SUMITOMO ELECTRIC BORDNETZE

Logistics Manual for Suppliers

Requirements for the Supply of Production Materials

Annex 2 – SEBN GTL Label

Wolfsburg, September 2023

SUMITOMO ELECTRIC GROUP

GLOBAL TRANSPORT LABEL (GTL)

IMPLEMENTATION GUIDELINE

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1. Introduction

This guideline describes the transport label for the supply of the production materials to the SEBN plants and contains the technical specifications that are required to implement GTL (Global Transport Label). The new GTL will replace the old VDA 4902.
The guideline specifies the label, label placement, field and barcode contents in accordance to VDA recommendation (VDA 4994). The GTL is found on the delivered item and is aligned with the advanced shipping notification that is transmitted via electronic data interchange (EDI).

Therefore, the Shipping notification and GTL must contain the same information. It includes texts for manual processing and barcodes for scanner capture.

The use of the GTL serves to clearly identify packages (shipping units and individual packages), to enable process optimization in goods receipt area (no relabeling and mechanical processing), and continuous tracking of the goods along the entire supply chain (traceability) including production lines. SEBN will inform the supplier in advance granting a reasonable time period to apply the new labeling standard.

2. Function of labels (VDA 4994)

Labels are used to identify product and shipping packages in the internal material flow and along their route from the dispatcher of the goods (normally the factory of the supplier) to the shipping company and eventually to the recipient of the goods (normally the factory of the customer). Labels allow for the unique identification of packages around the globe. In addition to the clear-text information, labels also contain machine-readable data in the form of 1D and 2D barcodes for automated handling.

Targets of an unified SEBN transport label:

- Global unification of all supplier transport labels for automotive and industrial business.
- Simplification of data communication.
- Reduction of manual handling in goods receipt.
- Non-ambiguous labeling and identification of separate packing pieces.
- Have an easy access to the production date of the supplier in order to have a better control of the material with short expiration date.

3. Size, layout and application of labels.

3.1. Dimensions

The following formats are considered:

a. A5-landscape (210 mm x 148 mm)
b. Half letter (215,9 mm x 139,7mm)
c. A6 (148 x 105mm). The format AIAG-B10 (6 inches x 4 inches) can be used too.
d. SLC1: Label for small load carriers (210mm x 74mm)
e. SLC2: Label for flat small load carriers (210mm x 42mm)

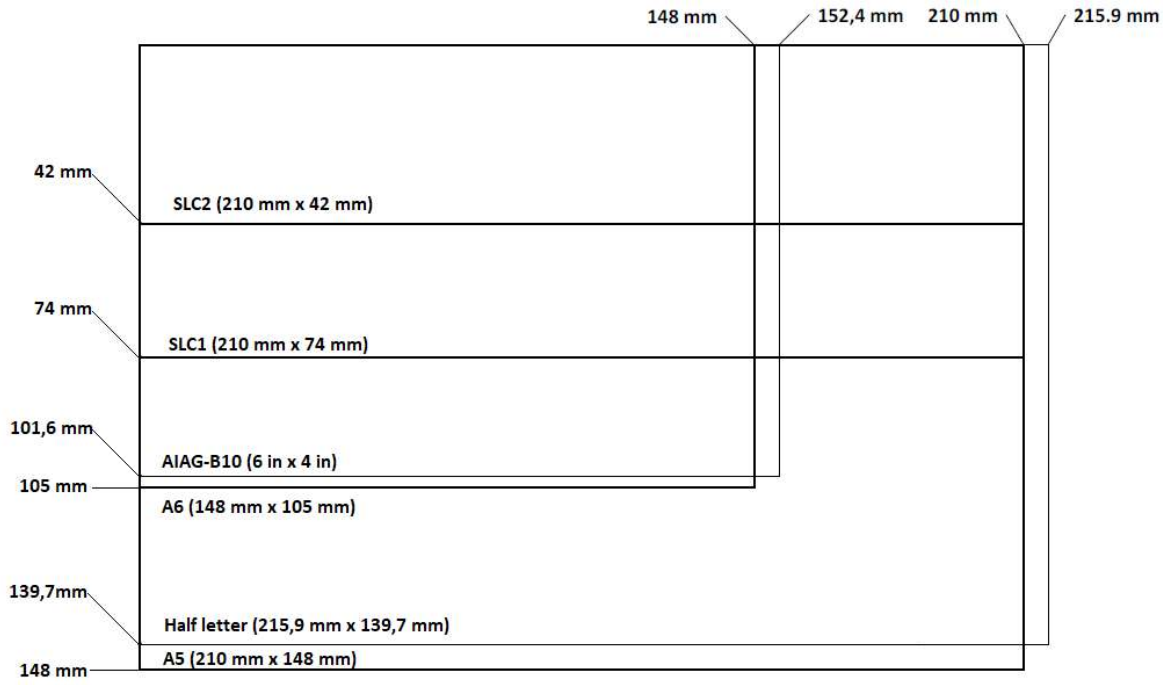


Figure 1: Comparation of sizes of different labels

3.2. Data fields on labels

The information printed on the label is divided into logical fields of data according to the applicable layout template.

The following information blocks are defined:

- A1 - Goods sender (ship from)
- A2 - Goods recipient (ship to)
- A3 - Label type and 2D barcode symbol
- B1 - Customer reference 1
- B2 - Customer routing information
- B3 - Logistics reference
- C - Customer's article number
- D1 - Package ID
- D2 - Customer reference 2
- E1 - Optional information as defined by supplier
- E2 - Customer reference 3

For more information, see chapter 5.

Figure 2: Dimensions and layout of data fields - label format A5

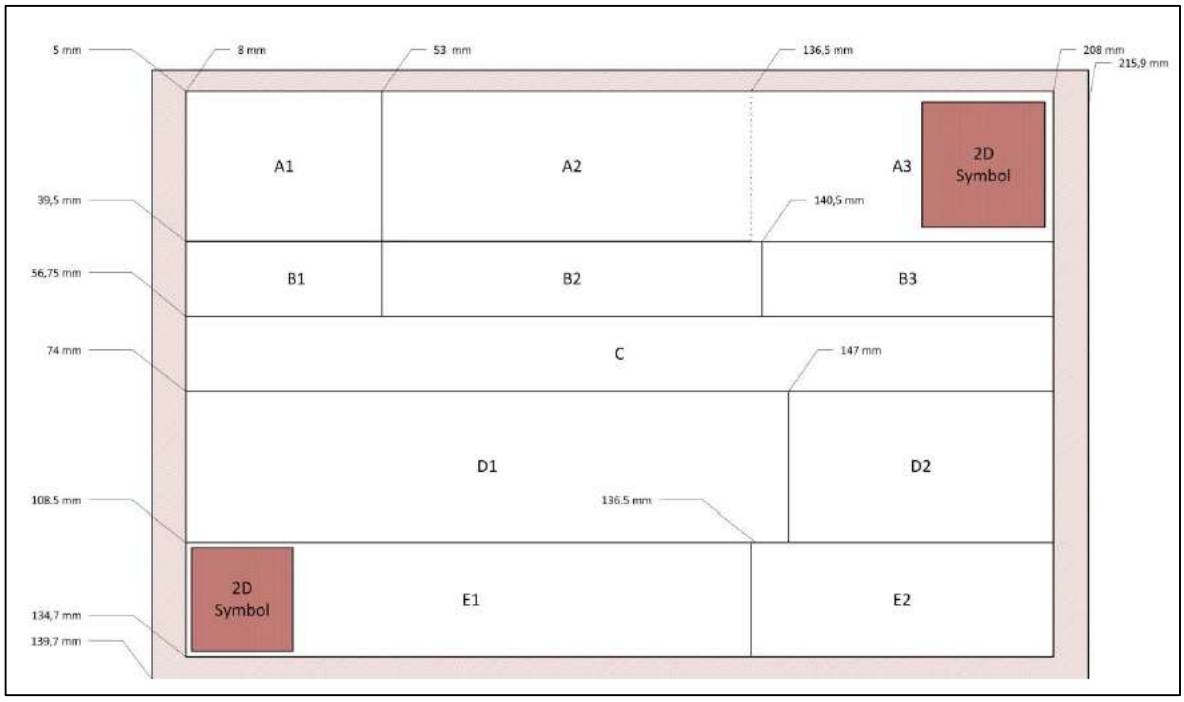


Figure 3: Dimensions and layout of data fields - label Half-Letter format

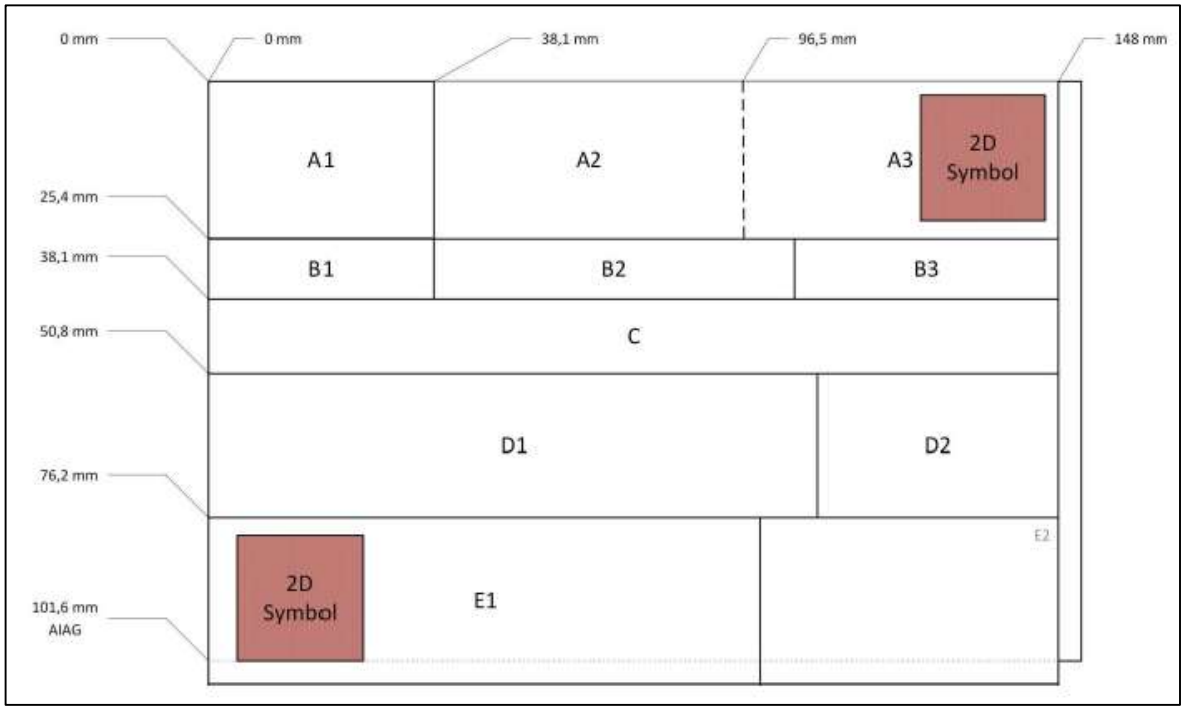


Figure 4: Dimensions and layout of data fields - label format A6

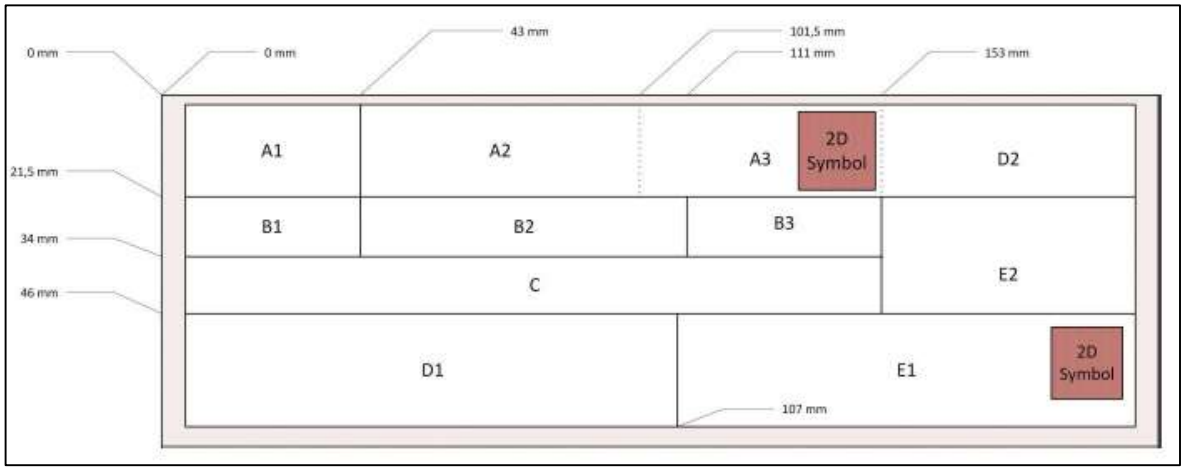


Figure 5: Dimensions and layout of data fields - label format SLC1

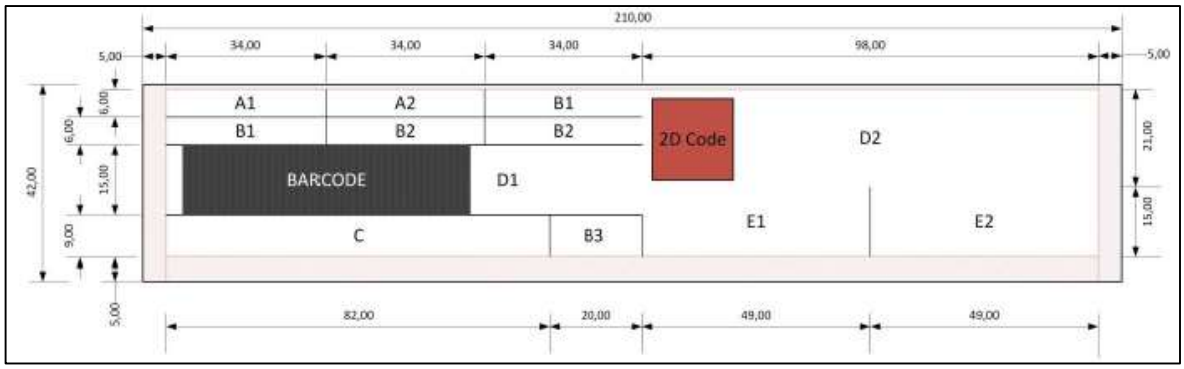


Figure 6: Dimensions and layout of label format SLC2

Note: Due to the small size, the SLC 2 Label only contains a subset of the information printed on the other labels. Also, to avoid reading problems with the 2D Symbol certain VDA Recommendation 4994 Version 1.3 of June 2021 Page 13 of 45.

Copyright: VDA lines on the label, which separate the blocks, are not printed (see examples later in this document).

3.3. Technical Requirements

Label	Requirements
Insert label	min. 120 g/m²
Adhesive label	min. 80 g/m²
Combined label	approx. 130-170 g/m²
Carrier material	approx. 50-90 g/m²
Label material	approx. 80 g/m²
Paper	white, machine-finished, moisture-resistant
Adhesive	permanent adhesive, moisture-resistant, easy to remove

Table 1: Technical requirements

Prior agreement with SEBN, insert labels might be secured with adhesive dots, or might be produced from a heavier paper.

For use with returnable containers, adhesive labels must be easy to remove without leaving behind any residue.

If the labels have to be attached to boxes without label holders, then adhesive components will need to be used (sticky labels, adhesive dots). The method to be used must be approved by SEBN.

For shipments to and from North America, labels of size Half Letter or A6 or 6x4" might be used, if approved by SEBN.

For trouble-free machine reading, the labels must be attached horizontally on the packaging.

3.4. Types of labels (SEBN)

For TPUs, label format A5 landscape should be used. It can be designed as an insert label (if a suitable label frame/holder is available) or as a self-adhesive label. Depending on the type, the following specifications must be observed:

Labels for TPUs:

• Master Label (M) for homogeneous TPU: the TPU holds individual PPUs which all contain the same article number (e.g. packed in SLCs). The individual PPUs are equipped with separate Single labels: a Single Label denominates the label on the PPU, i.e. innermost packaging unit containing the parts.

• Master Label (MIX) for mixed TPU (Mixed Label): The TPU holds individual PPUs which do not all contain the same article number. The individual PPUs are equipped with separate Single Labels.

• Single Label (S) for simplified TPU: the TPU contains only parts with the same article number but which are not packed in individual PPUs.

Product packaging unit contain Single Label (figure below can be used for orientation). Additionally, Master or Mixed load label can be optionally added to the pallet.

Figure 7: Example usage of the master label on an homogeneuous pallet (1200X800mm) with A5 label format.

3.5. Labels for small load carriers (SLCs)

For containers according to VDA small load carrier system (VDA 4500), the DIN A5 label might also be used, provided that the label can be inserted into the label frame without having to be folded.

Instead of using folded labels, the SLC1 or SLC2 label size should be used. Please follow customer's instructions regarding use of SLC and SLC2.

The use of adhesive labels on KLTs is prohibited. Prior to returning the empty containers to the sender, all labels must be removed.

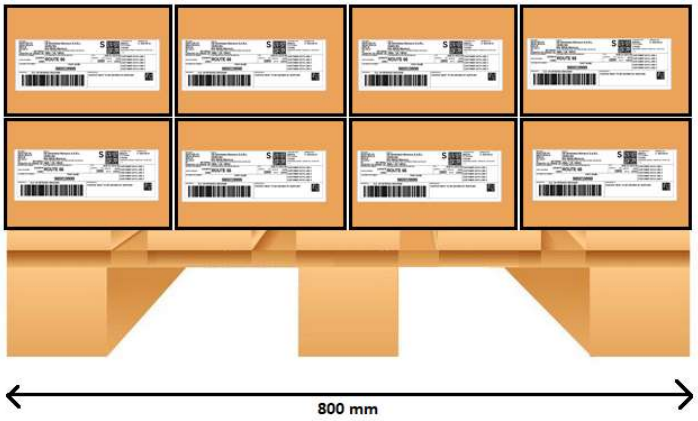


Figure 8: Example usage of single labels on an homogeneuous pallet (1200X800mm) with SLC1 label format.

3.6. Label pasting

A GTL has to be attached to all packages carrying parts (loading unit, container or shipping carton). The right pasting of the GTL is an important component of packaging, and a prerequisite for automated processing in the supply chain, e. g. scan recording at goods receipt.

4.Description of data fields:

For all text content, use font Arial Narrow, bold (alternative font: Helvetica Condensed, bold). Text must be printed in capital letters. The data fields and lines must be identified with headings or titles as specified in the table below. These titles are to be printed in English. The table below lists the contents of the individual fields in detail:

Function	A1	Information regarding goods dispatcher and country of origin
Title		SHIP FROM
Content		L1: Name of goods sender L2: Name of goods sender, continued or blank L3: Town/city, L4: Country code (ISO 2 alpha code) and postal code, L5: ID (supplier number) of the ship from L6: Country of origin of goods (ISO 2 alpha code)
Function	A2	Information regarding goods recipient, unloading point, storage location
Title		SHIP TO
Content		L1: Name of goods recipient L2: Name of goods recipient, continued or blank L3: Address of goods recipient L3: Country, postal code and town/city of goods recipient L4: Plant, unloading point, customer internal destination, separated by forward slashes "/" Note: There must, however, always be a blank space of at least 3mm width before the 2D symbol.
Function	A3	Identification of label type (Master, Mixed, Single) and 2D code
Title		none
Content		Label type codes: M = Master, MIX = Mixed, S = Single Data Matrix symbol 1 (see User data for coding in DataMatrix) On DIN A5 and DIN A6 labels, there should be a 10mm right margin to the 2D code.
Function	B1	Reference data #1 of customer
Title		DELIVERY NOTE NUMBER / SUPPLIER NUMBER
Content		Associated delivery note number, assigned by ship from. Supplier number assigned to the seller by the customer.

Function	B2	Details required by the customer for the internal routing of the container after receipt of the goods.
Title		CUSTOMER ROUTING INFO
Content		Customer-specific routing information This field is only completed, if the respective information has been communicated by the customer as part of the call-off. Otherwise, the field remains blank.
Function	B3	Logistics reference details for customer
Title		ETA, QUANTITY, *QUANTITY UNIT*, NET, GROSS WEIGHT
Content		Expected time of arrival - ETA: expected/request delivery time of the goods at the customer's premises. This field is also used for cross-dock processes, for instance to define shipping priorities. This information is only useful for labels on loading units. Quantity: Number of parts contained in package; on Master Labels: total number of parts in loading unit. Date format: CCYY-MM-DD/hh:mm QUANTITY UNIT: Quantity unit code. Net weight: Net weight of the parts in the package or in the loading unit, in KG, including decimal point where required. Gross weight: Gross weight of package or loading unit in KG, without decimals; if the gross weight is < 1kg, it is stated as 1kg.
Function	C	Customer's article number; safety symbol (if required): circle with triangle (see figures)
Title		ARTICLE NUMBER
Content		Article number: Customer-assigned article number of part. The customer's part designation may be printed to the right of the heading.
Function	D1	Transmission of unique package ID (license plate)
Title		PACKAGE ID
Function		Package ID in plain text. Globally unique package ID in the form of a barcode, encoded according to code 128. 6 mm minimum blank area to the left and right.
Title	D2	Reference data #2 of customer
Content		See figure

Function		Package type, qualified date, parts generation status, batch number On Master and Mixed Labels attached to loading units: Package type, shipping date, number of inner packages. The following applies to inner packages and simplified loading units: • The shipping date should be printed. The shipping date must be preceded by the letter "S". • The production date can be additionally printed. The production date must be preceded by the letter "P".
Title	E1	Supplier internal process data and material specific information
Content		not defined
Function		May be used by the supplier for internal purposes.
Title	E2	Other customer reference information
Content		not defined
Function		This field contains customer data that is transmitted.

Table 2: Description of data fields.

Completely filled labels can look like the following:

Figure 9: Single Label for homogeneous loading units.

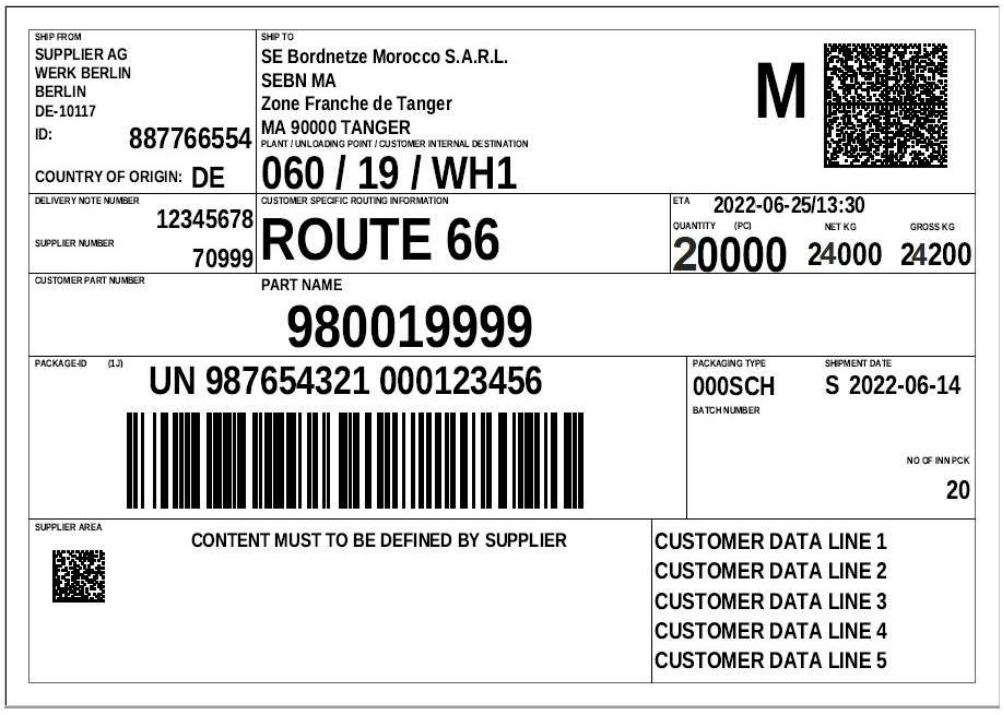


Figure 10: Master Label for homogeneous loading units.

Figure 11: Single Label in SLC 1 format.

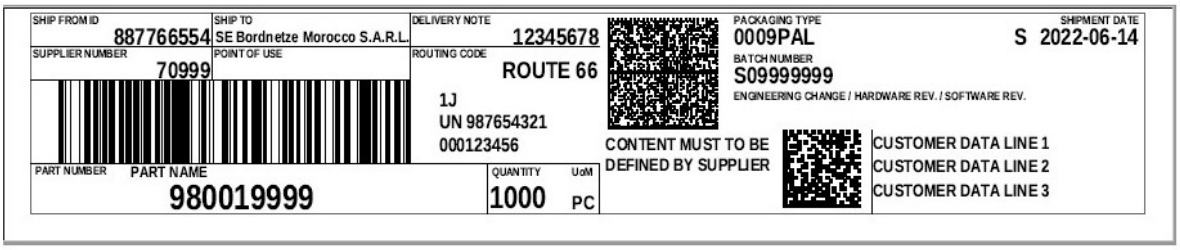


Figure 12: Single Label in SLC 2 format.

5. Identification of packages and loading units:

The identification of the individual packages and loading units plays a crucial role in controlling the various process steps in the incoming goods warehouses. For this reason, each package and each loading unit must be uniquely identifiable. This must be guaranteed by the supplier to ensure the traceability of a material.

A package identifier, hereafter referred to as the package ID, and the data identifier (DI) have the following structure:

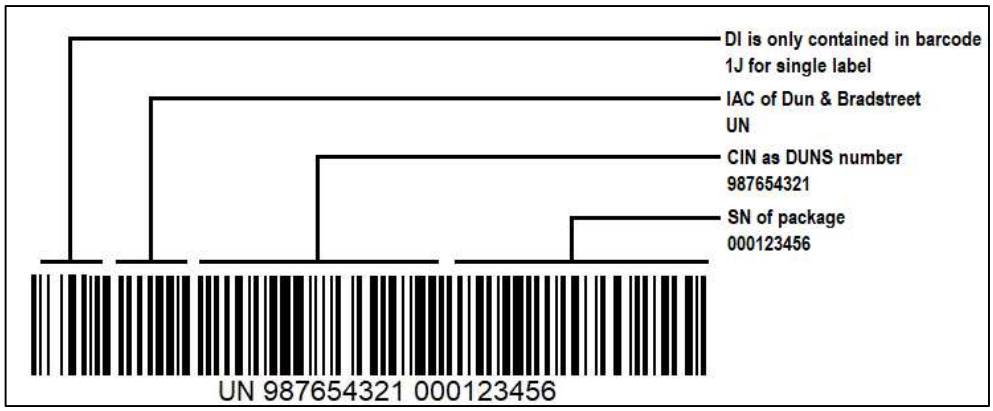
DI	IAC	CIN	SN
Data Identifier	Issuing Agency Code	Company Identification Number	Serial Number
An..2	An2	n…9	n…9
1J	UN	987654321	000123456

Table 3: General structure of package ID.

The data identifier (DI) is a classifying characteristic and precedes the actual barcode content. The data identifier classifies the packages into Single, Homogeneous Master, Mixed Master, see Table 4. The data identifier forms part of the barcode and is displayed on the label in brackets, preceding the package ID.

Each package ID begins with an Issuing Agency Code (IAC). This is the code of the agency or organisation that has issued the ID. For the German automotive industry, we recommend using the numbering system of Dun & Bradstreet, abbreviated as UN. For the unique identification of companies, corporate divisions and traders, Dun & Bradstreet uses the nine-digit numerical D-U-N-S code (Data Universal Numbering System).

The serial number of the package is devised by the despatcher of the goods. Operators in the automotive industry are generally using serial numbers and we recommend to continue using such codes. To ensure compatibility with the existing systems, the serial number should also have 9 digits (with added leading zeros, where required). Serial number must not be longer than N9.



The total length of the package identification number, including DI, must not exceed 22 digits.

1J	Unique package ID of inner packaging (Single Label)
5J	Unique package ID of mixed loading unit with intermediate packaging level (mixed master)
6J	Unique package ID of loading unit or intermediate packaging containing identical parts (Master Label for homogeneous loading unit)

Table 4: Admissible data identifiers

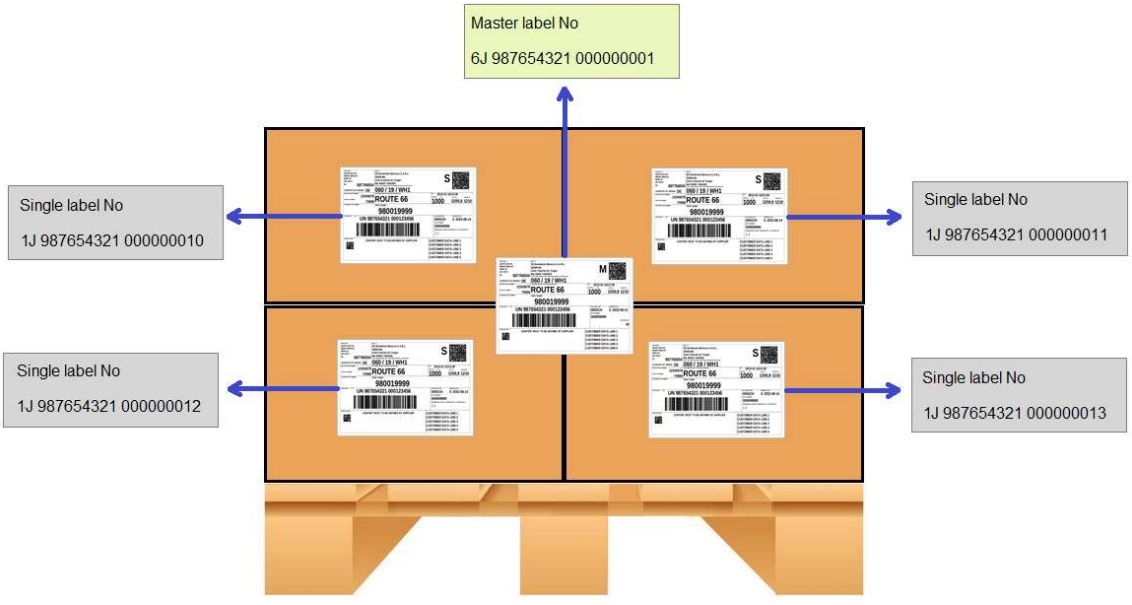


Figure 13: Matching of Single Label and higher-level Master/Mixed Label

6. Barcode, 2D code and optional RFID tag

6.1. 1D barcode

The barcode is a code 128 barcode. It contains the package ID (license plate). In the readable versions, the data identifier (1J, 5J, 6J) is omitted. Otherwise, the barcode corresponds to the readable version of the package ID. Spaces are only included to make the printed text more readable but are omitted in code 128.

The minimum height of code 128 for tray, KLT and B10 labels is 15mm. For A5 labels, we recommend that the barcode is 20mm high, for all other formats 17 mm.

6.2. 2D Data Matrix symbol (SEBN)

6.2.1 Symbol size

The Data Matrix code is a Data Matrix ECC 200 code (see also ISO/IEC 16022). For SLC1 labels the height and width including quiet zone is max. 20 mm, for DIN A5 labels max. 34 mm. The height and width of each module is min. 0.3 mm.
The blank area around the DataMatrix code must correspond to minimum twice the module widths at all sides of the code.

Based on the available area (A6 and KLT labels: 20mm x 20mm) and the minimum size of the modules (0.3mm), the matrix consists of 52 x 52 modules. The maximum size of the DataMatrix symbol is thus 304 characters (including control characters).

6.2.2 Message structure and user data

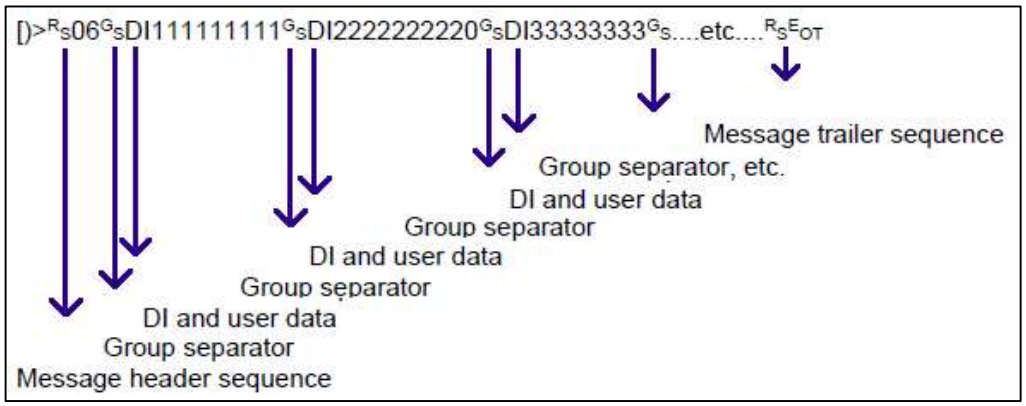
The Data Matrix Code follows the same syntax as proposed in the VDA recommendation 4994, the content of the code is SEBN specific.
The format indicator "06" (according to ISO/IEC 15434) is used to construct the DMC. This consists of the character string [)><RS>06<GS> at the beginning of the code, followed by the user data according to ISO/IEC 15418 and the character strings <RS> and <EOT> at the end.

Description	ASCII	Hex	Decimal

Message header	[]>	5B, 29, 3E	91, 41, 62
Message trailer	R S	1E	30
Format header	06	30, 36	48, 54
Group separator	G S	1D	29
Record separator	E O T	04	4

Table 5: Control indicators

Example of message, with dummy user data "111111111", "22222222", "333333", etc.:



Sequence of data fields Data

Identifier

User data	DI	Master	Mixed	Single	Mandatory/ Optional	Comments and sample data
Identification of specification	12P	X	X	X	M	12PGTL3
Specification version	9K	X	X	X	M	9K10 for version 1.0
License Plate (Package ID)	1J, 5J, 6J	X (6J)	X (5J)	X (1J)	M	
Delivery date	8D	X	X	X	M	Format CCYYMMDD

						(e.g. 8D20221231)
Production date	16D			X	O	Format CCYYMMDD (e.g. 16D20221231)
Part number SEBN	P	X		X	M	Without hyphen and blanks Only capital letters, digits and full stop
Supplier´s part number	1P	X		X	M	
Additional Part Information	23P	X		X	O	Content is agreed with suppliers on a material specific basis, only capital letters
Supplier batch number	1T			X	M	Mandatory for batch management Only if unique, else empty Alphanumeric, capital letters
Quantity	Q	X		X	M	Q9999 Full stop as separator
Gross weight in KG	2Q	X	X	X	M	e. g. 2Q9999
Unit of measure	3Q	X		X	M	e. g. 3QKG (cp. table 7 Unit of measure for DMC and labels), capital letters
Order No. SEBN	K	X			O	e. g. K55284673
Delivery note number (supplier)	2S	X	X	X	M	e. g. delivery note number
Order Item SEBN	4K	X			O	e. g. 4K00010
Supplier No. at SEBN	V	X	X	X	M	If not possible with single label use of 13V is required
Supplier´s location	12V	X	X	X	M	
Supplier No. (DUNS)	13V	X	X	X	O	Relevant for MAT-Label on third packaging level
Unloading point	2L	X	X	X	M	
Ship from´s supplier number	3L	X	X	X	M	e.g. 3L998877665

Country of origin	4L	X	X	X	M	
Customer specific routing	23L	X		X	O	

Table 6: User data for Data Matrix Code.

7. List of abbreviations and definitions

7.1 .Front size Global Transport Label (VDA 4994).

Data field	Description	A5	SLC 1	SLC 2	A6
Ship-from name 1	Name of ship-from	10	10		10
Ship-from post code	Post codeo of ship-from	10	10		10
Ship-from location	Ship-from´s location	10	10		10
Ship-from country	ISO 3166-1 alpha 2 code of the ship-from	10	10		10
Ship-from unique ID	Ship-from ID number	10	10		10
Country or origin	ISO 3166-1 alpha-2 code of the country origin	10	10		10
Ship-to name 1	Name of ship-to	12	12	12	12
Ship-to post code	Ship-to´s post code	12	12		12
Ship-to location	Ship-to´s location	12	12		12
Ship-to country	ISO 3166-1 alpha 2 code of the ship-TO	12	12		12
Ship-to plant number	Ship-to's plant ID number	30	18		18
Unloading point	Unloading point (where the means of transport is being unloaded)	30	18		18
Customer internal destination	Additional Internal destination at customer's side after unloading (warehouse / storage)	30	18	12	18
Label type	Type of Label	48	48		48

	6J = Master (‘M’) 5J = Mixed (‘MIX’) 1J = Single (‘S’)				
Supplier number	Supplier number of the ship-from plant assigned by customer	18	12	12	10
Delivery note number	Delivery note number, issued by supplier (maybe in some cases DESADV number?)	18	12	12	10
Customer specific routing	Customer specific routing	36/ 22	24/18	12	24/ 22
Place of consumption	Place where items are used in production	36/ 22	24/18		24/ 22
ETA	Time of arrival, requested by customer	14	12		14
Quantity	Quantity per loading unit (Master label) or per pack (Single label)	30	24	18	24
Unit of measure	Abbreviation of the unit of measure	6	6	6	6
Gross weight	Gross weight of the loading unit or inner packaging item	20	12		14
Net weight	Net weight of the loading unit or inner packaging item	20	12		14
Customer´s part number	Part number assigned by customer	36	24	18	28

Customer´s part description	Part description according to customer's nomenclature	10	10	10	10
Safety sign	Symbol to mark safety relevant parts				
License plate	Globally unique package ID of the package / loading unit	24	12	8	20
Package type code	Type of package code according to receiver's codification	16	12	12	12
Shipment code	Date and time of scheduled shipment	16	12		12
Expiry date	Best before date	16	12	12	12
Production date	Date of production	16	12	12	12
Batch number/ lot number	Batch number / lot number	16	12	12	12
Hardware status	Hardware status	16	12		12
Software status	Software status	16	12		12
Engineering change ID	Engineering change ID	16	12	12	12
Number of inner package items	Number of inner packages in a loading unit	24	24		24
Supplier specific information	Supplier specific information for supplier's use only	tbd	Tbd	Tbd	Tbd
Customer specific information	Additional, customer specific information for customer's use only	14	12		14

Table 7: Front size Global Transport Label.

7.2 Abbreviations/codes used on labels

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

Table 8: Abbreviations/codes used on labels.

7.3 Other definitions

Product Packaging Unit (PPU): Examples: cardboard boxes and plastic boxes (also known as Small Load Carriers – SLC). In this case the label provides unique identification of the product, together with additional logistics data. The label generally supports the internal handling of the PPU by the supplier up to the point of consolidation into transport packaging units and by the customer once the transport packaging units are broken down again.

Transport Packaging Unit (TPU): Examples: pallets, loaded with PPUs and auxiliary packaging material (lids, etc.), metal containers or large load carriers (LLC). In this case, the label provides unique identification of the package unit, including details regarding its logistics and material properties. The information on the label is generally used to control consignments along singlestage or multi-stage transport chains from the supplier to the customer and to support the receipt of the goods by the customer with subsequent internal handling including storage in the customer's warehouse.