

SYNOPSIS

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1. OBJECTIVE

- ✦ Determination of the carrying amount of inventories in Financial Statements. This includes determination of the cost of inventory and any amount to be written off to bring it to Net Realisable Value;
- ✦ It provides guidance on cost formulas that are used to assign costs to inventories;
- ✦ This standard is very important as valuation of inventory impacts both P&L as well as Balance Sheet, i.e., if closing stock is overvalued/undervalued, it impacts CY profits as well as asset value in the Balance Sheet.

2. SCOPE

This standard is NOT applicable for the following inventories: (Reasons are given in brackets)

- (a) Financial instruments (*If any contract satisfies financial asset or financial liability definition – it should be dealt with by Ind AS-32 and Ind AS-109, even if it is meant for sale in the ordinary course of business*);
- (b) Biological assets (*dealt with Ind AS-41 - Agriculture*); [As per Ind AS-41 – Agriculture, Inventories comprising agricultural produce are measured initially and subsequently on the balance sheet date at fair value less selling costs at the point of harvest. The same value will be the Cost as per Ind AS-2]

This standard does not apply to the **measurement** (only) of:

- (a) Inventories **held by producers** of agricultural and forest products, agricultural produce after harvest, and minerals and mineral products, to the extent that they are measured at net realisable value (NRV) in accordance with well-established practices in those industries. When such inventories are measured at NRV, changes in that value are recognised in profit or loss in the period of the change. (*Refer Note 1 below*)
- (b) Inventories **held by commodity broker-traders** who **measure** their inventories at **fair value less costs to sell**. Any change in value of inventory from period to period will be recognised in profit or loss in the period of change. (*Refer Note 2 below*)

Note 1

If inventory is recognised at NRV, the profit or loss on those are recognised in the year even though it has not yet been sold. This is permitted only when agricultural crops have been harvested or minerals have been extracted (i.e., *ready for sale*) **and sale is assured under a forward contract or a government guarantee**, or when an active market exists and there is a **negligible risk of failure to sell**.

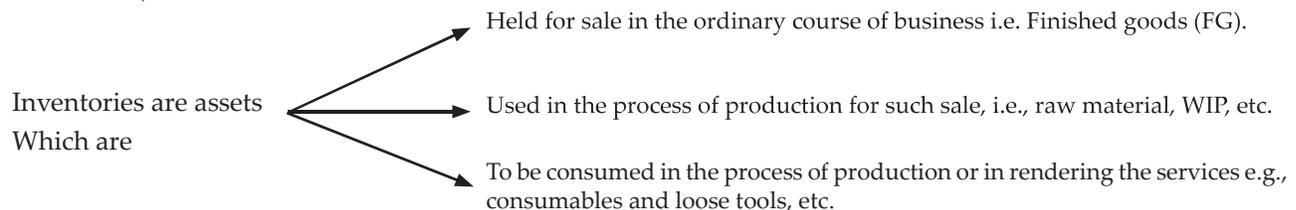
Note 2

This is an option given to the broker-trader to value inventory at fair value *less* cost to sell. If they value their stock like that, they need not follow this standard. They are middle men in the business and their profit is fluctuation in price or brokers' margin.

As we discussed in important basics chapter – NRV is from the point view of seller i.e., entity specific and FMV is market specific.

3. DEFINITIONS

Now let us understand the key terms used in the standard. (Read the definitions carefully to understand the standard better)



Note:

Material includes the primary packing material but **not** the secondary packing material and publicity material as Inventory cost does not include selling costs.

Primary packing material is essential to bring an item of inventory to its saleable condition, like, bottles, cans, etc., in case of food and beverages industry.

Secondary Packing materials are generally for transporting and forwarding the material.

Concept Capsule 1

X Ltd., manufactures soaps. It requires oil, which is bought in tins and at the end of the Financial Year (FY) the company has 1 lakh empty tins and containers. The entity sells the empty tins at ₹ 2 each. So, the worth of tins held by the company is ₹ 2 lakh (₹ 2 × 1 lakh tins) which is a material amount for the entity. The accountant of the company wants to disclose (classify) the empty tins as Inventory. Do you agree with this? Give your answer with reasons.

Suggested Answer

(Before you answer read the inventory definition once again.)

As per Ind AS-2 – Inventory is an asset, which is held for sale or used in the process of production or to be consumed in such process.

Containers & empty tins do NOT satisfy the definition of “Inventories” as these are not held for sale in the ordinary course of business and these are NOT used or consumed in the process of production. Hence classification of empty tins under Inventory is NOT correct. But these will satisfy the definition of an ASSET, hence the entity should recognize the asset at its NRV and present it either under current assets or noncurrent assets depending on the expected realisation time.

Concept Capsule 2

Radha Ltd. is engaged in the business of refining & transportation of crude oil through pipelines. The length of pipeline is 50 kms and it should be filled initially with 50 lakh Lts of oil. (Say, the entity wants to transport 10,000 Lts of oil from one end to another, if it fills with 10,000 Lts in the empty pipeline, it will be in the pipeline only and it cannot reach the other end. Hence the entity should fill the oil at the beginning to start transportation and the stock in the pipeline is a permanent stock which cannot be sold). Can the entity treat the stock of crude oil in pipelines as Inventory?

Suggested Answer

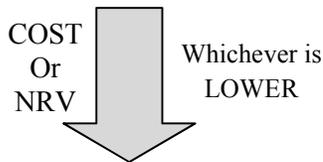
As per Ind AS-2, Inventory is an asset, which is held for sale in the ordinary course of business or used in the process of production for such sale.

The crude oil in the pipeline is held for sale. The oil in the pipeline is always replenished by way of fresh additions. The oil initially filled is not going to stay in pipeline permanently. Hence it is concluded that the oil in pipeline at the end of FY is held for sale in the ordinary course of business and it should be treated as Inventory as per Ind AS-2.

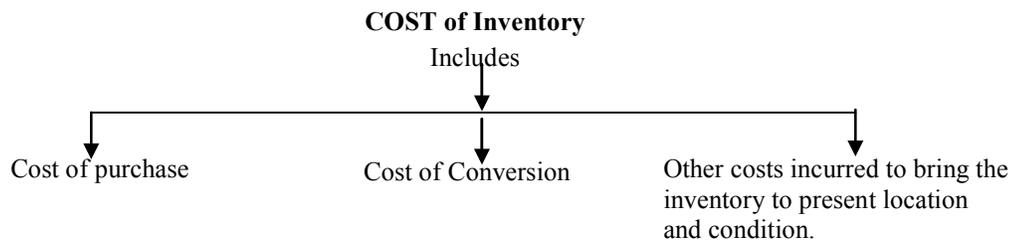
The oil is NOT held to produce or provide services in the ordinary course of business; hence it cannot be accounted as Property, Plant and Equipment (*Fixed asset*) under Ind AS-16. (Please read the definition of PPE as per Ind AS-16)

4. MEASUREMENT OF INVENTORIES

Inventory is valued at



Let us try to understand what is Cost? Which items are included/excluded from the cost of inventory? And Methods of valuation of inventory?



We should understand each element of cost separately.

5. COST OF PURCHASE

Cost of purchase includes all the costs incurred to purchase the material. The following items are directly related to the purchase of material:

	₹
Purchase price, i.e., Basic price of material	XXX
Add:	
NON-refundable taxes & duties like customs duty	XXX
Carrying Cost e.g., inward freight cost	XXX

Inward Insurance cost	XXX
All other costs incurred directly related to acquisition and bringing it to warehouse.	XXX
Less:	
Trade discounts	(XXX)
Quantity discounts	(XXX)
Duty drawbacks & other similar items	(XXX)
Cost of purchase	XXXX

Note:

The suppliers may offer an **early settlement discount** for payment within specified days (Cash Discount) and the entity may intend to achieve this. Still, this discount should not be deducted from cost of purchase.

Concept Capsule 3

ABC Ltd., purchases a product from X Ltd., at ₹ 10 each. As per the agreement, supplier gives a quantity discount of 10% when ABC Ltd. purchases 1,00,000 items in a year.

- Can ABC Ltd reduce the discount amount from its purchases?
- When should ABC Ltd. reduce discount amount from cost of purchase?

Suggested Answer

As per Ind AS-2, trade discounts, rebates, duty drawbacks and other similar items are deductible in determining the costs of purchase.

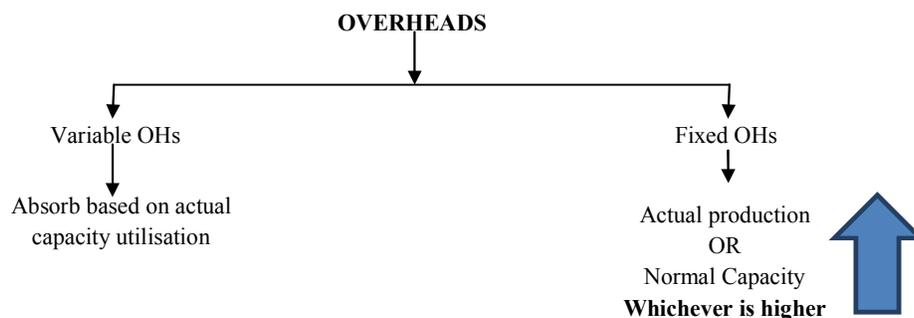
- Quantity discount is directly related to purchases hence it should be deducted from the cost of purchase.
- Discount is an income to the entity. Income should be recognised when it satisfies the following conditions:
 - Receipt of discount should be probable; and
 - It should be measured reliably.

As receipt of discount is probable when the entity purchases 1 lakh items, it should be *deducted from the cost of purchase* when it meets the target of 1,00,000 items.

6. COST OF CONVERSION

This includes the costs incurred to convert the raw materials into finished goods like labour, factory rent, fuel costs, power expenses, factory maintenance (factory overheads) and other items.

- We can refer to Cost Accounting Standard-4 (CAS 4) for further clarity.
- The overheads (OH) should be absorbed or loaded on inventory in the following manner:
 - ❖ Factory overheads can be divided into two types based on its nature, i.e., variable and fixed overheads.
 - ❖ Absorption of overheads (to determine cost p. u.) should be done as described in the following manner:



Q: What is Normal capacity?

Normal capacity is the number of units of production on an average over a period under normal circumstances after considering loss of capacity under normal circumstances. (Normal capacity = Total capacity *Less* planned maintenance).

It is computed based on the productive capacity achieved over a period of time. Say average production of three preceding financial years, where there **no** abnormal production took place.

Q: What is Actual capacity?

Actual capacity is actual production of goods over a period.

Q: Why should we take Normal capacity when actual production is less than normal capacity?

This can be understood better with the following example:

Example

For a product, raw material cost per unit is ₹ 25, direct labour ₹ 10 per unit and Fixed Ohs ₹ 2,00,000 **per annum**. The actual production is 4,000 units but normal capacity is 5,000 units. No opening stock. Closing stock is 1,000 units at the end of the year.

Let us determine the value of inventory (1,000 units) in both ways, i.e., by allocating Fixed OH based on normal capacity and actual capacity. First let us find out per unit cost and with that we can value the cost of 1,000 units.

Particulars	Basis	Units	Per Unit	Basis	Units	Per Unit
Raw Material put.	Actual		25	Actual		25
Direct labour p.u.	Actual		10	Actual		10
Fixed overheads p.u.	Normal	5,000	40	Actual	4,000	50
	Total cost per unit		75	Total cost per unit		85
Closing Stock (in units)			1,000			1,000
Closing Stock value in ₹			75,000			85,000

Observe the closing stock valuation. On observation, you can notice that, the closing stock value based on allocation of Normal capacity is lower when compared to actual capacity based allocation. Lower production may be because of idle time, labour strikes, inefficiencies, etc. When there is inefficiency or idle time, the closing stock value is high and because of higher closing stock value, gross profit will also be increased. It means the entity's inefficiency is becoming an asset to the entity and raising the profit. Does it make any sense? Think once.

Hence it is reasonable to allocate the Fixed OHs based on the Normal capacity when it is higher than Actual capacity.

Concept capsule 4**(CA Final-May 2018)**

Rama Ltd. normal production volume is 1,00,000 units. Estimated fixed overheads are ₹ 5,00,000. Calculate fixed overhead per unit to be absorbed when actual production is (i) 1,00,000 units; (ii) 80,000 units; (iii) 1,20,000 units and find out unabsorbed amount of OHs to be transferred to P&L in all the situations?

Suggested answer**(i) When actual production is 1,00,000 units:**

When actual production is equal to normal capacity, fixed overheads should be absorbed by 1,00,000 units i.e. fixed overheads recovery rate = $5,00,000/1,00,000 = ₹ 5$ per unit.

Overheads absorbed = actual capacity × per unit rate = $1,00,000 \times 5 = ₹ 5,00,000$;

Actual overheads incurred = ₹ 5,00,000; So unabsorbed amount = Nil

(ii) When actual production is 80,000 units:

When actual production is less than normal capacity, fixed overheads should be absorbed by using normal capacity (i.e., 1,00,000 units) i.e., fixed overheads recovery rate = $5,00,000/1,00,000 = ₹ 5$ per unit.

Overheads absorbed = actual capacity × per unit rate = 80,000 × 5 = ₹ 4,00,000;

Actual overheads incurred = ₹ 5,00,000; So unabsorbed amount = ₹ 1,00,000 and these unallocated overheads **should be charged to P&L** in the period in which it is incurred.

(iii) When actual production is 1,20,000 units:

When actual production is more than normal capacity, fixed overheads should be absorbed by using actual capacity (i.e., 1,20,000 units) i.e., fixed overheads recovery rate = 5,00,000/1,20,000 = ₹ 4.17 per unit. Overheads absorbed = actual capacity × per unit rate = 1,20,000 × 4.17 = ₹ 5,00,000;

Actual overheads incurred = ₹ 5,00,000; So unabsorbed amount = Nil.

Concept capsule 5

ABC Ltd. manufactures control units for air conditioning systems. Each control unit requires the following:

- ❖ 1 component X at a cost of ₹ 1,205 each 1 component Y at a cost of ₹ 800 each
- ❖ Sundry raw materials at a cost of ₹ 150 each

The company faces the following monthly expenses:

- ❖ Factory rent ₹ 16,500
- ❖ Energy cost ₹ 7,500
- ❖ Selling and administrative costs ₹ 10,000

Each unit takes two hours to assemble. Production workers are paid ₹ 300 per hour.

Production overheads are absorbed into units of production using an hourly rate. The normal level of production per month is 1,000 hours.

Determine the cost of inventory.

Suggested answer

As per Ind AS-2, variable overhead is allocated based on actual capacity and fixed OH is allocated based on actual or normal capacity whichever is higher.

<i>The cost of a single control unit:</i>	₹
Materials:	
Component X	1,205
Component Y	800
Sundry raw materials	150
	2,155
Labour (2 hours × 300)	600
Production overhead [(16,500 + 7,500) / 1,000 hours × 2 hours]	48
	2,803

7. OTHER COSTS

All other costs incurred to bring the inventory to the present location and condition.

Examples:

- ✳ Quality control cost – quality control employee cost and other costs of that department;
- ✳ R&D cost incurred for the development and improvement of the process or product;
- ✳ Administration OHs **in relation to** production activities (General admin OHs should NOT be included);
- ✳ Packaging cost – Primary package cost is **part of cost** of inventory and secondary package cost should NOT be included, etc.

The following costs should be EXCLUDED from “COST”

The following expenses should be charged to P&L statement as expense as and when incurred by the entity.

1. **Abnormal wastage** of Raw material, labour or other production costs (**Reason:** Inefficiency cannot increase the product value hence it should NOT be a part of cost);
2. **Storage costs** (If storage is a part of process of production, such storage cost should be included in the cost. E.g., Storage cost incurred in production of wine, pickles, etc.);
3. **General administration OHs** (**Reason:** General administration costs are NOT necessary to bring the inventory to its present location and condition);
4. **Selling & Distribution Costs** (**Reason:** Same as above);
5. **Interest & Financial charges** (In general, borrowing costs are not related to bring the inventory to its present location and condition. If inventory satisfies the definition of "Qualifying asset" as per Ind AS-23 – It should be included).

Concept capsule 6

In a production process, normal wastage is 5% of input. 5,000 MT of input were put in process resulting in a wastage of 300 MT. Cost per MT of input is ₹ 1,000. The entire quantity of waste is left as stock at the year end. If waste has **no** realizable value, what is the cost per unit?

Suggested Answer

As per Ind AS-2, Abnormal amount of waste materials, labour or other production costs are **excluded** from cost of inventories and such costs are recognised as expenses in the period in which they are incurred.

In this case, normal waste is 250 MT (5,000 MT × 5%) and Actual waste is 300 MT; hence abnormal waste is 50 MT (300 MT – 250 MT).

The cost of normal waste 250 MT will be included in determining the cost of inventories (finished goods) at the year end.

The cost of abnormal waste amounting to ₹ 52,632 (50 MT × ₹ 1,052.63) will be charged to P&L statement. [Cost per unit = 5,000 × 1,000/4,750 = 1,052.63]

Concept capsule 7 Deferred credit terms

A dealer has purchased 1,000 cars costing ₹ 2,80,000 each on deferred payment basis as ₹ 25,000 per month per car to be paid in 12 equal instalments. At year end 31st March, 20X1, twenty cars are in stock. What would be the cost of goods sold, finance cost and inventory carrying amount?

Suggested answer

	Per car ₹
Deferred payment price (25,000 × 12)	3,00,000
Less: Cash price	2,80,000
Interest expense	20,000

		₹
Cost of inventory	20 cars × 2,80,000	56,00,000
Finance cost	1,000 cars × 20,000	2,00,00,000
Cost of goods sold	980 cars × 2,80,000	27,44,00,000

8. ALLOCATION OF COSTS IN SPECIAL SITUATIONS

Joint Products

Two or more products generated simultaneously, by a single manufacturing process using common input, and being *substantially equal* in value.

Example

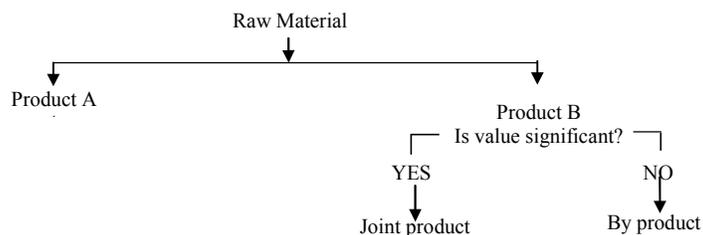
- (1) Butter, cheese, and cream from milk, (2) Fuel oil, gasoline, and kerosene from crude oil.

By-product

A secondary or incidental product, as in a process of manufacture. By-product generally has *insignificant value*.

Example: In the manufacture of Sugar – Sugar is the main product and molasses is by-product.

Understand the concept of Joint product and by-product with the following diagram:



9. ALLOCATION OF COST IN CASE OF JOINT PRODUCTS

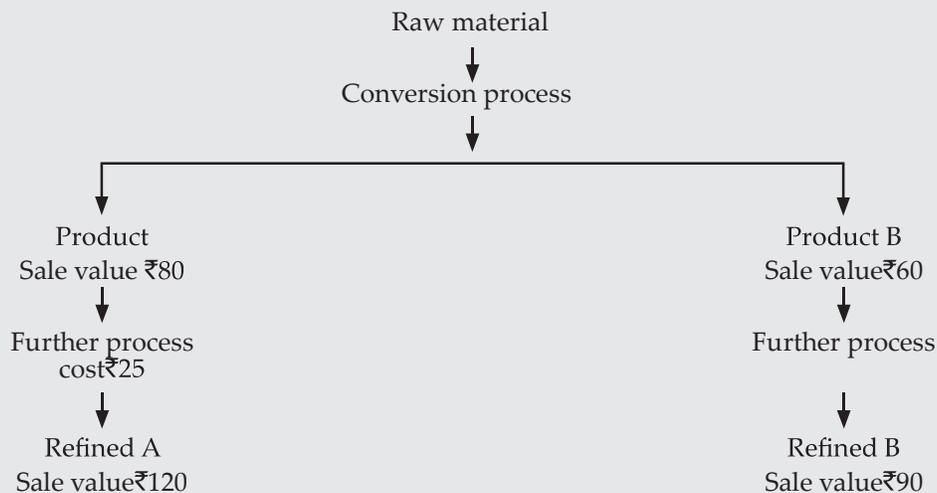
In this case, the joint costs (common costs) are allocated between the products on a rational and consistent basis.

Basis of allocation: May be

- On the Sales value of each product when the products become separately identifiable;
- Sale value after completion of production Less further processing cost after separately identified;
- On the sale value after completion of production.

Let us understand the allocation of joint product costs by using the following concept capsule:

Concept capsule 8



In the above example the Raw material is used in conversion process and it is separated into Products A & B and both the products are material (sale value is significant) and important hence we can call them Joint products. The Sale value at the time of separation is ₹ 80 and ₹ 60 respectively and the company did further processing of each and incurred a cost of ₹ 25 & ₹ 20 respectively and after the completion of the process the sale value is ₹ 120 and ₹ 90 respectively.

The question is how do you allocate the RM cost of ₹ 100 between A&B?

Suggested Answer

The Raw material cost of ₹ 100 can be apportioned between A & B in the following ways – which the entity feels rational and systematic – it depends on the situation and circumstances.

- Sale value when they are separated i.e., in the ratio of 80:60
- Sale value of final products i.e., 120:90
- Sale value of final product *Less* further processing cost i.e. $(120-25) : (90-20) = 95 : 70$