

General Shipping and Packaging Instructions for Suppliers of NETZSCH Pumpen & Systeme GmbH in Waldkraiburg

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1. Aim and purpose of the General Shipping and Packaging Instructions

The following NETZSCH Pumpen & Systeme GmbH (NPS) regulations for the packaging and delivery of goods supplement the contractual provisions of the General Terms and Conditions of Purchase and form part of the basis of our Terms and Conditions. The supplier is responsible for ensuring, both in-house and externally, that all parts are properly and adequately preserved, protected and packaged such that they arrive at their delivery destination safely and undamaged. The supplier must observe the stipulations of these Packaging Instructions and any additional national and international regulations that may apply. Failure to comply with the stipulations of these Shipping and Packaging Instructions can result in a complaint which in turn will have a negative impact on your supplier evaluation. In addition to this, any additional costs arising due to failure to observe these stipulations will be charged directly to the supplier.

2. Delivery address

Please take note of the details provided in our orders regarding the delivery and invoice address.

3. Goods receipt hours

3.1 Goods Receipt, Geretsrieder Straße 1, 84478 Waldkraiburg, Germany

Monday to Thursday:	7–9 am; 9.15 am–12.15 pm 1–3 pm
Friday:	7–9 am; 9.15 am–12.00 pm

4. Packaging requirements and regulations

4.1 General packaging requirements

In accordance with sections 407ff. of the German Commercial Code (HGB), the selected packaging must suit the requirements of the product being packaged. It must also be able to withstand the loads and stresses of the intended means of transport. This means that the transport route and means must be taken into account, along with any circumstances that may affect the transport, such as weather influences and the immediately subsequent transport, handling and storage processes. The following requirements must be considered when specifying packaging for both reuse or a disposable solution:

The goods must be protected against damage, soiling and environmental factors which may adversely affect the quality of the goods. Corrosion of the goods must be ruled out ([see 4.7.1](#)). The containers and packaging must be suitable for storage and stacking ([see 4.6.1](#)).

The consignor is liable for any damage and expenses incurred as a result of packaging that does not comply with the above requirements.

4.2 Specific packaging requirements

Regardless of the selected packaging, it must be ensured that the delivery meets the following requirements:

- The parts must be delivered without any loss of quality and free of soiling.
- The transport packaging should ensure safe and easy handling during loading and unloading.
- Rational loading units and efficient use of transport capacities (stackability)
- Sufficient transport protection
- Safe and easy handling when removing the parts from the packaging
- Correct labelling
- Use of materials from the point of view of environmental protection It must be ensured that no polystyrene chips and foam are used as filler materials. Film is permissible only for rain protection.
- One material number for each individual package, i.e. single type (e.g. separated by left-hand/right-hand parts)
- If mixed content containers cannot be avoided, the parts must be visibly and clearly separated, labelled and organised appropriately ([see 4.6.3](#))
- Alternative packaging options must be considered (e.g. standard reusable packaging such as Euro pallets and Euro box pallets).
- If there is a risk of damage occurring due to slippage or abrasion, suitable dividers/inlays must be used.
- Appropriate padding must be provided for parts susceptible to scratching and/or shock (e.g. bubble wrap; see [Appendix](#)).
- Surface protection must be used for shafts and the like (e.g. POLY-NET; see [Appendix](#))
- For transnational goods transport, the import regulations for wooden packaging materials must be observed. This includes correct labelling of all treated materials in accordance with the IPPC standard ([ISPM15](#)).

4.3 Packaging functions

The packaging must provide multiple functions during transport, handling and storage processes and other movements of the goods.

- ⚠ **Protective function:** Protection against physical damage and environmental damage Adequate stability for the maximum stacking height
- ⚠ **Loading and transport:** Transport packaging must be designed in such a way as to ensure easy and safe holding, lifting, moving, setting down and storing of the load.
- ⚠ **Storage function:** The packaging must be capable of withstanding the static and ambient stresses and loads that it will be exposed to during storage. Optimal packaging should streamline the putaway and retrieval processes. Optimal use must be made of the storage space. The use of appropriate packing material will enable systematic arrangement of the stored goods.

- 🗑️ **Ease of use:** Easy to use and safe to handle
- 🗑️ **Informative function:** Required shipping and delivery information is attached visibly.
- 🗑️ **Eco-friendliness:** Eco-friendliness and least problematic recycling or disposal option and adherence to statutory regulations
- 🗑️ **Warranty function:** By delivering an undamaged package, the supplier guarantees that the details provided on the packaging correspond to the content.
- 🗑️ **Streamlining:** Efficient shipping and storage units in terms of the shipping method, route and weight, the utilisation of transport capacities and safe handling during loading and unloading, storage, opening and disposal

4.4 Inlays

For shipping goods, the box pallets must be lined with corrugated cardboard for the delivery of small parts and mixed-goods containers. For components with sensitive surfaces (e.g. coated, polished) cardboard, bubble wrap or similar must be placed between the individual parts to protect these.

Attention: The use of recycled materials in relation to materials from substance groups 0 and 1 (apart from stainless steels) is not permissible in accordance with DIN EN 1560.

4.5 Use of disposable and reusable containers

4.5.1 General requirements for disposable and reusable containers

The use of both reusable and disposable packaging must be considered when developing the packaging solution. Use of the reusable packaging specified in the following and its quality requirements must be given preference and is approved in advance if these requirements are complied with. If the cost effectiveness of disposable packaging compared to reusable packaging has been verified, disposable packaging may be used upon written approval by NPS. The cost of disposal of disposable packaging (cardboard boxed, wood and film) must be considered in the feasibility profitability analysis. In this case, please ensure that the disposable packaging consists of only one material.

- Reusable packaging

- Wooden Euro pallets (WxLxH) 1200 x 800 x 144 mm (DIN EN 13698-1) with a maximum total weight of 1000 kg
 - Without top frame



[EPAL Euro pallet \(epal-pallets.org\)](http://epal-pallets.org) // as at: 14/02/2023

- Quality class as per EPAL standard “NEW”, “Class A”, & “Class B” – **only pallets suitable for machines, conveyor systems and high-bay racks**
 - With **solid wood** frame
- Height class 1: Pallet with goods to max. 500 mm total height (measured from the floor to the top edge of the goods)
 - Height class 2: Pallet with goods to max. 1000 mm total height (measured from the floor to the top edge of the goods)
 - Height class 3: Pallet with goods to max. 1000 mm total height (measured from the floor to the top edge of the goods)
→ Height class 3 only with special approval from NPS
- Box pallet – DIN 15155 / basic dimensions 1240 x 835 x 970 mm with a maximum total weight of 1000 kg



- Quality class as per EPAL standard: **only box pallets suitable for exchange** will be accepted

[EPAL box pallet \(epal-pallets.org\)](http://epal-pallets.org) / as at: 14/02/2023

- Box pallet – DIN 15155 / basic dimensions 1240 x 840 x 500 with a maximum total weight of 1000 kg
- Bito small load carrier “NETZSCH” SLC with double bottom (black), load capacity 75 kg, max. permissible total weight 35 kg



Small load carrier SLC | BITO Lagertechnik

- Type BITO 64220-D
 - Type BITO 64270-D
 - Type BITO 43220-D
 - Type BITO 43270-D
 - ⇒ Predefined **bar code labels on four sides, with a number range from NPS**. Only as an exchange item, with management of a container account upon special agreement.
- Retainers for specific parts agreed upon with NPS
 - Liquid containers agreed upon with NPS (e.g. IBCs made of high-density polyethylene (HDPE))
- Disposable packaging with low requirements, max. 1000 kg, is possible max. length = 1200 mm; width = 800 mm; height = 1200 mm
 - Disposable cardboard packaging
 - Dimensions, if possible:
 - Length = 538 x width = 366 x height = 198 mm (alternative: 248mm)
 - Length = 338 x width = 266 x height = 198 mm (alternative: 248mm)
 - Disposable pallets
 - Disposable packing material
 - Disposable protective packaging
 - Disposable liquid container

The supplier must procure the disposable packaging. Eco-friendly, recyclable materials that are comprehensively accepted for recycling must be used for all disposable packaging. Adhesive/packing tapes, films, labels and goods tags must not compromise the recyclability of the base material.

- Disposable packaging for projects, e.g. sea and air freight packaging, as Euro pallet base dimensions and/or more than 1000 kg total weight
- Screws should be preferred to nails for use with disposable packaging.

Appropriate internationally recognised packaging guidelines, e.g. by HPE (German Association for Wooden Packaging, Pallets, Export Packaging) (<http://www.hpe-standard.com/certified-packaging.html>) must be applied and must be approved by the responsible purchaser.

If there are any queries as to whether the requirements of these instructions must be observed for a particular item, the responsible purchaser must be consulted and must approve this in writing.

4.5.2 Quality requirements for Euro pallets

If the supplied Euro pallets have one or several of the following faults, these will not be exchanged. Quality class as per EPAL standard “NEW”, “Class A”, & “Class B” – only pallets suitable for machines, conveyor systems and high-bay racks. The consequential costs must be paid by the supplier.

Bar code labels adhered, stapled or otherwise attached to Euro pallets or frames are not permissible, i.e. these must be removed if present. Any protrusions, e.g. film, packaging materials, poor positioning of the goods on the pallet, must be avoided.

The requirements by EPAL® apply

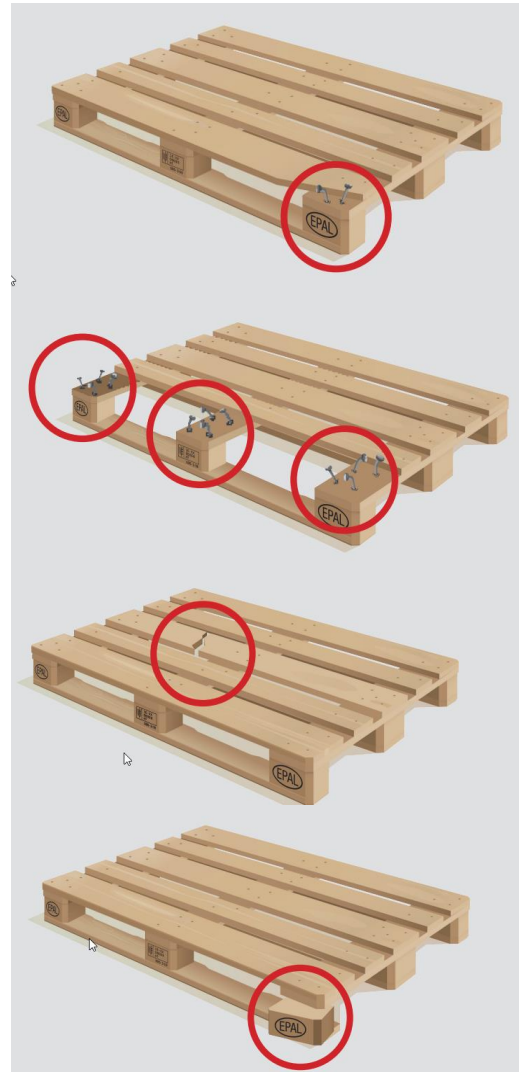
[EPAL Quality and Exchange DE.pdf \(epal-pallets.org\) - https://news.epal-pallets.org/PDF/EPAL_Qualita%CC%88tsklassifizierung_GB_A0_Quer.pdf](https://news.epal-pallets.org/PDF/EPAL_Qualita%CC%88tsklassifizierung_GB_A0_Quer.pdf) / as at: 14/02/2023

A base board or covering edge board has splintered in such a way that more than one nail or screw shank is visible.

A board is missing.

A board is broken.

A block is twisted and protrudes beyond the outer edge of the pallet by more than 1 cm.



Source: European Pallet Association e.V. - https://news.epal-pallets.org/PDF/EPAL_Qualita%CC%88tsklassifizierung_GB_A0_Quer.pdf / as at: 14/02/2023

Other reasons can be: loss of load bearing capacity, soiling of the goods by the pallet, strong splintering on several blocks and/or use of obviously impermissible parts.

4.5.3 Quality requirements for box pallets

If the supplied box pallets have one or several of the following faults, these will not be exchanged. The consequential costs must be paid by the supplier.

Bar code labels on box pallets are not permissible upon delivery, i.e. if these are present they must be removed. Any protrusions, e.g. film, packaging materials, poor positioning of the goods in the box pallet, must be avoided.

The requirements of EPAL® apply - <https://www.epal-pallets.org/eu-en/load-carriers/epal-box-pallet> / as at: 14/02/2023

The stacking frame or the corner posts are deformed.



The hinged front wall panel can no longer be opened or closed.



The base frame or feet are bent in such a way that the Euro box pallet no longer rests evenly on four feet or can no longer be stacked safely.



The tubular steel mesh is torn in such a way that the wire ends protrude inwards or outwards (one mesh per wall may be missing).



A board is missing or broken.



The identification marking of the railway/pallet organisation and/or the EUR mark (in the oval) are missing or illegible.



The general state is so poor due to rust or dirt that this may lead to contamination of the goods.



Source: [EPAL box pallet \(epal-pallets.org\)](https://epal-pallets.org) / as at: 14/02/2023

4.6 Loading units of reusable and disposable packaging

A loading unit is a physical transport unit, consisting of a loading aid, a loading securing device and the item to be packaged. The unit must be handled in such a way that it can be transported, stacked and stored.

4.6.1 Stackability of loading units

If a loading unit is made up of small containers (special or universal containers, disposable packaging), this must match the standard dimensions or pallet.



4.6.2 Making up loading units

The basic dimension of the loading units (1200 x 800 mm) must not be exceeded by the packaged goods/loading units. The entire height of the loading units must be secured such that the transport packaging cannot slip during transit. This can be achieved, for example, by using plastic strapping or stretch film. Fastening straps must not cut into the cardboard packaging and this must be prevented with edge protectors. If partial quantities are removed from a loading unit, it must be ensured that the remaining goods remain stable.



4.6.3 Mixed packages

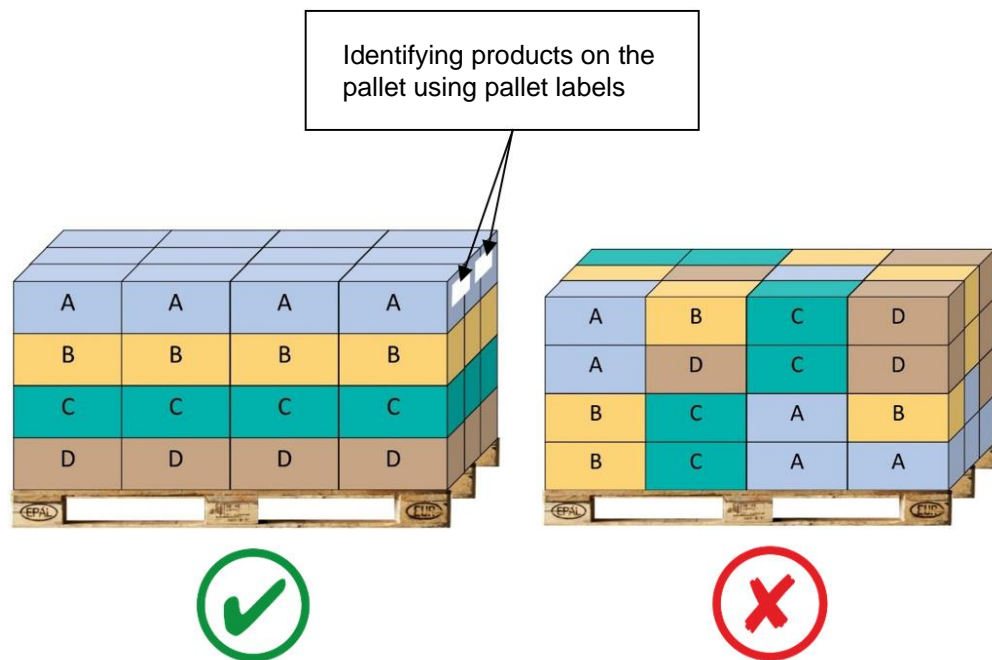
Products must not be mixed and multiple product types must not be stacked on one pallet; that is, this is only permissible if the packaged unit is not full → see the following images.

In addition to this, the packaged unit must be labelled to indicate the multiple product types. Products must be stacked according to type and must never be mixed under any circumstances.

The weight and size of the different products must be taken into account so that they are stacked in order of decreasing weight/size. In other words, large, heavy products must be stacked at the bottom and small, light ones at the top.

The following are not permissible:

- Stacking one half with one type according to height and the other half with a different item or product type
- Mixed stacking in layers
- Stacking products on a pallet which have been ordered by different companies (supplier A, B or C)



4.7 General corrosion protection

Corrosion occurs when materials are corroded or destroyed as a result of chemical or electro-chemical reactions with agents in the surrounding environment. Corrosive agents are the substances surrounding the parts, affecting the material and causing the corrosion, e.g. dirt, gases, salts or dust. Any parts susceptible to corrosion and any machined and ground/polished surfaces (especially processed cast and forged parts) require special protection as a result. Preventive measures must therefore be taken to provide protection against corrosion. Preventive protective measures involve protecting the material against corrosion by using corrosion protection and adequate packaging.

The type, nature and time of implementing corrosion protection depends on:

- The protection required by NPS specifications
- The sensitivity of technical surfaces to corrosion and other harmful influences (dust, dirt, etc.)
- Transport conditions and duration of transit
- Storage conditions and storage period
- Subsequent treatment
- Subsequent intended use

4.7.1 Corrosion protection on the material

The supplier must implement the anti-corrosion measures required by NPS as per the applicable specification/drawing, unless agreed otherwise. Parts supplied without the stipulated corrosion protection will be considered faulty and a complaint will be made against the supplier.

Only the preservatives agreed with NPS may be used, e.g. Hakudren HKS17 – Kluthe for grey cast iron.

Other preservatives require prior testing and approval by NPS.

4.7.2 Anti-corrosion packaging

Regardless of the corrosion protection applied to the material, parts must be delivered with protection provided against corrosive agents and surface damage during transit and storage. Suitable protection must be provided by covers, films, plugs, coverings or other suitable means. If necessary, anti-corrosion films must be used, e.g. VCI film or paper suitable for this group of substances, which can be sent to normal film/paper recycling.

4.7.3 Anti-corrosion films

Anti-corrosion films contain chemical substances that will gradually evaporate. They provide a protective film on the surface of the packaged parts to displace oxygen. Usually, enveloping the parts in protective film will suffice, but the distance between the anti-corrosion film and the parts must not exceed 30 cm. Airtight packaging is not necessary; however, the anti-corrosion films must be kept in a closed packaging to ensure the efficacy of the corrosion protection. The anti-corrosion film must be compatible with the respective parts and/or alloys. If there are components with different alloys, it is possible that only a few of the parts are protected against corrosion. In this case, desiccants may provide better protection. NPS recommends consulting a corrosion protection specialist on both selection and application in order to work in optimal conditions and prevent damage.

4.8 Environmental protection

NPS requires that the disposable and reusable packaging and load carriers used are made of recyclable materials. However, the use of reusable packaging and load carriers must be prioritised. To this end, NPS – along with its suppliers – pursues the waste management objective set out by environmental legislation following the ecological principle of “**prevention before reduction before recycling**”, thereby consistently contributing to the avoidance of waste.

Avoiding packaging waste

Packaging waste must be limited to the immediate extent necessary.

Reducing packaging

Reusable and disposable packaging must be defined in terms of ecological and economic factors and only the necessary amount may be used.

5. Loading containers

NETZSCH Pumpen & Systeme GmbH refers to the regulations and recommendations of the German Insurance Association (GDV) and the "Container Handbook".

German version: <https://www.containerhandbuch.de/chb/stra/index.html>
 English version: https://www.containerhandbuch.de/chb_e/stra/index.html

Problems occurring during unloading due to inexperienced loading of the containers, lack of load securing or insufficiently strong load securing.

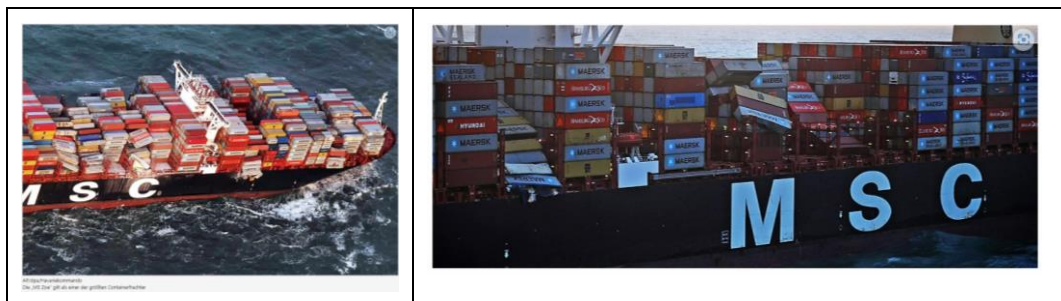
The following must be checked already when the container is provided (e.g. by checking the container and by photographing the outside and inside – important as evidence for potential insurance claims):

✓	Dry, clean, flat floor free of splinters, no condensate or moisture on the walls or ceiling of the container, no musty smell
✓	The container leaks or drips
✓	Intact container walls without damage (corrosion or areas of corrosion with straight progression lines indicate damage)
✓	Check the container wall alignment before and after loading (convex, concave, dents, bulges), carry out a light test (floor, ceiling, walls must be flat) – the best way to do this is with a torch or the torch on your phone: No light must enter the closed container.
✓	Check that the container doors work properly (the doors immediately indicate if a container is warped); any gaps around the doors must be clear and the surrounding plastic seal must be intact; the hinges must be free of corrosion; it must be possible to open and close the doors without particular force; if necessary, apply a little WD40 to the hinges.
✓	The lashing eyes must be clear (not stuck, corroded, bent, damaged, or cracked).
✓	The paperwork must be correct (container number, etc.).
✓	The loading date and period must be noted.

If only one of the listed faults is found, the container must be replaced with a new container in better condition.

When the checks have been passed, the container must be loaded based on the load securing rules:

Load securing with the lashing eyes using loops, (ratchet) straps or belts with sufficient tensioning force. Inserted wooden beams are used to separate the free areas; avoid free storage areas; insert solid bulkheads (i.e. dividing walls in the container); fill unused storage spaces with packing materials (e.g. boxed with filler material) to prevent sliding. The load must be secured to ensure the goods cannot move during ship movements or when the container is tilted.



Source: <https://unterirdisch.de/index.php?threads/verlorene-schiffscontainer-die-unsichtbare-gefahr-im-meer.13680/>

Important: If the environment at the time of container loading is very damp, a sufficient number of desiccant bags must be added to the transported goods (available from very small up to container size, e.g. 2 x 2 m).

Remember: The stability of the container walls must not be affected by the load securing measures. This means that the straps must not be tightened so much that the container walls start to deform.

6. Supply chain security

Particularly in the case of the movement of merchandise (movable material goods mainly resold unchanged), all shipments must be packaged to be tamper-proof. This means that the packages must be provided in a manner that makes it impossible to access the contents without leaving externally visible signs. This can be ensured with the following measures, for example:

- Security seals around the edges and/or sealing of the straps
- The package openings (covers, bases, etc.) must be sealed well to prevent access to the inside of the package (overlaps are useful here)
- The package must be identifiable (company logo, or layout/print agreed and approved by NPS on the packaging).
- Recessed grips in the packages must not allow for any access inside.
- Stapling cardboard packaging shut

If there are any queries as to whether the requirements of these instructions must be observed for a particular item, the responsible purchaser must be consulted and must approve this in writing.



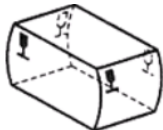
6. Identification of the package and delivery documents


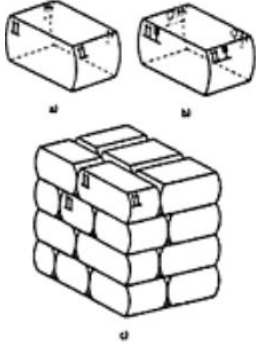

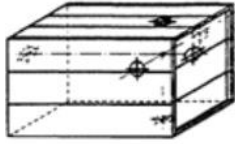



Each package and the respective delivery documents must be labelled as follows:

Mandatory details on the delivery note	Mandatory details on the packaging
NPS order number/item number(s) Delivery note number Recipient, phone number NPS material number Material designation, material, hazardous material Quantity, count, weight Batch number if relevant material is ordered Designation, type, size	NPS order number(s)
Optional details on the delivery note	Optional details on the packaging
Handler Other typical information	Delivery note number NPS material number Material description Quantity, number, weight Batch number if relevant material is ordered

6.1 Identification with symbols

Symbols must be used in line with DIN 55402 (Deutsches Institut für Normung) and ISO standard R/780 (International Organization for Standardization).

No.	Meaning of the symbols	Symbol	Function	Acc. to DIN	Acc. to ISO	Comment
1.	Keep dry		The package must be kept in dry conditions.	x	x	ISO 7000; no. 0626
2.	Fragile		The contents of the package are fragile and must be handled with care.	x	x	ISO 7000, no. 0621, example of application: 

3.	Top		Indicates the correct upright position of the package	x	x	ISO 7000, no. 0623, example of application: 
4.	Centre of gravity		Indicates the centre of gravity of the package, which is handled as a single unit	x	x	ISO 7000, no. 0627, example of application: 
5.	Do not stack		Stacking the packages is not permitted; no load may be placed on the package.	x	x	ISO 7000; no. 2402
6.	Do not damage the barrier layer		Underneath the outer packaging, there is a (nearly) water vapour-proof barrier that contains desiccants for corrosion protection. This protective function will fail if the barrier is damaged.	x		-
7.	Do not use hooks		Hooks must not be used for handling purposes as they cause point loads and therefore potential damage.	x	x	-

7. Exemption provision

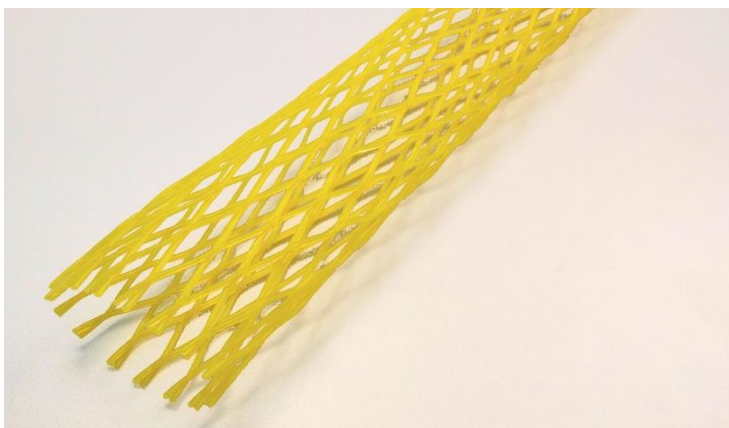
If specific packaging requirements require deviation from these Packaging Instructions, appropriate consultation and written approval from NPS are required.

8. Appendix

Bubble wrap:



POLY-NET:



Author:	Checked by:	Approved by:
Only the original of this document is signed and this is stored at QM. Checked and approved by QM on: _____ by: _____		