Packing instruction
ZEISS Industrial Quality Solutions

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List of abbreviations

ZEISS IQS	ZEISS Industrial Quality Solutions
ESD	Electrostatic discharge
DIN	Deutsches Institut für Normung (German Institute for Standardization)
ISO	International Organization for Standardization
IPPC	Integrated Pollution Prevention and Control

1 General

This document defines ZEISS Industrial Qualtiy Solutions (IQS) packaging requirements for supplier deliveries. Failure to comply with these requirements may result in a complaint and have a negative effect on the supplier's assessment. Deviations from the Packing Instructions should be provided to and agreed on by your ZEISS IQS shipping contact. Deviations will need to be agreed upon by each IQS plant.

1.1 General requirements for packaging

Packaging used for delivery always must fulfill the applicable legal local regulations. In addition, the following requirements must be met:

- The packaging must be designed according to qualitative, economic and ecological aspects. Unnecessary packaging material must be avoided for the benefit of the environment.
- The purpose of the packaging is to protect the goods inside against environmental influences, damage, contamination (e.g. by dust) and volume loss.
- The packaging must comply with the associated current legal requirements (e.g. §§ 407 ff. HGB (German Commercial Code)).
- The goods must be delivered in such a way that one quantity unit (e.g. 1 piece) is identifiable and can be removed per quantity unit.
- Each quantity unit must be clearly marked with the ZEISS material number without affixing the number directly to the quantity unit itself (due to visible and sensitive surfaces etc.). Serial numbers must be specified on the delivery note and on the goods without attaching them directly to the goods themselves.

1.2 Environmental conditions

- The packaging must be designed in accordance with the environmental conditions (temperature, air pressure, humidity).
- If certain environmental conditions must be complied with, this should be made clear by marking the packaging with corresponding transport symbols.

1.3 Safety requirements

- For ESD sensitive goods, the specifications of DIN 61340-5-1 must be complied with.
- When transporting goods which react sensitively to tilting and tipping, tilt indicators must be attached to the outer lateral surfaces of the packaging. The use of tilt indicators must be coordinated with ZEISS IQS.
- In addition, shock indicators must be attached to the outer lateral surfaces of the packaging of shock-sensitive assemblies/systems after consulting with ZEISS IQS.
- For goods containing lithium batteries consider the latest shipping regulations.

1.4 Marking with symbols according to ISO 7000

- Symbols for transport packaging (see Attachment 4.1) must be attached to the packaging. The use of the respective symbols must be adapted to the specific application.
- The symbols should be placed directly on the packaging if possible. If this is not possible, they should be placed on a label instead.
- The color of the symbols is normally black. If black is not discernible due to the packaging, a contrast color, e.g. white, should be used for clear detectability.
- The use of colors such as red, orange or yellow is permissible only for hazardous goods and in accordance with the corresponding regulation.
- The placement of the symbols must be selected so that they are not covered during the packaging process.

1.5 Delivery address

- Please pay attention to the shipping and billing address on our purchase orders.
- Forwarders must deliver to the delivery address specified in the respective ZEISS order even if that means transporting the goods to several different locations.

1.6 Delivery note

- The supplier is required to provide delivery notes to freight carriers.
- One delivery note must always be attached to the shipment on the outside.
- For international shipments, second copy of the delivery note is required to be placed inside the shipment as the outside delivery note is frequently removed by customs.
- Delivery date as stated on the purchase order is the date we expect goods to arrive at ZEISS IQS. Applies to all types of deliveries, including ex works.

  The following data must be included on the delivery note: (see figure)
  - ZEISS purchase order number (barcode required)
  - ZEISS customer number
  - Correct delivery address
  - ZEISS contact
  - Material number (barcode optional)
  - Material description
  - Quantity (barcode optional)
  - Serial number / batch number (barcode required)
  - Number of boxes (in case the shipment includes multiple packages)
  - Supplier delivery note number (barcode optional)
  - Delivery note creation date (i.e. ship date)
  - Delivery date (i.e. arrival date)
  - Supplier contact details

  Please also ensure the following:
  - **Consignment goods**: The comment must be included on the delivery note.
  - **Initial sample goods (FAI)**: A reference to first article inspection sample (FAI) must be made on the delivery note. FAI samples also must be separately marked and packaged. FAI sample test report must be attached to the goods on the outside.

- The **barcodes** on the delivery note must be in GS1 Standard, Code 128 Standard or QR Code.

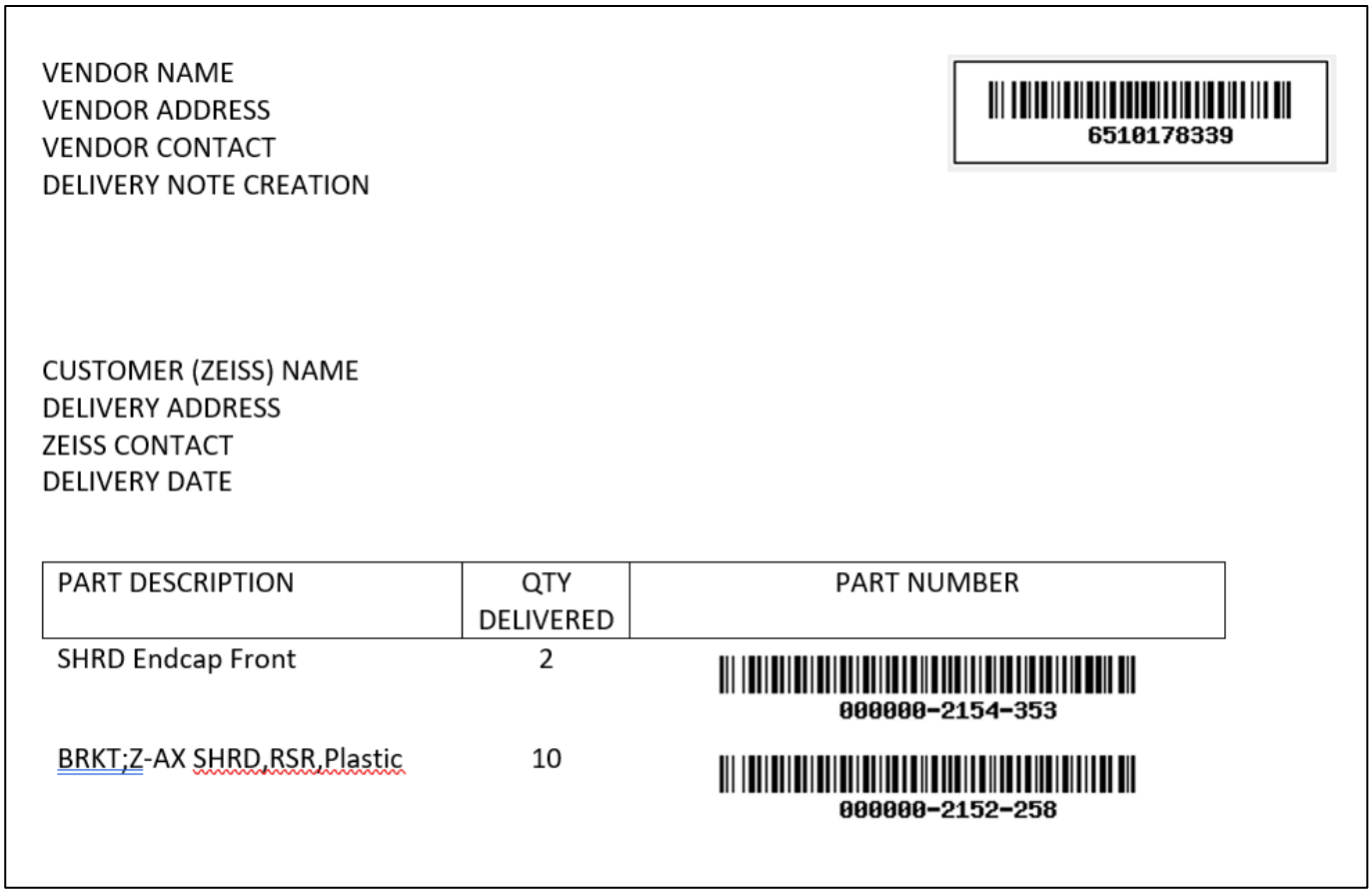


Figure 1: Delivery note

1.7 Further requirements

- Certificates and test documentation must be attached if required.
- If several packages are included, they must be labeled accordingly (1 of ...)
- If one material consists of several parts, these must be consolidated and labeled.
- Individual parts must be labeled with ZEISS material numbers.
- Deliver spare parts individually packaged if it is known that spare parts are involved.

2 Disposable packaging

2.1 General

- If needed disposable packaging will be provided by the supplier.
- It's particularly encouraged in case of international deliveries where return of empty packaging is not economically or environmentally sensible.
- The disposable packaging must be designed to meet specifications outlined in section 2.2.2.

2.2 Packaging requirements

2.2.1 Storage

- If disposable packaging is involved, it must be ensured that the individual packages are storable and stackable, depending on their size and weight.
- The maximum permissible load to stack packaging must be considered and, if necessary, the stacking properties must be labeled on the packages with the appropriate symbols.

2.2.2 Specifications

- The packaging must not cause any risk of injury (e.g. sharp edges must be avoided).
- The packaging must be designed so that it will not be damaged if it is overturned.
- The selected packaging must meet the requirements of the goods to be packaged.
- The packaging must be designed to withstand the loads exerted by the intended type of transport.
- The packaging must ensure reliable protection against corrosion to preserve the quality of the goods.
- It must be ensured by the packaging that no humidity enters the packaging and damages the goods.
- The size of the packaging should be no larger than necessary, without impairing its protective function.
- The filling material used must be kept to a necessary minimum.
- The filling material used must be selected according to legal and environmental aspects.
- The use of styrofoam chips and hygroscopic filling materials such as wood shavings, hay, straw or waste paper is prohibited.
- The use of composite materials is prohibited.

2.2.3 Labeling of disposable packaging

- If disposable packaging is used, the goods must be labeled with a delivery note as described in section 1.6.
- If several parts are delivered in a single piece of disposable packaging, the individual parts must be labeled clearly and with the following data.
    - Company labeling
    - ZEISS material number (barcode/QR code optional)
    - Version status

- A logistic goods label with a barcode (Figure 2) must be attached to each material package.
    - The label must be attached to the outside of the packaging and must be readable both manually and automatically with a scanner. Labels must not be concealed by parts of the packaging or the strapping.
    - Pallets must be packed so that the label is identifiable at all times. If necessary, a second label must be attached to the packaging (two-sided labeling).

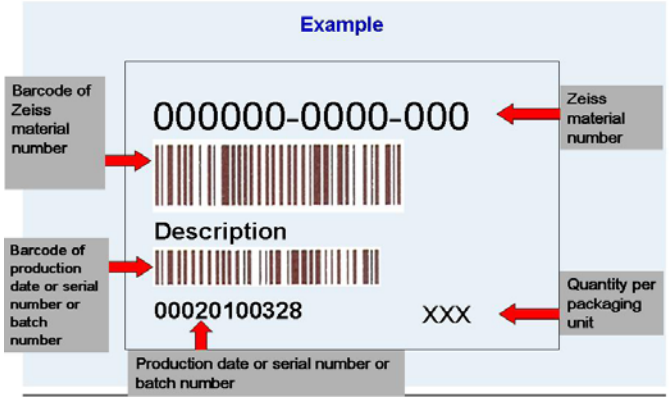


Figure 2: Goods label

2.2.4 Transport

- If the goods are packed using a pallet, make sure that the packaging does not exceed the dimensions of the pallet.
- When shipping disposable packaging, the selected means of transport must correspond on the requirements of the material.
- It must be ensured that the goods are secured by the packaging and are not damaged. Loosely packaged parts are prohibited.
- Repackaging during transport must be avoided.
- The packaging must be designed so that all materials are accessible.
- The packaging must be designed for the requirements and principles of the selected shipping method.
- Wooden packaging and transport means must be designed according to the IPPC standard.

2.2.5 Case example: Inadequate packaging

Figure 3: Inadequate packaging

3 Reusable packaging

3.1 General

- Returnable containers are provided to the supplier by ZEISS IQS.
- If the supplier would prefer delivering the goods in its own reusable packaging, it must be clarified in advance whether this packaging meets ZEISS IQS requirements.
- It must be ensured that the containers remain in a clean and orderly condition.
- The supplier is responsible for the cleaning costs incurred by the supplier.
- If a returnable container is damaged, this will be reported to ZEISS IQS and the further course of action has to be clarified.
- Vendor must inform responsible ZEISS Lead Planner as soon as possible if blue box is missing for the coming up delivery

3.2 Packaging requirements

3.2.1 Types of reusable packaging

- Shuttle (blue box or wooden) containers (example Figure 4 and 5)
  - The reusable packaging is transported back and forth between ZEISS IQS and the supplier.
  - The shuttle container may be suitable for several materials, which are indicated on the outside of each box.
- Kanban containers (example Figure 6)
  - There are several type of Kanban shuttle containers
  - These are mostly used for demand-driven supply of materials

Figure 4: Blue box

Figure 5: Wooden shuttle container

Figure 6: Kanban container

3.2.2 Labeling of reusable packaging

- If reusable packaging is used, the goods are provided with a delivery note as described in section 1.6.
- ZEISS IQS is responsible to maintain reusable packaging labels as shown in Figure 7.

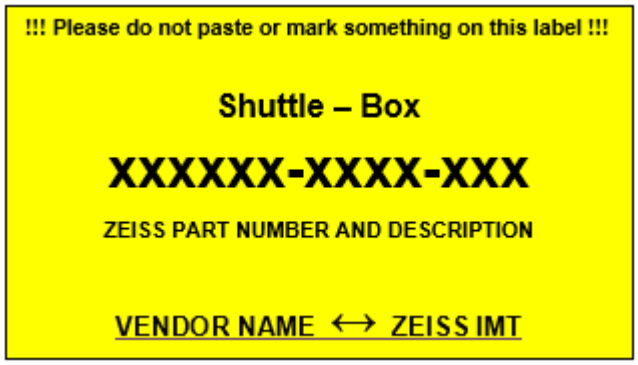


Figure 7: Shuttle container label

- The supplier must consider the following points:
  - It is prohibited to paste over the labels.
  - Validate that materials corresponds with the labels

3.2.3 Case example for reusable packaging

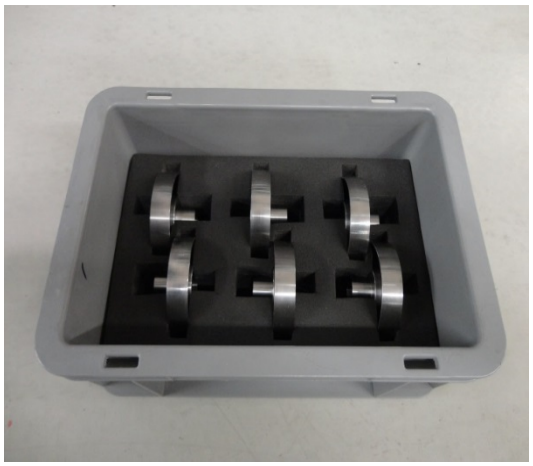


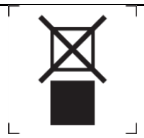
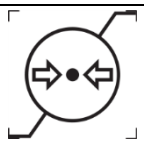
Figure 8: Correct application of reusable packaging

3.3 Change management

If the supplier determines that the reusable packaging supplied by ZEISS IQS does not meet the requirements of the material, this must be communicated to ZEISS IQS and the further course of action must be discussed.

4 Appendix

4.1 Symbols on transport packaging

Pos.	Icon	Symbol no.	Standard	Meaning and explanation
1		0623	ISO 7000 (DIN EN ISO 780)	"Top" Position: Upper left-hand corner of side surfaces Indicates the proper upright position of the package.
2		0621	ISO 7000 (DIN EN ISO 780)	"Fragile" Position: Upper left-hand corner, next to "Top" symbol The contents are fragile and therefore must be handled with care.
3		0626	ISO 7000	"Keep dry" The package must be kept in a dry environment.
4		2402	ISO 7000	"Do not stack" Stacking of the packages is prohibited and no load should be placed on the package.
5		2403	ISO 7000	"Stacking limitation" n: Largest number of identical packages that may be stacked, where 'n' stands for the permissible number of packages.
6		0632	ISO 7000	"Permissible temperature range" Values must be adapted to the application
7		2620	ISO 7000	"Permissible humidity range" Values must be adapted to the application
8		2621	ISO 7000	"Permissible air pressure range" Values must be adapted to the application
9		0627	ISO 7000	"Center of gravity" Indicates the position of the center of gravity on the respective lateral surface.