

# A Study on Inventory Management at Anantha PVC Pipes Pvt Ltd, Ananthapur

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## ABSTRACT

Inventory management helps companies identify which and how much stock to order at what time. It tracks inventory from purchase to the sale of goods. The practice identifies and responds to trends to ensure there's always enough stock to fulfill customer orders and proper warning of a shortage. The purpose of inventory management is to ensure availability of raw material in sufficient quantities as and when required and also minimize investment in inventories. This is essential to manage inventories efficiently and effectively in order to avoid excess investment. It is possible for a company to reduce the level of inventories to a considerable extent without any adverse effect on production and sales by using simple inventory planning and control techniques. The reduction of excessive inventories will create a favorable impact on the company profitability. Inventory turnover ratio, inventory conversion period is very helpful to know how effectively inventory plays a role in the organization. The use of EOQ analysis is very effective and is useful tool for classifying, monitoring and controlling of the inventories.

**How to cite this paper:** N. Saritha | Dr. P. Basaiah "A Study on Inventory Management at Anantha PVC Pipes Pvt Ltd, Ananthapur" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-6 | Issue-6, October 2022, pp.448-455, URL: [www.ijtsrd.com/papers/ijtsrd51895.pdf](http://www.ijtsrd.com/papers/ijtsrd51895.pdf)



IJTSRD51895

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## MEANING

The term inventory refers to the raw materials used in production as well as the goods produced that are available for sale. A company's inventory represents one of the most important assets it has because the turnover of inventory represents one of the primary sources of revenue generation and subsequent earnings for the company's shareholders. There are three types of inventory, including raw materials, work-in-progress, and finished goods. It is categorized as a current asset on a company's balance sheet. Inventory Management is the process of overseeing and controlling the flow of inventory units a business uses in the production or manufacture of goods for sale or distribution. Inventory is an accounting term that refers to goods that are in various stages of being made ready for sale, including:

1. Raw materials
2. Work-in-progress
3. Finished goods

## DEFINITION:

“**Inventory management is a systematic approach to sourcing, storing, and selling inventory**—both raw materials (components) and finished goods (products). In business terms, inventory management means the right stock, at the right levels, in the right place, at the right time, and at the right cost as well as price.”

## TYPES OF INVENTORIES:

**Raw materials** are unprocessed materials used to produce a good. Examples of raw materials include: Aluminium and steel for the manufacture of cars, Flour for bakeries that produce bread Crude oil held by refineries.

**Work-in-progress** inventory is the partially finished goods waiting for completion and resale. WIP inventory is also known as inventory on the production floor. A half-assembled airliner or a partially completed yacht is often considered to be work-in-process inventory.

**Finished goods** are products that go through the production process, and are completed and ready for

sale. Retailers typically refer to this inventory as merchandise. Common examples of merchandise include electronics, clothes, and cars held by retailers

**INDUSTRY PROFILE:**

The Indian plastics market is comprised of around 25,000 companies and employees 3 million people. The domestic capacity for polymer production was 5.72 million tones in past years. The Indian pipe industry is among the top three manufacturing hubs after Japan and China. The demand for plastic pipes such as PVC and CPVC is increasing as these pipes are better in quality and durability. The growth rate of the Indian plastics industry is one of the highest in the world, with plastic consumption growing at 16% per annum.

**OBJECTIVES OF THE STUDY:**

- To study various inventory techniques practiced in Ananta PVC Pipes Pvt. Ltd, Anantapur.
- To analyse the inventory stocking levels of Ananta PVC Pipes Pvt Ltd, Anantapur.
- To evaluate the efficiency of inventories of Ananta PVC pipes Pvt ltd, Anantapur.

**NEED OF THE STUDY:**

- The study of inventory management is the necessary activity that helps for continuous production in the company.
- Inventory management is must for every organization to maintain the adequate stock.
- It is crucial for an organization to understand its inventory to achieve both efficient and fast operations at an affordable cost.

**SCOPE OF THE STUDY:**

- The study is confined to inventory management at Ananta PVC Pipes Pvt Ltd and the study is to

be conducted for a period of five years i.e., from 2016-2017 to 2020-2021.

**RESEARCH METHODOLOGY:**

**Secondary data:**

The study is based on secondary data and it is collected from the company annual reports, journals and website.

**Website: [www.ananthapvcpipes.com](http://www.ananthapvcpipes.com)**

**TOOLS AND TECHNIQUES:**

- EOQ Analysis
- ABC Analysis
- Inventory turnover ratio

**LIMITATIONS:**

- The Study is limited to Ananta Pvc Pipes Pvt Ltd.
- The Study limited for a period of 5 years from 2016-2017 to 2020-2021.

**DATA ANALYSIS AND INTERPRETATION:**

**EOQ Analysis:**

The economic order quantity is that inventory level, which minimizes the total of ordering cost and carrying cost. It is defined as the quantity of materials to be ordered at one time which minimizes the wastage and costs. The basic objective of EOQ is to have an ideal order quantity for any item and to economize on the cost of the purchase.

Economic Order Quantity is given by the formula:

$$EOQ = \sqrt{\frac{2 \cdot A \cdot O}{C}}$$

Where,

- A = Annual consumption
- O = Ordering cost and
- C = Carrying cost

**Calculation of EOQ during the years 2016-17 to 2020-21**

years	2016-17	2017-18	2018-19	2019-20	2020-2021
Annual consumption	3855255	4042049	4714985	5387921	6060857
Ordering cost	24800	38450	31250	37168.8	41220.5
Carrying cost	520	680	720	830	940
EOQ	19176.3	21380.0	20230.8	21894.7	23052.3
	3	8	5	8	0



**➤ INTERPRETATION:**

From the above graph it is observed that EOQ is highest in the year 2020-21 i.e., 23052.3 units and it is lowest in the year 2016-17 i.e., 19,176.33 units. In 2017-18 it is 21380.08 and decreased to 20230.84 in the year 2018-19. Carrying cost and ordering cost is increased when compared to last year.

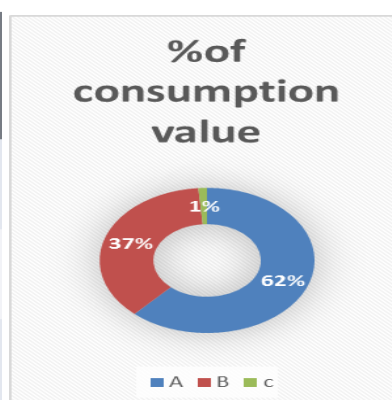
**ABC ANALYSIS:**

➤ In materials management, ABC analysis is an inventory categorization technique. ABC analysis divides an inventory into three categories—"A items" with very tight control and accurate records items" with less tightly control and good records, and "c items" with the simplest control possible and minimal records.

**ABC analysis for the year 2016-17:**

category	Raw Material	No.of items	quantity	rate	% of quantity	% of rate
A	Alpha Blue& processing Aid	2	1993	450.81	0.99	61.8
B	B.S, C.s, carbon PVC Resin Block & PVC satbilizer	5	47964	269	23.9	36.88
C	Calcium Titanium Dioxide & Scrap	3	150671	9.6	75.10	1.3
	Total	10	200628	729.40	100	100

Category	% Of Consumption Value
A	61.80
B	36.88
C	1.32



➤ **INTERPRETATION:**

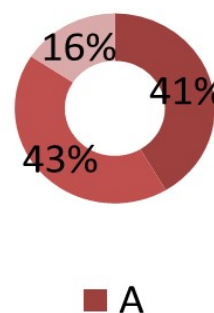
In the year 2016-17 the company has invested 61.80% of annual consumption value in A class items, 36.88% of annual consumption value in B class items and 1.32% of annual consumption value in C class items.

**ABC ANALYSIS FOR THE YEAR 2017-18:**

Category	Raw Material	No. Of Items	Quantity	Rate	%Of Quantity	%Of Rate
A	Alpha Blue & Processing Aid	2	1052	446.34	0.05	41.5
B	B.S, C.S, Carbon, PVC Resin, Block & PVC Stabilizer	5	43608	459.38	1.9	42.71
C	Calcium Titanium Dioxide & Scrap	3	223041.85	169.74	98.3	15.78
Total		10	267701.8	1075.46	100	100

**% Of Consumption**

Category	% Of Consumption
A	41.50
B	42.72
C	15.78



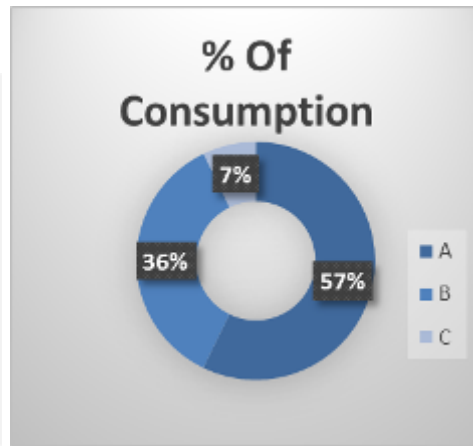
➤ **INTERPRETATION:**

In the year 2017-18 the company has invested 41.50% of annual consumption value in A class item, 42.72% of annual consumption value in B class items 15.78% of annual consumption value in C class items.

**ABC Analysis for the year 2018-19:**

Category	Raw Material	No. Of Items	Quantity	Rate	%Of Quantity	%Of Rate
A	Alpha Blue & Processing Aid	2	460	459.05	0.005	57.22
B	B.S, C.S, Carbon, PVC Resin, Block & PVC Stabilizer	5	95432940	285.55	99.75	35.59
C	Calcium Titanium Dioxide & Scrap	3	233156	57.64	0.24	7.18
Total		10	95666556	802.24	100	100

Category	% Of Consumption
A	57.22
B	35.59
C	7.18



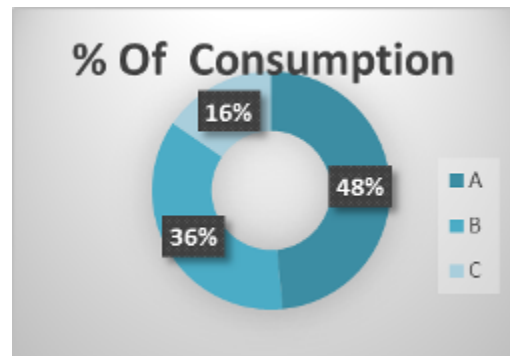
**➤ INTERPRETATION:**

In the year 2018-19 the company has invested 57.22% of annual consumption value in A class item, 35.59% of annual consumption value in B class items and 7.18% of annual consumption value in C class items.

**ABC Analysis for the year 2019-20:**

Category	Raw Material	No. Of Items	Quantity	Rate	%Of Quantity	%Of Rate
A	Alpha Blue & Processing Aid	2	1132	470	0.001	48.454
B	B.S, C.S, Carbon, PVC Resin, Block & PVC Stabilizer	5	203933882	350	99.849	36.082
C	Calcium Titanium Dioxide & Scrap	3	307082	150	0.150	15.464
Total		10	204242096	970	100	100

Category	% Of Consumption
A	48.45
B	36.08
C	15.46



**INTERPRETATION:**

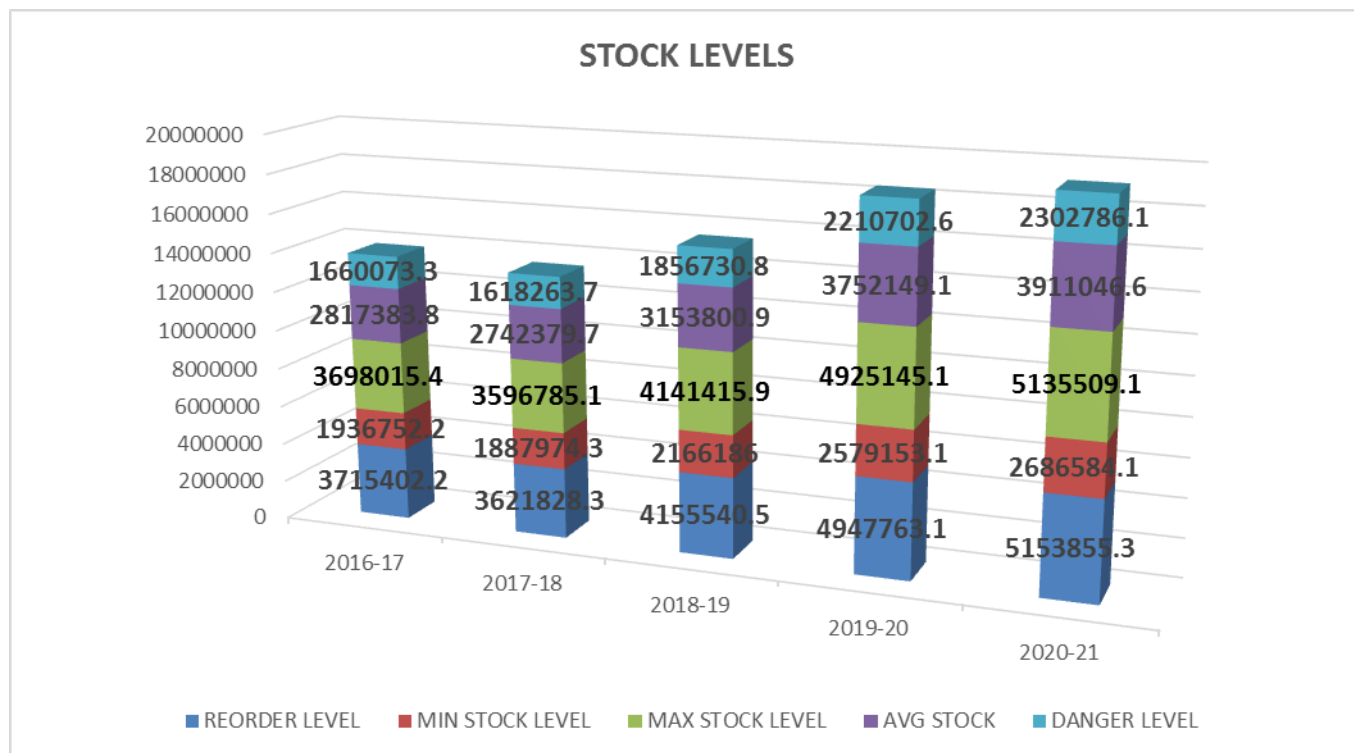
In the year 2020-21 the company has invested 48.45% of annual consumption value in A class items, 36.08% of annual consumption value in B class items and 15.46% of annual consumption value in C class items.

**Stock levels:**

- Reorder level = lead time \* Average usage + safety stock
- Average usage = usage/total working days in a year
- Safety stock = total usage \* period of safety stock / total working days in a year
- Minimum stock level = re-order level – (Average usage\* Average lead time)
- Maximum stock level = re-order level + re-ordering quantity- (Min usage\*Min lead time)
- Average stock level = ½(Minimum stock level +

- Maximum stock level)
- Danger level = Average usage \* Maximum re-order period for emergency purchases

YEARS	REORDER LEVEL	MIN STOCK LEVEL	MAX STOCK LEVEL	AVG STOCK	DANGER LEVEL
2016-17	3715402.2	1936752.2	3698015.4	2817383.8	1660073.3
2017-18	3621828.3	1887974.3	3596785.1	2742379.7	1618263.7
2018-19	4155540.5	2166186.0	4141415.9	3153800.9	1856730.8
2019-20	4947763.1	2579153.1	4925145.1	3752149.1	2210702.6
2020-21	5153855.3	2686584.1	5135509.1	3911046.6	2302786.1



**INTERPRETATION:**

From the above graph it is observed that all types of stock levels are increasing year by year with moderate changes. From this we can say that all types of stocks are maintaining properly but danger stock level should be maintained minimum as it is increasing yearly.

**INVENTORY TURNOVER RATIO:**

Inventory turnover ratio is concerned with the cost of goods and average inventory. Total inventory turnover ratio is showing how many times inventory is replaced during the year symbolically,

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$$

Years	2016-17	2017-18	2018-19	2019-20	2020-21
Cost Of Goods Sold(cr)	17.8	24	22	22.24	22.66
Average Inventory	4.37	4.52	2.91	3.62	3.63
INVENTORY TURNOVER RATIO	4.07	5.3	7.56	6.15	6.25



**INTERPRETATION:**

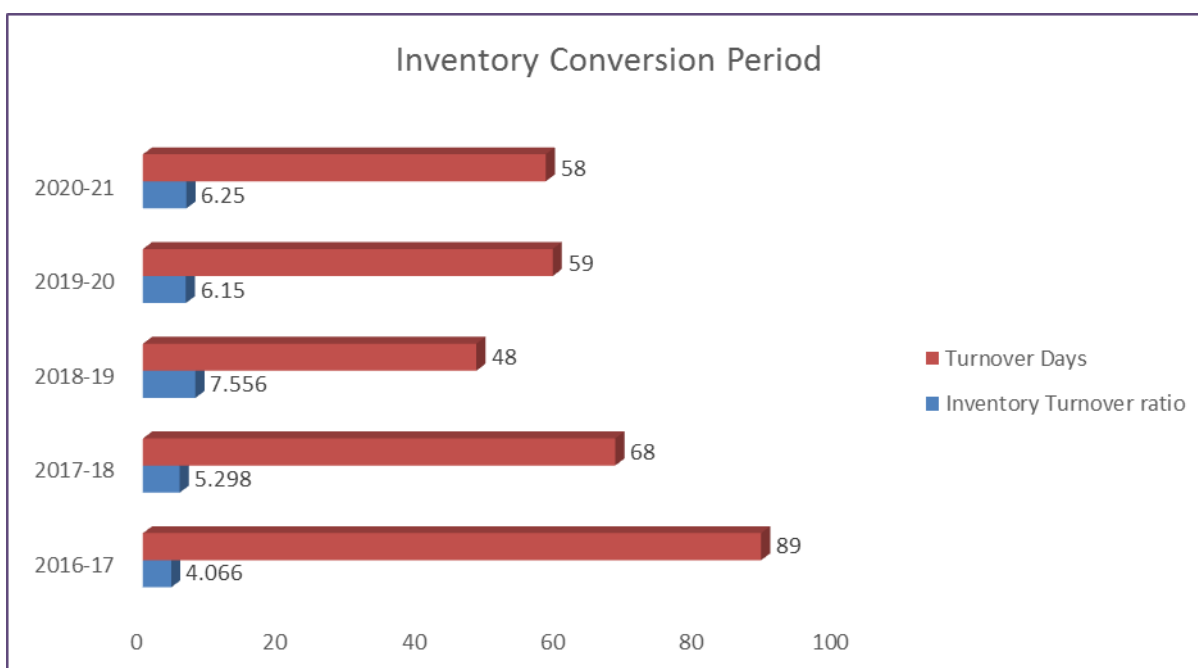
From the above graph it is observed that inventory turnover ratio is more in the year 2018-19 i.e., 7.56 and it is less in the year 2016-17 i.e., 4.07. finally, when compared to previous year it is more in the year 2020-21 i.e.,6.25.

**INVENTORY CONVERSION PERIOD:**

**Formula:** 365/ inventory turnover ratio

Inventory turnover ratios are calculated to indicate whether inventories have been used efficient or not. Inventory conversion period may also be calculated to find the average time taken to clear the stock.

Year	Inventory Turnover ratio	Turnover Ratio
2016-17	4.066	89
2017-18	5.298	68
2018-19	7.556	48
2019-20	6.15	59
2020-21	6.25	58



### INTERPRETATION:

From the above chart it is observed that the conversion period high in the financial year 2016-17 i.e., 89 days and it is low in the year 2018-19 i.e., 48 days. when compared to previous year the conversion period is less in the year 2020-21 i.e., 58days.

### FINDINGS:

1. EOQ is highest in the year 2020-21 i.e, 23,052 units and it is lowest in the year 2016-17i.e, 19,176.33 units.
2. The ordering cost and carrying cost per unit is high because of material transportation, insurance, tax and storage cost is high.
3. The highest inventory conversion period is recorded in the year 2016-17 with 89 days.It states that, in that year the demand is low to the products
4. The lowest inventory conversion period is recorded in the year 2018-19 with 48 days.It states that the demand for the products is high and inventory is converted into sales in a less time when compared to other years.

### SUGGESTIONS:

1. The company should maintain and improve the existing performance.
2. Purchase raw materials at the time when the stock reaches the minimum level.
3. The EOQ calculated is suggesting that the company should obtain its inventory requirements by placing orders frequently to its suppliers rather than one time replenishment.
4. The company inventory conversion period is comparatively more. It indicates company

performance is not efficient. The company is suggested to focus on reducing the conversion period of inventory to convert the inventory into sales in less time.

### CONCLUSION:

Inventory management has to do with keeping accurate records of finished goods that are ready for shipment. The study has been done to know about the inventory management of the ANANTHA PVC PIPES PVT LTD., with standard tools and techniques of inventory management. This study found out that the inventory management of the company should concentrate on reduction of different types of costs and also systematic maintenance of inventory. Company has to increase inventory turnover ratio.

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