct ongoing reviews for maintaining the system. Management should also be aware that some costs might be involved. If the system highlights a potential safety hazard to the consumer then expenditure may be required to address the hazards control.

Management commitment is stated in the Heineken Product Integrity Policy amongst others including verification of the HACCP system.

5.2.1.3 DEVELOP EMPLOYEE AWARENESS OF HACCP

Employees need to understand the purpose of HACCP and why a system is being introduced into the company. This will help the HACCP team obtain information in the setting up stage.

5.2.2 DEFINE THE SCOPE OF THE HACCP SYSTEM

The HACCP team need to establish and document the scope of the HACCP system. The scope needs to include:

1) a description of the product(s) that is/are being produced and sold,
2) the product's intended end use (target groups, intended use and "not intended use"),
3) the process to be studied (look at responsibility transport raw materials/ finished products),
4) the hazards considered (types of hazard related to food safety only),
5) Any food safety hazards that are controlled outside the HACCP system e.g. by pre-requisite programmes.

Stage 2

5.2.3 PREPARE A FLOW DIAGRAM

The purpose of the flow diagram is to provide a detailed description of the process to help the HACCP team carry out identifying hazards in the process. The flow diagram should be an activities diagram showing each process step in the order in which it is carried out, including re-work routes. All material additions and services should be shown in the diagramthe hazard analysis. The flow diagram is an essential aid to the HACCP team when The flow chart should not be an equipment diagram e.g. engineering drawing, because this may omit essential process steps e.g. addition of ingredients, which may have specific hazards associated with it.

Stage 3

5.2.4 VERIFY THE FLOW DIAGRAM

Before starting the hazard analysis the HACCP team should confirm that the on-site process matches the diagram. This should be done by walking the process and interviewing employees responsible for process activities.

Stage 4

5.2.5 CONDUCT A HAZARD ANALYSIS AND IDENTIFY APPROPRIATE CONTROLS (PRINCIPLE 1)

A hazard is a biological, chemical or physical agent that may cause the finished product to be unsafe for human consumption or cause injury to a consumer during handling.

Table 1 **Impact Rating**

Impact rating	Impact	Definition
1	Low	Consumption of the hazard might cause consumer disgust, but will not have any significant adverse physical health effect.
3	Moderate	Consumption of the hazard might cause mild adverse physical health effect or a health effect if the consumer was consistently exposed to the hazard over a long period of time.
5	Severe	Consumption of the hazard might cause severe physical problems in some/all people.

Table 2 **Likelihood rating**

Likelihood rating	Likelihood	Definition
1	Very Low	It can occur less than once a year
2	Low	It can occur once per month to once per year
3	Moderate	It can occur once per week to once per month
5	Severe	It can occur every batch to once per week

RISK RATING = Impact x Likelihood

Score < 5 define preventive / control measures, but do not enter decision tree: no CCP or OPRP. Pre-requisite programmes

Score ≥ 5 Define preventive / control measures to prevent, eliminate or reduce hazard to an acceptable level and enter decision tree.

will cover hazard

Risk Assessment Guide

Likelihood \ Severity	Insignificant-cant (1)	Minor (2)	Significant-ant (3)	Major (4)	Fatal (5)
Very Likely (5)	5	10	15	20	25
Likely (4)	4	8	12	16	20
Unlikely (3)	3	6	9	12	15
Very Unlikely (2)	2	4	6	8	10
Almost Impossible (1)	1	2	3	4	5

Risk Evaluation	Color
Very High risk	
High risk	
Moderate to high risk	
Moderate risk	
Moderate to low risk	
Low risk	
Very low risk	

Conducting a hazard analyses can be done by using the table below.

Validation

Validation is obtaining evidence that established control measures and the monitoring of CCP's and OPRP's are right and *will be* effective (*will it work*)
Validation should be carried out before implementing a HACCP plan And validation should be demonstrable.

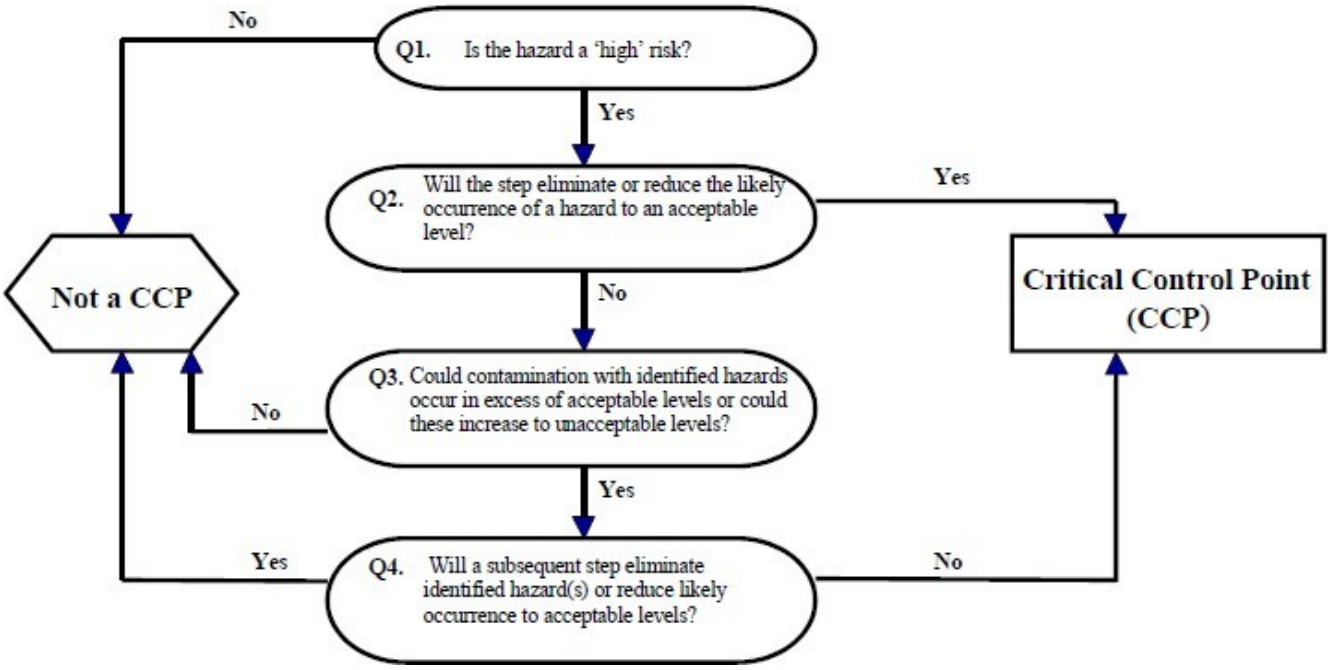
STEP	INPUT	HAZARD	CAUSE	Risk (*High* or *Low*)			PREVENTIVE MEASURE / CONTROL MEASURES	PM/CM VALIDATION
				Severity	Likelihood	Overall		
		Microbiological, Chemical, Physical, Quality						

The Selection of control measures according to the below table:

Control Measures Criteria	Parameters
A) Its effect on identified food safety hazards	1. Not eliminate completely 2. Reduce to acceptable level 3. Eliminate the hazard completely
B) Its Feasibility for monitoring	1. No Feasibility 2. Has Limitation 3. Feasible
C) Its place within the system relative to other control measures	1. First 2. In Middle 3. Final Measure
D) The likelihood of failure in the functioning of a control measure	1. Low 2. Medium 3. High
E) The severity of the consequence (s) in the case of Failure in its functioning	1. Low 2. Medium 3. High
F) Whether the control measures is specifically established and applied to eliminate or significantly reduce the level of hazards	1. No 2. So so 3. Definitely
G) Synergistic effects	1. No Have 2. So so 3. Have

Stage 5

5.2.6 IDENTIFY THE CCP'S / OPRP (PRINCIPLE 2)



STEP	CCP Decision *(Yes or No)*				CCP or CP
	1	2	3	4	

Stage 6

5.2.7 ESTABLISH (CRITICAL) LIMITS FOR THE CCP (PRINCIPLE 3)

Critical limits must be set for each identified CCP. The critical limits define the difference between a safe and unsafe process. The critical limit is not necessarily the legal limit of the contaminant in the product. The limit applies to the control measure and not the hazard

Stage 7

5.2.8 ESTABLISH MONITORING AT EACH CCP / OPRP (PRINCIPLE 4)

A monitoring procedure could be in-line, on-line or off-line. The monitoring procedure must state the frequency of monitoring, person responsible for carrying out the monitoring and the monitoring procedure. The monitoring activity must relate to the control and be timely. Online/offline automation with recording/alarm is the best monitoring system. If any one of the critical limits is exceeded as determined by the monitoring system, the CCP is out of control and will result in a potential hazardous or unsafe product. Records must be kept of the results of monitoring.

Table Monitoring system for CCP's						
Step	**Hazard/Cause**	**Preventive Measure**	**Critical Limit / Ref.**	**Monitoring**	**Immediate Action/ Longer Term Action**	**Records**
				What: *How:* *Where:* *When:* *Who:*	*Immediate:* *Who:* *Longer:* *Who:*	

Table Monitoring system for OPRP's					
Step	**Hazard/Cause**	**Preventive Measure**	**Monitoring**	**Immediate Action/ Longer Term Action**	**Records**
			What: *How:* *Where:* *When:* *Who:*	*Immediate:* *Who:* *Longer:* *Who:*	

Stage 8

5.2.9 ESTABLISH CORRECTIVE ACTION (CCP) and CORRECTIVE MEASURES (OPRP) (PRINCIPLE 5)

When a critical limit of a CCP is exceeded appropriate corrective action must be taken to put the CCP back in control. The corrective action must state what to do to put the CCP back in control and what to do with the affected product produced since the last monitoring was carried out. Records must be kept of corrective actions.

When a deviation of aOPRPappropriate corrective measures must be taken to (so to be sure the general control measures of the OPRP be effective again).

Stage 9

5.2.10 ESTABLISH DOCUMENTATION AND RECORDS (PRINCIPLE 6)

The outcome of a HACCP study (principles 1 to 5) is a "HACCP plan" which defines hazards, cause, risk rating, control, monitoring and corrective actions. This can be used as a work instruction for people carrying out monitoring and corrective actions at CCP's / corrective measures for OPRP and as a training document during the implementation stage of HACCP. As a minimum the HACCP system documents should include the process flow diagram, HACCP plan, additional work instructions for CCP's, records of monitoring and corrective actions and training records. These are all required as evidence of due diligence.

5.2.11 IMPLEMENT THE HACCP PLAN

Once all the critical limits, monitoring and corrective actions have been documented the plan needs to be implemented. This is achieved by training those responsible for monitoring and corrective actions in their tasks and providing a means to record results of monitoring and corrective action taken.

Stage 10

5.2.12 ESTABLISH VERIFICATION PROCEDURES (PRINCIPLE 7)

5.2.12.1 Verification

Once the HACCP plan has been implemented verification procedures must be established to verify that the controls introduced are effective in managing the risks identified. Documentation / records used during verification are:

- Extra product testing on selected parameters (for example heavy metals, mycotoxins, NDMA and so on)
- Review of complaints (customers and consumers)
- Results of control of CCP's (monitoring records)
- Results of control of OPRP's (monitoring records)
- Results of internal audits (including internal auditing on pre-requisites) to verify compliance.
- Blockages of non-conforming products
- Results of external audits
- Check if the estimated 'impact' and 'likelihood' of the several hazards are still the same
- Changes in brewery / plant, process, raw materials, processing aids, packaging, product composition of finished goods or target groups (pre-requisite)
- Changes in legislation or society
- Records of previous verifications

Section 2: HACCP Study

COMPANY PROFIL

1. **Scope:**
   Process: Production of Glasses used for packaging of food products.

COMPANY NAME / ADDRESS

Kandil Glass
Plot No. 91
A3 zone
10th of Ramadan city
Sharqia **- Egypt**

Telephone: 0554332075

0554332096
Facsimile: 0554332103
website:
www.kandilglass.com

Contact Person:
Eng. Ahmed Radwan
CEO / General Manager:
Mr. Khalil Kandil

Sector
- **Private**

MAJOR PRODUCTS/SERVICES
Glass Jars
Glass Bottles

- **Sales Turnover:**
- **Number of Employees: 650**
- **Facilities:**

Large range of manufacturing equipment at the location of our chosen and approved Subcontractors and at our own premises.

COMPANY BACKGROUND
- **Year Established: 2005**
- **Regional presence: 10th of Ramadan city /** Sharqia **/Egypt**
- **ISO 9001:2015 certified**
- **ISO 45001:2018 certified**
- **ISO 2200:2018 certified**
- **FSSC:22000 V6 certified**
- **ISO 14001:2015 certified**
- **White list certified**
- **BSCI certified**
- **Sedex certified**

CURRENT ACTIVITIES
producing glass bottle and jars intended to use in food packaging

Company Targets
Manufacturing container glass with best quality and safe for food industries usage

- **Major customers:**

Heinz, Shweeps, El Masreen, Halwany brothers, Yahoo,.....
- **Main Export Markets (Countries):**

Europe, USA, Algeria, Turkey,....

Implementing the food safety management program HACCP to provide the highest standards of food quality / safety and hygiene as per international standards.

1.1 General Objectives;

1. Ensure that all customers are provided with the highest level of food safety and hygiene.
2. Ensure safely raw materials receipt, handling, processing, storage and Dispatch.
3. Ensure good personal hygiene standards for all product handlers are maintained.
4. Maintain the highest standard of cleanliness.
5. Provide adequate hygiene and food safety training for all product handlers.
6. Ensure regular maintenance and speedy repair to all company areas.
7. Regular and thorough review and monitoring of hygiene standards and practices.
8. Conduct regular screening of raw materials and final products to ensure safety parameters.

1.2 Specific Objectives;

To be complied with international standards (ISO 9001, ISO 22000, FSSC 22000 and OHSAS18001)

1. To have full documented system for hygiene practices follow up.
2. To be a pioneer FSSC 22000 certified with our competitors.
3. To maintain hygiene policies for all production processes.
4. To maintain policy & system to follow up the Receiving & Delivering of food goods.
5. To maintain policy & system for cleaning & sanitation programs.
6. To maintain & continue improve skills of food handlers through full implementation of training program.
7. To maintain & increase customers trusting.
8. To be complied with laws.
9. To increase business contracts.

2. HACCP TEAM MEMBERS (NAMES / RESPONSIBILITIES & DUTIES)

#	Name	Position
1	Ahmed Radwan	QC & QA Food Safety Team Leader
2	Rabiee EL Nagar	Batch and furnace director Ass. Food safety Team Leader
3	Mohamed Zaki	Production section head
4	Nagy Tarek	Quality Control section head
5	Ahmed Hanfy	Plant Manger
6	Amr Mobarak	Warehouse Member
7	Ibrahim Abd Alla	Batch Member
8	Emad Fadl	Admin Member
9	brahim Abd Alla	Furnace Member
10	Ahmed Radwan	Q.A Members
11	Hossam-Eldien Hussien	Q.A Members
12	Mariam Ashraf	Q.A Members

Responsibilities:
Duties:

1	**Ahmed Radwan** **Quality Control &Quality Assurance**	**Food safety Team Leader**

Responsibilities:

- Prepare HACCP policy with **Food safety Team Leader**.
- Responsible of whole HACCP system (establishment, implementation, monitoring, recording, documents & documents' control).
- Complete Responsibility of HACCP team.
- He is the source of the top management commitment, supports with resources to finalize HACCP system and implement it on the field.
- To determine HACCP scope with HACCP team.
- To determine the purposes of HACCP system.
- To determine HACCP objectives with HACCP team.
- To coordinate HACCP team meeting, pre-preparation for these meetings, prepare the meeting agenda --- to prepare report after each meeting.
- Make the products description
- Identify the Hazards for each process --- with HACCP team members.
- Make HAZARD analysis--- with HACCP team members.
- Determine Critical limits --- with HACCP team members.
- Establish Preventive Measures (Policies, procedures, work instruction, records) --- with HACCP team members.
- Establish a Monitoring system --- with HACCP team members.
- To determine the corrective action in case of deviation from the acceptable limits with HACCP team members.
- Verification of the whole HACCP system.
- To make the validation step during the establishment of HACCP system & in the end of establishing.

Duties:

- Revise, advice and take final approval for;
  - Food Safety mission statement & Policy.
  - Scope of HACCP system.
  - Purposes & Objective of HACCP system.
  - Products description & intended uses.
  - Flow diagram for products
  - Hazards Identification & Hazard Analysis.
  - Critical Control Points of the HACCP plans.
  - Preventive measures for each CCP
- Establish HACCP Team, and select its' members.
- Support the HACCP team & HACCP system for the following:
  - Financial resources
  - Operational resources
- Communications with customers, receiving customer complaints and advise them with the feedback.
- To provide adequate hygiene **TRAINING** for all food handlers:
  - Off Job Training & On Job Training
  - Importance of the Food Hygiene & Food Safety.
  - Physical hazardous & Protection.
  - Chemical Hazardous & Protection.
  - Microbiological Hazardous & Protection.
  - Personal Hygiene.
  - Critical Limits during processing from receiving till end products.
  - Cleaning & Sanitation processes.
  - HACCP system preparation.
- Design flow diagrams for the product
- Make verification of flow diagrams-----with HACCP team members.
- To determine CCPs according to the HACCP decision tree.
- To be the **Internal Auditor**
- Follow up & collect the microbiological analysis reports for the product..
- Follow up the pest control program & schedule.
- Follow up & check the cleaning & sanitation program & schedule.
- Follow up with engineering department
- Updating of the HACCP System, PRP, OPRP, CCPs, Manuals and Risk Assessment.

- Update the Regulatory requirements, Standards, References, Customer specs and communicate this information internally within the organization.

****

#	Name Company Position	HACCP Team Position

Responsibilities:
Duties:

2	Dr. Rabieaa Alnagar **Plant Manager.**	**Ass. Food safety Team Leader**

Responsibilities:

- Present the final HACCP documents to **Food safety Team Leader** to be approved & to be started implemented

Duties:

- **Coordinate** HACCP system between all departments.
- Follow up the achievements in the establishing of HACCP system
- Follow up & supervision of the internal audit.
- Follow up full implementation for HACCP system

Share HACCP Team to prepare:

- HACCP mission statement & policy
- HACCP purposes & objectives
- HACCP scope

- Prepare hygiene training plans
- Implement the food safety system each in his department.
- Attend HACCP meeting for follow up and present achievements in concerned training courses.
- Attend hygiene & food safety training to be aware of all training.
- To provide the HACCP team with the updated standard & references they need for HACCP system.

****

#	Name Hotel Posi tion	HACCP Team Position

Responsibilities:
Duties:

3	**Rest Of the Team**	**HACCP Team Member**

Responsibilities:

- Complete Responsibilities for system establishment, implementation and improvement
- Charge on system implementation in different Department.

Duties:

* Share HACCP Team to prepare:
    - HACCP mission statement & policy
    - HACCP purposes & objectives
    - HACCP scope
- Prepare hygiene training plans
- Implement the food safety system each in his department.
- Attend HACCP meeting for follow up and present achievements in concerned training courses.
- Attend hygiene & food safety training to be aware of all training.
- To provide the HACCP team with the updated standard & references they need for HACCP system.

****

3. Product Description

3.1 Raw Materials

4.1.1 Sodium Feldspar					
Product Description	**Appearance**		White - grey		
	Odor		Odorless		
	Chemical formula		$NaAlSi_3O_8$		
Bulk density			0.8 - 1,6 g/cm3		
Melting temperature			1100 - 1500°C		
Solubility in water			Not soluble		
Solubility in hydrofluoric acid			soluble		
Storage Conditions			Store in Dry and ventilated Area		
Packaging & Delivery			1Ton Jumbo on trucks		
Product Specifications	**Chemical**	**SiO2**	Max.72.0		
		Fe2O3	Max.0.2		
		Al2O3	Min.16		
		K2O	Min.1		
		Na2O	Min.9		
	Sieve (Grain Size)	**Mm**	**mesh**	**Standard (%)**	
		>1.18	>16	Max.1%	
		< 0.15	<100	Max.40%	
Supplier			SISICAM		

4.1.2Dolomite					
Product Description	**Synonyms:**		dolomitic limestone, Dolostone		
	Molecular Weight:		184.4		
	Chemical Formula:		Ca, Mg (CO3)2		
Physical and Chemical Properties	Physical state and appearance:		Solid. (Solid powder.)		
	Odor:		Characteristic.		
	Color:		Off-white.		
	pH (1% soln./water):		9 [Basic.] 2.7 @ 25 C 2.9 @ 20 C (Water = 1)		
	Dispersion Properties:		Is not dispersed in cold water, hot water.		
	Solubility:		Insoluble in cold water, hot water.		
Stability and Reactivity	Stability:		The product is stable..		
	Conditions of Instability:		Incompatible materials		
	Incompatibility with various substances:		Reactive with oxidizing agents, acids.		
	Polymerization:		Will not occur.		
Product Specifications	Chemical	CaO	Max.31		
		MgO	Min.18		
		Fe2O3	Max.0.2		
	Sieve (Grain Size)	mm	**mesh**	**Standard (%)**	
		>1.7	>12	Max.5	
		< 0.15	<100	Max.25	
Regulatory Requirements / Ref.			MSDS Attached		
Storage Conditions			Store in Dry and ventilated Area		
Suppliers			Al Watanya For Supplying		

4.1.3Limestone					
Product Description	**Synonyms:**		Carbonic acid calcium salt; calcite; aragonite; limestone		
	Molecular Weight:		100.09		
	Chemical Formula:		CaCO3		
Physical and Chemical Properties	**Physical state and appearance:**		Fine, white powder.		
	Odor:		Odorless.		
	Solubility:		0.001 gm in 100 ml water, soluble in dilute acids.		
	Density:		2.7 - 2.95		
	% Volatiles by volume @ 21C (70F):		0		
	Melting Point:		825C (1517F)		
Stability and Reactivity	**Stability:**		Stable under ordinary conditions of use and storage.		
	Conditions of Instability:		When heated to decomposition (825C), emits calcium oxide fumes and liberates carbon dioxide.		
	Incompatibility with various substances:		Acids, fluorine, magnesium with hydrogen.		
	Polymerization:		Will not occur.		
	Conditions to Avoid:		Heat, incompatibles.		
Product Specifications	**Chemical**	**CaO**			
		Fe2O3			
	Sieve (Grain Size)	**mm**	**mesh**	**Standard (%)**	
		>1.7	>12	Max.5	
		< 0.15	<100	Max. 25	
Regulatory Requirements / Ref.			MSDS		
Storage Conditions			Store in Dry and ventilated Area		
Suppliers			Yahiya Hassan Company		

4.1.4 Sand					
Product Description	**Synonyms:**		Quartz; Silica, crystalline quartz; Silicon dioxide		
	Molecular Weight:		60.08		
	Chemical Formula:		SiO2		
Physical and Chemical Properties	**Physical state and appearance:**		Fine, off-white granules.		
	Odor:		Odorless.		
	Solubility:		Insoluble in water.		
	Specific Gravity:		2.65		
	% Volatiles by volume @ 21C (70F):		0		
	pH:		N/A		
Melting Point:			1710C (3110F)		
Stability and Reactivity	**Stability:**		Stable under ordinary conditions of use and storage.		
	Hazardous Decomposition Products:		At higher temperatures, can change crystal structure to form tridymite or cristobalite, which have greater health hazards.		
	Incompatibility with various substances:		Strong alkalis, hydrofluoric acid, powerful oxidizers and fluorine containing compounds.		
	Polymerization:		N/A		
	Conditions to Avoid:		Moisture, heat, dusting and incompatibles.		
Product Specifications	**Chemical**	**SiO2**	Min.99%		
		Fe2O3	Max. 0.025%		
		L.O.I (300°C)	Max.1.2		
		Bulk Density	Max.2.5		
	Sieve (Grain Size)	**mm**	**mesh**	**Standard (%)**	
		>0.5 mm	>30	Max.5%	
		< 0.125	<140	Max.5%	
Regulatory Requirements / Ref.			MSDS		

Storage Conditions	Store in Dry Area
Suppliers	Demirs / Indestrimp

4.1.4Soda Ash				
Product Description	**Synonyms:**		Carbonic acid, disodium salt; disodium carbonate; soda ash	
	Molecular Weight:		106	
	Chemical Formula:		Na2CO3	
Physical and Chemical Properties	**Physical state and appearance:**		White powder or granules	
	Odor:		Odorless.	
	Solubility:		45.5 g/100 ml water @ 100C (212F)	
	Specific Gravity:		2.53	
	% Volatiles by volume @ 21C (70F):		0	
	pH:		11.6 Aqueous solution	
Melting Point:			851C (1564F)	
Stability and Reactivity	**Stability:**		Stable under ordinary conditions of use and storage. Hygroscopic. Readily absorbs moisture from the air. Solutions are strong bases.	
	Hazardous Decomposition Products:		Oxides of carbon and sodium oxide.	
	Incompatibility with various substances:		Fluorine, aluminum, phosphorous pentoxide, sulfuric acid, zinc, lithium, moisture, calcium hydroxide and 2,4,6-trinitrotoluene. Reacts violently with acids to form carbon dioxide.	
	Polymerization:		Will not occur.	
	Conditions to Avoid:		Moisture, heat, dusting and incompatibles.	
Product Specifications	**Chemical**	**Na2CO3**	Min.98.5	
		NaCl	Max.1	
		Fe2O3	Max 35 ppm	
		L.O.I (300ºC)	Max.1.2	
		Bulk Density	Max.1.3	
	Sieve (Grain Size)	**mm**	**mesh**	**Standard (%)**
		>1.18	>16	Max.10%
		< 0.15	<100	Max.40%
Regulatory Requirements / Ref.			MSDS	
Storage Conditions			Store in Dry and ventilated Area	
Suppliers			SISICAM	
4.1.5 Cullet				
Product Description	**Synonyms:**		Waste glass	
	Molecular Weight:		-	
	Chemical Formula:		Soda lime silicate	
Physical and Chemical Properties	**Physical state and appearance:**		Flint – crushed size 2 cm – 5 cm	
	Odor:		Odorless.	
	Solubility:		Non soluble	
	Specific Gravity:		2.5	
	% Volatiles by volume @ 21C (70F):		0	
	pH:		4-6 Aqueous solution	
Melting Point:			851C (1564F)	
Stability and Reactivity	**Stability:**		Stable under ordinary conditions of use and storage.	
	Hazardous Decomposition Products:		Non	
	Incompatibility with various substances:		Fluorine	
	Polymerization:			
	Conditions to Avoid:			

Product Specifications	**Chemical**	**Moisture**	1-3%
		colored glass	Less than 6.5%
		organic Matter	Less than 0.2%

		Ferrous	Less than 0.005%	
		Inorganic & Non ferrous	Less than 0.2%	
	Sieve (Grain Size)	**Cm**	**mesh**	**Standard (%)**
Regulatory Requirements / Ref.				
Storage Conditions		Open area		
Suppliers		El Tawheed		

Cobalt Oxide

Physical state and appearance: Solid.
Odor: Not available.
Molecular Weight: 240.8 g/mole
Color: dark black
pH (1% soln/water): Not applicable.
Boiling Point: Not available.
Melting Point: Decomposes. (895°C or 1643°F)
Critical Temperature: Not available.
Specific Gravity: 6.2 (Water = 1)
Odor Threshold: Not available
Solubility: Insoluble in cold water.

Chemical specs

CoO % : min 98%
Fe2O3% : Max 0.4 %

Precautions: Do not ingest. Do not breathe dust. Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes

Storage: No specific storage is required. Use shelves or cabinets sturdy enough to bear the weight of the chemicals. Be sure that it is not necessary to strain to reach materials, and that shelves are not overloaded.

Hazards Identification

Potential Acute Health Effects: Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation.
Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to lungs, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

Selenium

properities

Product Name: Selenium
Chemical Formula: Se
Physical state and appearance: Solid.
Odor: Odorless.
Taste: Not available.
Molecular Weight: 78.96 g/mole
Color: Red
pH (1% soln/water): Not applicable.

Boiling Point: 684.9°C (1264.8°F)
Melting Point: 217°C (422.6°F)
Specific Gravity: 4.81 (Water = 1)
.Solubility: Insoluble in cold water.

Chemical specs:

Se% : min. 99.8 %

Handling and Storage

Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

Hazards Identification

Hazardous in case of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant)

BNT – COAT 100

Monobutyltintrichloride

Properties

Molecular weight		g/mol	282,17
Density (20°C)		g/ml	1,70-1,73
Boiling point	(16 hPa)	°C	102
Viscosity		mPa.s	appr. 7
Colour			clear up to slight yellow

Specification			Test method
Content of tin	%	min 41,0	BNT A11.3
Content of chloride	%	min 36,0	BNT A11.3
Content of MBTCl	%	min 98,5	BNT A11.3
Di-content	%	max 0,3	BNT A11.3
Tri-content	%	n.d.	BNT A11.3
Moisture	%	< 0,01	BNT A9

Application

$MBTCl_3$ is a liquid and used as raw material for production of Butyltin-catalysts for esterification and transesterification reactions. $MBTCl_3$ is also used for container- and flatglass coating.

Transport and storage

$MBTCl_3$ is delivered in steel drums with PE-inliner or plastic IBC. In closed packing units the product has an shelf life of minimum 6 month without deviation of quality.

Safety instruction

Please consider the information in the Safety Data Sheet

Glass chem CC25

COLD END COATING MATERIAL

Product data

Active ingredient Modified wax

Solid material content Approx. 23.5%
Specific weight : 1.0 g/cm³ (20°C)
Form: Dispersion
Colour: Cream-coloured
pH : Neutral to slightly alkaline

Properties

Long-lasting protection of the glass surface,
Excellent dry scratch resistance,
Excellent wet scratch resistance,
Excellent wet smoothness after several treatments with alkaline solutions,
Excellent wet smoothness after sterilization and/or pasteurization processes,
Very good wet scratch resistance during the filling process in zones where the glass containers accumulate and are exposed to pressure,
Excellent protection during transportation,
Reduced glass fracture during filling and transportation,
Considerably reduced scuffing of the glass surface after transportation, filling, or other mechanical wear.

Application

CC 25 is diluted with deionised or softened water and
applied at the cold-end section by using a suitable spray system.
If applied correctly, the resultant coating is virtually invisible.
A dilution ratio of 1:100 is usually recommended, but it can be varied between 0.2 and 2:100.
Dosing Unit is recommend for preparation.
When diluted with deionised or softened water,
dilution has a pot life of several days.
The pot life of cold-end dilutions is dependent on water quality.
is suitable for coating containers that are 80°C
to 150°C in temperature, preferably above 100°C

.

Card Board					
S	Material	Inner layer	Middle layer	Outer Layer	Diamension
1	Carton	Brown Craft 120 gm	Flute 112 gm	Brown Craft 120 gm	9cm*100cm*120cm
2	Carton	Brown Craft 120 gm	Flute 112 gm	Brown Craft 120 gm	14cm*100cm*120cm
3	Carton	Brown Craft 120 gm	Flute 112 gm	Brown Craft 120 gm	5cm*100cm*120cm

Plastic Specifications							
S	Shape	Specifications	Height (cm)	Length (cm)	Width (cm)	Thickness (micron)	Use
1	Plastic Bag	Thermal shrink wrapping bags coloured green treated against the sun for six months	300	133	100	190	Shrinl-wrap
2	Plastic Roll	Flint thermal shrink wrapping rolls double layer opened from one side	-	Roll	60	100	Packets
3	Plastic Roll	Flint thermal shrink wrapping rolls double layer opened from one side	-	Roll	60	50	Poly ethaline Base

Wooden Pallet Specs (Export)

Wood Type	White
Dimensions	1000*1200 mm
Deckboard Width	100 mm
deckboard Thickness	18-20 mm
No. of top deckboard	9 board (1000mm Length)
No. of bottom deckboard	3board (1200mm Length)
Block Dimensions	100-90*100-90*100-90 mm

Wooden Pallet Specs (Local)	
Wood Type	White
Dimensions	1000*1200 mm
Deckboard Width	80-90 mm
Deckboard Thickness	15-18 mm
No. of top deckboard	9board (1200mm Length)
No. of bottom deckboard	3board (1000mm Length)
Block Dimensions	80-90*80-90*80-90 mm

Note:
All packaging materials and pallets shall be stored in clean and dry places.

3.2 Final Product

4.2.1 Glass	
Product Description	
Ingredients	Soda ash, Sand,Limestone,Dolomite,feldspar.
Origin of Ingredients	Egypt,Turkey
Packaging & Delivery	Packed on palllet with plastic wrapping
Lableing	Each Pallet is labeled and traceable
Method of Production	I.S machines (Press Blow and Blow Blow process)
Storage Conditions	In cover and well ventilated warehouses (in case of outside storage the product should double shrinked for protection

4.2.1 Glass			
Product Specifications	Chemical	SiO2	68-75%
		Fe2O3	max.0.1%
		Al2O3	0-3%
		CaO	8-12%
		MgO	0-3%
		Na2O	12-16%
		K2O	0-2%
		Density	2.45 -2.5 gm/cm3
	Heavy metal	According To Standard No. 94/62/EC	
	Microbiology	Free from pathogenic MOs	

Accept and Reject Limit

Final Product Quantity	Sample Size	Limit					
		Minor Defects		Major Defects		Critical Defects	
		Accept	Reject	Accept	Reject	Accept	Reject
501-1200	32	3	4	1	2	0	1
1201-3200	50	3	4	1	2	0	1
3201-10000	80	3	4	1	2	0	1
10001-35000	125	5	6	2	3	0	1

Kandil Glass Products Specs		Kandil Glass Products Specs	
Product	Intended use	Product	Intended use
B-B-G-ARS-0024-RBN-F-K-S-18	Food	B-R-G-MNA-0250-OPL-F-K-T-38	Food
B-R-G-CRV-0300-OPL-F-H-T-38	Food	B-R-G-MRK-0250-PLN-F-H-V-31	Food
J-R-G-CYL-0300-PLN-F-K-T-63	Food	B-R-G-MRK-0500-PLN-F-H-V-31	Food
B-R-G-CRV-0350-OPL-F-H-T-38	Food	B-R-G-MRK-0750-PLN-F-H-V-31	Food
B-R-G-CRV-1000-OPL-F-H-T-38	Food	J-R-G-CYD-0147-PLL-F-H-T-53	Food
B-R-G-MLK-0300-PLN-F-H-T-38	Food	B-R-C-HDB-0300-TWN-F-H-S-26	Food
B-R-C-BST-0250-SGL-F-K-T-38	Food	J-R-G-CYL-0660-PLL-F-K-T-82	Food
B-R-C-BST-1000-OPN-F-K-T-53	Food	B-B-C-VRM-0060-PLN-F-H-C-26	Food
B-B-G-CYL-0150-PLN-F-K-S-304	Food	B-R-G-TPH-0250-PLL-F-H-T-38	Food
B-R-C-FRT-0275-SGL-F-H-S-26	Food	B-R-G-TPH-1000-PLL-F-H-T-43	Food
B-B-C-FRZ-0280-SGL-F-H-S-26	Food	B-B-C-CON-0330-GRL-F-H-M-28	Food
B-R-G-FRZ-0275-PLL-F-K-S-26	Food	J-R-G-BOO-0370-PLN-F-K-T-63	Food
J-R-G-CYD-0212-PLL-F-H-T-63	Food	J-R-G-GCM-0580-PLN-F-K-T-63	Food
B-B-C-GLO-0240-PLL-F-H-M-28	Food	J-R-G-BOO-0370-PLN-F-K-T-63	Food
B-B-C-GLO-0500-PLL-F-K-M-28	Food	J-R-G-BRL-0370-LNL-F-K-T-66	Food
B-R-G-GLY-0073-RNN-F-H-S-28	Food	J-R-G-TUB-0474-PLN-F-H-L-60	Food
B-B-C-HNZ-0150-SGL-F-H-N-23	Food	J-R-C-DOM-0380-HON-F-H-T-66	Food
B-R-C-HNZ-0187-SGN-F-H-T-30	Food	J-R-C-DOM-0740-HON-F-H-T-82	Food
B-R-C-HNZ-0279-SGL-F-H-T-30	Food	J-R-C-HLW-0316-RGL-F-K-T-63	Food
B-R-C-HNZ-0778-WVL-F-H-T-38	Food	J-R-C-HLW-0625-RGL-F-H-T-82	Food

B-B-G-HOT-0183-RNL-F-H-S-13	Food	J-R-C-HRO-0370-FRL-F-K-T-63	Food
B-R-G-JUC-0250-OPL-F-H-T-38	Food	J-R-G-VIT-0725-FLL-F-K-T-82	Food
B-R-G-JUC-0200-WVL-F-K-T-38	Food	J-R-C-HRO-0750-FRL-F-K-T-82	Food
B-R-K-PCM-0250-RBL-F-H-T-38	Food	J-R-G-VAS-0320-PLN-F-H-T-63	Food
J-R-G-CYL-0300-PLN-F-K-T-63	Food	J-R-G-OLA-0263-PLN-F-K-T-58	Food
B-R-G-CRV-1000-OPL-F-H-T-43	Food	J-R-G-OLA-0300-PLL-F-H-T-63	Food
B-B-G-JUC-1000-OPN-F-H-T-38	Food	J-R-G-OLA-0320-PLL-F-K-T-63	Food
B-R-G-LTF-0850-SGN-F-K-T-53	Food	J-R-C-PRV-14-PLL-F-H-LUG-63	Food
B-R-C-MLY-0850-SGN-F-H-T-53	Food	B-R-C-SAC-12-RNN-F-H-CT-38	Food
B-R-G-MLK-1000-PLN-F-H-T-53	Food	J-R-C-MYO-12-PLN-F-H-70-2035	Food

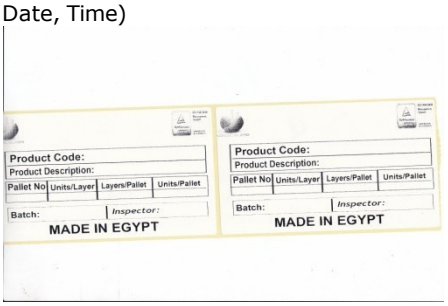
Glass Container Specification
For Carbonated and Non Carbonated Beverages

Product Description and Function:

The specifications outlined in this document apply to returnable and non-returnable glass bottles. The bottles can be sleeved, labeled, or decorated.
The glass bottles are fit for purpose, and thus are designed and manufactured to be suitable for the filling, packing, storing, distribution, and consumption of the product.
The specifications outlined in this document apply to bottles for filling carbonated and non-carbonated products. The same bottles could undergo a hot fill or pasteurization process.

Material Traceability:

All unitized pallets are adequately labeled by:
1. Customer Details.
2. Product Details (Category, Weight, Capacity)
3. Productions Details (Line, Shift, Date, Time)



4. Packaging Details (Pallet, Tray)
5. Process Details (B&B, P&B, NNPB, ABB)
6. Finish Details.

In Case of any nonconformance, the pallet tag(s) should be returned to **KANDILGLASS** together with defect samples which are required for investigation and root cause analysis.

Test Procedures:

All test procedures used to verify the quality and performance of the glass bottles are in line with general industry standards.

1- Dimensional Specifications

Fill-Point Capacity	Per approved **KANDILGLASS** bottle drawing.
External Dimensions	Per approved **KANDILGLASS** bottle drawing.
Ovality	Ovality (the difference between the maximum and minimum diameter measured in the same horizontal plane) must not exceed the total tolerance as indicated on the bottle drawing.

Glass Thickness

Major Diameter (mm)	Minimum Thickness (mm)		Minimum Thickness (mm)				
	Sidewall & Lower Contact Point		Bearing Surface Diameter (mm)	Overall Bottom Plate		Center Bottom Plate	
	Individual	Average*		Individual	Average*	Individual	Average*
Up to 68.3	1.1	1.4	Up to 50.8	2.5	3.0	2.8	3.2
> 68.3 – 76.2	1.2	1.7	> 50.8 - 57.2	2.6	3.1	2.9	3.3
> 76.2 – 82.6	1.3	1.8	> 57.2 - 63.5	3.1	3.6	3.4	3.8
> 82.6 – 92.1	1.5	1.8	> 63.5 - 69.9	3.5	4.0	3.8	4.2
> 92.1 - 104.8	1.6	2.0	> 69.9 - 82.6	4.4	4.9	4.7	5.1
> 104.8 - 127.0	1.7	2.4	> 82.6 - 95.3	5.3	5.8	5.6	6.0

* Average minimum thickness refers to the average of all minimum thickness readings of a set of samples, and not to the average thickness measured on an individual sample.

Thickness ratio	**Maximum 2.5 (B &B)** **Maximum 1.9 (P & B)**
Thickness ratio refers to the ratio between the maximum and minimum wall thickness measured in the same horizontal plane.	

Perpendicularity

Height (mm)	0-120	>120-130	>130-140	>140-150	>150-160	>160-170	>170-180	>180-190
Maximum	3.0 mm	3.2 mm	3.4 mm	3.6 mm	3.8 mm	4.0 mm	4.2 mm	4.4 mm
Height (mm)	>190-200	>200-210	>210-350					
Maximum	4.6 mm	4.8 mm	4.8 mm					

The values shown above indicate a maximum perpendicularity for total indicator reading at 360° (full rotation)

Finish Dimensions	Per approved **KANDILGLASS** finish drawing.
Bottom push-up	Per approved **KANDILGLASS** bottle drawing
Weight	Per approved **KANDILGLASS** bottle drawing.

Note: The weight tolerance referred to, above is only a design tolerance, not a working tolerance. It is provided as guidance for moulds wear calculations.

Anneal Grade	Maximum Real Temper Number of 4 (ASTM C 148-00)

2. Physical Performance Specifications

Internal Pressure Resistance (Carbonated)		
Bottle type	Non Refillable Bottles	Returnable
IPR (as delivered)	Minimum 200psi	225psi

Surface Treatments		
Hot end coating thickness	20 - 60 CTU (body)	Max. 10 CTU (finish)
Cold end coating tilt angle	10 – 22 Deg	

Glass surface treatment ensures correct mobility of the bottles during conveyor transportation (to avoid any issues of bottles "popping-up" or conveyor blocking) while maintaining bottle quality and avoiding premature scuffing.
All raw materials used in the manufacture of Cold End Coating materials are listed in the regulation of food additives in the FDA-Regulations CFR 21, Nr.176.210, 177.1660 and 178.3400
Hot End Coating is reacting on the hot glass surface to SnO2 by 100%. For this reason FDA regulations are not applicable

Vertical Load	Minimum 5.3 kN
Impact Resistance	Minimum 35 IPS
Thermal Shock	Max. 42oC The samples must not crack or break. (ASTM C 149 –)

It is recommended that the temperature differential throughout the process (storage, pre- heat, filling, and cool-down) be controlled within this specification to prevent breakages.

3- Additional Specifications

Glass Color	Glass Color should be matched with customer approved color standard sample bottle (color measurement is carried out in PERKIN ELMER UV/VIS Spectrometer Lambda-25.

(Internal Process Control)	Flint	Emerald Green	Amber
Dominant wavelength (nm)	555 - 575	555 - 575	550 – 586
Purity (%)	< 3.5	46 – 72	90+
Brightness (%)	> 65	30 – 42	17 – 30
Glass thickness (mm)	2	10	4 mm

Heavy Metals

KANDILGLASS containers are periodically subjected to analysis to measure if the glass composition is free of heavy metals and that if conforms to Article II of the EU Packaging Waste Directive 94/62/EC, which restricts the content of heavy metals in packaging products.

Markings

Glass containers include at least the following markings:

- Manufacturer symbol and plant identification
- Mould (cavity) number

Blown lettering (embossing):	Per approved **KANDILGLASS** bottle drawing

4- Visual Defects.

Please refer to 'List & Description of Critical, Major, and Minor Nonconformance.

Safety / Critical Defects:

Defects that could result in hazardous or unsafe conditions for individuals using the glass bottles, or be injurious to their health by virtue of glass inside the bottle to be filled.

Major / Functional Defects:

Defects likely to result in failure, reduce the usability of the unit of product for the intended purpose, affect functional performance

Minor / Cosmetic Defects:

Effects which are not likely to affect production efficiency or the product itself, but which are nevertheless undesirable as being a departure from the accepted visual standards.

Handling of Nonconformance

, or cause production line downtime.

If any critical / major defect is found beyond the stated reject levels all pallets from the same date of production, shall be isolated for further investigation.

Combined investigation shall be undertaken by both **KANDILGLASS** and customer by taking a statistical sample from the isolated lot in question as detailed below, to determine the acceptability of the isolated lot.

The buyer is required to maintain full traceability records between the filled products and incoming glass pallets.

In case of a lot being rejected **KANDILGLASS** responsibility is limited to the value of the empty glass.

If any critical / major defect is found beyond the stated reject levels all pallets from the same date of production, shall be isolated for further investigation.

Combined investigation shall be undertaken by both **KANDILGLASS** and customer by taking a statistical sample from the isolated lot in question as detailed below, to determine the acceptability of the isolated lot.

The buyer is required to maintain full traceability records between the filled products and incoming glass pallets.

In case of a lot being rejected **KANDILGLASS** responsibility is limited to the value of the empty glass.

Sampling Plan

Sampling procedures for inspection by attributes will be as per MIL-105-D General Inspection Level II.
For the purpose of determining the sample size, a container load / truck load will be considered as a lot

If the results on the above samples pass the stated acceptance levels, one full **KANDILGLASS** production date will be considered as accepted

Glass Container Performance

Line breakages

The Customer will report to **KANDILGLASS**, if any excessive line breakages during filling operation and warehousing are encountered, due to quality of bottles and not when the breakage is due to storage, warehousing, ware handling, and filling line process conditions at customer's end.
Customer shall isolate the suspect lot in question and put aside for further investigation.

Combined investigation shall be undertaken by both **KANDILGLASS** and customer based on the following criteria:
Evaluation of Non Conforming Lots.
Line breakages are measured by parts per million on a production run of at least 10000 bottles from the lot size (one Shipping container load or one Truck-Load) in question.
Breakages are counted through the production process from the rinsing machine to the finished products warehouse. If they are due to quality of bottles (i.e. Internal pressure Resistance, Thermal Shock Resistance, Vertical Load Resistance and Impact Resistance) The lot will be considered acceptable if the breakages are within the below mentioned parameters:

- Individual line segments 0.6000%. (For primary breaks only)
- Delayed breakage 0.3000% (sampled from warehouse 48 hours after filling on the basis of number of bottles not cases)

Kandil glass will not investigate any customer complains after 3 month of supplying

-

References
The following documents need to be approved by the Customer for each bottle designJob- specific drawings:
1. Bottle Drawing
2. Finish Drawing

Sampling guidelines:

1. *List & Description of Critical, Major, and Minor Nonconformance (defect list / KG.IT.WI.04)*
2- *Table II-A Single Sampling Plan for Normal Inspection*

Approval	Customer Representative
Signature	
Name	
Designation	

List & Description of Critical, Major, and Minor Nonconformance (Glass Defects)			
Critical / Safety Defects - Defects that could result in hazardous or unsafe conditions for individuals using the glass containers, or be injurious to their health by virtue of glass inside the glass container to be filled.			
ט"ב	ט	Bird Swing	A string or strand of glass extending across the interior of the container.

		Overpress	A glass fin projecting upward from the inside edge of the finish, such that it may be chipped in normal use.
		Pulled Glass (Plunger)	A piece of glass projecting inwards and inside the bore of the container.
		Spike	A pointed piece of glass formed on the interior bottom of the container.
		Stuck Glass	A Piece of foreign glass of varying size, stuck to the exterior surface of the container.
		Fused glass	A piece of foreign glass of varies size stuck to the interior glass surface.
		Loose glass	A piece of foreign glass that find its way into the container.
		Sugary Finish	Very fine fins of glass at the bore entry
		Sugary bore	Very fine fins of glass into the interior surface of the bore
		Fin seam	A sharp glass fin on any seam or parting line
		Soft blister (Skin)	A blister capable of being broken, which on the inside surface of the container
		Chocked bore (Neck)	A constriction in the bore of the neck, where the bore restricts entry of the filling tube
		Chipped finish	Any chip in the sealing surface that might pose a hazard to the consumer
		Critically thin	An area of thin glass that is capable of breaking during manual handling
		Internal foreign material	A piece of foreign material included in the glass
		Sharp flanged finish	A horizontal flange at the outer or inner top edge of the finish such that there is a risk that the flange will be dislodged under normal condition of use or injure the consumer

List & Description of Critical, Major, and Minor Nonconformance (Glass Defects)			
Major / Functional Defects: Defects likely to result in failure, reduce the usability of the unit of product for the intended purpose, affect functional performance or cause production line downtime.			
Major/Functional Defects (AQL 1%)	**Finish**	Bulge Finish	The neck finish of the container is bulged out of shape by blowing action.
		Crizzle Finish	A finish with many fine surface fractures across the sealing surface that affect the seal
		Finish Check	Small fractures (splits or cracks) occurring in the glass surface in the middle of the finish
		Finish Seam	A prominent seam / parting line on the side of the finish profile that affect the seal or removal torque
		Incline Sealing Surface	A gradual slope in the finish sealing surface (outside specified limits)
		Line Over Finish	A fine groove across the sealing surface that will cause a container to leak after filling.
		Offset Finish	A finish formed with two halves shifted out of "molds" alignment (Seal or removal torque is affected)
		Oval Finish	An oval shaped or pinched finish (outside specified limits)
		Split Finish	A fracture that extends over the top of the finish (sealing surface)
		Protrusion on finish	An extension of glass on the finish , which is susceptible to chipping or interferes with cap application
		Check under finish	Small fractures (splits / cracks) occurring in the glass surface near the parting line between neck and finish
		Deformed finish	Malformed finish
		Unfilled Finish (down finish)	A finish which is incompletely filled, in the sealing surface, bead or the thread (Proper seal not maintained)

		Split thread	A split occurring between the threads
		Chipped thread	Any chipped in the threads
		Unfilled thread	Finish with threads that are not completely formed
		Bead check	Small fractures (split or cracks) occurring in the glass surface in the bead
		Chipped bead	Any chipped in the bead
	Neck	Neck Check	Small fractures (splits or cracks) occurring in the glass surface on the neck of the container,
		Bent Neck	A neck where the finish is tilted to one side, (outside specified limits)
		Hollow Neck (blow back)	A neck in which the glass has blown away (inside surface)
		Overmax. Height	Height that exceeds maximum allowable specification.
		Pinched Neck	A neck which has been pushed or pinched (outside specified limits)
	Shoulders	Sunken Shoulder	A shoulder which is not fully blown up (outside specified limits)
		Thin Shoulder	A shoulder which has a thin section of glass (outside specified limits)
		Shoulder Check	Small fractures (splits / cracks) occurring in the glass surface on or near the shoulder
	Body	Bulged Body / Panel	The container body / panel has an over max body diameter (outside specified limits)
		Body Check	Small fractures (splits or cracks) occurring in the glass surface on the main body of the container,
		Seam check	A crack in the seam area
		Letter check	Crack in letter
		Heel Check	Small fractures (splits or cracks) occurring in the glass surface of the heel of the container,
		Offset Body Seam	A body formed with two halves of the mold shifted out of alignment (Line flow is affected)
		Leaner (bent)	A portion of the container is tilted to one side, away from the vertical line ((outside specified limits)
		Oval Body	Oval shaped or flat spot (difference between max and min diameters measured in the same plane)
		Sunken Body	A sunken side / panel which is not fully blown out (outside specified limits)
		Freak	An obvious mis-shaped bottle
		Broken ware	Broken glass on the lehr
		Thin Body	Uneven glass distribution / thin spots in the sidewall which are below the minimum acceptable level

List & Description of Critical, Major, and Minor Nonconformance (Glass Defects)			
Major / Functional Defects: Defects likely to result in failure, reduce the usability of the unit of product for the intended purpose, affect functional performance or cause production line downtime.			
Major/Functional Defects	Base	Bottom Check	Small fractures (cracks) occurring on or near the bottom contact surface of the container,
		Damaged Baffle Mark	A damaged and prominent baffle seam where container strength is affected
		Deep Baffle Mark	A heavy baffle seam where container strength is affected
		Faded Knurling	Faint / washed out stipple bars where container strength is affected
		Flanged Bottom	A fin or rim of glass around the bottom of the container at the mould parting line
		Rough baffle	Rough surface within the baffle seam limits

		Squat Heel (base leaner)	A bottom / heel which has sagged. (container is leaning & unstable) when placed on flat surface
		Swung Baffle Mark	A baffle seam extending onto the bearing surface where container strength is affected
		Thin Bottom	A bottom thinner than specified
		Wedge Bottom (Heel Tap)	A localized thick area at one side and thin area on the other side of the bottom (outside specified limits)
	Structural	Inclusion (stress Rel)	A small foreign particle, embedded in the bottle wall (where container strength is affected)
		Stones (stress related)	Small pieces of refractory imbedded in the glass (where container strength is affected)
		Poor Annealing	Internal stresses in the container due to poor annealing
		Poor Pressure resistance	A container failing Internal Pressure Resistance testing
		Poor Thermal resistance	A container failing Thermal Shock testing
		Poor Impact resistance	A container failing Impact Resistance testing

List & Description of Critical, Major, and Minor Nonconformance (Glass Defects)			
Minor / Cosmetic Defects: Defects not likely to affect production efficiency or the product itself, but which are nevertheless undesirable as being			
Minor Cosmetic Defects 4 %	Finish	Finish Dirty Appearance	A finish that has a scaly / pitted appearance on it
		Finish Rough Appearance	A finish that has a granular appearance on it
		Finish Tear Mark	A small surface fissure in enamel of glass (Doesn't extend into the glass, but can be felt with fingernail)
		Finish Shear Mark	A "C" shape mark in the glass attributable to the action of the shears
		Fold bead	Fold on the bead
		Unfilled bead	Finish with bead that are not completely formed
	Neck	Neck Dirty Appearance	A neck that has a scaly / pitted appearance on it
		Neck Rough Appearance	A neck that has a granular appearance on it
		Neck Tear Mark	A small surface fissure in enamel of glass (Doesn't extend into the glass, but can be felt with fingernail)
		Neck Brush Mark	Fine vertical lines on the outside of the neck
		Knockout	A seam between the finish and the neck
	Shoulder & Body	Swung Blank Seam (Open)	A blank seam that extends too far away from the mold seam
		Crizzled body	A surface fracture of any length that does not penetrate the surface of the bottle
		Brush Mark	Fine vertical laps in the outside of the container
		Cold Appearance (Wavy)	Irregular surface on either the inside or outside of the container
		Dirty Mould	Appearance (Rough) An impression mark on the glass surface caused by a build up of dirt in the mold (carbon, graphite, oil)
		Loading Mark (Drag)	Fine vertical laps occurring on the outside surface of the container
		Oil Marks	Short strings of small bubbles in the glass
		Prominent Mold Seam	A heavy mold seam.
		Body Tear Mark	A small surface fissure in enamel of glass (Doesn't extend into the glass, but can be felt with fingernail)
		Washboard	A series of horizontal waves, or folds, on the outside of the container
	Base	Shear Mark on base	"C" shaped marks making a definite line in the glass attributable to the action of the shears
		Damaged Baffle Mark	A damaged and prominent baffle seam where container strength is not affected
		Deep Baffle Mark	A heavy baffle seam where container strength is not affected
		Drop Bottom (Rocker)	A bottom which has sagged (container is not unstable) when placed on flat surface
		Swung Baffle Mark	A baffle seam extending onto the bearing surface where container strength is not affected
	Gen er	Wrinkle Mark (Lap)	A fine wrinkle or fold on the outside of the bottle
		Cat scratch	Surface marks running vertically up the container
		Excessive blooming	A level of surface coating that affects the visual appearance of the bottle

		Hard Blisters	A blister well within the glass wall (the size does not reduce the container strength)
		Seeds in Glass	Small bubbles or gaseous inclusions (Exceeds 9 seeds / cm2)
		Stones (non stress)	Small pieces of refractory or unmelted batch materials (does not reduce the container strength)
		Black Spots (non stress)	Small black specs in the container (does not reduce the container strength)
		Amber line	
		Inclusion (non stress)	Small foreign particles, embedded in the bottle wall (where container strength is not affected)
		Plunger mark	Mark in side the surface of glass container

Table II –A Single sampling Plan for <u>Normal Inspection</u>

Sample Size code direction	Sample Size	0.01		0.015		0.025		0.04		0.065		0.1		0.15		0.25		0.4		0.65		1		1.5		2.5		4		6.5		10		15	
		AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE	AC	RE
A	1																																		
B	3																																		
C	5																																		
D	8																																		
E	13																																		
F	20																																		
G	32																																		
H	50																																		
J	80																																		
K	125																																		
L	200																																		
M	315																																		
N	500																																		
P	800																																		
Q	1250																																		
R	2000																																		

= use the first sampling plan below arrow. if the sample size equal. Or exceed, lot or batch size, carry out 100% inspection

= use first sample plan below arrow

Ac = Acceptance Number
Re = Rejection Number

Table 1: Sample Sizes and Code Letters

Lot or Batch Size	2 - 8	9 - 15	16 - 25	26 - 50	51 - 90	91 - 150	151 - 280	281 - 500	501 - 1200	1201 - 3200	3201 - 10000	10001 - 35000	350001 - 150000	1500001 - 500000	500001- over
General Inspection Level II	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q

4.FLOW DIGRAM

FLOW DIGRAM.docx

4. Verification of Flow Diagram

That is to confirm that the follow diagram confirm with the reality on site dated 25th of Feb. 2020

#	Name	Signature
1	Mohamed Saad	
2	Ahmed Radwan	

5. Hazard Analysis and risk Assessment

STEP	INPUT	HAZARD	CAUSE	Risk (*High or Low*)			PREVENTIVE MEASURE / CONTROL MEASURES	PM/CM VALIDATION	links
				S	L	Overall			
Receiving Raw Materials & Packing Materials	Raw materials	C: Heavy metal concentration in Sand and Feldspar	Mining area had high heavy metal concentration (Natural)	3	3	9 (M)	Approved suppliers and Mine through regular evaluation and sample analysis Training for staff responsible for product receiving PRP System Weekly Hygiene Audit	Final Product Glass analysis for heavy metal every 6 month Training Validation Test	..\chemical lab\تعليما ت التشغيل\Chemistry LabWI [1]..ppt
Transport & Storage at storage area	Raw Material	P/C: Cross contamination between different raw materials during storage process	Incomplete separation between raw materials (Chemical)	3	1	3 (L)	Application of Good storage practices Training for staff responsible for product Storage and Transport Preventive maintenance of storage area Weekly Hygiene Audit	Internal Audit Training Validation Test	المخازن\..تعليما ت التشغيل\تعليما ت التشغيل.ppt
	Workers Vehicle	P: Contamination by non-food grade materials	Contamination from workers or transportation vehicles (Chemical)	2	2	4 (L)	Application of Good storage practices Training for staff responsible for product	Internal Audit Training Validation Test	

							Storage and Transport Preventive maintenance of storage area Weekly Hygiene Audit		
Glass Cullet Processing (Cleaning and Crushing)	Material	P: Contamination with stones, metals or other foreign materials	Unclean Cullet from the supplier	4	5	20 (VH)	Magnet separation of metals Visual inspection by the supervisors Training for staff responsible for the process Approved Supplier only	Magnet Calibration by the Manufacturer Training Validation Test	..\cullet inspection\cullet inspection WI 09.ppt
	Material	C: Contamination with chemical with different composition from cullet, e.g., Heavy Metals and minerals which used in order to add color to their glass-works	Unclean Cullet from the supplier	4	3	12 (M)	Visual inspection by the supervisors Training for staff responsible for the process Approved Supplier only Training for staff responsible for the process	Training Validation Test	
Transport to Silo	Workers Vehicle	Contamination by non food grade materials	Contamination from workers or transportation vehicles (Chemical)	2	2	4 (L)	Training for staff responsible for product Transport Preventive maintenance of transport vehicle Weekly Hygiene Audit	Internal Audit Training Validation Test	..\الخلط BH\تعليمات التشغيل\تعليمات التشغيل الخلط.ppt
Weighting	Balance	C: Incorrect Concentration of raw materials used	Un Calibrated Balance	3	1	3 (L)	Calibration Preventive maintenance	Balance Calibration	..\calibration\خطة المعايره KG.CB.FR.01.xls
Belt Feeding	No Safety Risk								

Mixing(Addition of water , Cobalt, Na2SO4 &Silinium)	No Safety Risk								
Furnace Silo & Feeding	No Safety Risk								
Furnace (1450-1600°C)	Oven	P: refractoriness parts fall inside the product	refractoriness corrosion	3	1	3 (L)	Maintenance Plan	Furnace Inspection and validation by the Manufacturer	الصهر\..\تعليمات FN\تعليمات التشغيل\تعليمات تشغيل الصهر.ppt
Feeder	Oven	P: refractoriness parts fall inside the product	refractoriness corrosion	3	1	3 (L)	Maintenance Plan	Feeder Inspection and validation by the Manufacturer	
Forehearth	Oven	P: refractoriness parts fall inside the product	refractoriness corrosion	3	1	3 (L)	Maintenance Plan	ForehearthInspection and validation by the Manufacturer	
Gob Cutting		P: Parts of the shears	Broken shears during cutting	3	1	3 (L)	Maintenance Plan	Shears visual Inspection and validation by the Manufacturer	
Deflector	Oil	C: Using of chemical of non food grad origin	All oil used is approved and has no risk on the product	3	1	3 (L)	COC & COA Available Supplier Assurance system	Oil Residue Analysis Inspection and validation by the Manufacturer	
Forming	Machine	P: internal stuck glass	Incorrect machine set up and operation	5	1	5 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer	\\kama-glass\Forming department\Defect Manual.docx
		P: Bird Swing	Incorrect machine set up and operation	5	1	5 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer	
		P: Overpress	Incorrect machine set up and operation	4	2	8 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer	
		P: Pulled Glass (Plunger)	Incorrect machine set up and operation	3	2	6 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer	
		P: Spike	Incorrect machine set up and operation	5	1	5 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer	
		P: Fused glass	Incorrect machine set up and operation	5	1	5 (M)	Machine setup instructions	Inspection of the resulted product	

								Inspection and validation by the Manufacturer
		P: Sugary Finish	Incorrect machine set up and operation	5	1	5 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Chipped finish	Incorrect machine set up and operation	3	2	6 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Sharp flanged finish	Incorrect machine set up and operation	5	1	5 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Crizzle Finish	Incorrect machine set up and operation	4	2	8 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Finish Check	Incorrect machine set up and operation	3	3	9 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Line Over Finish	Incorrect machine set up and operation	3	1	3 (L)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Split Finish	Incorrect machine set up and operation	3	4	12 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P:Check under finish	Incorrect machine set up and operation	3	3	9 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Unfilled Finish	Incorrect machine set up and operation	3	3	9 (M)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Thin Shoulder	Incorrect machine set up and operation	2	2	4 (L)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Thin Body	Incorrect machine set up and operation	2	2	4 (L)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Heel Check	Incorrect machine set up and operation	1	3	3 (L)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer
		P: Inclusion (stress Rel)	Incorrect machine set	3	1	3 (L)	Machine setup instructions	Inspection of the resulted product

			up and operation					Inspection and validation by the Manufacturer	
		P: Neck Dirty	Incorrect machine set up and operation	3	1	3 (L)	Machine setup instructions	Inspection of the resulted product Inspection and validation by the Manufacturer	
Hot End Coating Spray	Materials	C: Increase conc. Of the Mono butyl tin tri chloride (MBTC) over the limits (High SnO2 Thickness "0-10 CTU")	Incorrect dosing amount adjustment Causing Rusty finish	4	4	16 (M)	Training for staff responsible for the process Thickness measurements every 6 hours	Validation of dosing machine	
Annealing (Temp. Control)	Machine	P: Breakage of the glass during handling by customer / Consumers due to weak glass	Incorrect temp. adjustment of the annealing lehr	1	2	2 (L)	Temp. control panel Training for staff responsible for the process		
Cold End Coating Spray	Machine	P: Contamination from fan and cover with dirt C: Incorrect conc. Of CC 25 which will cause line jamming at the customer	Irregular cleaning Failure in spray unit	1	3	3 (L)	Scheduled cleaning and maintenance Preventive maintenance Training		
Glass Inspection	Machine /visual	P: glass defects which may harm consumers	Incorrect forming process	3	3	9 (M)	Inspection process (machine and visual)	Inspection machine challenge	
	Workers	B: n from worker hands	Poor personal Hygiene	3	3	9 (M)	Training for staff responsible for the process Follow PRP system		
Inverters	Glass	P: Contamination with broken glasses	Glass breakage during handling	3	2	6 (M)	Scheduled cleaning and maintenance Preventive maintenance Training	Glass breakage audit report	..\Glass Breakage\KG2.GB.PR.01 Glass breakage Procedure.docx
Packaging and Palletization	Materials	C/B: Contamination of glasses	Cross contamination with	1	3	3 (L)	Approved Suppliers		

			unclean packaging				Raw materials inspections Good Storage Practices		
Resorting	Materials	P: Contamination with broken glasses	Sliding of carton layers and glass broken	1	2	2 (L)	Staff Training		
Final Product Storage	Staff Environment	P: Contamination with dust	Storage at open storage area	1	2	2 (L)	Good Storage Practices Training for staff responsible for the process Audit suppliers responsible for final product storage Planning of storage capacity		
	Rain	P: Contamination with rain water	Storage at open storage area	1	2	2 (L)	Good Storage Practices Training for staff responsible for the process Audit suppliers responsible for final product storage Planning of storage capacity		
	Staff	B: Contamination of the product from workers during the repackaging process	Poor personal Hygiene of staff during the repacking process in case of any damage in pallets or their package	1	2	2 (L)	Application of Good Hygienic practices Good Manufacturing practices Staff Training on personal Hygiene Requirements		
Loading and Dispatch	Staff	P: Contamination	Dirty Hands or vehicle	1 1	2 2	2 (L) 2 (L)	Training for staff responsible for the process Vehicle inspection & cleaning		

	Staff	B: Contamination of the product from workers during the loading and uploading process	Poor personal Hygiene of staff during loading and uploading process	1	2	2 (L)	Application of Good Hygienic practices Good Manufacturing practices Staff Training on personal Hygiene Requirements		
	Vehicle	B: Contamination of the product from Vehicle during Transportation process	Poor Cleaning of Transportation vehicle	1	2	2 (L)	Application of Cleaning and Disinfection program Good Transportation practices Staff Training		

6. CCP / OPRP Table

STEP	CCP Decision (Yes or No)				CCP or CP
	1	2	3	4	
Receiving Raw Materials & Packing Materials	NO	-	-	-	CP
Transport & Storage at storage area	NO	-	-	-	CP
Glass Cullet Processing (Cleaning and Crushing)	YES	-	-	-	OPRP 01
Transport to Through Loader / Forklift to Transport Vehicle	NO	-	-	-	CP
Open Sacks	NO	-	-	-	CP
Mixing(Addition of water , Cobalt, Na2SO4 &Silinium)	NO	-	-	-	CP
Furnace (1450-1600°C)	NO	-	-	-	CP
Feeder	NO	-	-	-	CP
Forehearth	NO	-	-	-	CP
Gob Cutting	NO	-	-	-	CP
Deflector	NO	-	-	-	CP
Forming	NO	-	-	-	CP
Hot End Coating Spray	NO	-	-	-	CP
Annealing (Temp. Control)	NO	-	-	-	CP
Cold End Coating Spray	NO	-	-	-	CP
Inspection	NO	-	-	-	CP

Inverters (0.3b)	YES	YES	-	-	CCP
Packaging and Palletization	NO	-	-	-	CP
Final Product Storage	NO	-	-	-	CP
Loading and Dispatch	NO	-	-	-	CP

10. Table Monitoring system for CCP's

Step	Hazard/Cause	Preventive Measure	CL	Monitoring	Immediate Action/ Longer Term Action	Records
Inverters	Physical : Glass breakage during handling	Automatic Alarm for air pressure failure	*Min. 1 bar*	*What:* Air Pressure *How:* Pressure Gauge *Where:* On Line *When:* Daily/shifts *Who:* QA	Immediate: Resort 1 pallet during breakdown *Who:* QC *Longer:* *Alarm for air pressure* *Who:* *Q.A Manager*	Inverter Checklist Form

11. Table Monitoring system for OPRP's

Step	Hazard/Cause	Preventive Measure	Monitoring	Immediate Action/ Longer Term Action	Records
Glass Cullet Processing (Cleaning and Crushing)	P: Contamination with stones, metals or other foreign materials as result of Unclean Cullet from the supplier C: Contamination with chemical with different composition from cullet as result of Unclean Cullet from the supplier	Approved suppliers Training for staff responsible for product receiving PRP System	*What:* Glass Cullet *How:* Visual *Where:* On receipt / during processing *When:* Every batch received/2 samples every day *Who:* Batch Department	*Immediate:* Reject Cullet *Who:* *QC* *Longer:* Hold & Review suppliers *Who:* *Q. Manager*	Glass Cullet Inspection kama-\\glass\Glass-Quality\Chemical lab\chemistry work\chemical analysis result\Phase 2

12. Verification Table

Activity	Description	Frequency	Responsibility	Records
Review of CCP Monitoring	Check air pressure	Daily	Q.C. Manager	Inverters Check list form
PRP: Verification of cleaning routines	Microbiological test for TBC, and Coliform Bacteria for Product Contact Services	12 month	Q.A. Manager	Laboratory Reports
Verification of safety of Glass	Microbiological test of 2 randomly selected products for TBC, and Coliform Bacteria	12 month	Q.A. Manager	Laboratory Reports
Review of OPRP	Ensuring Magnet affectivity through calibration	12 month	Q.A. Manager	Calibration cert.
PRP: Personal Hygiene	Effective hand washing and disinfection (Coliform Bacteria test for 3 random workers of final product packaging and storage)	12 month	Q.A. Manager	Laboratory Reports
PRP: Pest Control	Review performance of the pest control company	Weekly	Food Safety Team	Verification records
PRP: Training	Review performance of Instructor and Candidates	Every course	HR Manager	Evaluation Records
Review hazards	Review customer complaints, industry trends, corrective action	Every 12 months	Food Safety Team	Internal Audit Checklist
Audit HACCP Plan	Audit the entire HACCP Plan including all forms	Annually	Food Safety Team	Internal Audit Checklist
Audit traceability	Trace one product from selected customer to raw product supplier	Annually	Q.A. Manager	Internal Audit Checklist
Review Approved Suppliers	Review status of suppliers' certification	Every 3 months	Q.A. Manager	Approved Suppliers List
Review Work Instructions		Annually	Food Safety Team	Management Meeting

13. **Forms**

Form name	code
HACCP team	**KG2.HA.FR.01**
CCP Record	KG2.HA.FR.02
Product and raw material description	**KG2.HA.FR.03**
Risk assessment	**KG2.HA.FR.04**
Monitoring &Verification	**KG2.HA.FR.05**