

GENERAL LOGISTICS GUIDELINE

Murrelektronik GmbH

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The goal of this agreement is to create an unobstructed supply chain characterized by efficient processes.

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Change history

Version	Change	Date	Name
1.0	Creation	04/23/2018	CB / MHP
1.1	Adaptation in point 3.1 Arrangement of the containers	06/16/2018	MHP
1.2	Update point 6.2 Contact persons in OPP	11/21/2018	MHP
1.3	Update of the goods receipt times Update goods identification – delivery note Update of the checklist delivery in Murrelektronik reusable containers Add varietal purity Add dangerous goods	03/01/2021	PS

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Contents

Change history	2
Contents	3
1. General	4
1.1. Preface	4
1.2. Scope.....	4
1.3. Responsibility of the suppliers.....	4
2. Packaging quality requirements	5
2.1. General.....	5
2.2. Environment protection and packaging	5
2.3. Special instructions for sea freight.....	5
3. Terms of delivery	6
3.1. Checklist for delivery in Murrelektronik reusable containers	6
3.2. Pallet	8
3.3. Folding / attachment frame	8
3.4. Package shipments	9
4. Varietal purity	9
4.1. Murrelektronik reusable containers on pallet.....	9
4.2. Cardboard packed goods on pallet	10
5. Product identification	11
5.1. Goods tags for Murrelektronik reusable containers	11
5.2. Delivery Note.....	11
5.3. Packing List.....	12
5.4. Dangerous goods	13
6. Proof of origin	13
7. Delivery to the company Murrelektronik.....	14
7.1. Requirements for the service provider	14
7.2. Murrelektronik locations and delivery times	14
8. Delivery performance	15

1. General

1.1. Preface

The general logistics guideline (LG) contains requirements and specifications that regulate the logistic processes between Murrelektronik GmbH and its suppliers. The goal of this agreement is to create an unobstructed supply chain characterized by efficient processes.

If the company Murrelektronik GmbH places an order or an order for raw parts, products or semi-finished products, the packaging and/or shipping method must be agreed with Murrelektronik GmbH before the first delivery.

1.2. Scope

The general logistics guideline serves as a basis for the design and implementation of logistical procurement processes by our suppliers to our plants worldwide. It is to be seen as an addition to our purchasing framework agreement and other fixed delivery specifications.

Article-specific delivery details are created by Murrelektronik's SCM in a separate document as an addition to the general logistics guideline.

Individual requirements for product packaging are agreed by the product management in the "Delivery Specification".

The logistics guideline applies to all deliveries until revocation:

Murrelektronik GmbH	Murrelektronik GmbH	Murrelektronik CZ s.r.o.
Falkenstraße 3	Bachgasse 3	Průmyslová 762
71570 Oppenweiler	09366 Stollberg	333 01 Stod
Germany	Germany	Czech Republic

With the order confirmation, the supplier commits to comply with the logistics guideline. In the case of contradictions, the individual provisions - e.g. article and supplier-specific supplements - shall take precedence.

1.3. Responsibility of the suppliers

The packaging of the goods is the responsibility of the supplier. The supplier must ensure that the goods are delivered in perfect condition. The supplier is responsible for compliance and implementation of the agreed logistics concept from the production location to the transfer of risk. The aim is 100% availability and quality of the material / parts at the transfer point.

2. Packaging quality requirements

2.1. General

Regardless of the choice of packaging type, the following requirements must be met:

- Damage-free delivery
- Protection against contamination
- Old tags and labels were removed
- Optimal unloading of the transport vehicles by means of industrial trucks and forklifts
- Usage of recyclable materials
- Minimal use of disposable packaging material as a contribution to waste prevention
- Optimal utilization of the volume of containers and cartons
- All delivery and customs documents must be attached to the forwarding order

2.2. Environment protection and packaging

Environmental protection has a high priority at Murrelektronik. This is reflected not only in the green corporate color but also in our packaging standards.

Therefore, when choosing packaging, our suppliers should follow Murrelektronik's priority ranking:

- 1) Storage-compatible packaging in Murrelektronik reusable containers
- 2) Disposable packaging made of renewable raw materials (e.g. wood or cardboard)
- 3) Disposable packaging made of non-renewable raw materials (e.g. plastic)

This order may change due to economic factors (transport costs, effort in empty container management).

2.3. Special instructions for sea freight

For overseas transports, one-way pallets with European standard dimensions must be used. Furthermore, the packaging must be designed in such a way that the delivery conditions are fulfilled.

3. Terms of delivery

Deliveries shall be made in accordance to the agreed delivery terms. Any freight costs caused by non-compliance with the specifications will be rejected. For all other delivery conditions, freight invoicing is between the transport company and the freight payer.

We expressly point out that all additional costs arising from non-compliance with our logistics guidelines are to be borne by the supplier.

The company Murrelektronik has a range of standard containers, which, as far as this has been agreed, are to be used preferably in a reusable process. When filling cavities, only paper pads should be used.

Order of priorities:

1. Murrelektronik reusable container (after coordination with the Murrelektronik HQ SCM)
2. Pallet
3. Package shipment

3.1. Checklist for delivery in Murrelektronik reusable containers

a. **Pallet**

The containers are placed on a wooden pallet with the European standard dimensions. The wood is treated and marked according to the IPPC standard. For more details about the pallets see point 3.2

b. **Murrelektronik Container**

Articles can only be delivered in the specified Murrelektronik containers

	ME Article no.	ME Description	Color	Outer dimensions (mm)	Inner dimensions (mm)
Finished parts and trading goods	10091140	G18 (mittel)	grün	600x400x180	570x370x160
Raw parts ESD-protected	60000009	B18 (mittel)	schwarz	600x400x180	570x370x160
Raw parts non-ESD-protected	60000034	S18 (mittel)	silber	600x400x180	570x370x160

c. **Container capacity**

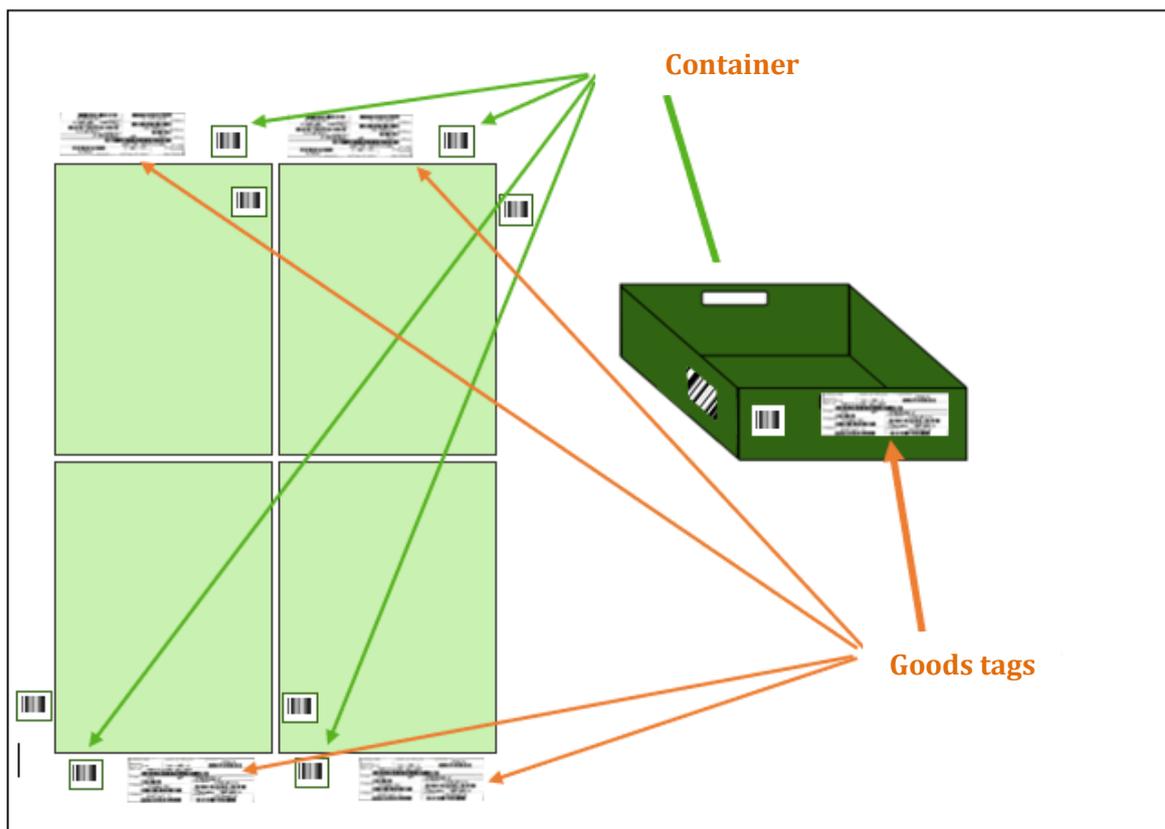
The container contains the defined quantity from the "supplier-specific addition general logistics guideline". Containers are only filled up to 2cm below the edge of the container.

d. **Stacking height**

On a pallet there is only one type of container with a maximum stacking height of 9 containers (160 cm). There is a maximum of 36 containers on one pallet. The maximum container quantity per pallet must be used. Already started container levels must be filled with empty containers.

e. **Arrangement of the containers**

When using the green G18 containers, the position of the two existing container number barcodes must be considered. The containers must be arranged so that the container barcodes are visible at the front sides of the pallet.



f. **Goods tags**

The Murrelektronik goods tags with the container label is also attached to the long side of the container on the outside. For further details to the goods tags, see point 5.1.

g. **Weight of the containers**

Maximum weight per container is 20 kg.

h. **Sorting of articles**

See point 4.1

i. **Documents**

Neither in the containers nor on the containers are any other papers, documents, labels or stickers besides the products and the goods tag. A packing list readable from the outside must be attached to each shipping package. For further details of the contents of the packing list, see point 5.3 - Packing list.

j. **Number of containers per shipment**

The number of containers delivered per shipment must be recorded on a separate document provided by Murrelektronik and handed over together with the other delivery documents.

k. **Top level**

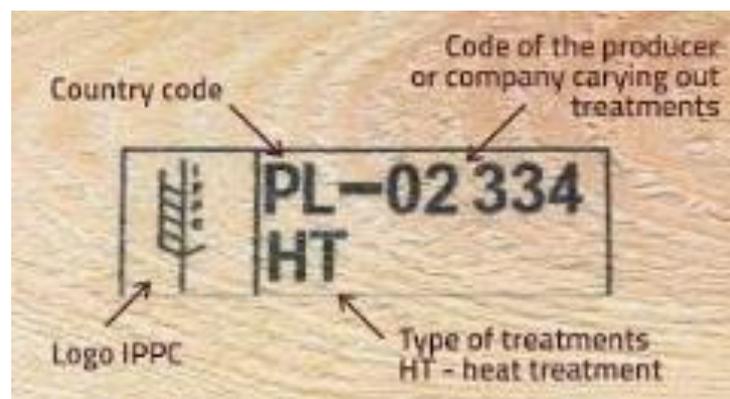
The top level of the container is covered and protected against moisture and dirt. The entire pallet is wrapped with strapping bands or with stretch film.

l. **Container procurement**

Murrelektronik reusable containers are ordered via the document "Empty Container Management". If you have any questions about empty container management, please contact: scm-service@murrelektronik.de

3.2. Pallet

The packaging must ensure safe and damage-free transport. It must be delivered on pallets in European standard dimensions. The wood used must be treated and marked according to the IPPC standard. All items must be placed within the pallet dimensions. Overhangs are not allowed. The maximum permissible load weight of the pallet used must not be exceeded. Only undamaged pallets will be accepted.



3.3. Folding / attachment frame

The height of the goods to be delivered must not exceed the wooden frame. Including pallet, the maximum height of 100 cm must not be exceeded.

3.4. Package shipments

Package shipments can contain a maximum of five packages, each with a maximum weight of 20kg. Any shipment exceeding this weight must be delivered on pallets.

The packaging must ensure safe and damage-free transport (see also requirements for packaging quality). It is essential that the name of the recipient is indicated in the shipping documents. The freight and customs documents, including the delivery bill, must be attached to the outside of the package in a shipping bag.

4. Varietal purity

4.1. Murrelektronik reusable containers on pallet

The containers on a pallet are sorted by order. Within an order, the articles are stacked according to type. If the order quantity of the individual articles does not result in a single pallet or more than one pallet, they may be consolidated into mixed pallets. Identical articles within an order are stacked on top of each other. Articles with a smaller number of containers are placed on top.

- Ideal stacking

C	B
C	B
A	B
A	B
A	B
A	B

- Not allowed stacking

B	B
B	B
B	B
A	A
A	A
C	C

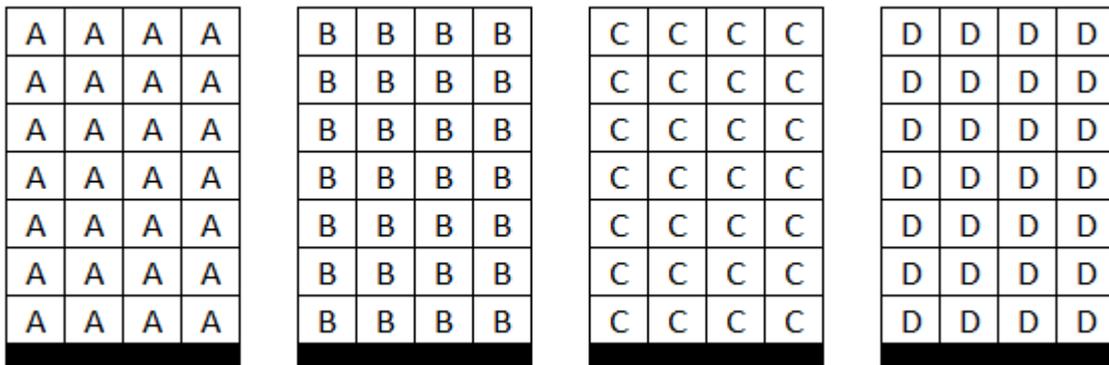
4.2. Cardboard packed goods on pallet

Generally applies:

The cartons must be arranged on the pallet in such a way that all labels of the cartons on the pallet can be read. In the case of individual cartons, the labels must be placed horizontally on the front side. Including the pallet, the maximum height of 100 cm must not be exceeded.

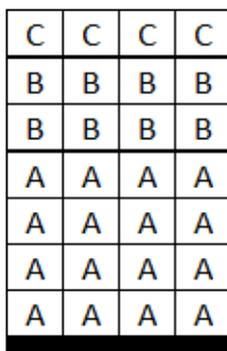
Each delivery of goods on pallets must be made according to order and within an order according to type. If the order quantity of the individual articles does not result in a single pallet or more than one pallet, they may be consolidated into mixed pallets.

- Ideal full varietal purity



Small quantities are concentrated on as few mixed pallets as possible and are grouped there according to type. Identical articles of an order are stacked next to each other. As soon as two or more articles are delivered on one pallet, there must be a separation between the individual articles (e.g. by separating layers). The heaviest articles are at the bottom.

- Mixed pallets



5. Product identification

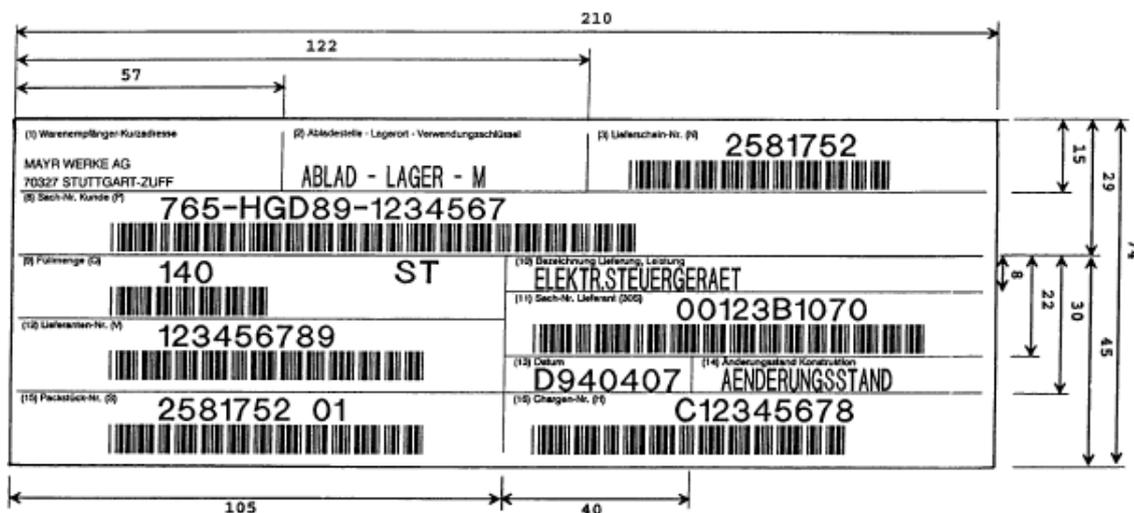
5.1. Goods tags for Murrelektronik reusable containers

The supplier must ensure that Murrelektronik reusable containers are marked. The marking must show at least the article number and the filling quantity of the container. It must be shown in form of a QR code or data matrix code as well as in plain text on the goods tag. Optionally, additional information according to VDA Standard 4902 can be printed on the transport label.

For clear identification of the articles in Murrelektronik reusable containers, the supplier can create barcode-readable labels according to VDA standard 4902 and attach them to the label holder provided on the container.

Detailed information about goods tags with VDA 4902 standard:

<https://www.vda.de/de/services/Publikationen/Publikation.~189~.html>



5.2. Delivery Note

A delivery of goods without a delivery note is not permitted. The delivery note must be attached to the front of the pallet or package by using a delivery note pocket. A separate delivery note must be provided for each order.

All documents must be in the recipient's national language or in English. Manually written delivery bills are not permitted.

The following data must be listed on the delivery bill:

- Delivery note number in fair copy and as barcode (code 128), DataMatrix code or QR code
- Murrelektronik order number in fair copy and as barcode (code 128), DataMatrix code or QR code
- Murrelektronik article number
- Murrelektronik article description

- Quantity and unit of measure
- Change index (if available)

5.3. Packing List

A packing list readable from the outside with the following contents must be attached to each shipping package:

- Number of pallets
- Order number
- Delivery note number
- Part number
- Number of pieces per container/carton
- For containers: container number

Packing list							
Ship-to party		/					
Package		1Z0A63996811237					
Total weight package		12,600 KG					
Purchase order no.	Package	ME material no.	Qty.	Unit	Cust. material no.	Delivery note no.	DN pos no.
1531897	1Z0A63996 811237258	55530	1	PC		87415677	000010
1534318	1Z0A63996 811237258	6654030	5	PC	21057720	87410237	000020
1532484	1Z0A63996 811237258	4000-68000-0020000	1	PC	2311083	87418022	000020
1532484	1Z0A63996 811237258	4000-68000-1210000	1	PC	2275801	87418022	000010
1532484	1Z0A63996 811237258	4000-68123-0000000	1	PC	2332490	87418022	000050
1530965	1Z0A63996 811237258	7000-48041-2910500	1	PC	40969114	87418045	000010
1533979	1Z0A63996 811237258	7000-50021-9610100	2	PC	4287674	87410239	000010
1534318	1Z0A63996 811237258	7000-50021-9610300	10	PC	40967313	87410237	000010
1533176	1Z0A63996 811237258	7000-88001-2300060	30	PC	4316388	87410258	000010

Example of a packing list

5.4. Dangerous goods

The shipper is obliged to observe all national and international regulations of the dangerous goods regulations or dangerous goods ordinance. The supplier shall be liable for all damages resulting from non-compliance with the statutory regulations.

If necessary, type-tested, approved packaging must be used for transport. In addition, the packaging must be marked in accordance with the regulations. For the packaging of limited quantities according to chapter 3.4 ADR (dangerous goods regulations for road and train) the requirements for composite packaging and its marking must be observed.

The bill of lading or delivery note is marked with the appropriate dangerous goods information (including identification number, dangerous goods class, packaging group) according to RN 202(3a) ADR. The prescribed dangerous goods documents according to chapter 5.2 ADR are attached to all packages with dangerous goods contents in a clearly visible position. Information on water hazard is mandatory. The supplier is responsible for the control of the transport of dangerous goods.

6. Proof of origin

The supplier is obliged to provide Murrelektronik GmbH with the required declarations (supplier declarations, certificate of origin) regarding the customs origin of the goods delivered by him in due time.

A reference to the goods is established by indicating the Murrelektronik article number on the supplier declaration.

If necessary, the supplier shall provide evidence of his information on the origin of the goods by means of an information sheet confirmed by his customs office. The supplier shall be liable for all disadvantages incurred by Murrelektronik GmbH due to incorrect or delayed submission of the proof of origin.

The signed long-term supplier declaration must be sent to Murrelektronik annually by mail without being asked.

7. Delivery to the company Murrelektronik

7.1. Requirements for the service provider

When leaving the vehicle on the factory premises, high visibility vests according to EN 471 and safety shoes according to DIN EN ISO 20345 must be worn. Independent unloading by the driver is not permitted.

7.2. Murrelektronik locations and delivery times

Goods must always be delivered to the delivery address indicated on the order. Our incoming goods department has fixed opening hours during which deliveries are accepted.

	Plant Stollberg	Plant Stod	Plant Oppenweiler
Delivery times	Mon- Fri 6.00 – 19.00 Uhr	Mon- Fri 6.00 – 21.00 Uhr	Mon- Fri 8.00 – 15.00 Uhr
Contact person	Team leader logistics/ warehouse +49 37296 503 666	Team leader operative logistics/ logistics planning +420 377597 939 +420 723 303 826	Team leader warehouse and shipping logistics +49 7191 47 3301

The valid delivery times must be followed, otherwise unloading is not possible.

The following applies to the Oppenweiler location:

Shipments of three pallets or more must be delivered in the morning.

Furthermore the supplier agrees to deliver the goods on the defined delivery day (as far as a specific day of the week is fixed between the supplier and Murrelektronik). Exceptional, unplanned-deliveries are excluded from this.

8. Delivery performance

The delivery performance of a supplier is measured using the key figures delivery service and delivery reliability. Both have a significant influence on the evaluation of the supplier. The key figures are defined as followed:

Delivery service:

Comparison of desired delivery date Murrelektronik to confirmed delivery date of the supplier.

A positive delivery service is calculated if the confirmed delivery date is stated on the order confirmation max. 2 days before or 1 day after the desired delivery date. If the confirmed delivery date is outside of this tolerance, this delivery item is evaluated negatively. If there is no confirmed delivery date, the desired delivery date is taken as reference.

Delivery reliability:

Comparison of confirmed delivery date with actual delivery date.

A positive delivery reliability is calculated if the confirmed delivery date matches the actual delivery date. Tolerance in this case is a delivery max. 1 day before and no day after confirmed delivery date. If a delivery is made outside of this tolerance, the delivery reliability is shown as negative.