

Chapter 29. Storage and Delivery

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0) Introduction

There are 2 primary related clauses on preservation in this chapter. The reason why a whole chapter is devoted to this is because the clauses have quite a fair bit of changes. They are not fully understood and/or poorly catered for.

1) 8.5.4 Preservation (ISO9001)

(Clause Description-Paraphrase)

The organization shall preserve the outputs during production and service provision, to the extent necessary to ensure conformity to requirements. NOTE Preservation can include identification, handling, contamination control, packaging, storage, transmission or transportation, and protection.

(Highlights of the clause)

- (Ref to old Standards). There had been a similar clause, 7.5.5 Preservation of product, in the previous version of ISO/TS16949.
- The old clause requires the organization to:
- preserve the conformity of product during internal processing and delivery to the intended destination.
- preservation shall include identification, handling, packaging, storage and protection.
 - The main functions dealing with preservation are therefore warehouse and logistics

(Compliance Best Practice)

8.5.4 Preservation

1. *This is only the ISO9001 portion of preservation*
2. *See 8.5.4.1 for a combined discussion*

2) 8.5.4.1 Preservation-supplemental (IATF16949)

(Clause Description-Paraphrase)

Preservation shall include identification, handling, contamination control, packaging, storage, transmission or transportation, and protection. Preservation shall apply to materials and components from external and/or internal providers from receipt through processing, including shipment and until delivery to/acceptance by the customer. In order to detect deterioration, the organization shall assess at appropriate planned intervals the condition of product in stock, the place/type of storage container, and the storage environment. The organization shall use an inventory management system to optimize inventory turns over time and ensure stock rotation, such as "first-in-first-out" (FIFO). The organization shall ensure that obsolete product is controlled in a manner similar to that of



nonconforming product. Organizations shall comply with preservation, packaging, shipping, and labelling requirements as provided by their customers.

(Highlights of the clause)

- There had been a similar clause, 7.5.5.1 Storage and inventory, in the previous version of ISO/TS16949.
- The old clause read: In order to detect deterioration, the condition of product in stock shall be assessed at appropriate planned intervals. The organization shall use an inventory management system to optimize inventory turns over time and assure stock rotation, such as “first-in-first-out” (FIFO). Obsolete product shall be controlled in a similar manner to nonconforming product.
- The old requirements are all retained and appear at the second paragraph.
- The new requirement include controls of: i) storage containers, and storage environment, ii) definition of preservation added include contamination control, transmission or transportation, iii) abide all preservation, packaging, shipping, and labelling requirements as provided by their customers

(Compliance Best Practice)

8.5.4.1 Preservation-supplemental

Inventory Rotation & Shelf Life Control

1. *Establish a preservation system such as FIFO with colour coding, which is acceptable to the customers*
2. *Shelf-life control should be introduced, especially for sensitive materials such as glue, chemicals, paints and solvent. A shelf-life guide and methods of preservations e.g. cold room needed, humidity control only etc, should be prepared for reference, better still, displayed. See **Exhibit 29-1**.*

Packing Standard

3. *Packing standard shall be approved by customer*

Shipment Control

4. *Compliance to delivery schedules shall be demonstrated: how the customer call-in is managed to ensure delivery to customer’s place on time, or ready to be picked up by ‘milk-runs’*

Inventory reliability

5. *Stock check every month is usually practiced. It should, at the same time, check on expiry dates, conditions of the material/products, and storage conditions, with reference to item 2 above*

3) SIs & FAQs

No SIs & FAQs for this Chapter

4) Supplementary Notes

Legend: HOC= Highlights of Clause, CBP= Compliance Best Practice, S&Q= SIs & FAQ, EXH= Exhibits

Clause	Section	Clarification Subjects
8.5.4, 8.5.4.1	CBP	SN29.1. Is color-coding the only system for FIFO? Are there others?
8.5.4, 8.5.4.1	CBP	SN29.2. Any pit fall of the various methods?
8.5.4, 8.5.4.1	CBP	SN29.3. Is shelf life checking only for finished goods?
8.5.4, 8.5.4.1	CBP	SN29.4. How to control expired materials?
8.5.4, 8.5.4.1	CBP	SN29.5. Shelf life control requires manufacturing dates, if no manufacturing dates are provided, what do we do?
8.5.4, 8.5.4.1	CBP	SN29.6. Where else identification can be lost besides warehouse?
8.5.4, 8.5.4.1	CBP	SN29.7. Is training to delivery man important?
8.5.4, 8.5.4.1	CBP	SN29.8. How to conduct expired material re-inspection and how to judge if is OK?
8.5.4, 8.5.4.1	CBP	SN29.9. How do we handle expired materials and finished goods.
8.5.4, 8.5.4.1	CBP	SN29.10. Old stocks not disposed but kept in the warehouse, how to prevent unintended use?

SN29.1. Is colour-coding the only system for FIFO? Are there others?

Colour-coding is a very common and well accepted system, but it is not the only method. Another method is to line product or material physically up in sequence, and the top of the line is the first to arrive and used. Feeding to the line is at the back. Another method is to use the stock card to control the issue of material first-in-first out.

SN29.1. Any pit fall of the various methods?

- Colour codes: normal number of colours used is 6. The Jan and Jul will share the same colour, Feb and Aug the same colour and so on. Any old stock from Jan can mix up with July
- Physical sequence: need to move the goods physically, which can be heavy and exhausting
- Stock card. If some incoming lots are not recorded, FIFO will be disrupted

SN-29.2. Is shelf life checking only for finished goods?

No. Shelf life for materials is equally important. Expired materials used will lead to quality problem and normally escape detection at FQC. When finally detected in the field, it is too late and can be costly.

SN-29.3. How to control expired materials?

Use a system of expiry date monitoring. Expiry dates are usually expressed as number of months from the manufacturing dates. A list should be prepared as the shelf-life guide. By looking at current date and manufacturing date on the label, expiry can be easily calculated using the shelf-life guide. You can check any material/FG at any time, or once a month during stock-take.

SN-29.4. Shelf life control requires manufacturing dates, if no manufacturing dates are given, what can we do?



You can use the receiving date. A world-class Japanese company would deduct 6 months from the expiry date based on shelf-life. Example, If a chemical has an expiry date of 12 months from date of manufacturing, the expiry date based on receiving date will now be 6 months only (12-6 months). Not very accurate, but practical and safe.

SN-29.5. Where else identification can be lost besides warehouse?

Half-use materials kept at production floor. You can lose the label from the pallet or material bags. This is common. Identification and traceability needs to extend to this place.

SN-29.6. Is training to delivery people important?

Yes, some materials are sensitive to moisture or heat. Delivery people should be trained to deal with the changing weather conditions. Securing of the cargoes is also important to avoid damage. We have seen many of such incidents, where the parts arrived damaged, at the customers' premises. Additionally, they should also abide by delivery time, safety and environment, while at customer's premises, according to customer operations or instructions.

SN-29.7. How to conduct expired material re-inspection and how to judge if it is OK?

Many of the expiry dates are just caution dates. The material or FG may still be usable, but need verification of the quality, including functional tests. This can be conducted by QC based on the original specs, provided there are suitable testing facilities available.

SN-29.8. How do we handle expired materials and finished goods. Can we downgrade for other uses? Sell to after-market?

Selling expired materials or finished goods to undisclosed buyers and after-market is not permitted by any customer. To downgrade for other users may be acceptable, but customer should be informed.

SN-29.9. Old stocks not disposed but kept in the warehouse, how to prevent unintended use?

This is also common because many management want to keep them "just in case they are needed later". They take up space, and creating a lot of inconveniences. The best way is to get rid of them as soon as possible. If the materials are still to be kept, they should be kept in a place far away from the active operation areas, and clearly marked obsolete.

Exhibit 28-1. Preservation Control

Preservation Control

No	Item	Shelf Life	Caution Period	Storage Conditions	Reaction Plan	Key determination
1	Resin ABC	-	3 years	Dry, ambient temp	Re-verification by QA	Color & first piece inspection
2	Steel coil XYZ	-	1 year	Dry, ambient temp	Re-verification by QA	Rust
3	Glue XXXX	6 months	-	<10C (freezer)	Scrap	Expiry Date
4	Paint	6 months	-	Dry, ambient	Return to vendor under agreement	Expiry date. SDS data

Remarks given in this section explain on the Exhibit. Do not include them as part of your working document

- This is an example of preservation control guide
- Copies are displayed in the warehouses to guide on compliance. It is also useful to guide stock-take, to spot any deterioration and incorrect storage method etc.
- Note that there are 2 areas of concern a) shelf life, b) caution period. There is a difference.
- Shelf-life is generally recognized and observed by the organization, or manufacturer. Once exceeded, the material or product is scrapped. Glue, paints and some chemicals are of this category.
- Caution period is not shelf-life per se. Resins is typical case. They shelf-life is not stated by manufacturers and also not expected to deteriorate over 5 years. A caution period of 3 years is assigned in the above case, for safety purpose. When 3 years is reached, the material is re-verified by QA, to ascertain if it is still usable. If so, it can be used and re-assigned a caution date (usually shorter this time). The re-verification method is important, See Best Practice for more explanation.