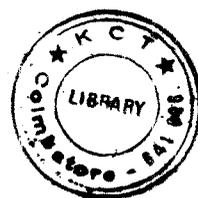


# **INVENTORY MANAGEMENT AT HINDUSTAN PHOTOFILMS MANUFACTURING COMPANY LIMITED**

Thesis submitted in partial fulfilment of the requirements for the award of the degree of  
**MASTER OF ENGINEERING IN MECHANICAL ENGINEERING  
( INDUSTRIAL ENGINEERING )**  
of BHARATHIAR UNIVERSITY

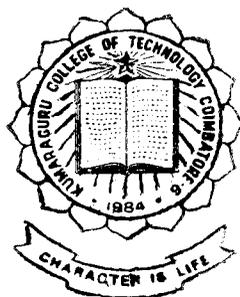


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INDUSTAN PHOTO FILMS  
MANUFACTURING CO.LTD.

(एक उद्यम)  
(A UNIT OF INDIA ENTERPRISE)

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## C E R T I F I C A T E

This is to certify that Mr. H. GANESAN, Final year M.E., Mechanical Engineering (Industrial Engineering), Kumaraguru College of Technology, Coimbatore has done a Thesis Work on "Inventory Management at Hindustan Photo Films Mfg. Company Ltd." in the Mechanical Maintenance Department of our organisation from; 18.5.1999 to 08.12.99.

During the above period his character and conduct were good.

  
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**H. GANESAN**

## SYNOPSIS

This thesis, aimed at Raw materials and consumables management at Hindustan Photo Films Mfg. Ltd., will be a stepping stone for overall effective utilisation of funds.

The major objective of this thesis is to study the existing raw materials, consumables, Inventory system and to suggest control policy for the same with the view to reduce the total inventory value and to obtain the optimum inventory level.

The data for this thesis has been collected by extensive interviews, discussions with officials, concerned and also from the secondary data found in the files and other records released to the inventory maintained.

This study is to aid the analysis of the raw materials and consumables inventory through ABC Classification and by providing stocking policies.

The findings have been arrived after a through analysis of the secondary data and a clear discussion with the officials, executives and other related staff members of the department concerned. New economic order quantities, optimum number of orders, safety stock, reorder levels and maximum stocks are suggested.

The comparison of existing and proposed inventory value on the inventory systems shows a savings in the inventory value.

# CONTENTS

CERTIFICATE	(i)
ACKNOWLEDGEMENT	(ii)
SYNOPSIS	(iii)
Chapter No.	Page No.
1. Introduction	
1.1 Profile of the organisation	1
1.2 A brief outline of the process	2
1.3 Inventory management at the organisation	4
1.4 Function of purchasing	9
1.5 Store keeping at the organisation	12
2. Objective and problem identification	18
2.1 Literature survey	19
3. Methodology	
3.1 Steps Involved	30
3.2 Inventory model	30
3.3 The economic order quantity	31
3.4 Lead time consumption	31
3.5 Safety stock & Reorder Level	32
4. Problem solving	
4.1 EOQ and maximum stock level calculations	37
5. Results and discussions	41

Bibliography

Appendix

Table I	ABC analysis
Table II	Average stock level
Table III	Existing and proposed stock level
Table IV	EOQ, LTC, reorder level, maximum stock.
Table V	Program and results for ABC analysis

# **CHAPTER 1**

## **INTRODUCTION**

## 1.1. Profile of the organisation

After Independence, the Government of India, having realised the importance of photographic material, especially motion pictures film and medical X-ray film for hospitals, thought of developing an Indigenous Photographic Industry. After a lot of deliberations a collaboration was struck with a French firm Es Bauchet et cie, who were later on taken over by the 3M company of USA.

The Hindustan photofilms factory was founded around October 1961 on a beautiful hill idyllic outskirts of Ootacamund. The regular production started in January 1967.

Initially the factory was confining its production to only cine positive films, photographic paper and after the taking over of the Ferrania, Italy, by the 3M company of USA, Some new products like, medical X-ray film, Roll film, Industrial X-ray film, are included in the product line of HPF. In due course, conversion of colour film imported Jumbos also is a main activity of the company. Recently, the company has produced medical X-ray film on Polyester base for export markets of Eastern Europe. It is also note worthy that there is no factory of this size and capacity in the whole of Asia, except perhaps in Japan. The organisation achieved ISO 9002 Certificate.

## 1.2 A brief outline of the process:

The Hindustan photo films has an integrated manufacturing line and even makes some of the very important raw materials required in very pure grades. There are essentially 5 production units viz.,

1. Film base casting
2. Emulsion preparation
3. Coating
4. Conversion
5. Silver Nitrate

Apart from the above, there is a small organic synthesis unit to manufacture sophisticated organic chemicals. There are recovery units for silver, film scrap and solvents.

In the film base, raw photographic film is cast using cellulose triacetate as a major raw materials. The various aspects of the film like its surface quality, thickness, density in case of colour base are maintained at the required levels under strict quality control. The raw base is subsequently coated with a thin layer of gelatin at the subtracting section and then it is ready for coating. Recently a large quantity of the base in various sizes, thickness etc., is being produced for direct sale.

In the emulsion section, the photo-sensitive material required for the various products is produced in darkness with gelatins. Silver nitrate and various halides as the major raw materials. This emulsion is melted and supplied to coating after adding various chemicals for facilitating coating.

In the coating department, the photo-sensitive emulsion is applied to the surface of base film or paper as the case may be in darkness. The coated film is set dried and sent to storage.

In the conversion department, the various finishing operations are carried out with strict inspection to ascertain that there are no defects and the quality conforms to the various specification laid down by quality control.

The cine films are slit into small rolls which are wound on plastic cores. These are then perforated and packed after covering in black paper. The X ray and paper products are simultaneously slit and cross cut to predetermined sizes. Pouched and cartoned. The roll film is slit cut into strips. These strips are packed with bicolour paper spooled either automatically or manually and packed with pouches and cartons. All the finished products are marked for identity with batch numbers and despatched to the finished product stores.

### 1.3 **Inventory management at the organisation:**

The first and foremost responsibility of an Industrial undertaking is to make profits – profits that would get a reasonable return on the invested capital. Besides this profit making responsibility, industry has other responsibilities like sharing returns, paying taxes servicing customers and enlarged only when the products have a good demand and move fast. In order to maintain a favourable situation all care should be taken to maintain high productivity and bring down the manufacturing costs to the minimum level possible. This leads to control of various expenses that take place during the manufacturing of the product.

#### 1.3.1 **Definition of inventory:**

Our subject is the body of mathematical and quantitative methods known as inventory theory.

On first consideration the words, “Inventory Theory” seems to be virtually self explanatory and a definition would appear to be obvious ‘Theory’ hardly requires elucidation and ‘Inventory’ immediately brings to mind a stock of some kind of physical commodity. The problem of the manufacturer can be taken as a paradigm. As has stock is depleted he will order or produce some quantity of the item so that he can continue to meet the demand for it. Such being the nature of an

inventory it follows that inventory theory must deal with the logic which does or should undertake this procedure. A definition then might be inventory theory deals with the determination of optimal procedures for procuring stocks of materials to meet future demand. Recollection of enormous variety of commodities for which some one must maintain stocks suggest that there would be a considerable number of special cases within inventory theory so defined but the definitions appears to be broad to encompass all of them.

### **Importance and need for inventory control :**

Management have no control over the external factors like prices of materials purchased transport distribution costs etc. Besides they have very little scope to improve on the fixed assets viz., land, buildings etc. It is to be realised that most of our Indian, Industries block their major capital in the working capital more than 90% of the working is sent by way of stocking materials of different nature and for many reasons beyond imagination. This area of investing in inventories is under the complete control of the management where they can plan and implement control measures for better ability of the source capital source and increasing productivity.

In Hindustan photo Film Mfg. Co.Ltd., the material cost is about 80% of the manufacturing cost. So maximum care be executed on

various aspects of materials. Everyone concerned in the industry should be cost conscious time conscious quality conscious and human conscious to perform his duty and attain the goals of the organisation.

Inventory or stock of any materials in any form in any part of the industry is another form of wealth or money most of the personnel should realize that materials lying around is nothing but money kept ideal without serving any purpose. If the same equivalent amount of money had been invested in a bank, it would fetch at least 14% return. Not only the company loses this 14% on its investment, it prevents other activities which would otherwise create profits because of the money blocked in these particular items.

Now a days inventory control is recognised as one of the cost for reaching of all business activities. It is the focal point of many, seemingly conflicting interests and considerations both short and long range.

Its planning and execution involves participation of most of the functional areas of a business such as marketing, production, purchasing, finance and accounts. The ultimate result achieved has a major bearing on the company's final strength and competitive

situation as it directly affects quality of service to customers production costs, earnings and liquidity and soundness of the working capital.

The importance of the inventory control in modern business operations may be highlighted as follows. In big mfg. Organisations like HPF, the management of finished goods inventories is the heart of the day to day of co-ordinating marketing and production.

Inventories have often been termed the graveyard of business. If the company is over stocking it is looking by way of additional inventory carrying cost. If its tries to reduce the investment on inventory by adopting hand to mouth policy it may end in stock at and consequent production hold ups.

By proper inventory control, procurement function can be made more productivity. Quality and quantity including value of stores held should be capable of being ascertained without references to the physical locations and measures.

Guidelines for material procurement can be indicated so that the right material could be procured at the right time to feed the machines. The use of materials can be regulated to obviate undue wastes and losses.

### 1.3.2 Scope of inventory control at organisations :-

The scope of inventory control would include the different aspects of materials as follows.

#### Raw materials

There are more than 150 raw materials in the use in the production sections viz., Base casting Emulsion, filter nitrate and casting with the turnover of HPF having gone up from 8 crores in 1998-99 (estimate).

### 1.3.4 Benefits of proper Inventory management:-

1. Ensure an adequate reply of materials, minimizes stock-out and shortages and avoids costly interruptions in operations.
2. Keeps down investment in inventories, inventory carrying cost and obsolescence losses to the minimum.
3. Facilitates purchasing economics through the measurement of requirement on the basis of recorded experience.
4. Eliminates duplication in ordering or in replenishing stocks by centralizing the source from which purchase requisitions emanate.
5. Permits a better utilisation of available stocks by facilitating inter-department transfer within the company.
6. Provides a check against the loss of materials through

7. Facilitates cost accounting activities by providing a means for allocating materials costs to various production departments like Base casting, Emulsion silver nitrate and conversion.

#### 1.4 **Functions of purchasing :**

Purchase department functions start with the receipt of chemicals. Packaging items and all Engineering items including machinery equipment's and spare parts.

Production planning dept. shall work out the materials requirement based on the annual production planning. Annual production is envied on the market off take for each product ie. Core – positive film. Medical X ray film, Roll film, industrial X ray etc.

##### 1.4.1 **Approved list of suppliers :**

- a. Communication received from new suppliers offering supply of particular items.
- b. Information gathered through market intelligence
- c. Information regarding new suppliers given in Trade Directors.

Approved list of suppliers prepared on the above lines should have finance approval every year before put into operation.



#### 1.4.2 Purchase Models :

Depending on the particular circumstances involved one of the following models of purchase is to follows:

1. Though tenders received from the approved list of suppliers
2. Advertised tender.
3. Proprietary items on septic 'brand' goods on single tender basis.
4. Placing indents on DGS & D rate contract.
5. Orders against running contracts concluded by the company
6. Purchase on the basis of repeat orders.
7. Purchase based on the negotiates with the regular parties
8. Emergent purchase.
9. Cash purchase (purchase of items for value less than Rs. 500/- of standard operating manual. In this case the prescribed tender enquiry form is to used

##### 1.4.2.1 Release of purchase orders and follow up :-

The original purchase order along with the acknowledgement copy sent to the supplier who will return the second copy. (In white colour) duly acknowledge. Copies of purchase order are also sent to the indenting department, finance and stores department.

In case of imported materials. Copies of purchase order are forwarded to the central ministry of shipping and transport for arranging

In every purchase order when released for effecting supply there should be a mention about the 'mode of transport' of ordered goods without fail. Mode of transport can be by roads, railways, ship, Air, post parcel..

While selecting the mode of transport, the following points are to be considered.

- a. Urgency of the materials.
- b. Quickest and reliable transport
- c. Economy air freight rates
- d. Nature of materials ie hardness chemicals / hazardness / explosives.
- e. Safest delivery of materials without damage / pilferages.

Mode of packing should be very clearly indicated in the purchase orders to ensure transportation of materials without damages, loss enroute.

#### **1.4.3 Selecting right sources of supply :-**

1. imported sources
2. indigenous sources
3. own manufacture for which raw materials would either be imported or procured locally.

The following factors are to be considered in selecting the supplier.

1. Reliability of supply
2. Reliable quality
3. Size of supplier
4. Financial stability
5. R & D service facility
6. Labour availability
7. Geographical location
8. Expansion capacity

After the competent supplier is selected the purchasing division has to still motivate, assist & evaluate the supplier.

### **1.5 Storekeeping at the organisation ;**

Manager planning and material control is in overall charge of all stores, Except medical stores which is under the control of chief medical officer (CMO). Immediate control of the stores department is the responsibility of the Deputy Manager – material control (DMMC) who reports to the manager, planning and material control. The DMMC is assisted by Asst. manager (stores) (AMS) in his duties.

#### **1.5.1. Stores and its categories :-**

1.5.1.1 The following are the categories into which the stores are classified.

### **Raw materials stores :**

Film Base

Emulsion

Coating

Filter narrate

### **Packing Material stores:**

Conversion

#### **1.5.2. Receiving :**

All incoming materials are initially received in the central receiving section CRS, to be passed on later to the respective holding stores.

#### **1.5.3 Purchase order file & Register:**

The purchase order copies received from the purchasing department are being filed in the central receiving section (CRS), store – wise. A register of purchase order is being maintained. All purchase orders / contracts on foreign firms are being separately maintained.

Whenever any materials is received in the CRS. The connected purchase order is linked before actually taking delivery of the material and giving acknowledgement. The material is being checked

physically for an apparent damage or discrepancy. In case where no discrepancy or damage is found the acknowledgement is given with remark, "Received subject to check / inspection" as all goods ordered are subject to consignee's inspection before accepting the same at site. The above Clearance is given by the storekeeper CRS or his immediate assistant who has been duly authorised by the DMMC or ASTO.

#### **Daily Arrival Report :**

To keep the indentors informed of the arrival position the storekeeper CRS ensures to send at the end of each day a report Indicating the details of daily arrival with copy to purchase department.

#### **1.5.4. SRIN :**

The form of stores received and inspection note annexure is providing in 5 copies for the consignment received and distributed as under.

- |                                      |   |   |
|--------------------------------------|---|---|
| 1 <sup>st</sup> copy (white) to      | - | Accounts Branch                         |
| 2 <sup>nd</sup> copy (pink) to       | - | Store keeper                            |
| 3 <sup>rd</sup> copy (yellow) to     | - | Indenting officer through stores office |
| 4 <sup>th</sup> copy (light blue) to | - | CRS                                     |
| 5 <sup>th</sup> copy (light green)   | - | Purchase Department.                    |

### **1.5.5. Responsibility of the CRS :-**

The central receiving section (CRS) is having the following functions.

- a. Maintenance of purchase orders files & registers
- b. Maintenance of parcel waybill / G.C notes register.
- c. Maintenance of registers for door delivery post parcel and local clearance.
- d. Physical receiving, checking and arranging of inspection of stores.
- e. Documentation including preparation of SRIN.
- f. Handling over of the accepted stores items to the respective stores under acknowledgement.
- g. Accounting and disposal of rejected items.
- h. Initiation of claims viz. Insurance claims / claims on carriers / claims on suppliers, as the case may be.
- i. Other items of work connected with receipts, inspection and acceptance etc. of all incoming materials.

### **1.5.6 Holding Stores ;**

Receipt, storage, custody and issue of stores constitute the major functions of Storekeeping.

Materials intended for storage in the holding stores are received from the CRS, along with the SRIN. The respective storekeepers ensure.

- a. That the correct material description and the code Nos. are entered in the SRIN.
- b. That the materials have been duly inspected by the authorised officer for such inspection and accepted to be taken into stock
- c. That the quantity indicated in the SRIN talkies with the quantity received in the stores, including the quantity given, if any, for laboratory test / test by the indenting officer.

#### **1.5.7 Issues:**

Another major function of the holding stores is the issue of materials to the indenting departments on production of authorised documents which are mainly

- a. Materials requisitions
- b. Stock Transfers

Materials are issued from the stores only against stores requisitions. The indenting officer shall ensure that a copy of each of the materials requisition sent for drawl of stores is retained by him in a separate file, which can be cross-checked with the entries in the copy of the stores.

- The requisition is accepted after verification and the storekeeper.
- Ascertains the availability of stock from the bin and notes the location of the requisition

- Picks up and arranges to bring out the required quantity from the bin or storage area bearing in mind the principle of FIFO.
- Enters the quantity issued in figures and words and signs the requisitions in the appropriate columns.
- Obtains signature of the person taking delivery of the material in the material requisition in the specified column for the purpose, indicating his code no. also.

The material requisitions are prepared in quadruplicate and distributed as follows.

- |   |               |   |                       |
|---|---------------|---|-----------------------|
| * | Original      | - | costing               |
| * | Duplicate     | - | Concerned Storekeeper |
| * | Triplicate    | - | store office          |
| * | Quadruplicate | - | indenture             |

In the case materials requisitioned being not available in stock, a rubber stamp 'Not Available' should be put on all the copies of requisitions in all such cases, the storekeeper concerned shall ensure that a copy of the requisition is sent to the DMMC, AMS, ASTO for further necessary action.

The study of the materials management in Hindustan Photo Films is taken up with an objective of studying procedures being adopted at present and to gauge the effectiveness of materials management function i.e., current materials management system. It is intended to study and analyse the existing data and arrive at optimum Inventory levels.

Finding the ABC analysis and to study the EOQ, Reorder Level, Safety stock, Lead time consumption and maximum stock.

In the present economic scenario and competition, the management is concentrating on cost reduction and this area is selected as one of the major contributors for cost reduction.

### **Problem identification :**

The materials management department is expected to provide the operational convenience with a minimum possible investment in inventories. In this organisation the inventory management needed to maintain minimum inventory cost. There is no exact ABC classifications, economic order quantity, lead time consumption, maximum stock level and reorder quantity in the raw materials. This caused to out of stock and also overstock sometimes. Therefore, the problem has been identified and the inventory control management is carried out.

# **CHAPTER 2**

## **OBJECTIVES AND PROBLEM IDENTIFICATION**

## **2.1 Literature survey:**

### **ABC analysis:**

ABC analysis is a way of classifying the materials into High, medium and low value items. The value of the items are here determined by price per unit multiplied by its annual usage in units. ABC analysis popularly known as Always Better control or the alphabetical approach. 'A' items are vital few. 'C' items are trivial many. In between 'A' and 'C' lies, 'B', medium value items [5].

### **Procedure for ABC analysis:**

- a) Tabulate and record annual requirement and prices of each item and extend its total value in terms of money by multiplying the two factors:
- b) Re arrange the items in descending order of their individual total value.
- c) Arrive at cumulative total and cumulative percentage value.
- d) Determine percentage levels.

75% of total value of Inventory have been taken as A, next 15% (ie. go in cumulative percentage) as B and the last 10% as C. There are 5 items in A and 15 items in B.

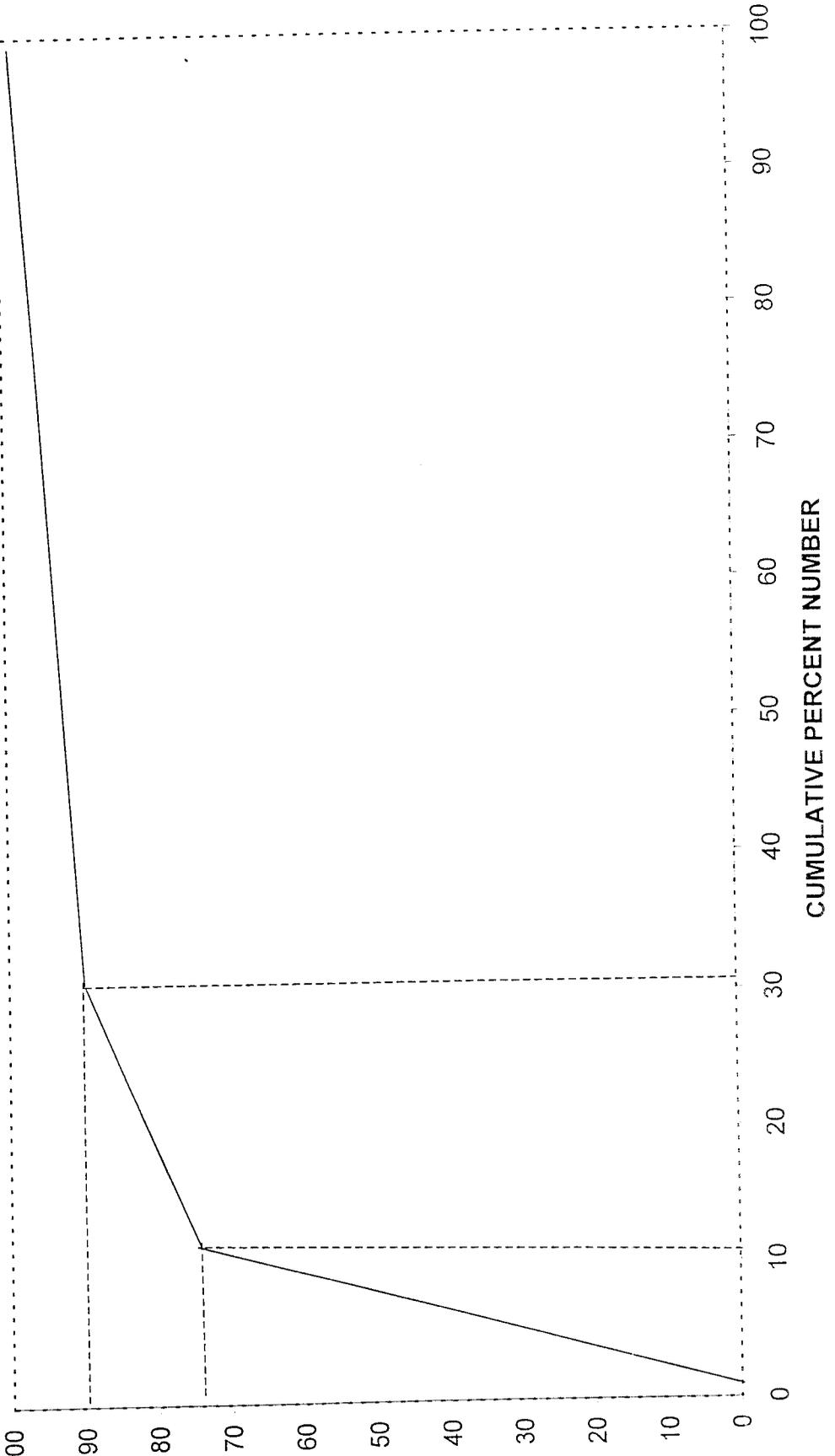
'A' items are the more important ones. It consists of only (5) items locking about 75% of the total inventory value. 'B' being a

considerable number of items (15) locking up a sizeable amount of money (20% of total inventory value), while 'C' items are the rest, quite a large number indeed (159) but involving quite a small percentage of money value (5% of total inventory value).

**Special advantages:**

1. It puts first in terms of money value of stocked items and helps to get best control relating to lock up capital for the least amount of controlling.
2. It helps management to concentrate in areas where it is mostly needed for optimizing the capital locked up.
3. In respect of the 'C' items, ie. the less expensive ones, paper control may be virtually eliminated as cost of exercising control would outweigh resultant savings. On the contrary, less inventory of these items may even endanger production hold-ups.

# ABC ANALYSIS



## **The structure of inventory analysis:**

The analysis of Inventory problems is fundamentally based on a very simple, common sensical observation. This is that in any genuine inventory problem whatsoever there must be opposing costs. By this we mean simply that there must be cost associated with doing "too much" and there must be a cost associated with doing "too-little". Sometimes there are several such costs but there must always be atleast one in each direction.

The resolution of any specific inventory problem requires the answers to two questions. First when or how often should the commodity be ordered? Second, how much of the commodity should be ordered on any particular order. Not every inventory problem demands an answer to both these questions. For example in a one shot inventory decision we know, by definition, that there will only be one order. However, this general case will require the answers to both questions.

Furthermore, when these questions are answered, the Inventory problem is solved. The Inventory decision problem consists precisely, of determining these two answers. Let us analyse the two questions in terms of opposing costs.

How often should the commodity be ordered? The precise

things about the frequency of order. First, there must be a cost associated with ordering too frequently. If this were not the case then the commodity would be ordered with the maximum possible frequency. Now, as a matter of fact this may well be the optimal ordering policy for some commodities but this is not the point of issue. If there were no cost associated with ordering too frequently then there would simply be no problem and no analysis would be required. It is precisely the existence of such a cost, which create the problem. Second, there must be a cost associated with not ordering frequently enough. If there were not such a cost the commodity would never be ordered at all or alternately one order might be placed for a gigantic amount of the commodity in question. If either one of these opposing costs were non existent there would be no inventory problem with regard to ordering frequency and the optimal policy would be to go to one of the two indicated extreme solutions.

How much of the commodity should be ordered? Once again we can be sure that our two opposing costs must exist. If there were no cost associated with ordering too much then some enormous quantity would automatically be ordered. Correspondingly, if there were no cost associated with ordering too little then no stock would be kept in inventory. If these costs did not exist there would simply be no inventory problem in terms of the amount of the commodity to be ordered. In every inventory problem there are such opposing costs

and the first step of the analysis must be to determine what the costs are and then, if possible to measure them.

### **The relevant costs:**

The first major class of costs is the procurement cost, i.e., the ordering cost. The ordering cost includes all those cost components which result from the processing of an order. In order to send out an order it is necessary to review the given item and determine how much must be ordered. It must be remembered that costs in the accounting sense are not always we need for the analysis of a decision problem. This same question arises for all the costs which we will need to consider. So we may as well take a paragraph to indicate the nature of the difficulty involved [7].

The difficulty can be formulated in two essentially equivalent ways. The first way is based on the common distinction between fixed and variable costs. The economic questions revolving around this distinction are amply illustrated by John Maurice Clark's classic work 'Studies in the Economics of Overhead Costs'.

Similar problems arise in the analysis of decisions. We can offer a completely satisfactory definition of fixed costs in terms of any decision problem. "Those and only those, costs which do not vary for any available course of action in any specific decision problem are

fixed costs for that decision problem. Such fixed costs are sunk costs for the decision problem in question and can be ignored". The difficulty arises, then, because accounting procedures are constructed with the intention, so to speak, of providing a kind of average fixed costs for a whole array of managerial decisions. For any specific decision the accounting fixed costs may not be at all correct.

For example, in this company, if the total number of orders can be accomplished by reducing the number of clerks in the purchase department, the company cannot do it all of a sudden. The cost of their salaries is fixed and sunk, for the inventory decision problem. Similarly, since the stores space cannot be utilised for some other purpose, that overhead cost is fixed and sunk for the inventory decision problem.

### **Ordering costs:**

The relevant ordering costs for this company are as follows:

Postage

Telephone

Telegram and Telex

Overtime payment

Salary and

Some partition of printing and stationery.

The ordering cost has been compiled taking into account the above mentioned factors.

Since separate accounts for Purchase Department were not maintained 60% of postage, 60% telephone bill, 30% telegram and telex charges and 5% of printing and stationery have been allotted for purchase department for the computation of ordering cost.

The items with which we are concerned viz., indigenous raw materials and packaging supplies form a major portion of purchase department's dealing we have allotted 50% of Purchase department's variable costs for these two items.

### **Inventory carrying costs:**

The second class of costs we will call the Inventory carrying costs. This includes a number of component costs, not all of which will necessarily be involved in any specific inventory problem.

### **The cost of money tied up in the inventory:**

The amount of money invested in the inventory could be utilised elsewhere to earn some kind of return. Since it is tied up in inventory it is not available and this fact requires that a cost assigned to reflect lost earning power. This is what is known opportunity cost of capital.

loan, the interest rate of short term loans 14.5% has been taken to compute this cost.

**Storage cost:**

Since the storage space cannot be utilised alternatively, the storage cost is not relevant for our inventory problem.

**Deterioration costs:**

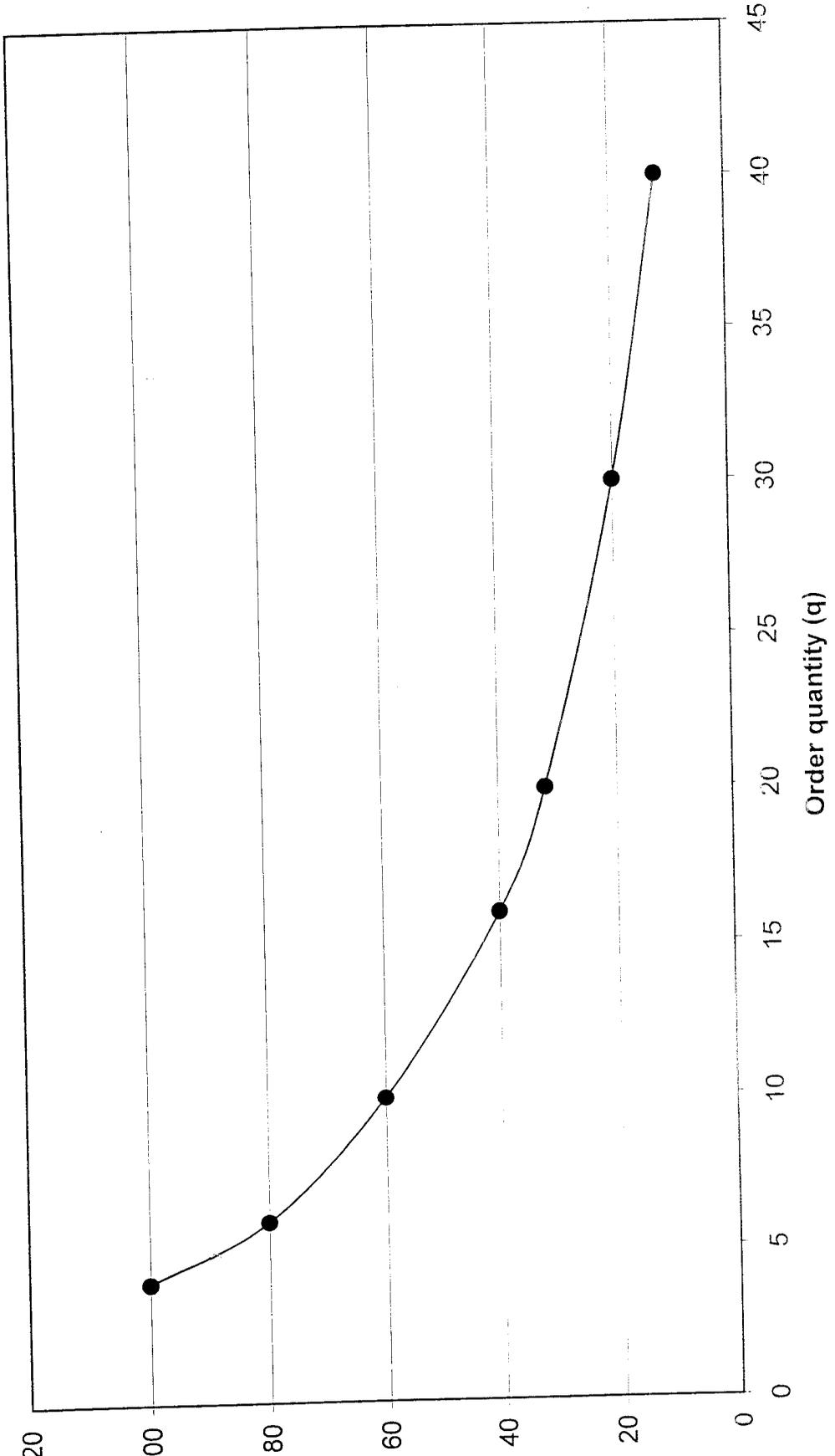
Many chemicals deteriorate in value during storage, since they have shelf-life. This can result from actual deterioration, obsolescence. This loss in value, then, represents a cost which must be assigned to carrying inventory.

**Insurance costs:**

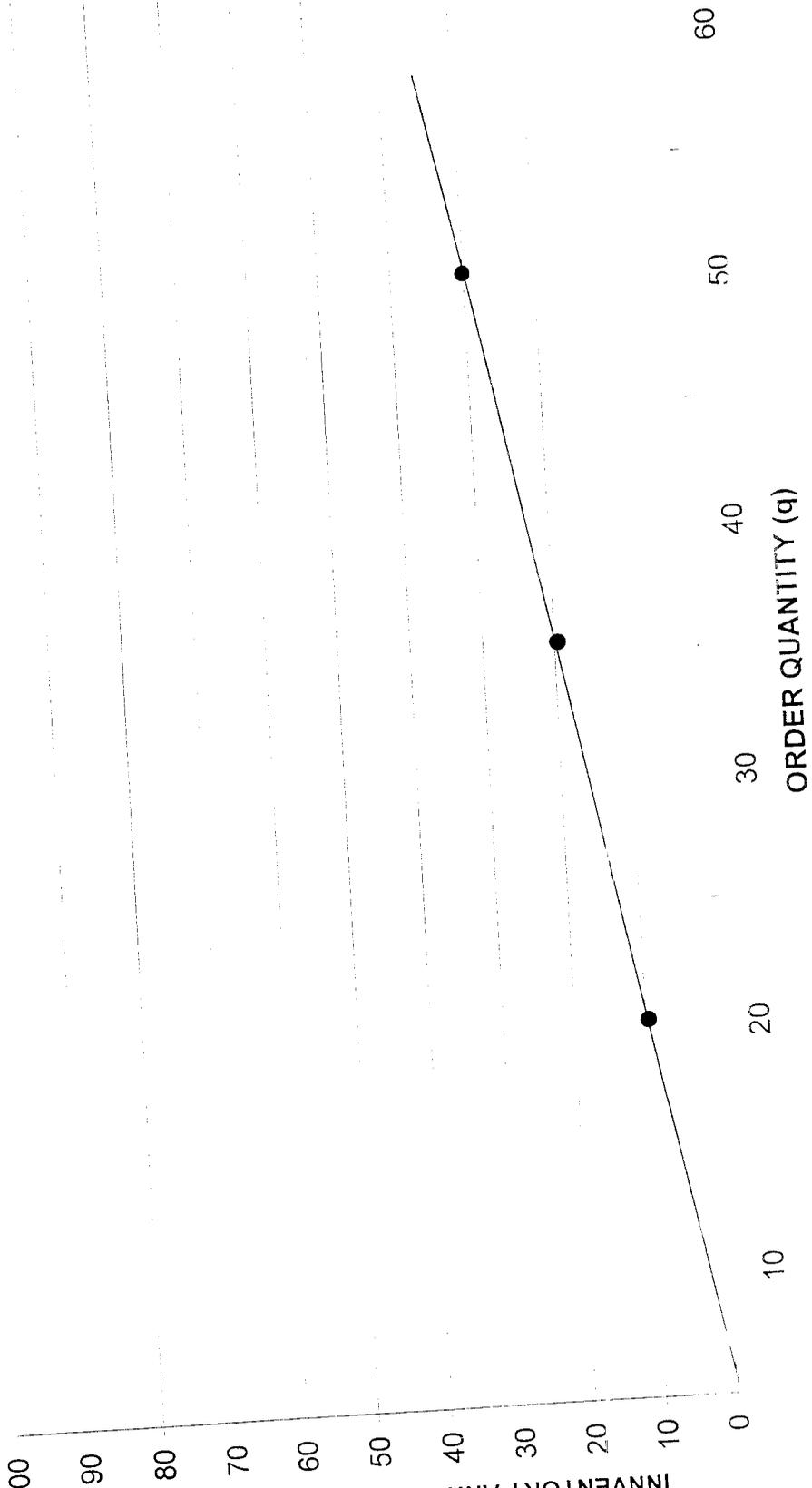
Since many inventories require insurance it is necessary to include this cost in the cost of carrying inventory.

Apart from these costs, other variable costs like printing and stationery, postage, telegram and telex, telephone and overtime payment, have been taken into account 30% of printing and stationery, 10% of postage, 10% of telegram and telex charges and 10% of telephone bill have been taken into the computation of inventory carrying cost.

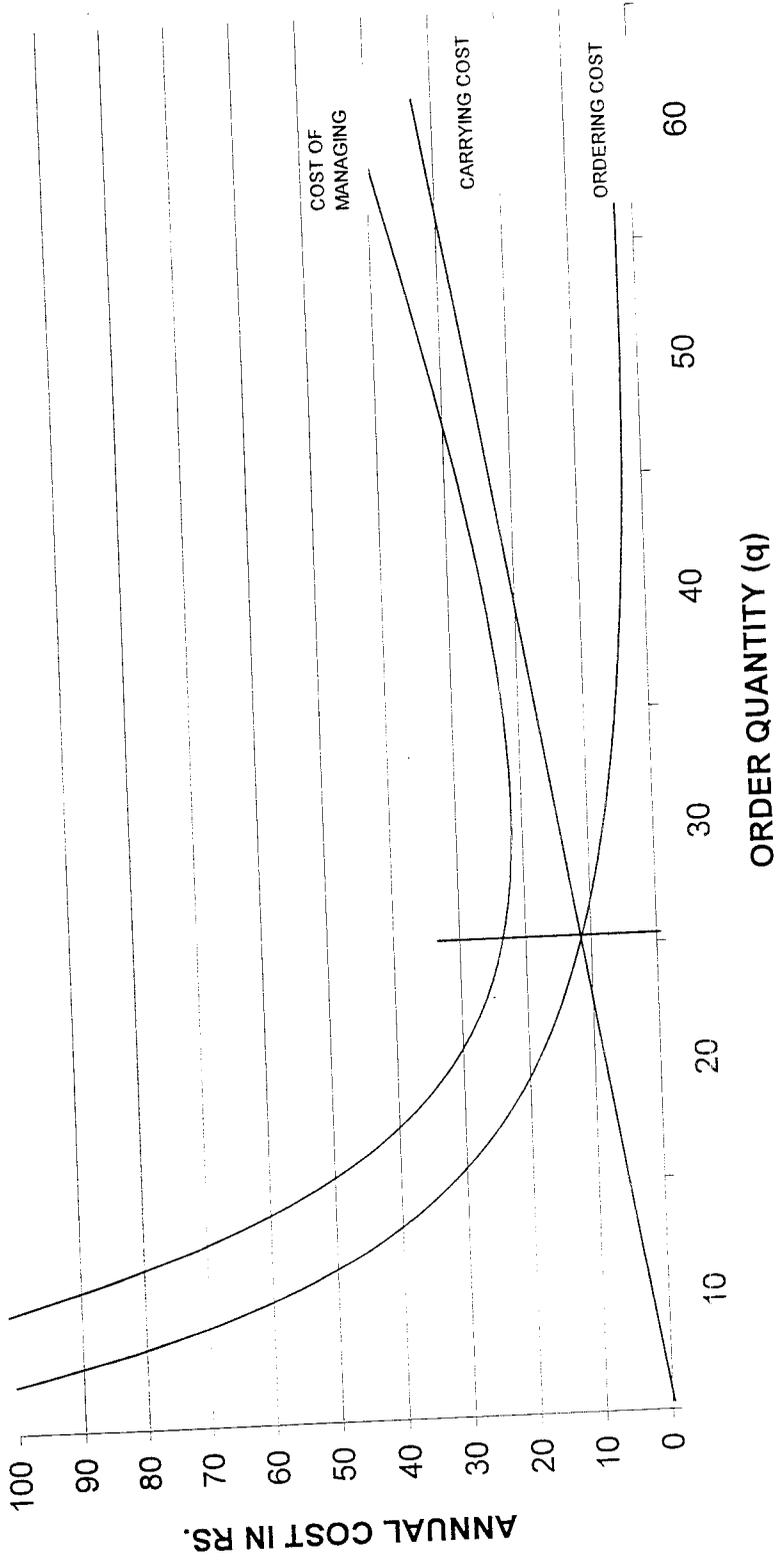
Variation of annual ordering cost with order quantity



# VARIATION OF TOTAL ANNUAL COST WITH ORDER QUANTITY



# VARIATION OF TOTAL ANNUAL COST OF MANAGING INVENTORY WITH ORDER QUANTITY



# **CHAPTER 3**

## **METHODOLOGY**

### **3.1. Steps involved:**

1. The study has been carried out at Hindustan Photo Films Manufacturing Company Limited.
2. Obtained the list of raw materials that are being consumed for a period of 12 months.
3. Calculated the Existing Inventory Value.
4. Calculated the cumulative usage of raw materials for the period of 12 months and conducted ABC analysis.
5. Categorized the raw materials into A,B & C items
6. The maximum and minimum stock levels of the raw materials are computed.
7. The ordering cost per order and inventory carrying costs are calculates.
8. The Economic ordering Quantity, Reorder level, Safely stock and lead time consumptions are calculated.
9. After carrying out the analysis as mentioned above, suitable operating stock level have been suggested.
10. The total savings for the organisation have been calculated from the results of the above steps.

### **3.2. Inventory model:**

The logical starting point for a discussion of scientific inventory management is a basic inventory model which, though quite simple,

has proved widely useful. The basic model is the 'fixed order quantity system' frequently referred to as 'Wilson Formulation'. In this system, the inventory re-order quantity is fixed and a re-order is placed for this quantity whenever the inventory on hand drops to a particular level, referred to as the re-order level.

### 3.3 The economic order quantity:

The fixed order quantity is based on selecting that order quantity which will minimize the total variable costs of managing inventory. In determining this, "economic order quantity", the model assumes that the cost of managing inventory is made up solely of two parts. Ordering cost and carrying cost.

$$EOQ = \frac{\sqrt{2AS}}{CI}$$

A = Annual consumption in units

S = Ordering cost

C = Carrying cost

I = Unit price

### 3.4. Lead time consumption:

#### Lead time:

The lead time is defined as the interval between the placing of an order and the receipt of material by the user department. Lead time

is of fundamental importance in determining inventory levels. The level of inventory of an item depends upon the length of its lead time. The longer the lead time, the higher the average inventory. Lead time usually, has two components: administrative lead time, from initiation of procurement action until the placing of an order, and delivery lead time, from placing of an order until the delivery of the ordered material. Here we are also taking testing time, since, there are stringent quality and specification standard laid out for his sophisticated process. Apart from the regular, analytical tests normally carried out, there is what is known as photo chemical test which is carried out to ascertain that by the use of the material involved, there would not be any damage to the product. Since annual requirement for all materials are given to the Purchase Department sufficiently earlier, administrative lead time is not taken into account for the total lead time computation.

### **Lead time consumption:**

The lead time consumption is computed by the formulae:

$$LTC = \bar{S}d L$$

where,

$\bar{S}d$  = Average daily usage

L = Lead time in days.

### **3.5. Safety stock & Reorder level :**

It is defined as the difference between the amount of stock to

expected demand for that period, is for the purpose of providing protection against depletion.

The need for safety stock arises because of;

1. Fluctuation in lead time.
2. Fluctuation in consumption rate.

### **Importance of safety stock:**

With full capacity utilisation presently in HPF and tight despatch schedules in different grades and sizes, and stock out of a raw materials may help up production, in turn causing upset in delivery promises. This will damage the good image of the company. Such stock-outs and consequent stoppages of work will dampen the morale of the employees as well. Even packing materials are to be held at safety levels, especially with so many sizes, grades, combinations etc.

As an instance, in x-ray, for want of either the cartons, or the poucher or yellow interleaving paper for any particular size of x-ray film, the production may have to be switched over to some other size. This may upset the delivery promises for that size. The cost of running out of stock is found to be more, when compared to the marginal cost of keeping some safety stock. The amount of safety stock is also important. Too high a stock may not be economical and too low a stock is risky.

Calculation of safety stock:

The formulae for buffer or safety stock is

$$B = K\sqrt{D}$$

K = a multiplier based on the level of protection desired  
(No. of standard deviations)

D = Lead time consumption

For A item K = 1

B item K = 2

C item K = 3

**Reorder level:**

The reorder level is determined by the formulae

$$R = \bar{B} + Sd L$$

= Safety stock + Lead time consumption.

Idealised inventory behavior does not occur in practice, however the model of inventory behavior is made somewhat more sophisticated as indicated. The significance of Reorder Level is that, it becomes a handy tool of the management to automatically effect placement of new purchase order without necessary resource to the risk of running out the stock or of building up unnecessary inventory.

### **Total existing stock value:**

The following steps are followed for obtaining total existing stock value.

- a) The 179 items available in the raw material stores are listed.
- b) The existing stock of the items and their unit prices are tabulated.
- c) The total value of the existing stock is calculated ie. {Existing stock x Their cost = Existing stock value}.
- d) The cumulative value of the existing stock value is calculated.
- e) At the end the total existing stock value is determined.

### **Average stock level:**

No organisation would like to operate at maximum stock levels to lock up funds not at minimum stock levels to face unforeseen stockness. If the organisation wants to adopt a conservative policy it may operate at average level of maximum and minimum.

$$\text{Average stock} = \frac{\text{Maximum stock} + \text{minimum stock}}{2}$$

2

### **Number of orders to be released per annum :**

$$\text{Number of orders to be released per annum} = \frac{\text{Annual consumption}}{\text{Economic order quantity}}$$

### **Maximum stock level:**

This is the level of the maximum quantity to be stocked at any one point of time. This implies that this is the level above which the stock should not be permitted to rise which can be given by,

$$\text{Maximum stock} = \text{Reorder level} + \text{EOQ}$$

# **CHAPTER 4**

## **PROBLEM SOLVING**

#### 4.1 EOQ and maximum stock level calculations

##### Ordering Cost:

Telephone Bills	=	65,430
Postage	=	12,876
Telegram and Tele Charges	=	3,957
Salary	=	10,80,000
Printing & Stationery	=	27,152
Purchase OT Bill	=	15,834
Total variable cost of purchase dept=		<u>12,02,249</u>

Purchasing department is dealing in various other items like Engg. items, import items and medical goods. Only 50% of total variable cost has been allotted for raw materials.

$$\text{Total ordering cost} = \frac{1202249 \times 50}{100}$$

$$= 601124$$

$$\text{Total number of purchase order} = 2133$$

$$\text{Ordering cost per order} = \frac{\text{Total ordering cost}}{\text{Total number of purchase order}} = \text{Rs. 281/-}$$

##### Inventory carrying cost :

Interest 14.5% on avg. Inventory

Value of 75,52,319.00	=	1095086
Insurance	=	280500
Deterioration	=	102254
Post	=	1954
Telegram & Telephone	=	1019
Stores OT bill	=	32,200
Salary	=	<u>280000</u>
Total variable cost of stores	=	<u>1793013</u>

$$\text{Inventory carrying cost} = \frac{\text{Total variable cost of stores} \times 100}{\text{Total avg. Inventory}}$$

$$= \frac{1793013}{7552319} \times 100$$

$$= 23.8$$

$$= \text{say } 24\%$$

**Item 1: A-1 Silver:**

**Economic order quantity**

$$\text{EOQ} = \frac{\sqrt{2AS}}{CI}$$

$$= \frac{\sqrt{2 \times 3026 \times 281}}{6895 \times 0.24}$$

$$= 35 \text{ Kg}$$

**Lead time consumption:**

$$\begin{aligned} \text{LTC} &= \overline{Sd} \\ &= \frac{3026}{300} \times 20 \text{ days} \\ &= 10 \times 20 \\ &= 200 \text{ Kg} \end{aligned}$$

**Safety stock:**

$$\begin{aligned} B &= \frac{K\sqrt{D}}{1\sqrt{200}} \\ &= 14 \text{ Kg} \end{aligned}$$

**Reorder level:**

$$\begin{aligned} \text{ROL} &= B + \text{LTC} \\ &= 14 + 200 \\ &= 214 \end{aligned}$$

**Maximum stock:**

$$\begin{aligned} \text{Max stock} &= \text{EOQ} + \text{ROL} \\ &= 50 + 214 \\ &= 264 \text{ Kg} \end{aligned}$$

**Item 6: B-1 Tri phenyl phosphare**

$$\begin{aligned} \text{EOQ} &= \frac{\sqrt{2 \times 21884 \times 281}}{130 \times 0.24} \end{aligned}$$

$$\text{EOQ} = 600 \text{ Kg}$$

**Lead time consumption:**

$$\begin{aligned} \text{LTC} &= \frac{21884}{300} = 72 \times 45 \\ &= 3280 \text{ Kg} \end{aligned}$$

**Safety stock:**

$$\begin{aligned} B &= K \sqrt{D} \\ &= 2 \sqrt{3280} \\ &= 114 \text{ Kg} \end{aligned}$$

**Reorder level:**

$$\begin{aligned} \text{ROL} &= B + \text{LTC} \\ &= 3394 \end{aligned}$$

**Maximum stock:**

$$\begin{aligned} &= 600 + 3394 \\ &= 3994 \text{ Kg} \end{aligned}$$

[ Refer Table 4 ]

# **CHAPTER 5**

## **RESULTS AND DISCUSSIONS**

The following results are arrived from the analysis.

**ABC analysis:**

Class	Number of items	Percentage value	Cumulative value	Percentage
A	5	2.8	5.8 Crores	75.00
B	15	8.4	1.6 Crores	20.00
C	159	88.8	0.33 Crores	5.00
Total	179	100	7.73 Crores	100

The total annual consumption value is determined as Rs. 7.73 crores. (Refer Table 1)

- a) Inventory value of existing raw materials Rs. 75,52,319.00
- b) Inventory value of proposed raw materials Rs. 7047171.00
- c) The ordering cost per order Rs. 281.00
- d) Inventory carrying cost – 24% of the average inventory
- e) For ABC items the calculated EOQ, lead time consumption, reorder level and maximum stocks are tabulated.

## Discussion:

1. The ABC analysis segregates the raw materials into three categories based on annual consumption value.
  - a) A-Item: About 3% of the raw materials consists of 75% of the total inventory value. These are high valued items. The stock Levels of these items are to be closely watched as over stocking of these raw materials results in locking up of huge amount of capital.
  - b) B-Items: About 8.5% of these raw materials. Constitute 20% of the total inventory value. They are medium valued items. These need every care but not to intensive as required for A-Category materials.
  - c) C- Items : About 88% of these raw materials constitute 5% of the total inventory value. These are low valued and are maximum numbered. These spares don't require much control, rather controlling them is uneconomical. These are certain vital spares in C-class items considering them as low valued they should not be rejected.
2. The minimum and maximum stock levels materials have been fixed as against the existing stock levels for each item.

3. The comparison of existing and proposed inventory value on the inventory systems shows a savings of 8% in the inventory value.
4. The ordering cost per order shows the maximum amount of Rs. 281 per order.
5. The new economic order quantity, lead time consumption, reorder level for the raw materials have been fixed as against the existing method.

## **Recommendations:**

1. The study has classified the raw materials into ABC items. Based on the annual consumption value and criticality of the items and day to day experience the organisation has the flexibility to fix suitable stock level from the suggested maximum, minimum and average levels for better management of raw materials to effect savings.
2. The ordering cost per order shows the maximum amount which can be reduced by minimizing the staff members in purchase department. This can be achieved as few staff members are leaving the organisation under voluntary retirement scheme.
3. After finding ABC analysis the recommended new economic order quantity, lead time consumption, reorder level have been suggested. By properly adopting these calculation considerable savings can be achieved by the organisation.
4. Based on the comparison of the existing method with the proposed method the average inventory value can be reduced by more than 5 lakhs and the fixed cost related to this 5 lakhs ie Rs.1.2 lakhs per annum becomes a saving to the organisation.

# **CHAPTER 6**

# **CONCLUSIONS**

## **Conclusions:**

The maximum and minimum stock levels and inventory are computed based on past one year data. Based on this computation the existing inventory policy is optimized. The savings are obtained when the firm is operating at the average stock level (5.2 lakhs). It is quite clear from the savings obtained, the organisation should operate at an average stock level. Only then the organisation will be in a position to realise a substantial amount of savings of Rs. 5.2 lakhs.

The ordering cost per order Rs. 281 which can be minimized by the reduction of staff members in purchase department. The organisation should properly concentrate on ABC analysis and through the economic order quantity, reorder level and lead time consumption.

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# **APPENDIX**

**Table I**  
**ABC analysis**

SL. NO.	MATERIAL DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	VALUE	CUM.VALUE	CUM %	CLASS
1	SILVER	3026.43	Kg	6895	20867268	20867268	26.99	A
2	METHYLENE CHLORIDE	322.10	Ton	36002	1159226	32460194	41.99	A
3	CELLULOSE TRI ACETATE	82354.12	Kg	122	10047203	42507397	54.99	A
4	GELETINE	28338.32	Kg	300	8501497	51008894	66.00	A
5	FURNACE OIL	1331.42	Kg	5955	7928617	58937511	76.25	A
6	TRIPHENYL PHESPARE	21884.62	Kg	130	2845000	31782511	79.93	B
7	TETRA HYDRO FURAN	15949.09	Kg	165	2631600	64414111	83.34	B
8	POTASSIUM TODIDE	1230.03	Kg	1162	1429300	65843411	85.19	B
9	POTASSIUM BROMIDE	10636.36	Kg	110	1170000	67013411	86.70	B
10	ACETONE	41.59	Ton	27100	1127163	68140574	88.16	B
11	METHANOL	92.25	Ton	11100	1024000	69164574	89.49	B
12	CAUSTIC SODA SLAKES	46.80	Ton	19400	908000	70072574	90.66	B
13	AMMONIUM BROMIDE	7.14	Ton	125000	892500	70965074	91.82	B
14	METHYL ETHYL KATONE	15.16	Ton	50250	762000	71727074	92.80	B
15	INDUSTRIAL METHYLATE SPRII	32090.91	Lt	22	706000	72433074	93.72	B
16	MERTON 22	2257.50	Kg	240	541800	72974874	94.42	B
17	ETHLENE GLYCOL	5646.88	Kg	64	361400	73336274	94.88	B
18	SULPERIC ACID	17366.67	Kg	18	312600	73648874	95.29	B
19	KSD OIL	32.00	Kl	7546	241500	73890374	95.60	B
20	CALCIUM INDEBUNR CHAMICALS	731.82	Kg	275	201250	74091624	95.86	B

SL. NO.	MATERIAL DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	VALUE	CUM.VALUE	CUM %	CLASS
21	BORAX	9.00	Ton	20360	183240	74274864	96.10	C
22	SODA ASH	16.19	Ton	11268	182400	74457264	96.33	C
23	METRON 11	1057.05	Kg	170	179700	74636964	96.57	C
24	CALCIUM CLORIDE	22.93	Ton	7500	172000	74808964	96.79	C
25	TRM GRIDE 375 GRADE	1000.00	Kg	165	165000	74973964	97.00	C
26	SPTS	650.00	Kg	250	162500	75136464	97.21	C
27	SULPHATE OF ALUMINA	59.42	Ton	2400	142600	75279064	97.40	C
28	BLEACHING POWER	1000.00	Kg	132	132000	75411064	97.57	C
29	SODIUM HYDROXIDE PELLETS	1755.07	Kg	69	121100	75532164	97.73	C
30.	GOLD CHLORIDE	220	GMS	500	110000	75642164	97.87	C
31	SUCCINIC ANHYDRIDE	175.04	Kg	625	109400	75751564	98.01	C
32	SOD THIO SULPHATE	4056	Kg	25	101400	75852964	98.14	C
33	CHROME ALUM	263.89	Kg	360	95000	75947964	98.26	C
34	AMMONIA GAS	3626.09	Kg	23	83400	76031364	98.37	C
35	ACETIC ACID	862.22	Ltr	90	77600	76108964	98.47	C
36	POT META BISULPHATE	600	Kg	108	64800	76173764	98.56	C
37	HYDROQUONONE PG GRADE	250	Kg	235	58750	76232514	98.63	C
38	DIBUTYL PHTHALATE	1051.28	Kg	54.6	57400	76289914	98.71	C
39	SOD CHLORIDE	1505.56	Kg	36	54200	76344114	98.78	C

SL. NO.	MATERIAL DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	VALUE	CUM.VALUE	CUM.%	CLASS
40	MRTHYL ISO CYNATE	5	Kg	9850	49250	76393364	98.84	C
41	WIDNECK REACTION VESSEL	4.92	No.	9151	45000	76438364	98.90	C
42	DILUTE NITRIC ACID	10000	Ltr	4	40000	76478364	98.95	C
43	SOD SULPHATE	2000	Kg	19	38000	76516364	99.00	C
44	MICRODEP C	200	Kg	172	34400	76550764	99.04	C
45	DIETHYL ETHER	429.49	Kg	78	33500	76584264	99.09	C
46	METOL	54.74	Kg	570	31200	76615464	99.13	C
47	SOD CARBONATE	19.04	Kg	1570	29900	76645364	99.17	C
48	METHYL AMINO ACETIC ACID	5	Kg	5900	29500	76674864	99.20	C
49	GLYCERINE AR	390.28	Kg	72	28100	76702964	99.24	C
50	COTTON HAND GLOVES	5392.40	Set	5	26962	76729926	99.28	C
51	BENTONITE POWDER	19.96	Ton	1137	22700	76752626	99.30	C
52	HYDROCHLORIC ACID	10870	Ltr	2	21740	76774366	99.33	C
53	LITHIUM NITRATE AR	11.82	Kg	1700	20100	76794466	99.36	C
54	ETHYL ACRYLATE	200	Kg	100	20000	76814466	99.38	C
55	SALYCLIC ACID	250	Kg	80	20000	76834466	99.41	C
56	CARBOXY SULPHIO PHENYL	5	Kg	3980	19900	76854366	99.44	C
57	MCG 100	500	Ton	36.8	18400	76872766	99.46	C
58	FORMALDEHYD	398.06	Ltr	41.2	16400	76889166	99.48	C

SL. NO.	MATERIAL DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	VALUE	CUM.VALUE	CUM %	CLASS
59	FORMALDEHYDE	39.49	LTR	390	15400	76904566	99.50	C
60	CARFOLC T	100.00	KG	151	15400	76919666	99.52	C
61	ACETIC ANHYDRIDE	5.23	KG	2770	14500	76934166	99.54	C
62	1,3 PROPANE SULPHONE 98%	200.00	GM	70.3	14060	76948226	99.56	C
63	PYRROLIDONE LR	10.00	KG	1385	13850	76962076	99.58	C
64	PH BUFFER	351.35	KG	37	13000	76975076	99.59	C
65	GLACIAL ACETIC ACID	496.15	LTR	26	12900	76987976	99.61	C
66	METHYL BENZOTHAZOLE	25.40	ML	500	12700	77000676	99.63	C
67	NITRO BENZENE	88.89	LTR	135	12000	77012676	99.64	C
68	PHENOL	118.18	GMS	88	10400	77023076	989.65	C
69	2, 4 DINITRO CHLOROBENZENE	12.66	KG	807	10213	77033289	99.67	C
70	PYRIDINE	220.96	LTR	43.9	9700	77042989	99.68	C
71	BRNZENE IR	21.01	NO	457	9600	77052589	99.69	C
72	ROUND BOTTOM FLASKS	50.00	KG	185	9250	77061839	99.70	C
73	3 METHYL 1, 4 SULPHOPHENYL 5 PYRAZ	75.65	NO	115	8700	77070539	99.72	C
74	VOLUMENTRIC FLASKS	5.27	KG	1500	7900	77078439	99.73	C
75	PURE CHRME 2, 3, 4	35.00	KG	225	7875	77086314	99.74	C
76	SIDFLOC	4.02	NO	1792	7200	77093514	99.75	C
77	MULTISOCKET FLAT FLANG	25.09	KG	279	7000	77100514	99.75	C
	DI SODIUM HYDROGEN ORTHOPHOSPHATE							

SL. NO.	MATERIAL DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	VALUE	CUM.VALUE	CUM %	CLASS
78	PHENIDONE LR	5.00	KG	1300	6500	77107014	99.76	C
79	OXYGEN GAS	36.57	CUM	175	6400	77113414	99.77	C
80	AMMONIUM THIOSULPHATE	75.00	KG	72	5400	77118814	99.78	C
81	FLAT FLANGE STOPPERS	3.01	NO	1792	5400	77124214	99.79	C
82	CALCIUM OXIDE	100.00	KG	53	5300	77129514	99.79	C
83	EDTA DISODIUM SALT	72.86	KG	70	5100	77134614	99.80	C
84	WASH BOTTLES B21	11.05	NO	438	4838	77139452	99.81	C
85	PROPARGYL ALCOHOL	1846.15	ML	2.6	4800	77144252	99.81	C
86	IODINE FLASKS F 17	22.60	NO	208	4700	77148952	99.82	C
87	ANILINE	35.16	LTR	128	4500	77153452	99.82	C
88	L.CYSTEINE - HYDROCHLORIDE	300.00	KG	15	4500	77157952	99.83	C
89	TRIETHYL ORTHO PROPIONATE	50000.00	ML	0.09	4500	77162452	99.84	C
90	BEAKERS CRZCLINE TALL FORM	59.21	NO	76	4500	77166952	99.85	C
91	SODIUM DICHROMATE	100.00	KG	45	4500	77171452	99.85	C
92	SUPREME HIPS - 810	100.00	KG	42	4200	77175652	99.86	C
93	METHYL PHENYL	1.50	KG	2800	4200	77179852	99.86	C
94	GAS MASK/AIR PURIFYING RESPIRATOR	2.00	NO	2100	4200	77184052	99.87	C
95	FORMIC ACID	100.25	LTR	39.9	4000	77188052	99.87	C
96	HYDROGEN PEROXIDE	18.06	LTR	216	3900	77191952	99.88	C

SL. NO.	MATERIAL DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	VALUE	CUM.VALUE	CUM %	CLASS
97	POTASSIUM CHLORIDE	75.00	KG	44	3300	77195252	99.88	C
98	SODIUM ACETATE	41.43	KG	70	2900	77198152	99.88	C
99	PRESSURE TUBING SOFT	150.00	MT	18	2700	77200852	99.89	C
100	VOLUMETRIC PIPPETS P2	33.33	NO	78	2600	77203452	99.89	C
101	RECEIVER ADAPTER & MULTI SOCKET	5.07	NO	493	2500	77205952	99.89	C
102	MANAGENESE DIOXIDE	30.00	KG	80	2400	77208352	99.90	C
103	DEMETHYL SULPHOXIDE	5.04	LT	456	2300	77210652	99.90	C
104	SPECIFIC GRAVITY BOTTLES	12.11	NO	190	2300	77212952	99.90	C
105	AMMONIUM NITRATE	50.00	KG	45	2250	77215202	99.91	C
106	BURETTES	4.30	NO	512	2200	77217402	99.91	C
107	MABORITE	10.00	KG	210	2100	77219502	99.91	C
108	MEASURING PIPPETS	6.97	NO	287	2000	77221502	99.91	C
109	SOD ACETATE TRIHYDRATE	57.58	KG	33	1900	77223402	99.92	C
110	IODINF FLASKS	10.22	NO	186	1900	77225302	99.92	C
111	ETHYL IODIDE EXTRA PURE	1.00	KG	1900	1900	77227202	99.92	C
112	CELLULOSE ACETATE BUTYRATE	1850.00	KG	1	1850	77229052	99.92	C
113	DIMETHYL GLYOXINE AR	48.91	GM	36.8	1800	777230852	99.93	C
114	PVE FLEXIBLE GLOVES	51.43	SET	35	1800	77232652	99.93	C
115	O PHOSPHORIC ACID AR	5.11	LTR	333	1700	77234352	99.93	C

SL. NO.	MATERIAL DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	VALUE	CUM.VALUE	CUM %	CLASS
116	LUNG – RAY WEIGHT PIPPET B15	2.92	NO	585	1700	77236052	99.93	C
117	METHYLENE BISACRYLAMIDE	500.00	GM	3.2	1600	77237652	99.93	C
118	VINYLENE CHLORIDE	1.03	LT	1550	1600	77239252	99.93	C
119	POT HYDROXIDE	6.67	KG	240	1600	77240852	99.94	C
120	TRISODIUM ORTHO PHOSPHATE	25.00	KG	60	1500	77242352	99.94	C
121	AMMONIUM PEROXY DISULPHATE	3.00	KG	500	1500	77243852	99.94	C
122	SODIUM METABISULPHATE	3.00	KG	500	1500	77245352	99.94	C
123	ISO PROPHYL ALCOHOL	0.74	KG	1900	1400	77246752	99.94	C
124	RB FLASK SHORT NECK 1000ML	2.46	NO	569	1400	77248152	99.95	C
125	FLASKES ERIENMEYER CONICAL	11.76	NO	119	1400	77249552	99.95	C
126	DROPPING BOTTLES B 19	5.93	NO	236	1400	77250952	99.95	C
127	ACID ALKALI GLOVES	40.00	SET	35	1400	77252352	99.95	C
128	2-RTHYL HEXYL ACRYLATE	1.00	LT	1350	1350	77253702	99.95	C
129	BORIC ACID	221.05	KG	5.7	1260	77254962	99.95	C
130	POT DICHROMATE	10.43	KG	115	1200	77256162	99.96	C

SL. NO.	MATERIAL DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	VALUE	CUM.VALUE	CUM %	CLASS
131	COMMON SALT	960.00	KG	1.25	1200	77257362	99.96	C
132	P-CHLOROMETA CRESOL	1000.00	GM	1.2	1200	77258562	99.96	C
133	POT HYDROGEN PHTHALATE	2.08	KG	576	1200	77259762	99.96	C
134	POTASSIUM THIOUNATE AR	1.98	KG	556.5	1100	7260862	99.96	C
135	DITHIZONE	25.00	GM	44	1100	77261962	99.96	C
136	CANNISTER FOR AMMONIA VAPOUR / GAS	3.55	NO	310	1100	7263062	99.97	C
137	SODIUM SULPHATE AR	3.24	KG	340	1100	77264162	99.97	C
138	DISSOLVED AVETYLENE GAS	6.88	CUM	160	1100	77265262	99.97	C
139	STOPPER AR	25.58	NO	43	1100	77266362	99.97	C
140	HYDROXYLAMINE SULPHATE	1.79	KG	560	1000	77267362	99.97	C
141	CELATINE POWDER	2.00	KG	490	980	772683642	99.97	C
142	MERCURIC CHLORIDE	947.37	GM	0.95	900	77269262	99.97	C
143	FABRIC ACID ALKALI PROOF GLOVES	25.71	NO	35	900	772702142	99.97	C
144	NAPHTHYLAMINE	1.00	KG	900	900	7721042	99.98	C
145	HYDRAZINE HYDRATE	4.12	IT	218.5	900	77271942	99.98	C
146	CHROMIUM REIOXIDE	3.00	KG	272	816	77272758	99.98	C
147	CONDENSERS	2.01	NO	399	800	7723558	99.98	C
148	POTASSIUM PER SULPHATE	4.15	GM	193	800	77274358	99.98	C
149	IRON POWDER ELECTROLITE	5.19	KG	135	700	77275058	99.98	C

SL. NO.	MATERIAL DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	VALUE	CUM.VALUE	CUM %	CLASS
150	MERCURIC SULPHATE	497.14	GM	1.4	696	77275754	99.98	C
151	SODIUM THISULPHATE	4.00	KG	160	640	77276394	99.98	C
	PENTACHLORIDE							
152	ETHYL BROMIDE	0.50	KG	1200	600	77276994	99.98	C
153	DISHES, FLASKS	5.77	NO	140	600	77277594	99.98	C
154	N-BUTYL ALCHOHOL AR	2.14	KG	280	600	77278194	99.98	C
155	ISOPROPHYL ETHER AR	4.29	ML.	140	600	77278794	99.99	C
156	STANNOUS CHLORIDE	0.98	GMS	510	500	77279294	99.99	C
157	CHLOROFORM AR	2.48	KG	190	472	77279766	99.99	C
158	TRIETHYLAMINE	2.27	L.T	176	400	77280166	99.99	C
159	SUCROSE AR	1.02	KG	393	400	77280566	99.99	C
160	PETROLEUM ETHER	3.74	LTR	107	400	77280966	99.99	C
161	BOTTLE WASH LDPE PLATIC	12.70	NO	81.5	400	77281366	99.99	C
162	SOD HYDROGEN CARBONATE	6.25	KG	64	400	77281766	99.99	C
163	WATCH GLASSES	4.99	NO	79.5	397	77282163	99.99	C
164	BEZYL ALCOHOL	1.00	LTR	380	380	77282543	99.99	C
165	FERRIC AMMONIUM CITRATE	1000.00	GM	0.34	340	77282883	99.99	C
166	TUBES WUTH RIM	50.00	NO	6.4	320	77283203	99.99	C
167	CITRIC ACID AR	2.00	KG	157	314	77283517	99.99	C
168	PH INDICATOR SOLUTION	2.00	LTR	150	300	77283817	99.99	C

BSL. NO.	MATERIAL DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	VALUE	CUM.VALUE	CUM %	CLASS
169	PVC AAPRON WITH ACID & ALKALI PROO	5.45	NO	55	300	77284117	99.99	C
170	P.DIMETHYL	86.21	GM	3.46	300	77284417	99.99	C
171	FLASKS BOILING FLAT BOTTOM	1.94	NO	155	300	77284717	99.99	C
172	ACETONETRITE	0.98	KG	3.6	300	77285017	99.99	C
173	BENZOYE PERROXIDE	1.00	LT	235	235	77285252	99.99	C
174	THYMOL BLUE POWDER SR	25.00	GM	9	225	77285477	99.99	C
175	PHOSPHOROUS PENTA SULPHATE	0.45	KG	440	200	77285477	99.99	C
176	FACE SHIELD HOOD	4.44	NO	45	200	77285877	99.99	C
177	CALCIUM SULPHATE ANHY	1.01	GMS	100	101	77285978	99.99	C
178	SULPHUR POWDER	1.23	KG	81	100	77286078	99.99	C
179	SODIUM NITRATE	1.1	KG	91.2	100	77286178	100.00	C
					77286178			

**Table : II**  
**Average stock levels**

Date	Silver	Metylene Chloride	CTA	Gelatine
1.6.98	260 Kg	30 Ton	8010 Kg	2500 Kg
1.7.98	290 Kg	28 Ton	8036 Kg	3000 Kg
1.8.98	365 Kg	31 Ton	8900 Kg	2200 Kg
1.9.98	275 Kg	26 Ton	6300 Kg	3200 Kg
1.10.98	283 Kg	42 Ton	6800 Kg	2900 Kg
1.11.98	301 Kg	23 Ton	8100 Kg	2800 Kg
1.12.98	288 Kg	27 Ton	6500 Kg	1900 Kg
1.1.99	192 Kg	26 Ton	7200 Kg	2000 Kg
1.2.99	315 Kg	32 Ton	6600 Kg	2200 Kg
1.3.99	412 Kg	45 Ton	8200 Kg	3500 Kg
1.4.99	180 Kg	12 Ton	5500 Kg	1700 Kg
1.5.99	275 Kg	22 Ton	6300 Kg	3000 Kg
	3436 Kg	344 Ton	86446Kg	30900Kg
	12	12	12	12
	286 kg	28ton	7200 kg	2575Kg

Date	Furnace Oil	Tri Phenyl Phosphate	Tetra hydro furan	Potassium Iodide	Potassium Bromide	Acetone	Methanol
1-6-98	130 KL	2000 Kg	1500 Kg	120 Kg	1000 Kg	4 Ton	8 Ton
1-7-98	125 KL	2200 Kg	1400 Kg	130 Kg	1100 Kg	5 Ton	8 Ton
1-8-98	140 KL	1900 Kg	1500 Kg	130 Kg	1100 Kg	4.5 Ton	7.5 Ton
1-9-98	120 KL	2000 Kg	1400 Kg	140 Kg	1200 Kg	5 Ton	8 Ton
1-10-98	110 KL	2200 Kg	1500 Kg	120 Kg	1100 Kg	4 Ton	8 Ton
1-11-98	135 KL	2000 Kg	1350 Kg	110 Kg	900 Kg	4 Ton	9 Ton
1-12-98	140 KL	1800 Kg	1400 Kg	120 Kg	1000 Kg	4 Ton	7 Ton
1-1-99	115 KL	1900 Kg	1200 Kg	130 Kg	1100 Kg	3.5 Ton	8 Ton
1-2-99	120 KL	1800 Kg	1200 Kg	90 Kg	900 Kg	4 Ton	8 Ton
1-3-99	140 KL	2800 Kg	1800 Kg	140 Kg	1300 Kg	4.5 Ton	9 Ton
1-4-99	100 KL	900 Kg	1000 Kg	110 Kg	800 Kg	3 Ton	7 Ton
1-5-99	110 KL	1200 Kg	1100 Kg	110 Kg	900 Kg	3 Ton	7 Ton
	1485 KL	22700 Kg	16350 Kg	1450 Kg	12400 Kg	48.5 Ton	94.5 Ton
	12	12	12	12	12	12	12
	124 Kl x 5955	1891 Kg x 130	1363 Kg x 165	120 Kg x 1162	1033 Kg x 110	4.04 x 27'100	7.87 x 11

Date	Cosmic Soda flakes	Ammonium Bromide	Methyl Ethyl Keton	Industrial Methylate Sprit	Metron 22	Ethylene Glycol	Sulphonic acid
1-6-98	5 Ton	1 Ton	1.5 Ton	3000 lt	200 Kg	500 Kg	1500 Kg
1-7-98	4.5 Ton	0.75 Ton	1.5 Ton	3000 lt	210 Kg	500 Kg	1500 Kg
1-8-98	4.5 Ton	0.75 Ton	1.3 Ton	2800 lt	200 Kg	450 Kg	1450 Kg
1-9-98	4 Ton	0.6 Ton	1.2 Ton	2600 lt	200 Kg	480 Kg	1600 Kg
1-10-98	5 Ton	0.7 Ton	1.5 Ton	2500 lt	190 Kg	480 Kg	1400 Kg
1-11-98	4 Ton	0.7 Ton	1.4 Ton	3000 lt	200 Kg	500 Kg	1500 Kg
1-12-98	4.5 Ton	0.8 Ton	1.2 Ton	2500 lt	200 Kg	500 Kg	1450 Kg
1-1-99	4 Ton	0.9 Ton	1.1 Ton	3000 lt	210 Kg	470 Kg	1500 Kg
1-2-99	4 Ton	0.7 Ton	1.2 Ton	2500 lt	200 Kg	500 Kg	1400 Kg
1-3-99	6 Ton	1.2 Ton	1.6 Ton	3500 lt	250 Kg	520 Kg	1600 Kg
1-4-99	3 Ton	0.6 Ton	1.2 Ton	2000 lt	150 Kg	470 Kg	1300 Kg
1-5-99	3 Ton	0.6 Ton	1.2 Ton	2500 lt	150 Kg	450 Kg	1300 Kg
	51.5 Ton	9.3 Ton	15.9 Ton	32900 lt	2360 Kg	5820 Kg	17500 Kg
	12	12	12	12	12	12	12
	4.29 x 19400	0.775 x 125000	1.325 x 50250	2741 x 22	196 x 240	485 x 64	1458 x 18

Date	HSD Oil	Calcium Indebunnr Chemicals	Borax	Soda ash	Metron II	Cadmium Chloride	Iron Oxide 375 Grade
1-6-98	3 Kl	70 Kg	1 Ton	1.5 Ton	95 Kg	2 Ton	100 Kg
1-7-98	2.8 Kl	65 Kg	0.8 Ton	1.5 Ton	90 Kg	2 Ton	100 Kg
1-8-98	2.7 Kl	60 Kg	0.7 Ton	1.3 Ton	90 Kg	1.9 Ton	110 Kg
1-9-98	2.7 Kl	65 Kg	0.8 Ton	1.3 Ton	95 Kg	2 Ton	90 Kg
1-10-98	2.8 Kl	80 Kg	0.7 Ton	1.5 Ton	90 Kg	2 Ton	90 Kg
1-11-98	2.9 Kl	65 Kg	0.8 Ton	1.5 Ton	85 Kg	1.6 Ton	100 Kg
1-12-98	2.8 Kl	65 Kg	0.7 Ton	1.3 Ton	100 Kg	2.3 Ton	100 Kg
1-1-99	2.7 Kl	60 Kg	0.8 Ton	1.4 Ton	85 Kg	2 Ton	90 Kg
1-2-99	2.7 Kl	60 Kg	0.7 Ton	1.2 Ton	90 Kg	1.9 Ton	100 Kg
1-3-99	3.1 Kl	70 Kg	1 Ton	1.8 Ton	100 Kg	2.2 Ton	120 Kg
1-4-99	2.6 Kl	60 Kg	0.7 Ton	1.1 Ton	80 Kg	2 Ton	70 Kg
1-5-99	2.5 Kl	60 Kg	0.7 Ton	1.1 Ton	80 Kg	1.9 Ton	75 Kg
	33.3 Kl	760 Kg	9.4 Ton	16.5 Ton	1090 Kg	23.8 Ton	1145 Kg
	12	12	12	12	12	12	12
	2.775 x 7546	63 x 275	0.8 x 20360	1.4 x 11268	90.8 x 170	1.98 x 7500	95 x 132

Date	SPTS	Sulphate of Alumina	Bleaching Powder	Sodium Hydroxide Pellets	Gold Chloride	Succinic Anhydride
1-6-98	60 Kg	6 Ton	90 Kg	200 Kg	70 gms	20 Kg
1-7-98	60 Kg	6 Ton	100 Kg	180 Kg	-	20 Kg
1-8-98	55 Kg	5.5 Ton	100 Kg	180 Kg	-	15 Kg
1-9-98	60 Kg	5 Ton	90 Kg	150 Kg	100 gms	15 Kg
1-10-98	40 Kg	5.5 Ton	80 Kg	150 Kg	-	20 Kg
1-11-98	50 Kg	5.5 Ton	100 Kg	150 Kg	-	20 Kg
1-12-98	60 Kg	6 Ton	100 Kg	120 Kg	-	20 Kg
1-1-99	65 Kg	5 Ton	90 Kg	120 Kg	-	15 Kg
1-2-99	55 Kg	4.5 Ton	70 Kg	150 Kg	-	15 Kg
1-3-99	65 Kg	6.5 Ton	120 Kg	200 Kg	100 gms	25 Kg
1-4-99	50 Kg	4.5 Ton	65 Kg	120 Kg	-	10 Kg
1-5-99	55 Kg	4.5 Ton	80 Kg	120 Kg	50 gms	10 Kg
	----- 675 Kg -----	----- 6.9 Ton -----	----- 1085 Kg -----	----- 1820 Kg -----	----- 320 gms -----	----- 205 Kg -----
	12	12	12	12	12	12
	56.25 x 250	5.75 x 2400	90.41 x 132	151 x 69	26 x 500	17 x 625

Date	Sodium Thiosulphate	Chrome Alum	Ammonia	Acetic Acid	Pot. Meta Bisulphate	Hydro PG Grade
1-6-98	400 Kg	25 Kg	350 Kg	100 Lt	70 Kg	30 Kg
1-7-98	350 Kg	30 Kg	400 Kg	90 Lt	70 Kg	25 Kg
1-8-98	350 Kg	50 Kg	400 Kg	90 Lt	60 Kg	30 Kg
1-9-98	400 Kg	-	200 Kg	100 Lt	50 Kg	25 Kg
1-10-98	300 Kg	50 Kg	300 Kg	80 Lt	50 Kg	30 Kg
1-11-98	350 Kg	20 Kg	300 Kg	60 Lt	80 Kg	20 Kg
1-12-98	400 Kg	30 Kg	400 Kg	80 Lt	70 Kg	20 Kg
1-1-99	400 Kg	30 Kg	300 Kg	80 Lt	60 Kg	25 Kg
1-1-99	300 Kg	20 Kg	300 Kg	80 Lt	60 Kg	25 Kg
1-2-99	300 Kg	20 Kg	250 Kg	70 Lt	60 Kg	25 Kg
1-3-99	500 Kg	50 Kg	500 Kg	100 Lt	80 Kg	40 Kg
1-3-99	500 Kg	50 Kg	500 Kg	100 Lt	80 Kg	40 Kg
1-4-99	200 Kg	30 Kg	300 Kg	60 Lt	40 Kg	-
1-4-99	200 Kg	30 Kg	300 Kg	60 Lt	40 Kg	-
1-5-99	350 Kg	20 Kg	300 Kg	70 Lt	40 Kg	20 Kg
	----- 4200 Kg -----	----- 345 Kg -----	----- 4000 Kg -----	----- 980 Lt -----	----- 790 Kg -----	----- 200 Kg -----
	12	12	12	12	12	12
	350 x 25	28.75 x 360	333 x 23	81 x 90	65 x 108	24.1 x 235

Date	Dibutyl phthalate	SOD Chloride	Methyl Thiocyanate	Reaction vessel	Dilute Nitric acid	Sod. sulphate
1-6-98	100 Kg	150 Kg	1 Kg	-	1000 lt	300 Kg
1-7-98	90 Kg	150 Kg	-	-	2000 lt	200 Kg
1-8-98	90 Kg	200 Kg	0.5 Kg	-	500 lt	100 Kg
1-9-98	80 Kg	200 Kg	0.5 Kg	2	1000 lt	200 Kg
1-10-98	90 Kg	-	1 Kg	-	1000 lt	200 Kg
1-11-98	100 Kg	150 Kg	-	-	1000 lt	150 Kg
1-12-98	100 Kg	150 Kg	-	-	700 lt	170 Kg
1-1-99	80 Kg	150 Kg	1 Kg	1	500 lt	200 Kg
1-2-99	80 Kg	100 Kg	-	-	600 lt	100 Kg
1-3-99	140 Kg	200 Kg	1 Kg	2	2000 lt	250 Kg
1-4-99	60 Kg	-	-	-	1000 lt	150 Kg
1-5-99	100 Kg	100 Kg	0.5 Kg	1	500 lt	100 Kg
	1110 Kg	1600 Kg	6.5 Kg	6 Nos.	11,800 Kg	2120 Kg
	12	12	12	12	12	12
	92.5 Kg x 54.6	133 Kg x 36	0.55 x 9850	0.5 x 9151	983 lt x 4	176 lt x 19

DATE	Microdep	Diethyl ether	Metol	SOD Carbonate	Methyl amino acetic acid	Glycerin e	Cotton hand gloves	Bentonite powder
1-6-98	20 Kg	40 Kg	5 Kg	2 Kg	1 Kg	40 Kg	1000	2 ton
1-7-98	20 Kg	40 Kg	6 Kg	2 Kg	0.5 Kg	40 Kg	200	2 Ton
1-8-98	20 Kg	35 Kg	5Kg	2 Kg	1 Kg	50 Kg	500	2 Ton
1-9-98	15 Kg	40 Kg	5Kg	1.5 kg	1 Kg	40 Kg	200	1 Ton
1-10-98	20 Kg	40 Kg	5Kg	2 Kg	--	30 Kg	-	2 Ton
1-11-98	20 Kg	40 Kg	5Kg	2 Kg	--	30 Kg	1000	2 Ton
1-12-98	15 Kg	40 Kg	5Kg	2 Kg	1 Kg	40 Kg	300	2 Ton
1-1-99	-	30 Kg	3 Kg	1 Kg	--	30 Kg	200	2 Ton
1-2-99	20 Kg	30 Kg	5 Kg	2 Kg	--	30 Kg	600	3 Ton
1-3-99	30 Kg	50 Kg	6 Kg	3 Kg	1 Kg	60 Kg	1000	2 Ton
1-4-99	20 Kg	30 Kg	4 Kg	1.5 Kg	0.5 Kg	40 Kg	500	2 Ton
1-5-99	20 Kg	40 Kg	4 Kg	1.5 Kg	0.5 Kg	40 Kg	500	
	220 Kg	450 Kg	58 Kg	22.5 Kg	6.5 Kg	440 Kg	6000 Set	22 Ton
	12	12	12	12	12	12	12	12
	18.33 x 172	37.5 x 78	4.8 x 570	1.875 x 1570	20.54 x 5900	36.6 x 72	500 x 5	1.83 x 11

Date	Hydrochloric acid	Lithium Nitrate AR	Ethyl Acetate	Salicyclic acid	Carboxy sulpho phenyl	MCG 100	Formaldehyde
1-6-98	1000 Lit	1 Kg	20 Kg	30 Kg	1 Kg	50 Ton	40 Lt
1-7-98	1000 Lit	1 Kg	20 Kg	20 Kg	-	50 Ton	50 Lt
1-8-98	1000 Lit	1 Kg	20 Kg	20 Kg	-	50 Ton	40 Lt
1-9-98	1000 Lit	1 Kg	20 Kg	20 Kg	-	50 Ton	50 Lt
1-10-98	1000 Lit	1 Kg	20 Kg	20 Kg	-	50 Ton	40 Lt
1-11-98	1000 Lit	1 Kg	20 Kg	30 Kg	1 Kg	50 Ton	40 Lt
1-12-98	1000 Lit	1 Kg	15 Kg	30 Kg	-	60 Ton	20 Lt
1-1-99	1000 Lit	1 Kg	20 Kg	25 Kg	-	60 Ton	40 Lt
1-2-99	1000 Lit	1 Kg	20 Kg	30 Kg	1 Kg	40 Ton	40 Lt
1-3-99	1000 Lit	2 Kg	30 Kg	40 Kg	1 Kg	60 Ton	50 Lt
1-4-99	1000 Lit	1 Kg	15 Kg	20 Kg	1 Kg	50 Ton	30 Lt
1-5-99	1000 Lit	1 Kg	15 Kg	30 Kg	-	50 Ton	30 Lt
	12000 Kg	13 Kg	235 Kg	315 Kg	6 Kg	620 Ton	470 lt
	12	12	12	12	12	12	12
	1000 x 2	1.08 x 1700	19.58 x 100	26.25 x 80	0.5 x 3980	51.6 x 36.8	39.1 x 41.2

Date	Formaldehyde	Carfolc T	Acetic anhydride	Propane 98%	Pyrrolidone	pH Buffer
1-6-98	4 Lit	10 Kg	1 Kg	-	2 Kg	40 Kg
1-7-98	5 Lit	10 Kg	0.5 Kg	-	1 Kg	30 Kg
1-8-98	10 Lit	10 Kg	1 Kg	-	1 Kg	30 Kg
1-9-98	-	10 Kg	-	-	1 Kg	30 Kg
1-10-98	-	10 Kg	1 Kg	-	1 Kg	40 Kg
1-11-98	5 Lit	10 Kg	-	-	-	30 Kg
1-12-98	5 Lit	10 Kg	0.5 Kg	-	1 Kg	30 Kg
1-1-99	6 Lit	10 Kg	1 Kg	-	1 Kg	30 Kg
1-2-99	5 Lit	10 Kg	-	-	1 Kg	40 Kg
1-3-99	10 Lit	10 Kg	1 Kg	250 Gm	1 Kg	30 Kg
1-4-99	-	10 Kg	0.5 Kg	-	1 Kg	30 Kg
1-5-99	5 Lit	10 Kg	-	-	1 Kg	30kg
	55 Lit	120 Kg	6.5 Kg	500 Gm	12 Kg	390 Kg
	12	12	12	12	12	12
	4.5 x 390	10 x 151	0.54 x 2770	41.6 x 70	1 x 1385	32.5 x 37

Date	Glacial Acetic Acid	Methyl Benzo thiasole	Nitro Benzene	Phenol	Dinitro Chloro benzene pyridine	Benzene LR
1-6-98	50 Lt	5 MI	10 Lt	100 gms	1 Kg	20 Lt
1-7-98	50 Lt	5 MI	10 Lt	-	1 Kg	20 Lt
1-8-98	50 Lt	-	20 Lt	-	1 Kg	20 Lt
1-9-98	50 Lt	-	-	-	2 Kg	20 Lt
1-10-98	50 Lt	5 MI	10 Lt	-	1 Kg	20 Lt
1-11-98	50 Lt	-	10 Lt	-	1 Kg	20 Lt
1-12-98	50 Lt	5 MI	10 Lt	100 gms	1 Kg	20 Lt
1-1-99	50 Lt	-	10 Lt	-	1 Kg	20 Lt
1-2-99	50 Lt	-	10 Lt	50 gms	1 Kg	20 Lt
1-3-99	50 Lt	5 MI	10 Lt	-	-	20 Lt
1-4-99	50 Lt	-	10 Lt	-	1 Kg	10 Lt
1-5-99	50 Lt	5 MI	10 Lt	-	-	-
	600 Lt	30 MI	120 Lt	250 Gms	13 Kg	230 Lt
	12	12	12	12	12	12
	50 X 26	2.5 x 500	10 x 135	20 x 88	1 x 807	19.6 x 43.9

Date	Round Bottom Flask	3 Metyl sulphophayl	Volumetric Flask	chrome 2,3,4	Sid floc	Multi socket flat flange
1-6-98	5 Nos.	5 Kg	20 Nos.	1 Kg	5 Kg	1 No.
1-7-98	-	5 Kg	-	-	2 Kg	-
1-8-98	5 Nos.	5 Kg	-	-	3 Kg	-
1-9-98	-	5 Kg	10 Nos.	1 Kg	3 Kg	1 Kg
1-10-98	5 Nos.	5 Kg	-	-	5 Kg	-
1-11-98	-	5 Kg	-	-	2 Kg	-
1-12-98	5 Nos.	5 Kg	20 Nos.	1 Kg	2 Kg	1 No.
1-1-99	-	5 Kg	-	-	5 Kg	-
1-2-99	-	5 Kg	-	-	2 Kg	-
1-3-99	5 Nos.	5 Kg	30 Nos.	2 Kg	5 Kg	2 Nos.
1-4-99	-	5 Kg	10 Nos.	1 Kg	2 Kg	-
1-5-99	-	5 Kg	-	-	2 Kg	-
	25 Nos.	60 Kg	90 Nos.	6 Kg	38 Kg	5 Nos.
	12	12	12	12	12	12
	2.08 x 457	5 Kg x 185	7.5 Nos x 115	0.5 x 1500	3.16 Kg x 225	0.41 x 179

Date	Disodium hydrogen ortho Phosphate	Phenodine LR	Oxygen Gas	Ammonium Thiosulphate	Flat Stopper	Calcium oxide
1-6-98	3 Kg	1 Kg	10 Kg	5 Kg	-	10 Kg
1-7-98	3 Kg	1 Kg	5 Kg	5 Kg	-	10 Kg
1-8-98	3 Kg	-	10 Kg	10 Kg	1 No.	10 Kg
1-9-98	2 Kg	-	5 Kg	5 Kg	-	10 Kg
1-10-98	2 Kg	1 Kg	10 Kg	10 Kg	-	10 Kg
1-11-98	4 Kg	-	10 Kg	10 Kg	1 No.	10 Kg
1-12-98	3 Kg	-	10 Kg	10 Kg	-	10 Kg
1-1-99	2 Kg	1 Kg	5 Kg	5 Kg	-	10 Kg
1-2-99	2 Kg	-	5 Kg	10 Kg	-	10 Kg
1-3-99	5 Kg	2 Kg	10 Kg	10 Kg	2 No.	10 Kg
1-4-99	2 Kg	-	5 Kg	5 Kg	-	10 Kg
1-5-99	2 Kg	-	5 Kg	5 Kg	-	10 Kg
	33 Kg	6 Kg	42 Kg	85 Kg	4 No.	120 Kg.
	12	12	12	12	12	12
	2.75 x 269	0.5 x 1300	3.5 x 175	7 x 72	0.33 x 1792	10 Kg x 53

Date	EDTA Disodium salt	Wash Bottle B21	Proparyl	Iodine flasks F17	Bromine	L-cystene Hydrochloride
1-6-98	10 Kg	4 Nos.	200 ml	3 No.	5 Lit	30 Kg
1-7-98	10 Kg	-	400 ml	2 No.	3 Lit	30 Kg
1-8-98	5 Kg	-	300 ml	2 No.	3 Lit	30 Kg
1-9-98	10 Kg	-	-	1 No.	3 Lit	30 Kg
1-10-98	10 Kg	4 Nos.	-	3 No.	3 Lit	30 Kg
1-11-98	10 Kg	-	200 ml	2 No.	3 Lit	20 Kg
1-12-98	5 Kg	-	-	2 No.	3 Lit	20 Kg
1-1-99	10 Kg	-	-	2 No.	4 Lit	30 Kg
1-2-99	5 Kg	-	300 ml	2 No.	3 Lit	30 Kg
1-3-99	10 Kg	4 Nos.	500 ml	3 No.	5 Lit	30 Kg
1-4-99	5 Kg	-	200 ml	2 No.	2 Lit	30 Kg
1-5-99	5 Kg	2 Nos.	200 ml	2 No.	3 Lit	30 Kg
	85 Kg	14 Nos.	2300 ml	26 No.	40 Lit	360 Kg.
	12	12	12	12	12	12
	7 x 70	1.16 x 438	191 x 2.6	2.1 x 208	3.33 x 128	30 x 15

Date	Triethyl ortho phosphate	Beakers Tall form	Sodium Dichromate	Supreme Hips – 810	Methyl phenol	Glass mask	Formic acid
1-6-98	5000 ml	10 No.	10 Kg	10 Kg	1 Kg.	1 No.	10 Lit
1-7-98	5000 ml	5 No.	10 Kg	10 Kg	-	-	10 Lit
1-8-98	5000 ml	5 No.	10 Kg	10 Kg	-	-	10 Lit
1-9-98	5000 ml	5 No.	10 Kg	10 Kg	-	1 No.	10 Lit
1-10-98	5000 ml	5 No.	10 Kg	10 Kg	-	-	10 Lit
1-11-98	5000 ml	5 No.	10 Kg	10 Kg	1 Kg	-	10 Lit
1-12-98	5000 ml	5 No.	10 Kg	10 Kg	-	-	10 Lit
1-1-99	5000 ml	5 No.	10 Kg	10 Kg	-	-	10 Lit
1-2-99	5000 ml	10 No.	10 Kg	10 Kg	0.5 Kg	1 No.	10 Lit
1-3-99	5000 ml	5 No.	10 Kg	10 Kg	-	-	10 Lit
1-4-99	5000 ml	5 No.	10 Kg	10 Kg	-	-	10 Lit
1-5-99	5000 ml	5 No.	10 Kg	10 Kg	-	-	10 Lit
	60000 ml	70 Nos.	120 Kg	120 Kg.	2.5 Kg	3 Nos.	120 Lt
	12	12	12	12	12	12	12
	5000 x 0.09	5.83 x 76	10 x 45	10 x 42	0.201 x 2800	0.25 x 2100	10 x 39.9

Date	Hydrogen peroxide	Potassium Chloride	Sodium acetate	Pressure Tubing soft	volumetric pippets	Receiver Adoptor multi socket
1-6-98	2 Lt	5 Kg	4 Kg	20 mt	8 No.	2 No.
1-7-98	2 Lt	5 Kg	4 Kg	50 mt	-	-
1-8-98	2 Lt	10 Kg	4 Kg	-	-	-
1-9-98	2 Lt	5 Kg	4 Kg	-	-	-
1-10-98	1 Lt	10 Kg	4 Kg	100 mt	-	-
1-11-98	2 Lt	5 Kg	5 kg	-	10 No.	-
1-12-98	2 Lt	5 Kg	5 Kg	100 mt	-	2 No.
1-1-99	2 Lt	10 Kg	3 Kg	-	10 No.	-
1-2-99	2 Lt	5 Kg	3 Kg	-	-	-
1-3-99	2 Lt	10 Kg	5 Kg	50 mt	10 No.	2 No.
1-4-99	2 Lt	10 Kg	4 Kg	-	-	-
1-5-99	2 Lt	5 Kg	4 Kg	-	-	-
	23 Lt	85 Kg.	49 Kg.	320	42 Nos.	8 No.
	1.9 x 216	7.08 x 44	4.08 x 70	26.6 x 18	3.5 x 78	0.66 x 493

Date	Magnesium Dioxide	Dimethyl Sulphoxide	Specific ground bottles	Ammonium nitrate	Burettes	Maborite	Measuring Pippetes
1-6-98	5 Kg	1 lt	1 No.	5 Kg	2 No.	1 Kg	2 No.
1-7-98	5 Kg	1 lt	2 Nos.	5 kg	-	1 Kg	-
1-8-98	--	-	-	5 kg	-	1 Kg	2 No.
1-9-98	5 Kg	-	2 No.	5 kg	2 No.	1 Kg	2 No.
1-10-98	5 Kg	1 lt	2 No.	5 Kg	-	1 Kg	-
1-11-98	-	-	-	10 Kg	-	1 Kg	2 No.
1-12-98	5 Kg	1 lt	2 No.	-	-	1 Kg	-
1-1-99	-	-	-	5 Kg	-	1 kg	-
1-2-99	-	-	1 No.	5 Kg	-	1 Kg	-
1-3-99	5 Kg	1 lt	3 No.	10 Kg	2 No.	1 Kg	2 No.
1-4-99	-	-	1 No.	-	-	1 Kg	-
1-5-99	5 Kg	-	1 No.	5 Kg	-	1Kg	-
	40 Kg	6 lt	15 No.	60 Kg	6 No.	12 kg	8 No.
	12	2	12	12	12	12	12
	3.33 x 80	0.5 x 493	1.25 x 190	5 x 45	0.5 x 512	1 x 210	0.66 x 287

DATE	Sodium Trihydrate	Iodine Flasks	Ethyl Iodine Extra pure	Cellulose Acetate Acetyrate	Dimethyl Glycoline	PVC Flexible gloves
1-6-98	5 Kg	1 No.	-	200 Kg	20 gm	10 set
1-7-98	5 Kg	4 No.	-	2 00 Kg	-	5 set
1-8-98	5 Kg	-	-	2000 kg	-	-
1-9-98	5 Kg	-	0.5 Kg	200 Kg	-	5 set
1-10-98	5 Kg	-	-	200 Kg	-	10 set
1-11-98	5 Kg	-	-	200 Kg	20 gm	5
1-12-98	5 Kg	2 No.	-	200 Kg	-	-
1-1-99	5 Kg	-	-	200 Kg	-	10 set
1.2.99	5 Kg	-	-	200 Kg	-	5
1.3.99	10 Kg	5 No	1 Kg	200 Kg	20 gm	-
1.4.99	5 Kg	-	-	100 Kg	-	5 set
1.5.99	5 Kg	-	-	100 Kg	-	-
	65	12 No.	15 Kg	2200	1260 gm	65
	12	12	12	12	12	122
	5.41 x 33	= 1 x 86	= 0.125x1900	= 163 x 1	=5 x 36.8	= 5.45 x 35

Date	O-Phosphoric acid	Lungray weight pipette B 15	Methylene Bisacrylamide	Vinyledene chloride	Potassium chloride	Trisodium ortho phosphate
1-6-98	1 Lit	1 No.	100 gm	-	2 Kg	5 Kg
1-7-98	-	-	-	-	-	2 Kg
1-8-98	2 Lit	-	-	16 lt	1 Kg	2 Kg
1-9-98	-	1 No.	250 gm	-	-	-
1-10-98	-	-	-	-	1 Kg	2 Kg
1-11-98	-	-	-	-	-	2 Kg
1-12-98	1 Lit	1 No.	-	-	-	2 Kg
1-1-99	-	-	-	-	1 Kg	2 Kg
1-2-99	-	-	-	-	-	2 Kg
1-3-99	2 Lit	1 No.	250 gm	1 Lt	2 Kg	5 Kg
1-4-99	-	-	-	-	-	2 Kg
1-5-99	1 Lit	-	-	-	-	2 Kg
	7 Lt	4 Nos.	600 gm	2 Lt	7 Kg	28 Kg
	12	12	12	12	12	12
	0.58 x 333	0.33 x 582	50 x 3.2	0.16 x 1550	0.58 x 240	2.33 x 60

Date	Ammonium Disulphate	Sodium Metabisulphate	Iso Prophyl alcohol	RB flask short neck	Flasks Eriemeyer conical	Dropping Bottles	Acid Alkali gloves
1-6-98	1 Kg	1 Kg	-	1 No.	2 No.	1 No.	10 set
1-7-98	-	-	-	-	1 No.	-	-
1-8-98	-	-	-	-	2 No.	-	-
1-9-98	1 Kg	1 Kg	-	1 No.	-	1 No.	10 set
1-10-98	-	-	-	-	-	-	-
1-11-98	-	-	-	-	4 No.	-	-
1-12-98	1 Kg	1 Kg	-	1 No.	-	2 No.	10 set
1-1-99	-	-	-	-	-	-	-
1-2-99	-	-	-	-	-	-	-
1-3-99	1 Kg	1 Kg	0.5 Kg	1 No.	5 No.	2 No.	20 set
1-4-99	-	-	-	-	-	1 No.	-
1-5-99	-	-	-	-	-	-	-
	4 Kg.	4 Kg.	1 Kg.	4 No.	14 No.	7 No.	50 se
	12	12	12	12	12	12	12
	0.58 x 333	0.33 x 582	50 x 3.2	0.16 x 1550	0.58 x 240	0.58 x 236	4.16 x

Date	2 - Ethyl Hexyl Acrylate	Boric acid	Pot dichromate	Common salt	P-Chloromate	Pot hydrogen phthalate	Potassium Thio cynate AR
1-6-98	0.5	20 Kg	1 Kg	500 Kg	250 gm	0.5 Kg	0.5 Kg
1-7-98	-	20 Kg	2 Kg	-	-	-	-
1-8-98	-	20 Kg	-	-	-	-	-
1-9-98	-	20 Kg	1 Kg	-	500 gm	-	-
1-10-98	0.5	20 Kg	2 Kg	250 Kg	-	1 Kg	0.5 Kg
1-11-98	-	20 Kg	-	-	-	-	-
1-12-98	-	20 Kg	2 Kg	-	-	-	-
1-1-99	-	20 Kg	-	-	250 gm	-	0.5 Kg
1-2-99	-	20 Kg	-	-	-	-	1 Kg
1-3-99	0.5	20 Kg	2 Kg	500 gm	500 gm	1 Kg	1 Kg
1-4-99	-	20 Kg	1 Kg	-	-	0.5 Kg	-
1-5-99	-	20 Kg	1 Kg	-	-	-	0.5 Kg
	1.5 Lit	240 Kg.	12 Kg.	1250 gm	1500 gm	3 Kg	3 Kg
	12	12	12	12	12	12	12
	0.125 x 1350	20 x 5.7	1 x 115	104 x 1.2	125 x 1.2	0.25 x 576	0.25 x 556

Date	Dithio zone	Connister for ammonia vapour / Gas	Sodium Phosphate AR	Dissolved Acecelene Gas	Stopper B 14	Hydroxy lamine sulphate
1-6-98	2 gm	2 No.	1 Kg	2	5 No.	1 Kg
1-7-98	3 gm	-	-	-	-	-
1-8-98	2 gm	-	1 Kg	-	-	-
1-9-98	2 gm	1 No.	-	2	10 No.	-
1-10-98	2 gm	-	-	-	-	1 Kg
1-11-98	5 gm	1 No.	1 Kg	-	-	-
1-12-98	2 gm	-	-	1	5 No.	-
1-1-99	5 gm	-	-	-	-	-
1-2-99	-	-	-	-	-	-
1-3-99	5	1 No.	2 Kg	-	-	-
1-4-99	-	-	-	2	10 No.	1 Kg.
1-5-99	-	-	-	-	-	-
	1.5 Lit	240 Kg.	12 Kg.	1250 gm	1500 gm	3 Kg
	12	12	12	12	12	12
	2.3 x 44	0.416 x 310	0.416 x 340	0.75 x 160	2.5 x 43	0.25 x 560

Date	Gelatine Powder	Mercuric chloride	Fabric acid alkali proof gloves	Naphaly lamine	Hydrazine hydrate	Chromium trietide	Condensers
1-6-98	1kg	500gram	5no	0.5 kg	2 lt	1kg	1no
1-7-98	-	-	-	-	-	-	-
1-8-98	-	-	-	-	-	1kg	1no
1-9-98	-	-	5no	-	1lt	-	-
1-10-98	-	-	-	0.5kg	-	-	-
1-11-98	0.5 kg	250kg	-	-	-	-	-
1-12-98	-	-	10no	-	1lt	1kg	-
1-1-99	-	-	-	-	-	-	-
1-2-99	-	-	-	-	-	2kg	1no
1-3-99	2kg	500gram	10no	1kg	2lt	-	-
1-4-99	-	-	-	-	-	-	-
1-5-99	-	-	-	-	-	-	-
	3.5kg	1250gram.	30no.	2kg	6lt	5kg	4no
	12	12	12	12	12	12	12
	0.29 x 490	104 x 0.95	2.5 x 35	0.16 x 900	0.5 x 218.5	0.41 x 272	0.33 x 399

Date	Potassium persulphate	Iron power electrolyte	Mercuric sulphate	sodium thioslphate Pentachloride	Ethy Bromide Ir	Dishes, Flasks
1-6-98	2gram	2kg	250gram	1kg	0.5kg	1kg
1-7-98	-	-	-	1kg	-	-
1-8-98	-	2kg	-	-	-	1kg
1-9-98	-	-	-	1kg	-	1kg
1-10-98	5gram	-	-	-	-	-
1-11-98	-	-	250gram	-	-	-
1-12-98	-	2kg	-	1kg	0.5kg	1kg
1-1-99	-	-	-	-	-	2kg
1-2-99	-	-	-	-	-	2kg
1-3-99	3gram	2kg	250gram	2kg	-	-
1-4-99	-	-	-	-	-	-
1-5-99	-	-	-	-	-	-
	10gram	8kg.	750gram.	6kg	1kg	7kg
	12	12	12	12	12	12
	0.8 x 193	0.66 x 135	62.5 x 1.4	0.5 x 160	0.08 x 1200	0.58 x 104

Date	N-butyl alcohol	Isoprophyl Ether AR	Stannous chloride AR	Chloroform	Triethylarrine	Sucrose
1-6-98	1kg	2ml	2grm	1KG	1LT	0.5KG
1-7-98	1KG	-	-	1KG	-	-
1-8-98	-	-	-	-	-	-
1-9-98	-	2ML	-	1KG	1LT	-
1-10-98	-	-	-	-	-	-
1-11-98	1KG	-	-	-	-	-
1-12-98	-	-	-	-	1lt	-
1-1-99	-	-	-	-	-	-
1-2-99	-	-	-	-	-	-
1-3-99	1kg	2ml	1grm	1kg	1lt	0.5kg
1-4-99	-	-	-	-	-	-
1-5-99	-	-	-	-	-	-
	4kg	6ml.	3grm.	4kg	4lt	1.5kg
	12	12	12	12	12	12
	0.33 x 280	0.5 x 140	0.25 x 510	0.33 x 190	0.33 x 176	0.125 x 393

Date	Petroleum ether	Bottle wash Ldpe Plastic	Sod hydrogen carbonate	watch glasses	Benzyl alcohol	Perric ammonium nitrate
1-6-98	1lt	5no	1kg	2no	0.5lt	500grm
1-7-98	-	-	1kg	-	-	-
1-8-98	-	-	-	2no	-	-
1-9-98	1lt	2no	-	-	-	250grm
1-10-98	-	-	1kg	-	-	-
1-11-98	-	-	-	-	0.5lt	-
1-12-98	-	3no	1kg	-	-	-
1-1-99	1lt	-	-	2no	-	-
1-2-99	-	-	-	-	-	-
1-3-99	1lt	5no	2kg	-	1lt	500grm
1-4-99	-	-	1kg	-	-	-
1-5-99	-	-	1kg	-	-	-
	4lt	15no.	8kg.	6no	2lt	1250kg
	12	12	12	12	12	12
	0.33 x 107	1.25 x 31.5	0.66x 64	0.5 x 80	0.16 x 380	104 x 34

Date	Tubes with rim	Citric acid AR	PH Indicator Solution	PVC Apron with acid & Alkali proo	P-dinethyl	Flasks boiling Flat Bottom	Acetonitrite
1-6-98	10 No	1 Kg	1 Lit	3 No.	250 gm	1 No.	0.5 Kg
1-7-98	10 No.	-	-	-	-	-	-
1-8-98	-	-	-	-	-	-	-
1-9-98	-	0.5 Kg	-	-	-	-	-
1-10-98	20 No.	-	-	3 No.	-	-	-
1-11-98	-	-	1 Lit	-	20 gm	1 No.	0.05 Kg
1-12-98	-	-	-	-	-	-	-
1-1-99	10 No.	0.5 Kg	-	-	-	-	-
1-2-99	-	-	-	-	-	-	-
1-3-99	20 No.	1 Kg	1 Lit	3 No.	50 gm	1 No.	0.5 Kg
1-4-99	-	-	-	-	-	-	-
1-5-99	-	-	-	-	-	-	-
	80 Nos.	3 Kg.	3 Lit	9 No.	120 gm	3 No.	1.5 Kg
	12	12	12	12	12	12	12
	6.6 x 6.4	0.25 x 157	0.25 x 150	0.75 x 55	70 x 3.48	0.25 x 155	0.125 x 306

Date	Benzoye Peroxide	Thymol Blue Powder AR	Phosphorous penta sulphate	Face shield hood	Calcium sulphate	Sulpher powder	Sodium Nitrate
1-6-98	0.5 Lit	10 gm	0.25 Kg	2 No.	1 gm	1 Kg	0.5 Kg
1-7-98	-	-	-	-	-	-	-
1-8-98	-	-	-	-	-	-	-
1-9-98	-	5 gm	-	2 No.	-	-	-
1-10-98	-	-	-	-	-	-	-
1-11-98	0.5 Lit	-	-	-	-	-	-
1-12-98	-	5 gm	0.25 Kg	-	-	-	-
1-1-99	-	-	-	-	-	-	-
1-2-99	0.5 Lit	-	-	-	-	-	-
1-3-99	-	10 gm	0.5 Kg	2 No.	1 gm	1 Kg	1 Kg
1-4-99	-	-	-	-	-	-	-
1-5-99	-	-	-	-	-	-	-
	1.5 Lit	30 gm	1.00 Kg	6 No.	2 gm	2 Kg	1.5 Kg
	12	12	12	12	12	12	12
	0.125 x 235	2.5 gm x 9	0.05 x 440	0.5 x 45	0.16 x 100	0.16 x 81	0.125 x 91.2

**Table - III**  
**Existing and proposed stock levels**

MATERIAL DESCRIPTION	PRESENT STOCK	UNIT	UNIT PRICE	AVG RATE INVENTORY	SUGGESTED AVG INVENTORY	AVG VALUE	REMARKS	EQQ	NO. OF ORDERS TO BE RELEASED PER ANNUM
SILVER	300	Kg	6895	2068500	285	1965075	1,08,425	50kg	60
METHYLENE CHLORIDE	30	Ton	36002	1080057	28.5	1026057	54000	4.5 ton	71
CTA	7500	Kg	122	915000	7200	878400	36800	1000 kg	82
GELETINE	2500	Kg	300	780000	2500	750000	30000	400 kg	70
FURNACE OIL	130	Kg	5955	774150	125	744375	29775	20 kl	66
TRIPHENYL PHESPARE	2300	Kg	130	299000	1900	247000	52000	600 kg	36
TETRA HYDRO FURAN	1500	Kg	165	247500	1400	231000	16500	400 kg	39
POTASSIUM TODIDE	120	Kg	1162	139440	115	133630	5810	50 kg	25
POTASSIUM BROMIDE	1050	Kg	110	115500	1000	110000	5500	450 kg	23
ACETONE	4.5	Ton	27100	121950	4	108400	13350	2 ton	20
METHANOL	8	Ton	11100	88800	7.5	83250	5550	20 ton	4
CAUSTIC SODA SLAKES	4.5	Ton	19400	87300	4.0	77600	9700	2.5 ton	18
AMMONIUM BROMIDE	0.95	Ton	125000	118750	0.75	93750	31250	0.25 ton	28
METHYL ETHYL KATONE	1.4	Ton	50250	70350	1.25	62812	7537	0.5 ton	30



MATERIAL DESCRIPTION	PRESENT STOCK	UNIT	UNIT PRICE	AVG RATE INVENTORY	SUGGESTED AVG INVENTORY	AVG VALUE	REMARKS	EOQ	NO. OF ORDERS TO BE RELEASED PER ANNUM
GLUCONIC ANHYDRIDE	20	KG	625	12500	15	9375	3125	25 Kg	7
SODIUM THIO SULPHATE	350	KG	25	8750	350	8750	-	600 Kg	7
THROM ALUM	40	KG	360	14400	30	190800	3600	40 Kg	6
AMMONIA GAS	400	KG	23	9200	350	8080	1150	550 kg	6
CETIC ACID	85	Lit	90	7650	85	7650	-	85 Lt	10
POT META BISULPHATE	70	Kg	108	7650	65	7020	540	50 Kg	12
HYDROQUINONE PG GRADE	30	Kg	235	7050	25	5875	1175	25 Kg	10
DIBUTYL PHTHALATE	120	Kg	54.6	6552	100	5460	1092	150 Kg	10
SOD CHLORIDE	150	Kg	36	5400	150	5400	-	150 Kg	10
MERTHYL ISO CYNATE	0.75	Kg	9850	7387	0.5	4925	2462	0.5 Kg	10
WIDNECK REACTION VESSEL	1.5	No.	9151	13726	1	9151	4575	1 No	5
DILUTE NITRIC ACID	1250	Lit	4	5000	1000	4000	1000	1000 LT	10
SOD SULPHATE	200	Kg	19	3800	175	3325	475	175 KG	11
MICRODEP C	25	Kg	172	4300	20	3440	860	20 KG	10
DIETHYL ETHER	40	Kg	78	3120	40	3120	-	40 KG	10
METOL	5	Kg	570	2850	5	2850	-	5 KG	11
SOD CARBONATE	2.5	Kg	1570	3925	2	3540	785	2 KG	9

MATERIAL DESCRIPTION	PRESENT STOCK	UNIT	UNIT PRICE	AVG RATE INVENTORY	SUGGESTED AVG INVENTORY	AVG VALUE	REMARKS	EOQ	NO. OF ORDERS TO BE RELEASED PER ANNUM
METHYL AMINO ACETIC ACID	0.75	Kg	5900	4425	0.5	2950	1475	1.5 KG	3
GLYCERINE AR	50	Kg	72	3600	40	2880	720	100 KG	4
COTTON HAND GLOVES	600	Set	5	2842	500	2500	500	1500 LT	3
BENTONITE POWDER	2.5	Ton	1137	2000	2	2274	568	6 TON	3
HYDROCHLORIC ACID	1000	Lt	2	2550	1000	2000	--	3500 LT	3
LITHIUM NITRATE AR	1.5	Kg	1700	2500	1	1700	850	4 KG	3
ETHYL ACRYLATE	25	Kg	100	2400	20	2000	500	50 KG	4
SALYCLIC ACID	30	KG	80	2400	30	2400	-	100 KG	2
CARBOXY SULPHO PHENYL	1	KG	3980	3980	0.5	1990	1990	3 KG	2
MCG 100	55	TON	36.8	2024	50	1840	184	150 TON	3
FORMALDEHYDE	40	LTR	41.2	1648	40	1648	-	150 LT	3
FURFURA	7.5	LTR	390	2925	5	1950	975	15 LT	3
CARFOLC T	10	KG	151	1510	10	1510	-	40 KG	3
ACETIC ANHYDRIDE	0.75	KG	2770	2077	0.5	1985	692	2 KG	3
1,3 PROPANE SULPHONE 98%	125	GM	70	8750	50	3500	5250	100 GMS	2
PYRROLIDONE LR	1	KG	1385	1385	1	1385	-	4 KG	3

MATERIAL DESCRIPTION	PRESENT STOCK	UNIT	UNIT PRICE	AVG RATE INVENTORY	SUGGESTED AVG INVENTORY	AVG VALUE	REMARKS	EOQ	NO. OF ORDERS TO BE RELEASED PER ANNUM
H BUFFER	35	KG	37	2295	35	1295	-	150 KG	2
GLACIAL ACETIC ACID	50	LTR	26	1300	50	1300	-	200 LT	3
METHYL BENZOTHAZOLE	5	ML	500	2500	2.5	1250	1250	10 ML	3
NITRO BENZENE	15		135	2025	10	1350	675	50 LT	2
PHENOL	75	GMS	88	6600	25	2200	4400	50 GM	2
2, 4 DINITRO CHLOROBENZENE PYRIDINE BRNZENE IR	1.5	KG	807	1210	1	807	403	6 KG	2
ROUND BOTTOM FLASKS	20	LTR	44	880	20	880	-	100 LTR	2
3 METHYL 1, 4 SULPHOPHENYE 5 PYRAZ	5	NO	457	2285	3	1371	914	10 NOS	2
VOLUMENTRIC FLASKS	5	KG	185	925	5	925	-	25 KG	2
PURE CHRME 2, 3, 4	20	NO	115	2300	10	1150	1150	40 NOS	2
SIDFLOC	1	KG	1500	1500	0.5	750	750	2 KG	3
MULTISOCKET FLAT FI ANG	3.5	KG	125	787	3.5	787	-	19 KG	2
DI SODIUM HYDROGEN ORTHOPOSPHATE	1.5	NO	1792	2688	1	1792	896	2 KG	2
	3	KG	279	837	3	837	-	15 KG	2

MATERIAL DESCRIPTION	PRESENT STOCK	UNIT	UNIT PRICE	AVG RATE INVENTORY	SUGGESTED AVG INVENTORY	AVG VALUE	REMARKS	EQQ	NO. OF ORDERS TO BE RELEASED PER ANNUM
PHENIDONE LR	1	KG	1300	1300	0.5	650	650	3 KG	2
OXYGEN GAS	4	CUM	175	700	3.5	613	87	20 CUM	2
AMMONIUM THIOSULPHATE	7.5	KG	72	540	7.5	540	-	50 KG	2
FLAT FLANGE STOPPERS	1	NO	1792	1792	1	1792	-	2 NO	2
CALCIUM OXIDE	10	KG	53	530	10	530	-	50 KG	2
EDTA DISODIUM SALT	10	KG	70	700	7	490	200	50 KG	2
WASH BOTTLES B21	3	NO	438	314	2	876	438	7 NO	2
PROPARGYL ALCOHOL	350	ML	2.6	910	200	520	390	1500 ML	2
IODINE FLASKS F 17	2	NO	208	416	2	416	-	15 NO	2
HYDROGEN PEROXIDE	2	LT	216	432	2	432	-	10 LT	2
POTASSIUM CHLORIDE	10	KG	44	440	7	308	132	50 KG	2
SODIUM ACETATE	4.5	KG	70	315	4	280	35	25 KG	2
PRESSURE TUBING SOFT	75	MT	18	1380	30	540	810	100 MTS	2
VOLUMETRIC PIPPETS P2	7	NO	78	546	4	312	234	30 NOS	2
RECEIVER ADOPTER & MULTI SOCKET	2	NO	493	986	1	493	493	5	2
MANAGENESE DIOXIDE	5	KG	80	400	4	320	80	25	2
DEMETHYL SULPHOXIDE	1	LT	490	493	0.5	246	247	5	2

MATERIAL DESCRIPTION	PRESENT STOCK	UNIT	UNIT PRICE	AVG RATE INVENTORY	SUGGESTED AVG INVENTORY	AVG VALUE	REMARKS	EQQ	NO. OF ORDERS TO BE RELEASED PER ANNUM
SPECIFIC GRAVITY BOTTLES	3	NO	190	570	2	380	190	10 NOS	2
MONIUM NITRATE	7.5	KG	45	338	5	225	113	50 KG	1
BRETES	2	NO	512	1024	1	512	512	5 NOS	1
BORITE	1	KG	210	210	1	210	-	10 KG	1
ASURING PIPETS	2	NO	287	574	1	287	287	7 NOS	1
D ACETATE TRIHYDRATE	7.5	KG	33	248	6	198	50	50 KG	2
DINE FLASKS	3	NO	186	558	1	186	372	11 NOS	1
HYL IODIDE EXTRA PURE	0.75	KG	1900	1425	0.25	475	950	1 KG	1
CELLULOSE ACETATE BUTYRATE	200	KG	1	200	200	200	-	2000 KG	1
METHYL GLYOXINE AR	10	GM	36.8	368	58	184	184	50 GM	1
VE FLEXIBLE GLOVES	8	SET	35	280	6	210	70	50 SET	2
PHOSPHORIC ACID AR	1.5	LT	333	500	1	333	167	5 LT	2
JGN - RAY WEIGHT PIPPET 15	1	NO	582	582	1	582	-	3 NOS	1
METHYLENE ISACRYLAMIDE	125	GM	3.2	400	100	320	80	500 GMS	1
INYLEDENE CHLORIDE	0.5	LT	1550	775	0.25	387	388	1 LT	2

MATERIAL DESCRIPTION	PRESENT STOCK	UNIT	UNIT PRICE	AVG RATE INVENTORY	SUGGESTED AVG INVENTORY	AVG VALUE	REMARKS	EOQ	NO. OF ORDERS TO BE RELEASED PER ANNUM
POT HYDROXIDE	0.75	KG	240	180	0.75	180	-	5 KG	2
TRISODIUM OFTHO PHOSPHATE	3.5	KG	60	210	2.5	150	60	25 KG	2
AMMONIUM PEROXY DISULPHATE	0.5	KG	500	250	0.5	250	-	5 KG	1
SODIUM METABISULPHATE	0.5	KG	500	250	0.5	150	-	5 KG	1
ISO PROPHYL ALCOHOL	0.5	KG	1900	950	0.25	475	475	1 KG	1
RB FLASK SHORT NECK 1000 ML	1	NO	569	569	1	569	-	3 NOS	1
FLASKES ERIENMEYER CONICAL	3	NO	119	357	2	238	119	12 NOS	1
DROPPING BOTTLES B 19	2	NO	236	472	1	236	236	8 NOS	1
ACID ALKALI GLOVES	15	SET	35	525	5	175	350	50 SET	1
2-ETHYL HEXYL ACRYLATE	0.5	LT	1350	675	0.125	169	1181	1 LT	1
BORIC ACID	20	KG	57	114	20	114	-	300 KG	1
POT DICHROMATE	1.5	KG	115	173	1	115	58	15 KG	1
COMMON SALT	250	KG	1.2	300	125	150	150	150 KG	7
P-CHLOROMETA CRESOL	375	GM	1.2	450	150	180	270	1500GMS	1
POT HYDROGEN PHTHALATE	0.75	KG	576	432	0.25	144	288	1 KG	3
POTASSIUM THIOCUNATE	0.75	KG	556	417	0.25	139	278	3 KG	1

MATERIAL DESCRIPTION	PRESENT STOCK	UNIT	UNIT PRICE	AVG RATE INVENTORY	SUGGESTED AVG INVENTORY	AVG VALUE	REMARKS	EOQ	NO. OF ORDERS TO BE RELEASED PER ANNUM
HIZONE	3.5	GM	4	154	2.5	110	44	50 GM	1
MINISTER FOR AMMONIA POUR / GAS	1	NO	310	310	1	310	-	5 NO	1
SODIUM SULPHATE AR	1	KG	340	340	0.5	170	170	5 KG	1
DISSOLVED AVETYLENE GAS	1.5	CUM	160	240	1	160	80	10 CUM	1
COPPER AR	8	NO	43	344	3	129	215	40 NOS	2
HYDROXYLAMINE SULPHATE	0.5	KG	560	280	0.25	140	140	2 KG	1
ELATINE POWDER	1.25	KG	490	613	0.5	245	368	3 KG	1
MERCURIC CHLORIDE	375	GM	0.95	356	150	143	213	1500 GM	1
LABRIC ACID ALKALI PROOF GLOVES	10	NO	35	350	3	105	245	40 NOS	1
DIAPHTHYLAMINE	0.75	KG	900	675	0.25	255	450	1 KG	1
HYDRAZINE HYDRATE	1.5	LT	218	327	0.5	109	218	5 LT	1
PHROMIUM REIOXIDE	1	KG	272	272	0.5	136	136	5 KG	1
CONDENSERS	1	NO.	399	399	1	399	399	4 NOS.	1
POTASSIUM PER SULPHATE	4	GM	195	772	1	193	579	10 GMS	1
IRON POWDER ELECTROLITE	2	KG	135	270	1	135	135	10 KG	1
MERCURIC SULPHATE	125	GM	1.4	175	100	140	35	1000GM	1



MATERIAL DESCRIPTION	PRESENT STOCK	UNIT	UNIT PRICE	AVG RATE INVENTORY	SUGGESTED AVG INVENTORY	AVG VALUE	REMARKS	EQQ	NO. OF ORDERS TO BE RELEASED PER ANNUM
PHENOLIC INDICATOR SOLUTION	0.5	LT	150	45	0.25	37	38	5 LT	1
VC AAPRON WITH ACID & ALKALI PROO	2	NO	55	10	1	55	55	15 NO	1
.DIMETHYL LASKS BOILING FLAT BOTTOM	35	GM	3.48	122	25	87	35	250 GM	1
ACETONETRITE	1	NO	155	155	1	155	-	5 NO	1
BENZYOYE PERROXIDE	0.5	KG	306	153	0.25	77	76	3 KG	1
THYMOL BLUE POWDER SR	0.25	LT	235	59	0.125	29	30	5 LT	1
PHOSPHOROUS PENTA SULPHATE	7.5	GM	9	68	2.5	23	45	100 GM	1
FACE SHIELD HOOD	0.375	KG	440	165	0.25	110	55	1 KG	1
CALCIUM SULPHATE ANHY	1	NO	45	45	1	45	-	10 NOS	1
SULPHUR POWDER	1	GM	100	100	1	100	-	5 GMS	1
SODIUM NITRATE	0.5	KG	81	40	0.25	20	20	5 KG	1
	0.75	KG	91.2	69	0.25	23	46	5 KG	1
				7552319		7047171			



MATERIAL DESCRIPTION	CLASSIFICATION	LEAD TIME IN DAYS	LEAD TIME CONSUMPTION (LTC)	EOQ	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EOQ + ROL)	REMARKS
ETHYLENE GLYCOL	B	30	550	450	45	595	600	1045	21. Review period system monthly placing an order because the price / unit is more.
SULPHURIC ACID	B	20	1150	1450	60	1210	1200	1660	
D OIL	B	20	2	2.5	3	5	5	7.5	22. Price / unit is less, so monthly the order is placed. Due to packing condition.
ALUMINIUM INDEBURN	B	20	50	50	7	57	50	107	
CHEMICALS	C	15	0.45	1	0.5	1	1	1	23. Price / unit is more and availability of material is obtained easily.
DRAX	C	15	0.8	1	0.8	1.5	1.5	1.5	
SODA ASH	C	30	106	100	30	136	150	136	24. Price / unit is less and availability of material is easily.
ETRON 11	C	15	1.15	3	1	2.15	2	2	
ALUMINIUM CHLORIDE	C	30	100	100	30	130	125	130	25. Monthly the order is placed, due to packing condition 100 is purchased.
FORM GRIDE 375 GRADE	C	30	65	50	25	90	100	90	
PTSP	C	15	3	2	1.5	4.5	4.5	4.5	26. Price/unit is more the order is biweekly placed. The availability of material is insufficiently.
SULPHATE OF ALUMINA	C	15	3	2	1.5	4.5	4.5	4.5	27. Monthly the order is placed, it is fixed. The availability is material in sufficient

MATERIAL DESCRIPTION	CLASSIFICATION	LEAD TIME IN DAYS	LEAD TIME CONSUMPTION (LTC)	EQQ	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EOQ + ROL)	REMARKS
BLEACHING POWER	C	30	100	100	30	130	125	130	28. Due to packing condition 100gm is purchased.
SODIUM HYDROXIDE	C	30	175	150	40	215	200	215	29. Order is placed bimonthly fixed period system
PILLETTS								70	30. Order is placed monthly. the material is available sufficiently
SODIUM CHLORIDE	C	60	50	50	20	70	100	30	31. Due to availability of packing condition the order is placed as 50 Kg monthly they fixed
SUCCINIC ANHYDRIDE	C	30	18	25	12	30	25	675	32. Every 1 1/2 month the order is placed.
SODIUM THIO SULPHATE	C	45	600	600	75	675	700	42	33. Due to packing condition the material is purchased. The material availability is sufficiently.
CHROME ALUM	C	30	27	40	15	42	50	840	34. Monthly order is placed because cost/unit is more
AMMONIA GAS	C	60	740	550	100	840	850	160	35. Bimonthly the order is placed price/unit is more.
ACETIC ACID	C	45	130	85	33	163	175	85	36. The order is placed every 1 1/2 month. The material available is sufficiently
POT META BISULPHATE	C	30	60	50	25	85	100	275	37. The order is placed ascending condition. Every three months the order is placed.
SODIUM CHLORIDE	C	45	225	150	50	275	250		

MATERIAL DESCRIPTION	CLASSIFICATION	LEAD TIME IN DAYS	LEAD TIME CONSUMPTION (LTC)	EOQ	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EOQ + ROL)	REMARKS
ETHYLENE ISOCYANATE	C	30	0.5	0.5	0.5	1	1	1.0	47. The price/unit is more. so the order is placed every one month. 48. The order is placed according to packing condition 49. The orders placed every 3 month 50. The order is placed every 15 days. The price/unit is more. And also material available is frequently.
DIENECK REACTION ESSEL	C	60	1	1	1	2	2	2	
LUTE NITRIC ACID	C	45	1500	1000	100	1600	1600	1600	
OD SULPHATE	C	60	400	175	60	460	460	450	
ICRODEP C	C	90	60	20	25	85	85	85	
ETHYL ETHER	C	90	130	40	35	165	165	175	
ETOL	C	45	8	5	3	11	11	10	
OD CARBONATE	C	30	2	2	1.5	3.5	3.5	5	
ETHYL AMINO ACETIC ACID	C	30	0.5	1.5	0.5	1	1	1	
GLYCERINE AR	C	45	60	100	25	85	85	100	
COTTON HAND GLOVES	C	90	1600	1500	125	1825	1825	2000	

MATERIAL DESCRIPTION	CLASSIFI -CATION	LEAD TIME IN DAYS	LEAD TIME CONSUMP TION (LTC)	EOQ	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EOQ + ROL)	REMARKS
ENTONITE POWDER	C	15	1	6	1	2	2	2	51. The order is placed every 2 months.
HYDROCHLORIC ACID	C	60	2200	3500	150	2350	2350	2500	52. The available of material is sufficient. cost/unit is more
ITHIUM NITRATE AR	C	30	1	4	1	2	2	2	53. The order placed in every 2 months.
METHYL ACRYLATE	C	60	40	50	20	60	60	60	56. Price/unit is more. so the order placed in every one month. The availability of material is sufficient.
SALYCLIC ACID	C	60	50	100	20	70	75	75	57. Every two months the order is placed.
CARBOXY SULPHO PHENYL	C	30	0.5	3	0.5	1	1	1	58. The order is placed every month
MCG 100	C	60	100	150	30	130	130	130	59. Price per unit is less. The order is placed every 1 1/2month.
FORMALDEHYDE	C	60	80	150	25	105	100	100	60. Price/unit is more. the order is placed every month.
FURFURA	C	30	4	15	2	6	5	5	
CARFOLC T	C	45	15	40	10	25	25	25	
ACETIC ANHYDRIDE	C	30	0.5	2	0.5	1	1	1	61. Due to packing condition the order is placed.

MATERIAL DESCRIPTION	CLASSIFICATION	LEAD TIME IN DAYS	LEAD TIME CONSUMPTION (LTC)	EOQ	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EOQ + ROL)	REMARKS
PROPANE SULPHONE	C	60	40	100	20	60	100	100	62. Price/unit is more . The order is placed every month.
ERROLIDONE LR	C	30	1	4	0.5	1.5	1.5	1.5	63. The order is placed every 2 months. Due to packing condition the order is placed.
BOOSTER CHEM XTREAT	C	60	70	150	25	95	100	100	
ACIAL ACETIC ACID	C	90	150	200	40	190	200	200	65. The order is placed every 3 months. The order is fixed. Price/unit is low. The ordering is placed according packing condition.
ETHYL	C	60	5	10	2	7	10	10	
INZOTHIAZOLE	C	90	26	50	14	40	40	40	
TRO BENZENE	C	60	25	50	15	40	50	50	
HENOL	C	60	2.5	6	1.5	4	5	5	66. The order is placed to every months. Order is placed according to packing condition.
4 DINITRO HLOBENZENE YRIDINE	C	60	45	100	20	65	75	75	
ENZENE LR	C	60	45	100	20	65	75	75	

MATERIAL DESCRIPTION	CLASSIFICATION	LEAD TIME IN DAYS	LEAD TIME CONSUMPTION (LTC)	EQO	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EOQ + ROL)	REMARKS
ROUND BOTTOM FLASKS	C	30	2	10	1	3	3	3	74. Order is placed every months. Price/unit is cost more.
METHYL 1, 4 DIPHOPHENYL 5	C	45	8	25	3	11	10	10	75. Order is placed every two months price/unit is more.
TRAZ									
GLUCONIC FLASKS	C	30	8	40	3	11	11	11	76. Order is placed fixed to every 3 months. The cost/unit is more.
PURE CHROME 2, 3, 4	C	60	1	2	1	2	2	2	
DFLOC	C	60	7	19	3	10	10	10	77. Order is placed every 2 months the price/unit is more.
MULTISOCKET FLAT LANG	C	90	1	2	1	2	2	2	
DI SODIUM HYDROGEN ORTHOPHOSPHATE	C	45	4	15	2	6	5	6	78. The order is placed every 2 months. The order is placed according to packing condition.
PHENIDONE LR	C	60	1	3	0.5	1.5	1.5	1.5	
OXYGEN GAS	C	30	4	20	2	6	10	10	
AMMONIUM THIOSULPHATE	C	60	15	50	4	9	10	10	
FLAT FLANGE STOPPERS	C	90	1	2	1	1	1	1	



MATERIAL DESCRIPTION	CLASSIFICATION	LEAD TIME IN DAYS	LEAD TIME CONSUMPTION (LTC)	EQQ	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EQQ + ROL)	REMARKS
FORMIC ACID	C	90	30	75	15	45	50	50	99. The order is placed 6 months. The price per unit is less.
DROGEN PEROXIDE	C	60	4	10	2	6	5	6	
POTASSIUM CHLORIDE	C	90	23	50	5	27	25	25	
SODIUM ACETATE	C	90	12	25	4	16	20	20	
PRESSURE TUBING	C	180	90	100	30	120	100	100	
DRIFT									
ISODILUMETRIC PIPPETS	C	90	10	30	3	13	13	13	
RECEIVER ADOPTER & MULTI SOCKET	C	60	1	5	1	2	2	2	
MANGANESE DIOXIDE	C	90	9	25	3	12	12	15	
DIETHYLENE SULPHOXIDE	C	60	1	5	0.5	1.5	1.5	2	
SPECIFIC GRAVITY BOTTLES	C	90	4	10	2	6	6	6	
AMMONIUM NITRATE	C	90	15	50	9	24	24	25	103. The order is placed every 2 months. It is ordered according to packing conditions.
BURETTES	C	90	1	5	1	1	1	1	
MAGBORITE	C	60	2	10	1	3	3	3	
									107. The order is placed in a fixed period system. Order is placed based on the future demand. price unit is less.

SERIAL DESCRIPTION	CLASSIFICATION	LEAD TIME IN DAYS	LEAD TIME CONSUMPTION (LTC)	EQQ	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EOQ + ROL)	REMARKS
MEASURING PIPETS	C	90	2	7	1	3	3	3	108. Order is placed every 6 months.
ACETATE HYDRATE	C	90	17	50	12	29	30	30	
LINE FLASKS	C	60	2	11	1	3	3	3	115. Order is placed every 2 months, price/unit is less.
THYL IODIDE EXTRA	C	180	0.5	1	0.25	0.5	0.5	0.5	
CELLULOSE ACETATE	C	180	1100	2000	100	1200	1200	1200	118. Order is placed every 6 months, price/unit is fixed.
TYRATE	C	90	15	50	9	24	25	25	
METHYL GLYOXINE AR	C	90	15	50	8	23	25	25	115. Order is placed every 2 months, price/unit is less.
E FLEXIBLE GLOVES	C	60	1	5	0.5	1.5	1.5	1.5	
PHOSPHORIC ACID AR	C	90	1	3	1	2	2	2	118. Order is placed every 6 months, price/unit is fixed.
ING - RAY WEIGHT	C	90	150	500	40	190	200	200	
PPET B15	C	90	0.5	1	0.25	0.5	0.5	0.5	118. Order is placed every 6 months, price/unit is fixed.
ETHYLENE	C	180	0.5	1	0.25	0.5	0.5	0.5	
SACRYLAMIDE	C	180	0.5	1	0.25	0.5	0.5	0.5	118. Order is placed every 6 months, price/unit is fixed.
NYLENE CHLORIDE	C	180	0.5	1	0.25	0.5	0.5	0.5	

MATERIAL DESCRIPTION	CLASSIFICATION	LEAD TIME IN DAYS	LEAD TIME CONSUMPTION (LTC)	EQQ	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EOQ + ROL)	REMARKS
DT HYDROXIDE569	C	90	2	5	1	3	3	3	119. The order is placed every 3 month. It is fixed. The price / unit is less.
RISODIUM OFTHO HOSPATE	C	90	7.5	25	3	10.5	10	10	
MMONIUM PEROXY SULPHATE	C	90	1	5	0.5	1.5	2	2	123. The order is placed every 6 months the price / unit is more.
ODIUM ETABISULPHATE	C	90	1	5	0.5	1.5	2	2	
SO PROPHYL ALCOHOL	C	180	0.5	1	0.25	0.5	0.5	0.5	
B FLASK SHORT NECK 000 ML	C	180	1	3	1	1	1	1	124. The order is placed in every 6 months.
LASKES ERIENMEYER CONICAL	C	90	4	12	2	6	6	6	
DROPPING BOTTLES B 9	C	90	2	8	1	3	3	3	127. The order is placed is every 3 months. The price / unit is less.
ACID ALKALI GLOVES	C	180	24	50	15	39	40	40	
2-RTHYL HEXYL ACRYLATE	C	180	0.6	1	0.25	0.8	1	1	
BORIC ACID	C	180	132	300	33	165	150	150	





MATERIAL DESCRIPTION	CLASSIFICATION	LEAD TIME IN DAYS	LEAD TIME CONSUMPTION (LTC)	EQQ	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EOQ + ROL)	REMARKS
ES, FLASKS	C	180	3	10	1	4	4	4	<p>152. The order is price order is placed every 6 months due to less .</p> <p>153. The price/unit is more The order is placed according to the packing condition.</p> <p>154-170.The order is placed in every 6 months. It is fixed period. The price / unit is less. The materials are ordering according to the packing condition.</p>
ETHYL ALCOHOL AR	C	180	1	4	0.5	1.5	1.5	1.5	
ETHOXY ETHYL ALCOHOL AR	C	180	2.5	10	1.5	4	4	4	
ETHYLENE DIAMINE	C	180	0.5	5	0.25	0.75	0.75	0.75	
ETHYLENE DIAMINE	C	180	1.5	5	0.5	2	2	2	
ETHYLENE DIAMINE	C	180	1.5	5	0.5	2	2	2	
ETHYLENE DIAMINE	C	180	0.5	2	0.25	0.75	0.75	0.75	
ETHYLENE DIAMINE	C	180	2	10	1	3	3	3	
ETHYLENE DIAMINE	C	180	8	25	3	11	11	11	
ETHYLENE DIAMINE	C	180	4	15	2	6	6	6	
ETHYLENE DIAMINE	C	180	3	10	2	5	5	5	
ETHYLENE DIAMINE	C	180	0.5	2	0.25	0.75	0.75	0.75	
ETHYLENE DIAMINE	C	180	600	2520	75	675	750	750	
ETHYLENE DIAMINE	C	180							
ETHYLENE DIAMINE	C	180							

MATERIAL DESCRIPTION	CLASSIFICATION	LEAD TIME IN DAYS	LEAD TIME CONSUMPTION (LTC)	EOQ	SAFETY STOCK	REORDER LEVEL (B + LTC)	REORDER QUANTITY	MAX. STOCK (EOQ + ROL)	REMARKS
SCREWS WITH RIM	C	180	30	100	15	45	40	40	166-170. The order is placed in every 6 months. It is fixed period. The price / unit is less. The materials are ordering according to the packing condition.
TRIC ACID AR	C	180	1	5	0.5	1.5	1.5	1.5	
INDICATOR SOLUTION	C	180	1	5	0.5	1.5	1.5	1.5	
CAAPRON WITH ACID &	C	180	3	15	1	4	4	4	
KALI PROO	C	180	50	250	20	70	75	75	
IMETHYL	C	180	1	5	1	2	2	2	
ASKS BOILING FLAT	C	180	1	5	1	2	2	2	
TTOM	C	180	0.5	3	0.25	0.75	0.75	0.75	
ETONETRITE	C	180	0.5	5	0.25	0.75	0.75	0.75	
NZOYE PERROXIDE	C	180	15	100	10	25	25	25	
YMOL BLUE POWDER	C	180	0.25	1	0.25	0.50	0.5	0.5	171-179. The material order is every 6 months it is fixed period. according to the future demand remaining order is placed. The price / unit is less for this materials. The materials ordered according to the packing condition.
OSPHOROUS PENTA	C	180	3	10	1	4	4	4	
ULPHATE	C	180	0.5	5	0.25	0.75	1	1	
ACE SHIELD HOOD	C	180	0.75	5	0.25	1.00	1	1	
ALCIUM SULPHATE ANHY	C	180	0.5	5	0.25	0.75	1	1	
ULPHUR POWDER	C	180	0.5	5	0.25	0.75	1	1	
ODDIUM NITRATE	C	180	0.5	5	0.25	0.75	1	1	

**Table -V**

**Program for ABC analysis**

Database Name : Master.dbf

Field	Field Name	Type	Width	Dec	Index	Collate
1	SNO	Numeric	3			
2	MAT_NAME	Character	40			
3	QUANT	Numeric	9	2		
4	UNIT	Character	5			
5	URATE	Numeric	10			
** Total **			68			

Database Name : Trans.dbf

Field	Field Name	Type	Width	Dec	Index	Collate
1	SNO	Numeric	3			
2	MAT_NAME	Character	25			
3	QUANT	Numeric	8	2		
4	URATE	Numeric	10	2		
5	UNIT	Character	5			
6	VALUE	Numeric	12	2		
7	CUMVALUE	Numeric	10			
8	CUMPER	Numeric	12	9		
** Total **			86			

Database Name : Strans.dbf

Field	Field Name	Type	Width	Dec	Index	Collate
1	SNO	Numeric	3			
2	MAT_NAME	Character	25			
3	QUANT	Numeric	8	2		
4	URATE	Numeric	10	2		
5	UNIT	Character	5			
6	VALUE	Numeric	12	2		
7	CUMVALUE	Numeric	12			
8	CUMPER	Numeric	12	2		
9	GRADE	Character	1			
** Total **			89			

\*\*\*\*\* Program for Master detail entries \*\*\*\*\*

```
clear
set date to british
set stat off
set clock to 23,65
set talk off
store 0 to mqty,msno
store 0 to Mrate
@ 1,1 to 24,78 double
@ 0,34 say "ABC ANALYSIS"
store space(40) to Mdesp
store space(5) to Munit
use master
store "Y" to ch
go bottom
do while CH="Y"
* clea
if lastkey() =27
    exit
endif
@4,11 say "Serial No."
@6,11 say "Material Description"
@8,11 say "Quantity"
@10,11 say "Unit Rate"
@12,11 say "Unit"
@4,35 get msno
@6,35 get Mdesp
@8,35 get Mqty pict "999999.99"
@10,35 get Mrate
@12,35 get Munit
```

```
read
append blank
replace sno with msno
replace mat_name with mdesp
replace quant with mqty
replace urate with mrate
replace unit with munit
store 0 to mqty,msno
store 0 to Mrate
store space(40) to Mdesp
store space(5) to Munit
@ 15,11 say "Records Updated Sucessfully"
@ 20,11 say "Do you want to Enter any more Details (Y/N)"
@ 20,56 get ch
read
enddo
set talk on
clea
close all
```

\*\*\*\*\* Program to calculate material values \*\*\*\*\*

```
clea
close all
set talk off
select a
use master
sele b
use trans
go top
dele all
pack
sele b
store 0 to mval,mcval,mcper
sele a
go top
do while !eof()
  sele b
  append blank
  repla sno with a->sno
  repla mat_name with a->mat_name
  repla urate with a->urate
  repla unit with a->unit
  repla quant with a->quant
  mval=a->quant*(a->urate)
  repla value with mval
  skip
sele a
skip
enddo
wait "Process Completed" Time 1
set talk on
close all
```

\*\*\*\*\* Program for finding cumulative values \*\*\*\*\*

```
clea
set clock to 24,65
set talk off
use trans
sort on value/d to strans
close all
clea
use strans
store 0 to mcum,tval,pval,mper
go top
do while .not. eof()
  tval=tval+value
  repl cumvalue with tval
  skip
enddo
go bottom
pval = cumvalue
go top
do while !eof()
  mper=(cumvalue/pval)*100
  if mper<75
    repl grade with "A"
  endif
  if mper>75 .and. mper<95
    repl grade with "B"
  endif
  if mper>95
    repl grade with "C"
  endif
  repl cumper with mper
  skip
enddo
@ 10,20 say "Process Completed..."
set talk on
close all
```

\*\*\*\*\* Program for printing report \*\*\*\*\*

```
clea
set talk off
set stat off
set date to british
use strans
set print on
set devi to print
set print to report.lst
list off
clea
set prin to
set print off
close all
return
```

□

MAT_NAME	QUANT	UNIT	URATE	VALUE	CUMVALUE	CUM %	GRADE
SILVER	3026.43	Kg	6895.00	20867234.85	20867235	26.999778358	A
METHYLENE CHLORIDE	322.01	Ton	36002.00	11593004.02	32460239	41.999779005	A
CTA	82354.12	Kg	122.00	10047202.64	42507442	54.999692703	A
GELETINE	28338.32	Kg	300.00	8501496.00	51008938	65.999641077	A
FURNACE OIL	1331.42	Kg	5955.00	7928606.10	58937544	76.258336332	A
TRIPHENYL PHESPARE	21884.62	Kg	130.00	2845000.60	61782544	79.939435885	B
TETRA HYDRO FURAN	15949.09	Kg	165.00	2631599.85	64414144	83.344420624	B
POTASSIUM TODIDE	1230.03	Kg	1162.00	1429294.86	65843439	85.193762341	B
POTASSIUM BROMIDE	10636.36	Kg	110.00	1169999.60	67013439	86.707606446	B
ACETONE	41.59	Ton	27100.00	1127089.00	68140528	88.165928700	B
METHANOL	92.25	Ton	11100.00	1023975.00	69164503	89.490833415	B
CAUSTIC SODA SLAKES	46.80	Ton	19400.00	907920.00	70072423	90.665576440	B
AMMONIUM BROMIDE	7.14	Ton	125000.00	892500.00	70964923	91.820367776	B
METHYL ETHYL KATONE	15.16	Ton	50250.00	761790.00	71726713	92.806035554	B
INDUSTRIAL METHYLATE SPRIT	32091.91	Lt	22.00	706022.02	72432735	93.719546018	B
MERTON 22	2257.50	Kg	240.00	541800.00	72974535	94.420572287	B
ETHLENE GLYCOL	5646.88	Kg	64.00	361400.32	73335935	94.888181911	B
SULPERIC ACID	17366.67	Kg	18.00	312600.06	73648535	95.292650002	B
KSD OIL	32.00	Kl	7546.00	241472.00	73890007	95.605086723	B
CALCIUM INDEBUNR CHAMICALS	731.82	Kg	275.00	201250.50	74091257	95.865480848	B
BORAST	9.00	Ton	20360.00	183240.00	74274497	96.102572125	C
SODA ASH	16.19	Ton	11268.00	182428.92	74456926	96.338614061	C
METRON 11	1057.05	Kg	170.00	179698.50	74636625	96.571123695	C
CALCIUM CLORIDE	22.93	Ton	7500.00	171975.00	74808600	96.793639371	C
TRM GRIDE 375 GRADE	1000.00	Kg	165.00	165000.00	74973600	97.007130206	C
SPTS	650.00	Kg	250.00	162500.00	75136100	97.217386331	C
SULPHATE OF ALUMINA	59.42	Ton	2400.00	142608.00	75278708	97.401904519	C
BLEACHING POWER	1000.00	Kg	132.00	132000.00	75410708	97.572697188	C
SODIUM HYDROXIDE PELLETS	1755.07	Kg	69.00	121099.83	75531808	97.729386522	C
GOLD CHLORIDE	220.00	GMS	500.00	110000.00	75641808	97.871713745	C
SUCCINIC ANHYDRIDE	175.04	Kg	625.00	109400.00	75751208	98.013264638	C
SOD THIO SULPHATE	4056.00	Kg	25.00	101400.00	75852608	98.144464461	C
CHROME ALUM	263.89	Kg	360.00	95000.40	75947608	98.267383427	C
AMMONIA GAS	3626.09	Kg	23.00	83400.07	76031008	98.375293340	C
ACETIC ACID	862.22	Ltr	90.00	77599.80	76108608	98.475698726	C
POT META BISULPHATE	600.00	Kg	108.00	64800.00	76173408	98.559542400	C
HYDROQUONONE PG GRADE	250.00	Kg	235.00	58750.00	76232158	98.635558076	C

1051.28 Kg	DIBUTYL PHTHALATE	54.60	57399.89	76343758	98.779955514	C
1505.56 Kg	SOD CHLORIDE	36.00	49200.16	76393008	98.843679293	C
5.00 Kg	METHYL ISO CYANATE	9850.00	45250.00	76438031	98.901933826	C
4.92 No.	WIDNECK REACTION VESSEL	9151.00	45022.92	76478031	98.953689180	C
10000.00 Ltr	DILUTE NITRIC ACID	4.00	40000.00	76516031	99.002856766	C
2000.00 Kg	SOD SULPHATE	19.00	38000.00	76550431	99.047366371	C
200.00 Kg	MICRODEP C	172.00	34400.00	76583931	99.090711480	C
429.49 Kg	DIETHYL ETHER	78.00	33500.22	76615133	99.131083243	C
54.74 Kg	METOL	570.00	31201.80	76645026	99.169761313	C
19.04 Kg	SOD CARBONATE	1570.00	29892.80	76674526	99.207930887	C
5.00 Kg	METHYL AMINO ACETIC ACID	5900.00	29500.00	76702626	99.244289023	C
390.28 Kg	GLYCERINE AR	72.00	28100.16	76729588	99.279174719	C
5392.40 Set	COTTON HAND GLOVES	5.00	26962.00	76752282	99.308538120	C
19.96 Ton	BENTONITE POWDER	1137.00	22694.52	76774022	99.336667154	C
10870.00 Ltr	HYDROCHLORIC ACID	2.00	21740.00	76794116	99.362666647	C
11.82 Kg	LITHIUM NITRATE AR	1700.00	20094.00	76814116	99.388544134	C
200.00 Kg	ETHYL ACRYLATE	100.00	20000.00	76834116	99.414421811	C
250.00 Kg	SALYCLIC ACID	80.00	19900.00	76854016	99.440170099	C
5.00 Kg	CARBOXY SULPHO PHENYL	3980.00	18400.00	76872416	99.463977562	C
500.00 Ton	MCG 100	36.80	16400.07	76888816	99.485197257	C
398.06 Ltr	FORMALDEHYD	41.20	16400.07	76904218	99.505125656	C
39.49 LTR	FURFURA	390.00	15401.10	76919318	99.524663302	C
100.00 KG	CARFOLC T	151.00	15100.00	76933805	99.543407798	C
5.23 KG	ACETIC ANHYDRIDE	2770.00	14487.10	76947865	99.561599805	C
10.00 GM	1,3 PROPANE SULPHONE 98%	70.30	14060.00	76961715	99.579520096	C
351.35 KG	PYRROLIDONE LR	1385.00	13850.00	76974715	99.596340586	C
496.15 LTR	PH BOOSTER CHEM MAXTREAT	37.00	12999.95	76987615	99.613031688	C
25.40 ML	GLACIAL ACETIC ACID	26.00	12899.90	77000315	99.629464012	C
88.89 LTR	METHYL BENZOTHAZOLE	500.00	12700.00	77012315	99.644990619	C
118.18 GMS	NITRO BENZENE	135.00	12000.15	77022715	99.658447011	C
12.66 KG	PHENOL	88.00	10399.84	77032931	99.671665328	C
220.96 LTR	2, 4 DINITRO CHLOROBENZENE PYRIDINE	807.00	10216.62	77042631	99.684216001	C
21.01 NO	BRNZENE IR	43.90	9700.14	77052233	99.696639874	C
50.00 KG	1 ROUND BOTTOM FLASKS	457.00	9601.57	77061483	99.708608300	C
75.65 NO	3 METHYL 1, 4 SULPHOPHENYL 5 PYRAZ	185.00	9250.00	77070183	99.719865089	C
5.27 KG	3 VOLUMENTRIC FLASKS	115.00	8699.75	77078088	99.730093241	C
35.00 KG	4 PURE CHRME 2, 3, 4	1500.00	7905.00	77085963	99.740282576	C
4.02 NO	5 SIDFLOC	225.00	7875.00	77093166	99.749602422	C
25.09 KG	6 MULTISOCKET FLAT FLANG	1792.00	7203.84	77100167	99.758660903	C
	7 DI SODIUM HYDROGEN ORTHOPHOSPATE	279.00	7000.11			

7	CHLOROFORM AR	2.48	KG	190.00	471.20	77280680	99.992223758	C
9	SUCROSE AR	1.02	KG	393.00	400.86	77281081	99.992742605	C
9	PETROLEUM ETHER	3.74	LTR	107.00	400.18	77281481	99.993260159	C
2	SOD HYDROGEN CARBONATE	6.25	KG	64.00	400.00	77281881	99.993777713	C
3	TRIMETHYLAMINE	2.27	I.T	176.00	399.52	77282280	99.994293972	C
3	WATCH GLASSES	4.99	NO	79.50	396.71	77282677	99.994807644	C
4	BEZYL ALCOHOL	1.00	LTR	380.00	380.00	77283057	99.995299320	C
5	FERRIC AMMONIUM CITRATE	1000.00	GM	0.34	340.00	77283397	99.995739240	C
5	TUBES WUTH RIM	50.00	NO	6.40	320.00	77283717	99.996153283	C
7	CITRIC ACID AR	2.00	KG	157.00	314.00	77284031	99.996559563	C
1	FLASKS BOILING FLAT BOTTOM	1.94	NO	155.00	300.70	77284332	99.996949022	C
0	P.DIMETHYL	86.21	GM	3.48	300.01	77284632	99.997337187	C
3	PH INDICATOR SOLUTION	2.00	LTR	150.00	300.00	77284932	99.997725352	C
2	ACETONETRITE	0.98	KG	306.00	299.88	77285232	99.998113517	C
9	PVC APRON WITH ALKALI PROO	5.45	NO	55.00	299.75	77285531	99.998500389	C
3	BENZOYE FERROXIDE	1.00	LT	235.00	235.00	77285766	99.998804451	C
4	THYMOL BLUE POWDER SR	25.00	GM	9.00	225.00	77285991	99.999095575	C
6	FACE SHIELD HOOD	4.44	NO	45.00	199.80	77286191	99.9993354352	C
5	PHOSPHOROUS PENTA SULPHATE	0.45	KG	440.00	198.00	77286389	99.999610541	C
7	CALCIUM SULPHATE ANHY	1.01	GMS	100.00	101.00	77286490	99.999741223	C
9	SODIUM NITRATE	1.10	KG	91.20	100.32	77286590	99.999870612	C
8	SULPHUR POWDER	1.23	KG	81.00	99.63	77286690	100.000000000	C



P-390