	UGEE CHEMICALS Warehouse SOP	**SOP** **Standard Operating Procedure**

STORAGE CONDITION MONITORING

SOP #:	Issuance Date:	As at Last Signature	
UCL/IBDWHSE/CD/Q/03.0	Revision Date:	Maximum 2 years from Effective Date	
	Effective date:	20 working days from the issuance date.	**Page 1 of 8**

PURPOSE

To outline the process of reading, tracking and reporting temperature and relative humidity data as well as management of storage areas to ensure that materials and products are stored under manufacturer recommended conditions to assure their quality and prevent storage compliance safety incidents.

SCOPE

This SOP applies to all storage areas in Ibadan plant warehouse. It applies to cold storage areas and all other materials and product storage locations.

RESPONSIBILITIES

Storage Condition Monitoring System Owner (SCM SO) is responsible to:

- document temperature and humidity information for all storage areas
- collate storage data and report OOLs when recorded.
- advise warehouse and customers on storage requirements, standards and storage areas' suitability for intended purposes.
- update, route for approval and deploy the 'WH Materials Storage limits' Database' with requirements for new materials as they come in
- drive preventive and corrective actions for opportunities identified in the system.

RPM Supply/ FP receipt technician/RPM WH leaders are responsible to:

- track cold storage areas' temperature daily between 2.00pm and 3.30pm and report OOT (<12 or >28 degrees) and OOL (<10 or >30 degrees) to the SCM SO immediately recorded
- own and follow through on actions to fix OOL temperature readings in their respective areas.

POTENTIAL RISKS

Fires may result if materials are kept under extremely high temperatures.

FIRE PROTECTION DEVICES:

- Eye Wash fountain
- Fire Extinguishers

SOP OWNER	QA APPROVAL	HS&E APPROVAL	AUTHORISATION
Kaosarat Olowookere Date: 12/07/2022	Alawode Olujide Date: 12/07/2022	Adedoyin Adebiyi Date: 12/07/2022	Owolabi Emmanuel Date: 12/07/22

- Fire Hose reel

TOOLS/EQUIPMENT/FACILITY REQUIREMENT

Manufacturer calibrated temperature and humidity loggers with accompanying software. Functional AC units connected to critical load power source or with back-up power source. Lagged - doors for cold storage areas. Normal storage areas adequately ventilated

1. 0 GENERAL

1.0.1. Storage requirement data for raw materials stored in the warehouses will be updated by warehouse QA as defined by manufacturers recommendations.

1.0.2. For packaging materials, storage requirements will be based on manufacturers recommendation.

Storage temperature requirement for all raw and packaging materials will be based on daily point readings.

1.0.4. Storage temperature requirement for all finished products will be based on daily average readings.

1.0.5. Acceptable temperature limits in the cold storage areas will be 12 to 28 degrees centigrade. 16 – 24 degrees will be the target range of temperature; 16 to 12 degrees and 24 to 28 degrees will be the reaction range.

TARGET RANGE (GREEN PORTION OF TEMPERATURE TRACKER 16-24°):

This is the required temperature range in cold storage areas based on the nature of materials stored there. Readings within this range requires no action from the SCM SO. It is the standard material cold-storage range.

REACTION RANGE (YELLOW PORTION OF TEMPERATURE TRACKER 12-16° & 24-28°):

This is the temperature range in a cold storage area within which the RPM warehouse leader or RPM supply technician and SCM SO will investigate why readings are not in the target zone. Readings within this range are still acceptable, but they are expected to awaken the area owner to the fact that there may already be an issue with the cooling/ventilation system or access control. It is acceptable to continue to store materials in the cold-room within this range.

DISASTER RANGE (RED PORTION OF TEMPERATURE TRACKER):

This is the temperature range in a cold storage area within which materials should not be stored. It is defined as <13 degrees and >28 degrees.

PROCEDURE

2.0 MEASURING INSTRUMENT CALIBRATION

2.0.1. Only manufacturer-caliberated measuring devices (temperature and humidity loggers) will be used for measurements for this procedure. This is to guarantee accuracy of data.

3.0 DATA GATHERING

3.0.1. The SCM SO will configure the data loggers to take and record readings based on needed frequency (daily, hourly, quarter-hourly) and take them into the various storage areas to position.

3.0.2. The SCM SO will, at the end of every month, collect data loggers from all storage areas, download temperature & humidity data from them and compute storage condition compliance and shares results with QA leader and warehouse OM.

3.0.3. For cold storage areas, temperature readings will, in addition to the monthly tracking, be taken and recorded daily on the cold storage area temperature monitoring chart. The RPM warehouse leader/RPM supply technician will write actual temperature tracked and plot same on the chart. This will be done between 2.00pm and 3.30pm daily. This is to assure the quality of the materials in these areas due to their high sensitivity to temperature changes.

4.0 MEASURING EQUIPMENT PLACEMENT IN STORAGE AREAS

4.0.1. The data loggers will be hung in the central part of the storage area to ensure getting reliable data. The data loggers will be hung freely on racks or building joists.

4.0.2. The SCM SO will ensure that each storage area has at least one data logger at every point in time.

5.0 OUT OF TARGET (OOT) AND OUT-OF-LIMIT (OOL) SCENARIO MANAGEMENT

5.0.1. If an out of target range temperature is read in one day in the cold storage area (<16 degrees or >24 degrees), the warehouse leader or the RPM technician will immediately inform the SCM SO for investigation, stating possible causes for the OOL readings.

5.0.2. If the OOL temperature read is between 12 to 16 or 24 to 28 degrees, the SCM SO will investigate the outage immediately with the RPM warehouse leader/RPM supply technician, develop and follow-through on actions to fix the outage within 72 hours of discovery.

5.0.3. If the temperature reading recorded in the cold storage area falls below 12 degrees or exceeds 28 degrees centigrade for **one day**, follow 5.0.2 above.

5.0.4. If the temperature reading recorded in the cold storage area falls below 12 degrees or exceeds 28 degrees centigrade for **3 consecutive days**, the SCM SO will notify the warehouse manager of the development and put-on-hold the supply of materials in the affected cold storage area pending re-test/re-validation/next step advice from clients QA contacts and QC if need be. The SCM SO will document an investigation for this to prevent re-occurrence.

5.0.5. If the temperature readings in the normal storage areas exceed the limits defined in the WH Materials Storage limits Database', the SCM will notify the warehouse manager of the development and put-on-hold the supply of materials in the affected cold storage area pending re-test/re-validation/next step advice from Client QA contacts and QC.

REASON(S) FOR UPDATE

Version 0: NEW SOP

DEFINITIONS

QA – Quality Assurance

QC—Quality Control

OOL – Out of Limit

SCM SO – Storage Condition Monitoring System Owner

End Of Procedure

SOP RELATED ATTACHMENTS

Attachment 1 – Qualification Sheet

Attachment 2 – Model Answers

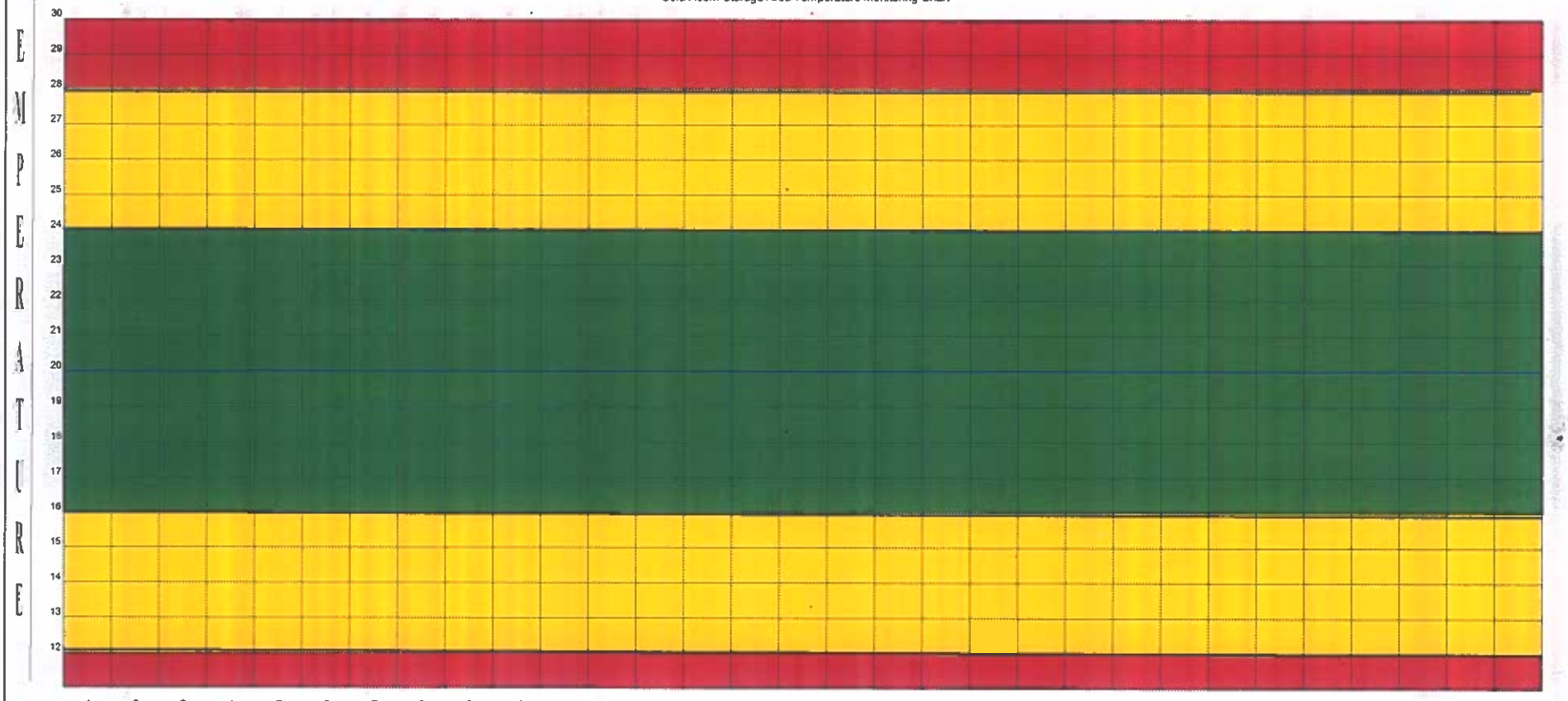
Attachment 3 – Storage area daily temperature tracking sheet

Attachment 4 – Normal Storage Area Temperature Monitoring chart

ATTACHMENT 3

Location:
Month:

Cold Room Storage Area Temperature Monitoring Chart



Colour code	Temperature range	Range Description	What should I do?
RED	Below 12 or above 28 degrees	Disaster range	Inform system owner immediately
GREEN	16 to 24 degrees	Target range	Nothing
YELLOW	16 to 12 and 24 to 28 degrees	Reaction range	Inform system owner immediately

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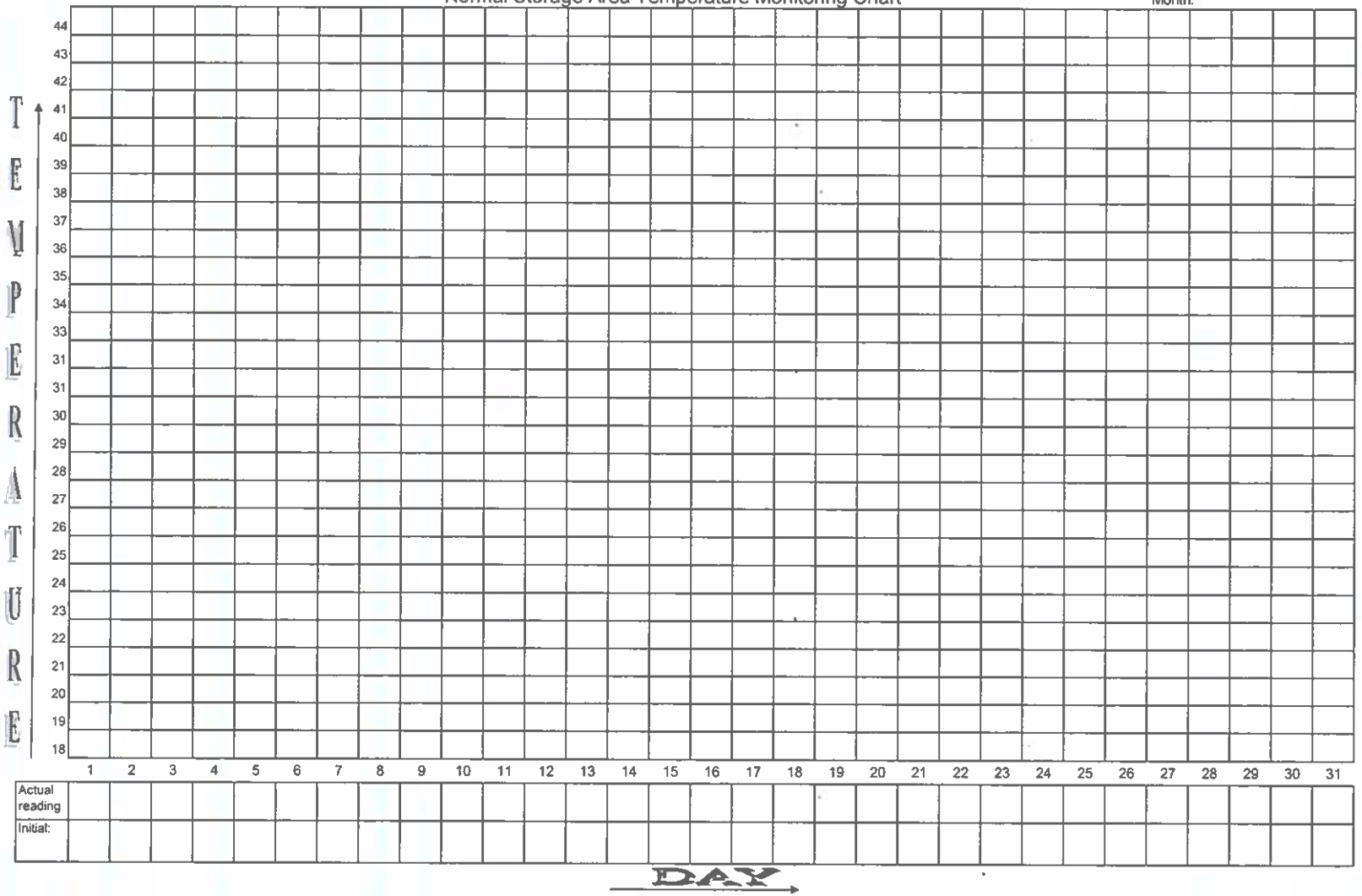
ATTACHMENT 4

Normal Storage Area Temperature Monitoring Chart

Location:

Month:



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