Components packaging standards
Guidelines for EMBS suppliers



Table of Contents

1. Objective and scope 3
2. Contact person 3
3. Principles of packaging selection 3
4. Environmental regulations on packaging 3
5. Disposable packaging specification 3
6. Disposable packaging standards 4
7. Conditions concerning returnable packaging 4
8. Returnable packaging standards 4
9. Maximum weight / height 4
10. Pallets 5
11. Avoidance of oversized packaging 5
12. Safe transport unit (packaging) 5
13. Mixed pallets 5
14. Delivery 5
    14.1. Special types of packaging 5
    14.2. Individual arrangements 5
15. Identification of packed goods 6
    15.1. Marking and labelling of packaging 6
    15.2. Label model example 7
16. Identification of components 8
17. Delivery note 8
18. Packaging approval 9
19. Document history 10

1. Objective and scope

The aim of this manual is to inform suppliers about EMBS' requirements as to packaging standards for components delivered to our plant.
By using the specifications below, we strive to ensure efficient and frictionless flow of materials between the supplier and EMBS.

2. Contact person

The responsible Commodity Buyer is a contact person in case of packaging topics for particular component.
Supplier Development Leader is responsible for contact with the supplier regarding packaging adjustment and development as well as requirements connected to this procedure.

3. Principles of packaging selection

Packaging should always be selected based on economic and ecological aspects. All packaging must meet legal and regulatory requirements (including local requirements applicable in the country to which the shipment is sent) and have a possibly minimal impact on contamination of the environment.
No matter what type of material is chosen, it must meet the following criteria:
- it cannot compromise the quality of delivered components in any way;
- components should be packed and placed on the pallet in the most effective way;
- components should be transported in a safe manner;
- components should be packed in a way that will ensure a safe and effortless unloading at the supplier's site.

4. Environmental regulations on packaging

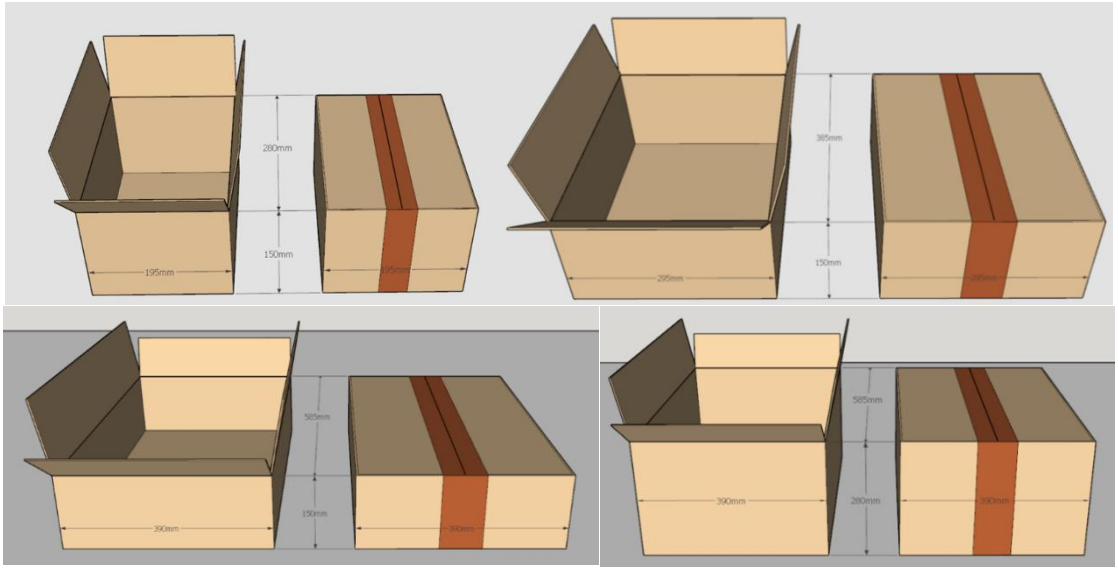
EMBS suppliers are required to comply with all applicable requirements of the Packaging and Packaging Waste Regulation (PPWR), Regulation (EU) 2025/40, in accordance with the implementation timeline and deadlines specified therein.
Compliance with the first applicable requirements is mandatory from 12 August 2026.
Upon request, Supplier shall provide a Declaration of Conformity confirming compliance with the applicable requirements of Regulation (EU) 2025/40 (PPWR), signed by a person authorised to act on behalf of the manufacturer, together with all relevant technical information and supporting documentation reasonably required to demonstrate such compliance. Such information shall include, where applicable, details regarding material composition, substances of concern and applicable concentration limits, recycled content, recyclability, and any other information required under the PPWR.
Supplier have to reduce the amount of negative environmental impact of the substances used for production of packaging as well as of generated packaging waste by limiting the volume and weight of packaging to the necessary minimum required to fulfil the function of packaging and ensure safety of the product taking into account EMBS' expectations.
EMBS supplier is obligated to reduce the amount and negative environmental impact of the substances used for production of packaging as well as of generated packaging waste by:
- ensuring, the packaging does not contain harmful substances in quantities that pose threat to the product, the environment or human health;
- ensuring, the maximum sum of heavy metals content (lead, cadmium, mercury and hexavalent chromium) in the packaging does not exceed 100 mg/kg, excluding the packaging defined in regulations.
EMBS supplier is obligated to deliver products in packaging that is designed and made in a way that enables its multiple use and subsequent recycling or at least recycling if multiple use is not possible or other than recycling form of recovery if recycling is not possible.

5. Disposable packaging specification

Packaging should meet the requirements referred to in the points above. The material can be arranged in layers provided that subsequent layers do not impact the quality of the components in lower layers.
The quality of the packaging must ensure, that the requirements concerning carrying capacity and additional load are met.
The maximum gross weight of a single packaging / carton box should not exceed 12 kg.

6. Disposable packaging standards

Sizes of acceptable cardboard packaging.



7. Conditions concerning returnable packaging

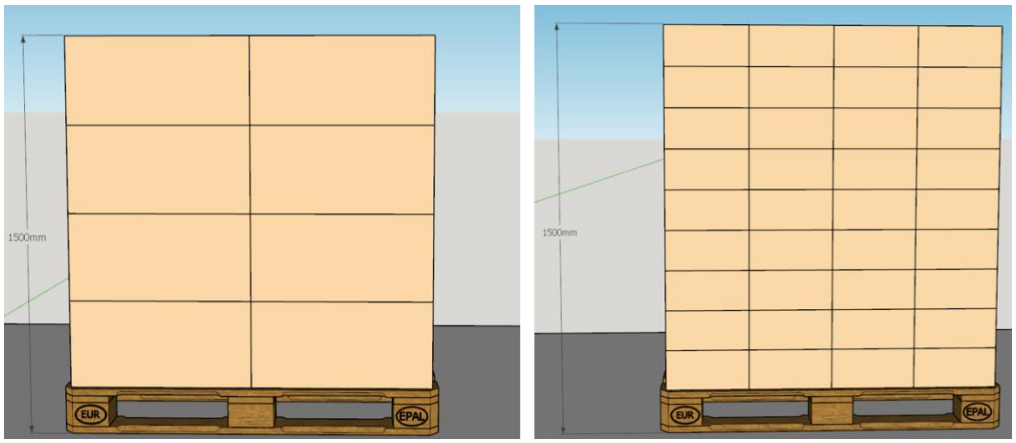
If possible, returnable KLT containers should be used for transportation of goods. To ensure long lifespan, returnable packaging should be handled with caution and should not be used for purposes which it is not designed for.
Supplier should inform EMBS in advance of the details related to the management of returnable packaging (e.g. method of return, liability and cleaning requirements, etc.).

8. Returnable packaging standards

Generally, returnable packaging is selected individually for the designed production line.

9. Maximum weight / height

The material should be delivered in packaging placed on a 120x80 cm pallet. Packaging should not project beyond the outline of the pallet.
The maximum weight of a pallet is 500 kg (exception: cell suppliers - weight of a loaded pallet including the pallet weight itself cannot exceed 1,000kg)
The maximum height of a pallet is 150 cm (see pictures below).



10. Pallets

Pallets should meet EPAL requirements, if not agreed otherwise with EMBS.
In case of pallet stacking, pallets must be marked with information about the number of permissible layers. Out of concern for the environment, EMBS prefers a maximum use of transport capacity, which can be achieved by using a method of packing, that will safely allow stacking pallets during transport. The supplier should ensure that this approach is safe for both employees and packed goods, during transport and on the supplier's / customer's premises.
If pallets cannot be stacked, they must be marked with a "DO NOT STACK" label.

11. Avoidance of oversized packaging

It is obligatory to comply with the basic dimensions of a pallet and oversize packaging should be avoided. In case of non-compliance with the above, EMBS will have to reject the delivery or charge the supplier with the costs of repacking of the goods.

12. Safe transport unit (packaging)

For environmental reasons, constricting is only allowed in exceptional cases upon EMBS's approval.
Proper securing of the goods with a plastic tape.
In case of components delivered in returnable containers, the packaging should be safely arranged on the pallet, secured with a cover and cross-fastened - two strips of PP tape along the pallet + two strips of PP tape crosswise.
In case of components delivered in disposable cartons, the hardness of the cartons has to be taken under consideration:
- cartons made of hard cardboard: the packaging should be safely arranged on the pallet and cross-fastened - two strips of PP tape along the pallet + two strips of PP tape crosswise. If the cartons have sufficiently hard filling, it is recommended to use cardboard angle bars.
- cartons made of soft cardboard *: in such cases it is allowed to wrap the cartons with stretch foil. The use of plain plastic wrap (known as cling film) is not allowed due to the cartons sticking together during transport, which leads to difficulties during unpacking.

* In order to protect the environment, EMBS does not accept the use of heat-shrinkable foil.



13. Mixed pallets

One packaging cannot contain more than one component type.
It is permissible to store packages of different components on one pallet, however they must be appropriately marked (collective label, individual label).

14. Delivery

The selection of the packaging and securing of a package should guarantee a safe transport of goods without damaging the components.

14.1. Special types of packaging

Special types of packaging that were not mentioned in packing specification or packing instructions must be approved by EMBS Purchasing Department.

14.2. Individual arrangements

Individual arrangements with EMBS Purchasing Department always take precedence over general packing specifications included in the Packaging Manual

15. Identification of packed goods

15.1. Marking and labelling of packaging

An easily identifiable label showing a 5-digit material number as assigned by EMBS and the number of products in the package should be affixed to all packaging. The labels should be placed in such a way that ensures their visibility on the pallet from each of the outer sides. If the material is packed into 1-4 carton boxes per layer, the labels should be placed in such a way that ensures their visibility on the shorter sides of the pallet. If there are more than 4 carton boxes on a pallet, the labels should be placed in such a way that ensures their visibility on the wider sides of the pallet.
Labels should meet the VDA 4992 / VDA 4994 standards (additionally, the DMC must contain the order number).
All packaging, both outer and inner, should have an easily identifiable label.

An example of a picture of a proper marking of packaging with labels.
Shorter side:



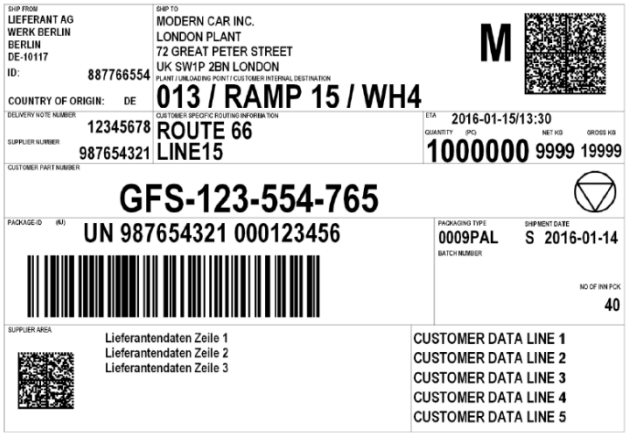
Wider side:



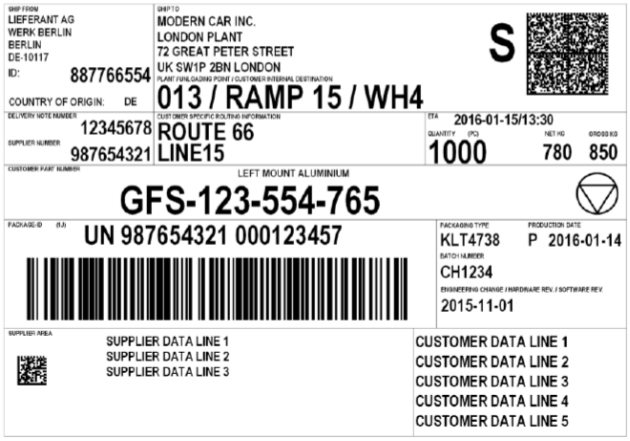
15.2. Label model example

VDA 4994 (GTL V2.0):

a) Collective label (M):



b) Single label (S):



Meaning of the individual codes in DMC is given in the VDA 4992/4994 standard.
Below required data by EMBS in DMC:

Data from DMC/ barcode	Prefix	Needed data in DMC	Description
Part number	P	EMBS part number	Material number in EMBS SAP
Order number	K	Order number from EMBS	Purchase Order Number / Schedule Agreement Number
*Delivery number	2S	Delivery number	Individual number of supplier delivery
Quantity	Q	Quantity of parts	Quantity of parts on pallet
Measure unit	3Q	Unit of measure	The actual unit in which the associated values are measured
Batch number	1T	Production LOT number, max 10 digits	Batch number

*Delivery number – in the case of pallet deliveries, the number on the collective label is sufficient (delivery number is not needed on single packages)

Description of the data syntax:

Message and Format-Header, Data Element Separator, Format- and Message-Trailer is in yellow.
Data Identifiers are in green.
Data fields are white.
Data are in bold font.

The syntax looks like:
(The whole data string is in one line (no CR/LF), in the sample below the line feeds are only for illustration)
[)>RS06GS12PLabel VersionGS9KLabel RevisionGSPCustomer Part-Number GS1PManufacturer Part Number GS31POrdering CodeGS12VManufacturer Number GS10VManufacturer LocationGS2PMaterial Revision Level GS20PAdditional Part InformationGS16DDate of Manufacturing GS14DExpiration DateGS30PRoHSGSZMS-LevelGSVSupplier-ID GS3SPackage-IDGSQQuantity per PackageGS3QUnit of MeasureGS1TBatch-No. #1 GS2TBatch-No. #2GSKOrder numberGS2SDelivery note number GS1ZSupplier DataRSEOT

Below you see how the code look like (example):
[)>RS06GS12P4992GSP00196508A0GS1PE0151CIT00003GS31PE0151CIT00003GS12V316111702 GS10VJP-Tokyo GS16D20150624GS14D20160624GS30PYGSZ5aGSV310734 GS3SUN1234567891069425GSQ1200GS3QPCS GS1T126A006CGSK3551354GS1ZCN-N1RSEOT *)

*) Data fields containing no data were not listed in the sequence (e.g. second batch "2T", delivery note number "2S")

"RS" and "GS" are system codes which in graphic should be read as marks "**@**" or "**^]**"

UN/EDIFACT or ANSI X12.3 measurement units are shown in the table below:

Table 2- EDIFACT units, ANSI units and abbreviations/codes used on labels

UN/EDIFACT	ANSI X12.3	Form DE	Form EN	Meaning
PCE / C62	PC	ST	PC	Piece
MTR	MR	M	M	Meter
CMT	CM	CM	CM	Centimetre
MMT	MM	MM	MM	Millimetre
MTK	SM	M2	M2	Square meter
MTQ	CR	M3	M3	Cubic meter
LTR	C8	L	L	Litre
LEF	X7	BL	LF	Leaf
PR	PR	PA	PA	Pair
RO	RL	RO	RO	Roll
KGM	KG	KG	KG	Kilogram
GRM	GR	G	G	Gram
KMT	DK	KM	KM	Kilometre
TNE	MP	T	T	Ton (metric)

The purchase order number should be also included in DMC label (prefix is "K" -> example K55284673).

EMBS purchase order number can be also added by writing it directly on the label in field named "Supplier area" or other (to agree with EMBS)
Information that the labels themselves contain:

- Number of the part (component) used by EMBS
- EMBS order number (if not available in DMC)
- A short description of the article (if there is a place)
- Quantity of material included in the delivery, along with measurement provisions (e.g. pcs, kg, etc.)
- Date of material production, production batch number (batch number / lot number) - additionally, apart from the DMC
- Expiry date (if applicable)
- Tool quantity and tool removal data (if applicable)
- number of sockets and data regarding socket sockets (if appropriate)

16. Identification of components

A supplier must identify all the components that have been packed, if the components are packed into additional packaging such as bags, rolls, etc. They should have labels with product number as used by EMBS and the number of components contained in it.

17. Delivery note

The delivery should contain a delivery note in the form of a shipping document containing product numbers, quantities of the

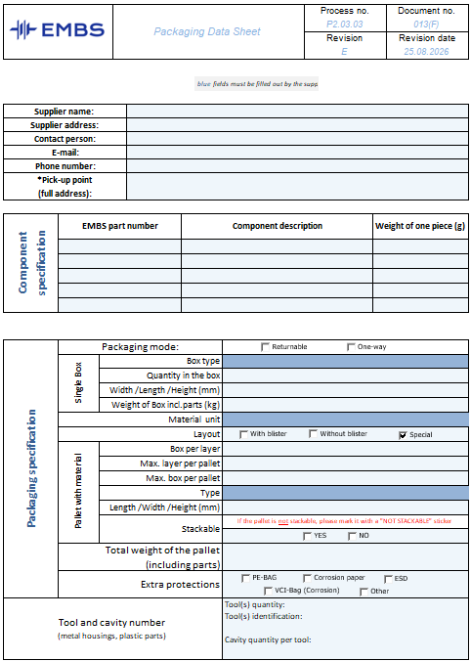
individual products, individual number of the document to identify the delivery, type and quantity of packaging, date of dispatch and Purchase Order number (PO nr).
Delivery note (DN) should be submitted along with the shipment and placed in such a way that ensures its accessibility without tearing/opening the package with the goods.

18. Packaging approval

All forms / types of component packaging shipped to EMBS must be approved by EMBS Purchasing Department.
For this purpose, the supplier must complete the Packaging Data Sheet.
In the event of packaging change, the supplier is required to additionally complete the Change Overview sheet.
The completed and signed document must be sent to the EMBS Purchasing Department in PDF format for approval.
In exceptional cases, EMBS may ask the supplier to send samples of the selected form of packaging.

Below you are shown sheets to be filled by supplier in the document "Packaging Data Sheet & Change Overview" – document no. P2.03.03-013(F).

- Declaration sheet


EMBS | Packaging Data Sheet | Process no. P2.03.03 | Document no. 013(F) | Revision E | Revision date 25.08.2026

blue fields must be filled out by the supp

Supplier name:	
Supplier address:	
Contact person:	
E-mail:	
Phone number:	
*Pick-up point (full address):	

Component specification

EMBS part number	Component description	Weight of one piece (g)

Packaging specification

Packaging mode:		☐ Returnable ☐ One-way
Single Box	Box type	
	Quantity in the box	
	Width /Length /Height (mm)	
	Weight of Box incl.parts (kg)	
Material unit		
Layout		☐ With blister ☐ Without blister ☑ Special
Pallet with material	Box per layer	
	Max. layer per pallet	
	Max. box per pallet	
	Type	
	Length /Width /Height (mm)	
	Stackable	If the pallet is not stackable, please mark it with a "NOT STACKABLE" sticker ☐ YES ☐ NO
Total weight of the pallet (including parts)		
Extra protections		☐ PE-BAG ☐ Corrosion paper ☐ ESD ☐ VCI-Bag (Corrosion) ☐ Other
Tool and cavity number (metal housings, plastic parts)		Tool(s) quantity: Tool(s) identification: Cavity quantity per tool:

Packaging photos

Full pallet (photo)	Arrangement in the box/package (photo)
Supplier comment / detailed description:	REMARKS: Supplier comment / detailed description:

Master/collective pallet label ("M" label)	Single box label ("S" label)
Label should include informations about tool and cavity number (metal housing and plastic products)	Label should include informations about tool and cavity number (metal housing and plastic products)

Label requirements: YGK 4104 (dimensions: 210x148mm - full pallet; 210x74mm - single cardbox/KLT); outer labels should be protected with plastic foil to avoid smutting (more label requirements can be found in the Packaging Manual).

Important notes

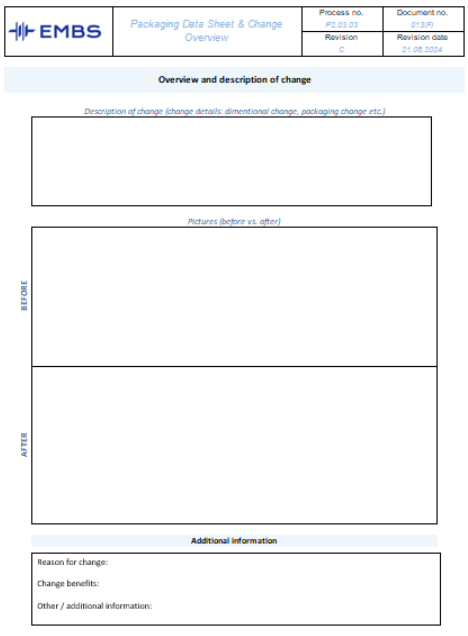
1. Supplier deliveries must comply with Packaging Manual for EMBS Suppliers, and actual PPWR regulations UE nr 2025/40 confirmed by PPWR EU Declaration (ANNEX VIII)
2. EMBS authorization does not exempt the supplier from their responsibility to deliver parts free of damage or corrosion.
3. Supplier shall deliver the parts according to approved packaging spec., otherwise will be charged for all claims related to non-compliance.
4. Shipping labels and component labels must meet EMBS labelling requirements.
5. In case of packaging change, EMBS Purchasing dept. must be informed in advance upfront about the proposed change. A short presentation describing the change and differences in the packaging (before vs after) should be submitted on the Change overview sheet.

PPWR EU Declaration of Conformity (Annex VIII) – provided by supplier ☐ please confirm by tagging
PPWR technical information/documentation – available and to be provided upon request

Packaging approval

	SUPPLIER PROPOSAL	EMBS APPROVAL
Date		Date
Name		Name
Singature (Sales Resp.)		Singature (Purchasing Resp.)

- Change overview sheet


EMBS | Packaging Data Sheet & Change Overview | Process no. P2.03.03 | Document no. 013(F) | Revision C | Revision date 21.08.2024

Overview and description of change

Description of change (change details: dimentional change, packaging change etc.)

Pictures (before vs. after)

BEFORE

AFTER

Additional information

Reason for change:
Change benefits:
Other / additional information:

19. Document history

Revision	Date	Change description	Prepared by	Approved by
A	2021-07-29	Creating the document	A. Blimer	G. Niedzielski
B	2022-11-16	Updating requirements for DMC, requirement of PO nr need to be added on label	G. Niedzielski	G. Niedzielski
C	2023-09-01	Adding information about the requirement for identifying tools and sockets in point 15.1	G. Niedzielski	G. Niedzielski
D	2024-08-21	Logo change	G. Niedzielski	G. Niedzielski
E	2024-12-05	Modification in 15.2 point: VDA version update, removal information about VDA4902 labelling, details about delivery number need	G. Niedzielski	G. Niedzielski
F	2026-09-04	Page 3, point 4 - added information about PPWR - UE regulation 2025/40 Page 8 – added sentence: “RS” and “GS” are system codes which in graphic should be read as marks "**@**" or "**^]**" Page 10 – updated 2nd page of the PDS sheet (PPWR requirements added)	G. Niedzielski	T. Duch