

# **EUROCODE**

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A system for unique coding of  
blood products, tissues and cells

**Eurocode IBLS e.V.**  
**International Blood Labeling Systems**

# Eurocode IBLIS e.V background information

- 1998: founded by the Working Party „Automation and Data Processing” of German Society of Transfusion Medicine and Immunohaematology (DGTI)
- 2012: addition of tissue support
- 2015: integration of Eurocode’s product code into the Single European Code for tissues and cells

154 members:

143 blood centers and tissue establishments

10 personal members

1 associated member (DGTI )

Germany

Austria

Croatia

Galicia (Spain)

## Eurocode: coding summary

- simple and world-wide-unique coding system
- leading identifier “!” for Eurocode defined in ISO 15418
- coding of all necessary items like:
  - product ID: Unique Product Identification Number
  - product characteristics: Product Code
  - quantity
  - date & time values

Items can be encoded separately or integrated into one single code by concatenation

# Board and Advisors

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German Institute for Cell and Tissue Replacement  
(DIZG), Berlin

Technical Advisors for tissues

A. Pruß, Charité, Berlin

H.J. Mönig, DIZG Berlin

## Organizing Eurocode:

- written technical specification
  - comprehensible data structure
  - open for future additions
  - published on [www.eurocode.org](http://www.eurocode.org)
  - member-based organization
  - unlimited use of all coding options for members
  - low-cost labeling software-solution available for members
- 
- free public use of product code segment as part of the Single European Code (SEC)

# Financial aspects

charitable organization by German Tax Code

- members = blood / tissue establishments
- membership fee annually:

<b>tissue establishments</b>	<b>= 50 €</b>
blood centers < 50.000 collections	= 50 €
blood centers > 50.000 collections	= 100 €
personal members	= 10 €
associated members	= 250 €

# Discrimination from other systems

by data identifiers → ISO 15418

<i>SI-System-identifikator</i>	<i>Kurztitel</i>	<i>Struktur</i>	<i>Referenz</i>	<i>für welche Technologie bzw. Symbologie</i>
<i>kein SI</i>	ASC	<i>ANS MH10 Data Identifier Struktur &lt;4-stellig nnnA</i>	ISO/IEC 15418	ISO-Symbole & RFID
<b>+</b>	HIBC	Health Industry Barcode ANS HIBC 2	ISO/IEC15418	ISO-Symbole & RFID
<b>-</b>	PZN	Pharmazentralnummer	www.ifaffm.de	Code 39
<b>&amp;</b>	ISBT-A	American Ass.of Blood Banks	ISO/IEC15418	Code 128
<b>=</b>	ISBT	International Society for Blood Transfusion	ISO/IEC15418	Code 128
<b>/</b>	GIBC	Graphic Communications Industry Barcode Council	ISO/IEC15418	Code 128
<b>!</b>	EURO CODE	EUROCODE	ILBS-EUROCODE e.V.	Code 128 und 2D
<b>.</b>	Dot	Verschlüsselungsstruktur	AFNOR NFZ63-400	Alle Symbologien
<b>FNC1</b>		GS1 Application Identifier	ISO/IEC15418	nur für Code 128&Datamatrix
<b>[ ]&gt;<sup>R</sup><sub>S</sub></b>	15434	Syntax für High Capacity Media	ISO/IEC15434	2D-Code & RFID

# Eurocode - Data Structures

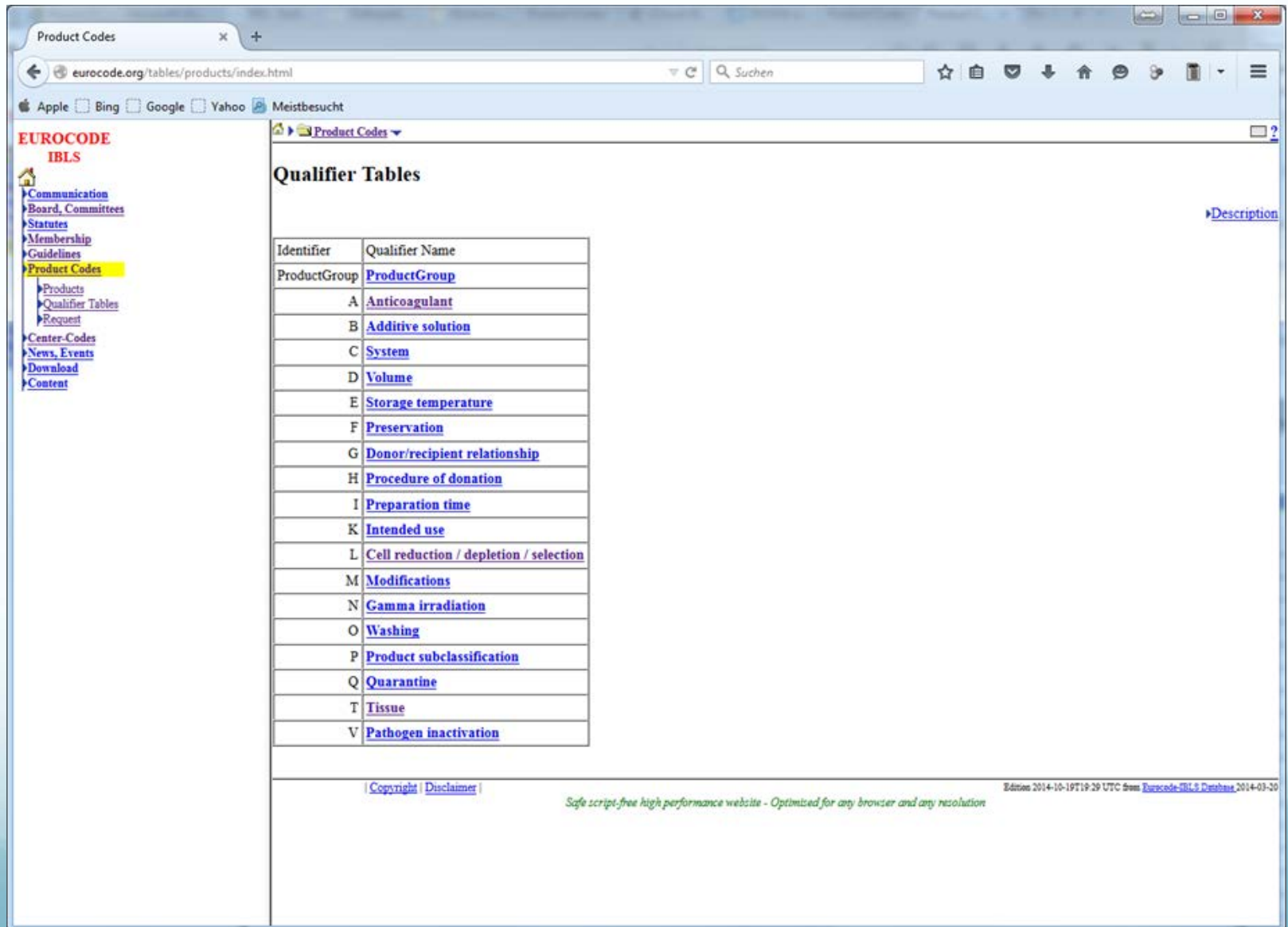
<u>Name of the data structure</u>	<u>Identifier</u>
• Unique Product ID (UPN)	!number <!0...!9>
• Donation date (2 formats)	!C / !D.
• Expiry date (2 formats)	!E / !F
• difference between UTC /local time	!G
• Product-Code (internat./national)	!P / !Q
• Blood group (ABO, RHD, RHCE, K)	!R
• Donor-ID	!S
• Volume	!V



Eurocode – product codes:  
product groups

N	Product Group	entries
0	<b>Whole blood</b>	25
1	<b>Red blood cell concentrates</b>	158
2	<b>Platelet concentrates</b>	138
3	<b>Leukocyte concentrates and buffy coat</b>	42
4	<b>Haematopoietic progenitor cells</b>	39
5	<b>Plasma</b>	117
6	<b>Miscellaneous</b>	15
7	<b>Tissues</b>	26
8...9	...	0

# general product codes qualifiers



The screenshot shows a web browser window with the URL [eurocode.org/tables/products/index.html](http://eurocode.org/tables/products/index.html). The page title is "Product Codes". The left sidebar contains a navigation menu with "EUROCODE IBLIS" and various categories, with "Product Codes" highlighted. The main content area is titled "Qualifier Tables" and contains a table with two columns: "Identifier" and "Qualifier Name". The table lists 20 qualifiers, each with a letter identifier and a descriptive name. A "Description" link is visible on the right side of the table. At the bottom of the page, there are links for "Copyright" and "Disclaimer", and a footer note: "Edition 2014-10-19T19:29 UTC from Eurocode-IBL-9 Database 2014-03-20".

Identifier	Qualifier Name
ProductGroup	<a href="#">ProductGroup</a>
A	<a href="#">Anticoagulant</a>
B	<a href="#">Additive solution</a>
C	<a href="#">System</a>
D	<a href="#">Volume</a>
E	<a href="#">Storage temperature</a>
F	<a href="#">Preservation</a>
G	<a href="#">Donor/recipient relationship</a>
H	<a href="#">Procedure of donation</a>
I	<a href="#">Preparation time</a>
K	<a href="#">Intended use</a>
L	<a href="#">Cell reduction / depletion / selection</a>
M	<a href="#">Modifications</a>
N	<a href="#">Gamma irradiation</a>
O	<a href="#">Washing</a>
P	<a href="#">Product subclassification</a>
Q	<a href="#">Quarantine</a>
T	<a href="#">Tissue</a>
V	<a href="#">Pathogen inactivation</a>

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# tissue-specific qualifiers

Product Codes

www.eurocode.org/tables/products/index.html

Product Groups **A B C D E F G H I K L M N O P Q T V**

Release 1.7.2

**T: Tissue**

Tissue product subclassification.

<b>0</b> 1.7.0	<b>Not specified</b> ?	
<b>1</b> 1.7.0	<b>Not applicable</b> Not applicable	
<b>2</b> 1.7.0	<b>Amnion</b> Amnion	
<b>10</b> 1.7.0	<b>Blood Vessel</b> BloodVessel	
<b>11</b> 1.7.0	<b>Heart Valve</b> HeartValve	
<b>12</b> 1.7.0	<b>Pericard</b> Pericard	
<b>21</b> 1.7.0	<b>Cornea</b> Cornea	
<b>22</b> 1.7.0	<b>Amnion, ophthalmological</b> AmnionOphth	
<b>30</b> 1.7.0	<b>Cancellous Bone (Spongiosa)</b> CancBoneSpong	
<b>31</b> 1.7.0	<b>Cartilage</b> Cartilage	
<b>32</b> 1.7.0	<b>Fascia</b> Fascia	
<b>33</b> 1.7.0	<b>Cortical Bone</b> CorticBone	
<b>34</b> 1.7.0	<b>Whole bone</b> WholeBone	
<b>35</b> 1.7.0	<b>Demineralsised Bone</b> DeminBone	
<b>36</b> 1.7.0	<b>Femoral Head</b> FemorHead	
<b>40</b> 1.7.0	<b>Meniscus</b> Meniscus	
<b>41</b> 1.7.0	<b>Ligament</b> Ligament	
<b>42</b> 1.7.0	<b>Tendon</b> Tendon	
<b>50</b> 1.7.0	<b>Acellular Dermis</b> AcellDermis	
<b>51</b> 1.7.0	<b>Skin</b> Skin	
<b>60</b> 1.7.0	<b>Ovarian tissue</b> OvarTissue	
<b>61</b> 1.7.0	<b>Sperm</b> Sperm	
<b>62</b> 1.7.0	<b>Oocyte</b> Oocyte	
<b>63</b> 1.7.0	<b>Pancreas islets</b> PancIslets	
<b>64</b> 1.7.0	<b>Hepatocytes</b> Hepatocytes	

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# Eurocode – each numeric codes stands for a set of properties

Product Codes

www.eurocode.org/tables/products/index.html

Product Codes Products (0, 1, 2, 3, 4, 5, 6, 7)

**EUROCODE**  
**IBLS**

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**Productgroup 7:**  
**Tissue** 26 products in this group

SORT ORDER: [ascending code numbers](#) | [product properties - qualifier display by relevance](#) | [product properties - qualifier display alphabetic](#) | [historical](#)

Product Number	PrSub -P-	Tiss -T-	Donor -G-	Pres -F-	Addit -B-	Temp -E-	Inact -V-	Quar -Q-	Proc -H-	Syst -C-	Wash -O-	Irrad -N-	Use -K-	Vol -D-
<a href="#">702001</a>	Tissue p22	Amnion t2	Allo g1	Dried f6	No Add b1	2to25 e8	PAA v11	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">702002</a>	Tissue p22	Amnion t2	Allo g1	Lyophil f2	No Add b1	Room e13	PAA v11	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">702003</a>	Tissue p22	Amnion t2	Allo g1	CryoPres f5	No Add b1	≤-30 e4	? v0	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">710001</a>	Tissue p22	BloodVessel t10	Postm g4	Dried f6	RPML/DMSO b18	≤-140 e6	? v0	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">711001</a>	Tissue p22	HeartValve t11	Postm g4	Dried f6	RPML/DMSO b18	≤-140 e6	Antibio v10	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">711002</a>	Tissue p22	HeartValve t11	Allo g1	Dried f6	RPML/DMSO b18	≤-140 e6	Antibio v10	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">712001</a>	Tissue p22	Pericard t12	Postm g4	Dried f6	RPML/DMSO b18	≤-140 e6	Antibio v10	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">721001</a>	Tissue p22	Cornea t21	Postm g4	CellCult f8	EaglesMed b21	30to38 e9	Antibio v10	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">721002</a>	Tissue p22	Cornea t21	Postm g4	CellCult f8	EaglesMed b21	2to6 e2	Antibio v10	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">730001</a>	Tissue p22	CancBoneSpong t30	Allo g1	Lyophil f2	No Add b1	Room e13	PAA v11	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">730002</a>	Tissue p22	CancBoneSpong t30	Postm g4	Lyophil f2	No Add b1	Room e13	PAA v11	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">730003</a>	Tissue p22	CancBoneSpong t30	Postm g4	Frozen f3	No Add b1	≤-30 e4	PAA v11	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">731001</a>	Tissue p22	Cartilage t31	Postm g4	Lyophil f2	No Add b1	Room e13	PAA v11	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5
<a href="#">731002</a>	Tissue p22	Cartilage t31	Postm g4	Frozen f3	No Add b1	≤-30 e4	PAA v11	NoQu q1	Other h3	CleanR c4	- o1	No Irr n1	Transpl k8	VSTis d5

# product code (example)

The screenshot shows a web browser window with the URL [eurocode.org/tables/products/index.html](http://eurocode.org/tables/products/index.html). The page displays the product code **721002** and its full name: **Tissue:Tissue/Cornea/Postm/EaglesMed/2to6/Antibio/Other/CleanR /Transpl/VSTis**. A red box highlights the product code and its name, with the text "Product short name" next to it. Below the product name is a table of specifications, with a red box highlighting the text "Product description by qualifiers" next to it.

**721002** Tissue:Tissue/Cornea/Postm/EaglesMed/2to6/Antibio/Other/CleanR /Transpl/VSTis

**Product short name**

**Product description by qualifiers**

Specifications	Qualifiers
Product subclassification (P)	Tissue <sup>e22</sup>
Tissue (T)	Cornea <sup>21</sup>
Donor/recipient relationship (G)	Allogenic (postmortal donors) <sup>4</sup>
Preservation (F)	Cell culture medium <sup>8</sup>
Additive solution (B)	Eagles Medium <sup>21</sup>
Storage temperature (E)	2 to 6°C <sup>2</sup>
Pathogen inactivation (V)	Antibiotics <sup>10</sup>
Quarantine (Q)	No quarantine <sup>1</sup>
Procedure of donation (H)	Other <sup>3</sup>
System (C)	Clean room <sup>4</sup>
Washing (O)	Not washed <sup>1</sup>
Gamma irradiation (N)	Not irradiated <sup>1</sup>
Intended use (K)	For transplantation <sup>8</sup>
Volume (D)	Volume / size for tissue products <sup>5</sup>




**Product Code History**

2011-07-27 00:00	Released
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Release 2014-10-19, Edition 2014-10-19T19:29 UTC by Eurocode-IBLS Database Engine 2014-03-20  
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# label (example: blood product)

!2762201012345611 !P441006 !R3182 !V300 !D2010062513 !F2010062813 !G+01

 Kons. - Nr.: <b>!276 220 10 123456 10</b>		Collection date (GMT +1): <b>25.06.2010 13:30</b> Expiry date (GMT +1): <b>28.06.2010 13:35</b>
 Prod. Code: <b>!P441006</b>	<b>PBSC</b> allogene ACD (UKE) <b>directed donation!</b> ml human peripheral blood stem cells. Contains 8% anticoagulant: ACD - A. Suspension for iv. infusion.	
<b>AB</b>	<b>Rh pos</b> <b>CCD.ee</b> <b>Kell neg</b> blood group code: !R3122	Content: CD34+ cells (total): see document attached Warning: Living human cells for transplantation. Do not x-ray! Immediate delivery required! Storage 2-6°C! Use standard filter sets for transfusion!
Donor - ID: Recipient: Recipient - ID:	<b>Universitätsklinikum Hamburg - Eppendorf</b> <b>Martinstraße 52, D - 20246 Hamburg</b>	

# EUROCODE - Publications

Introduction of the Eurocode in Germany as a contribution to quality assurance.  
Knels R, Roos D, Böcker W, Kardoeus J  
Clin Lab 2001; 47:575

## **Original paper:**

**Eurocode Blood Labeling System – uniform identification and classification of blood products improves transfusion security.**

Knels R, Roos D, Böcker W, Kardoeus J, Becker G  
Infus Ther Transfus Med 2002; 29:226-231

Eurocode blood labeling system – uniform identification and classification of blood products improves transfusion security.

Knels R, Boecker W, Roos D, Becker G, Kardoeus J  
Eur J Anaesthesiol 2004; 21 (Suppl 32):86

Eurocode and the German perspective on coding of tissues and cells.

Knels R, Mönig HJ, Wittmann G, von Versen R, Pruss A  
Vox Sang 2010; 99 (Suppl 1): 474

# EUROCODE - Original Paper:

## Original paper:

**“Eurocode International Blood Labeling System” enables unique identification of all biological products from human origin in accordance with the European Directive 2004/23/EC.**

Knels R, Mönig HJ, Wittmann G, von Versen R, Pruss A  
Cell and Tissue Banking 2010 Nov, 11 (4): 345-352

Kennzeichnung von Blutprodukten mittels Eurocode.

Knels R, Schnurstein K, Redecker-Klein A, Hiller J  
Anästh Intensivmed 2011 Feb;52 (2): 119-123

Improvement and spreading of Eurocode coding system since 1998.

Goebel S, Roos D, Kardeous J, Linke T, Lath K, Knels R  
Transfus Med Hemother 2011; 38 (Suppl 1): 70

Eurocode ensures coding of tissues and cells in accordance with EU Directives 2004/23/EC and 2006/86/EC.

Knels R, Schnurstein K, Redecker-Klein A, Hiller J, Mönig HJ, Pruß A  
Transfus Med Hemother 2011; 38 (Suppl 1): 71



# **EUROCODE**

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**International Blood Labeling Systems**