



## Quality Controls

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# Product catalogue

**From pioneer to leading international producer of quality control material.**

**1963**

Establishment of SERO, the oldest quality control manufacturer in the world. SERO and Nycomed (previously Nyegaard AS) enter into close cooperation to produce, market and distribute quality controls. Launch of Seronorm.

**1965-75**

Seronorm™ receives wide international recognition. Different Seronorm™-branded products become synonymous with internal quality control in Northern and Western Europe. Distribution starts in Japan in 1972.

**1975**

Prof. Lorentz Eldjarn receives the IFCC (International Federation of Clinical Chemistry) Distinguished Scientist Award in Toronto.

**1994**

The SERO laboratory is one of the first laboratories in Scandinavia to become accredited against EN 45001 ISO Guide-25.

**1998**

SERO takes over the distribution of the Seronorm™ products from Nycomed in Norway. The same occurs in 2005 in Sweden and Denmark, and in 2020 in Finland.

**2001**

SERO opens a new production unit specially designed for the filling and lyophilisation of control materials, including the sterile filling of liquid products.

**2004**

ISO 9001 & 13485 certification.

**2016**

SERO establishes SERO Bioscience & Technology (Beijing) Co. Ltd. in Beijing.

**2013**

SERO celebrates 50 years of service to laboratory medicine.



2018

For the first time in its history, SERO produces more than two million vials in one calendar year, positioning SERO as one of the industry leaders.

## Trust through **quality**

Every day, patients around the world have their blood and other biological fluids analysed by laboratories, the results of which provide doctors with a basis for clinical diagnosis.

The quality of this diagnosis depends on the reliability of the analyses and therefore on the laboratory's quality assurance (QA) system. Quality control (QC) materials are at the heart of any QA system, hence the importance of using QC materials that the laboratory can rely on.

Producing QC materials is not just one of our activities; it is our only production activity. SERO has the knowledge, competence, dedication, and technical expertise to produce world-class products that have been present for decades in international markets, and particularly in quality-demanding markets like Scandinavia, Germany and Japan, the latter being our most important export country.

SERO is a Norwegian based company and has become one of Europe's largest QC producers. The high, consistent quality of our products is deeply appreciated by our quality conscious customers, which include large international laboratory chains, highly reputable hospital laboratories, as well as many IVD organisations, including several of the top ten IVD companies in the world.

As your QC partner we are dedicated to deliver you trust in a bottle.



Professor Dr. Med. Lorentz Eldjarn, founder of SERO and pioneer in the field of QC materials for the laboratory.



Seronorm™

Immunoassay  
Liq

3 mL



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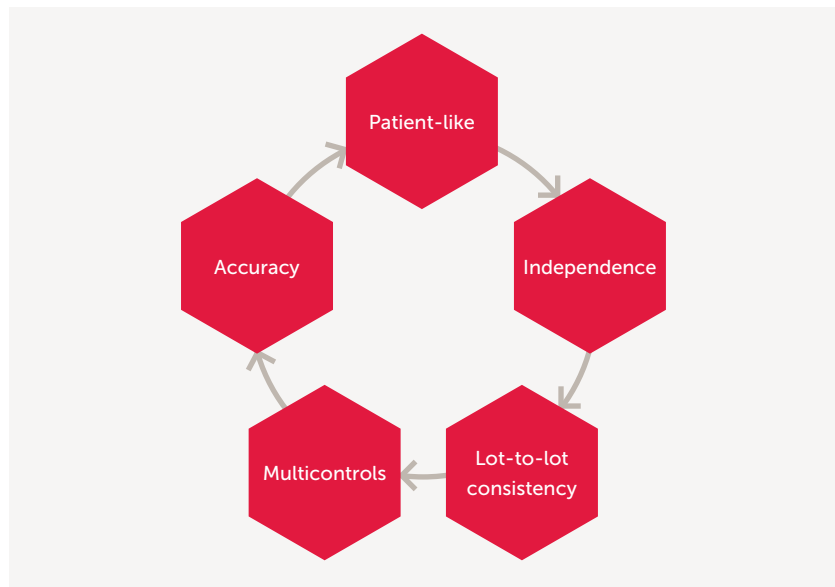


# Product philosophy

The purpose of quality control materials in the clinical laboratory is to help monitor the analytical process in order to detect, reduce and correct any deficiencies that could lead to wrong clinical decisions being made.

SERO's product philosophy – in line with our corporate mission – has always been to provide laboratories with high-quality control materials that ensure reliable results.

That is why SERO puts quality first in each step of the production process – from the selection of raw materials for production to data collection for product documentation. As an integral part of our product philosophy, SERO focuses on the following properties:



## Patient-like QC materials

Standard ISO 15189 for medical laboratories clearly states: “The laboratory shall use quality control materials that react to the examining system in a manner as close as possible to patient samples”.

SERO's products are based on 100% human matrix which is handled with great caution throughout the production process. The whole production process is designed to protect the properties of the matrix and thereby enable the final product to behave in a manner similar to patient samples. This combined with a strict selection of raw materials based on our high level of expertise ensures the quality of SERO products.

### True independent QC materials

SERO's branded products are true independent controls. Production is not optimized for any specific instrument or reagent kit, and the accuracy and precision data in the package inserts come from independent, trustworthy laboratories using SERO's value assignment protocols.

With modern analytical instruments being more and more of a "black box system", the best way for medical laboratories to control their laboratory system is through the use of third-party quality controls. ISO 15189 "Medical laboratories – Requirements for quality and competence" states its recommendations with regard to the selection of QC materials: "Use of independent third-party control materials should be considered, either instead of, or in addition to, any control materials supplied by the reagent or instrument manufacturer".

### High lot-to-lot consistency

At SERO, we are fully aware that laboratories prefer minimal lot-to-lot variation due to the challenging and time-consuming task of introducing a new lot.

Our fully integrated production facility which ensures control of each step of the production process coupled with strict selection of the raw materials used in the production enable us to document high lot-to-lot consistency. This has been a key reason why many modern laboratories choose and keep SERO as their long-term control sera partner.

### Multicontrols – allow savings

The SERO multi-parameter controls allow for huge savings. With the launch of Seronorm™ Immunoassay in 2003, SERO was the first QC manufacturer in the world to offer a highly consolidated immunoassay control that contains about 50 analytes, including most hormones, tumour markers and cardiac markers. By reducing the number of immunoassay controls used to cover the test menu in the laboratory, Seronorm™ Immunoassay has made it possible to significantly reduce waste related to dead volume in the instrument and enabled laboratories to achieve huge savings.

Our aim is to simplify our customers' daily laboratory routines and reduce the time and money spent on running QC materials. SERO's product range includes several multi-parameter control materials.

### Accuracy – trustworthy laboratory results through traceable analytical data

SERO's accuracy controls can be used both for the monitoring of day to day precision, and the information supplied with certain controls can be used to compare the trueness of your analytical results with other instruments. The SERO lot-specific product documentation provides specific information on analytical results, methods, an uncertainty budget and traceability in accordance with ISO 17511 and ISO 18153\*.



\* For detailed information concerning which control materials that can be used to monitor trueness and/or precision, please refer to the Instructions for Use available at our website [www.sero.no](http://www.sero.no) or upon request.



# SERO's Quality Controls

All products are based on 100% human matrix.

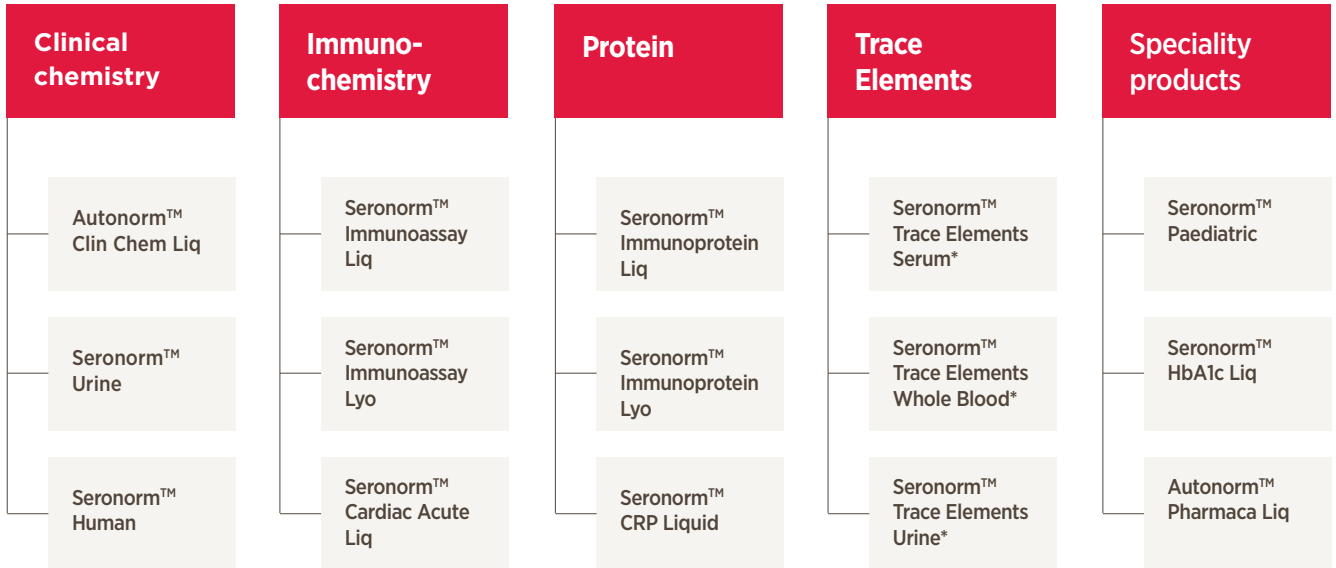
	Clin. Chemistry	Lipids	Enzymes	Proteins	Hormones	Cardiac Markers	Acute Markers	Tumour Markers	Therapeutic Drugs	Trace Elements	Diabetes	Lyophilized Liquid	Levels
Seronorm™ Immunoassay Liq						■	■		■	■		■	4
Seronorm™ Immunoassay Lyo						■	■		■	■			3
Seronorm™ Cardiac Acute Liq							■	■				■	4
Seronorm™ Immunoprotein Liq					■							■	2
Seronorm™ Immunoprotein Lyo					■								2
Seronorm™ CRP Liquid					■							■	3
Seronorm™ Human	■	■	■	■	■		■			■			2
Autonorm™ Clin Chem Liq	■	■	■	■	■		■			■		■	3
Seronorm™ Paediatric	■			■									1
Seronorm™ Urine	■			■		■						■	2
Seronorm™ HbA1c Liquid											■	■	2
Seronorm™ Trace Elements Serum										■			2
Seronorm™ Trace Elements Whole Blood										■			3
Seronorm™ Trace Elements Urine										■			2
Autonorm™ Pharmaca Liq									■			■	2

## Customized quality control materials

In addition to branded products SERO has several decades of experience in customization of control materials for IVD companies, EQA organizations as well as group of laboratories or laboratory chains. Should you have any needs

not covered by our current range, feel free to contact us, we might have the possibility to tailor-make a specific material, for example in the clinical chemistry or immunoassay field.

# The SERO product range



\* Also available as research use only (RUO)

“We are experts of control materials so that with our products you can take control of your analytical quality.”

Stefan Kernstock, CEO



# Seronorm™ Immunoassay

Your complete immunoassay control



Main features	Benefits
The “all-in-one” immunoassay control	Limits the number of different controls needed in your lab, reduces cost, saves time and space.
Based on 100% human serum; no preservatives or stabilizers added	Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.
Comprehensive product documentation for three different levels	Provides analytical data for more than 50 analytes for the most frequently used instruments on the market at clinically relevant concentrations.
Available in a liquid version	No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.
Available in a lyophilized version with a shelf life of 4 years	Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.
Independent QC material	Provides an objective assessment of the entire analytical system.

**Analytes:**

17- $\alpha$ -OH-Progesterone	CA 15-3	hCG, total	Progesterone	TBG
25(OH) Vitamin D	CA 19-9	HE4*	Prolactin	Testosterone
25(OH) Vitamin D <sub>3</sub>	CEA	hGH	Prostatic acid phosphatase*	Theophylline
AFP	CK-MB	Homocysteine	PSA, complexed*	Thyroglobulin
Aldosterone	Cortisol	IgE	PSA, free*	Troponin I
AMH*	C-peptide	IGFBP-3	PSA, total	Troponin T
Androstenedione	DHEA-Sulfate	IGF-1	PTH, intact	TSH
Anti-Tg*	Digoxin	Insulin	SHBG	Vitamin B12
Anti-TPO*	EPO	LH	T3, free	
$\beta$ 2-microglobulin	Estradiol	Methylmalonic acid	T3, total	
$\beta$ -hCG, total	Ferritin	Myoglobin	T4, free	
CA 125	Folate	NT-proBNP	T4, total	
	FSH	Ostase		

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

\* Lot to lot variation may occur

**Stability**

<b>Liquid</b>	<b>Shelf life</b>		<b>Open vial stability</b>	
	$\leq -20\text{ }^{\circ}\text{C}$	$\leq -20\text{ }^{\circ}\text{C}$	2-8 $^{\circ}\text{C}$	
	3 years $\Delta$	1 month *	10 days $\Delta$	

<b>Lyophilized</b>	<b>Shelf life</b>		<b>Open vial stability</b>	
	2-8 $^{\circ}\text{C}$	$\leq -20\text{ }^{\circ}\text{C}$	2-8 $^{\circ}\text{C}$	
	4 years $\Delta$	1 month **	10 days $\Delta$	

$\Delta$  With a few exceptions

\* When refrozen within 30 minutes

\*\* When reconstituted and frozen within 30 minutes

**Order Information:**

<b>Art. no</b>	<b>Product</b>	<b>Size</b>
207005	Seronorm™ Immunoassay Liq L-1*	12 x 3 mL
207105	Seronorm™ Immunoassay Liq L-2*	12 x 3 mL
207205	Seronorm™ Immunoassay Liq L-3*	12 x 3 mL
206005	Seronorm™ Immunoassay Lyo L-1*	12 x 3 mL
206105	Seronorm™ Immunoassay Lyo L-2*	12 x 3 mL
206205	Seronorm™ Immunoassay Lyo L-3*	12 x 3 mL

\* Not available in the US

# Seronorm™ Immunoassay Liq Low

## Analytes:

17-α-OH-Progesterone	Cortisol	Testosterone
25(OH) Vitamin D	Ferritin	TSH
25 (OH) Vitamin D3	IgE	Vitamin B12
Aldosterone	PSA, total	
Androstenedione	T4, free	
	TBG	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

## Benefits

**Clinically low levels of relevant analytes for control of e.g. anaemia**

Ensures control of relevant low concentrations of cortisol, ferritin, TSH among other analytes.

**Based on 100% human serum; no preservatives or stabilizers added**

Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.

**Comprehensive product documentation from independent laboratories**

Provides analytical data for the most frequently used instruments on the market.

**Liquid control material**

No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.

**Independent QC material**

Provides an objective assessment of the entire analytical system.

## Stability

Liquid

Shelf life	Open vial stability	
≤ -20 °C	≤ -20 °C	2-8 °C
3 years Δ	1 month *	10 days Δ

Δ With a few exceptions

\* When refrozen within 30 minutes

## Order Information:

Art. no	Product	Size
207305	Seronorm™ Immunoassay Liq Low*	12 x 3 mL

\* Not available in the US

# Seronorm™ Cardiac Acute Liq

The most complete acute control on the market

## Analytes:

BNP	Digoxin	Procalcitonin
β-hCG, total	hCG, total	S100β
CK, total	Homocysteine	Troponin I
CK-MB	IL-6	Troponin T
CRP	Myoglobin	
D-dimer	NT-proBNP	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

**Consolidated acute control that includes 16 different analytes**

**4 different levels, with the low level available in two variants (L-1A and L-1B)**

**Liquid control material**

**Comprehensive product documentation from independent laboratories**

**Independent QC material**

## Benefits

Provides a large panel of cardiac and acute markers to manage life-threatening conditions and helps to limit the number of controls in your lab, reduces cost, saves time and space.

Ensures control of relevant low concentrations for specific analytes like Troponin I on different instruments.

No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.

Provides analytical data for the most frequently used instruments on the market.

Provides an objective assessment of the entire analytical system.

## Stability

Liqui	Shelf life		Open vial stability	
	≤ -20 °C	2 years Δ	≤ -20 °C	2-8 °C
			1 month *	14 days Δ

Δ With a few exceptions

\* When refrozen within 30 minutes

## Order Information:

Art. no	Product	Size
211005	Seronorm™ Cardiac Acute Liq L-1A	6 x 2 mL
211105	Seronorm™ Cardiac Acute Liq L-1B	6 x 2 mL
211205	Seronorm™ Cardiac Acute Liq L-2	6 x 2 mL
211305	Seronorm™ Cardiac Acute Liq L-3	6 x 2 mL

# Seronorm™ Immunoprotein

## Analytes:

α1-acid-glycoprotein	C4	IgG
α1-antitrypsin	Ceruloplasmin	IgM
α2-macroglobulin	CRP	Myoglobin
Albumin	Cystatin C	Prealbumin
Anti-CCP	Digitoxin	Protein, total
Apolipoprotein A1	Ferritin	RF
ASL	Haptoglobin	Transferrin
β2-microglobulin	IgA	Electrophoresis*
C3c	IgE	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

\* Present in Seronorm Immunoprotein Liq L-1



## Main features

## Benefits

### Consolidated protein control

Limits the number of different controls needed in your lab, reduces cost, saves time and space.

### Based on 100% human serum; no preservatives or stabilizers added

Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.

### Available in a liquid version

No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.

### 4 years shelf life

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

### Comprehensive product documentation from independent laboratories

Provides analytical data on both nephelometric and turbidimetric methods.

### Independent QC material

Provides an objective assessment of the entire analytical system.

## Stability

Liqui	Shelf life		Open vial stability	
	Shelf life	Open vial stability	Shelf life	Open vial stability
	≤ -20 °C	≤ -20 °C	2-8 °C	
	4 years Δ	1 month *	14 days Δ	

Lyophilized	Shelf life		Open vial stability	
	Shelf life	Open vial stability	Shelf life	Open vial stability
	2-8 °C	≤ -20 °C	2-8 °C	
	4 years Δ	1 month **	14 days	

Δ With a few exceptions

\* When refrozen within 30 minutes

\*\* When reconstituted and frozen within 30 minutes

## Order Information:

Art. no	Product	Size
210405	Seronorm™ Immunoprotein Liq L-1	6 x 1 mL
210505	Seronorm™ Immunoprotein Liq L-2	6 x 1 mL
202805	Seronorm™ Immunoprotein Lyo L-1	6 x 1 mL
202905	Seronorm™ Immunoprotein Lyo L-2	6 x 1 mL



# Seronorm™ CRP Liquid

Straight from the fridge into the instrument

## Analytes:

CRP

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



Main features	Benefits
Based on 100% human serum	Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.
Liquid material stable at 2–8°C	Straight from the fridge to the instrument. Ready to use; no thawing or reconstitution needed. Eliminates potential handling errors.
Three clinically relevant levels	Ensures patient safety with a broader quality control range.
1-month stability in opened vials (2–8°C)	Reduces unnecessary waste for small-volume users.
Shelf life of 5 years	Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.
Independent QC material	Provides an objective assessment of the entire analytical system.

## Stability

Shelf life*	Open vial stability	
	2-8 °C	15-25 °C
5 years	31 days	7 days

\* Shelf life: 3 years for lots released before April 2023.

## Order Information:

Art. no	Product	Size
213005	Seronorm™ CRP Liquid L-1*	12 x 1 mL
213105	Seronorm™ CRP Liquid L-2*	12 x 1 mL
213205	Seronorm™ CRP Liquid L-3*	12 x 1 mL

\* Not available in the US

# Seronorm™ Human

Multi-component control with long shelf life

## Analytes:

ALAT	Calcium	Glucose	Potassium
Albumin	Chloride	HBDH	Protein, total
ALP	Cholesterol, HDL	IgA	Sodium
Amylase, pancreas	Cholesterol, LDL	IgG	Theophylline
Amylase, total	Cholesterol, total	IgM	Transferrin
Apolipoprotein A1	Cholinesterase	Iron	Triglycerides
Apolipoprotein B	CK	Lactate	UIBC
ASAT	CK-MB	LDH	Urea
Bile Acid	Copper	Lipase	Uric Acid
Bilirubin, direct	Creatinine	Lithium	Zinc
Bilirubin, total	CRP	Magnesium	
	Digoxin	NEFA	
	GGT	Osmolality	
	GLDH	Phosphorus	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

### Multi-component clinical chemistry control

## Benefits

Limits the number of different controls needed in your lab, reduces cost, saves time and space.

### Lyophilized material with a shelf life of 4 years

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

### Two clinically relevant levels

Ensures patient safety with a broader quality control range.

### Based on 100% human serum; no preservatives or stabilizers added

Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.

### Independent QC material

Provides an objective assessment of the entire analytical system.

## Stability

Lyophilized	Shelf life		Open vial stability	
	2-8 °C	≤ -20 °C	2-8 °C	10 days Δ
	4 years	1 month *	10 days Δ	

\* When reconstituted and frozen within 30 minutes

## Order Information:

Art. no	Product	Size
200805	Seronorm™ Human	10 x 5 mL
203005	Seronorm™ Human High	10 x 5 mL

# Autonorm™ Clin Chem Liq

A complete chemistry control ready to use

## Analytes:

α1-acid-glycoprotein	ASL/ASO	CK-MB	Chain	Protein, total
α1-antitrypsin	Bicarbonate	Copper	Lactate	Quinidine
α2-macroglobulin	Bile Acid	Creatinine	Lambda Light	Salicylate
ALAT	Bilirubin, direct	CRP	Chain	Sodium
Albumin	Bilirubin, total	Digoxin	LDH	Theophylline
ALP	C3c	Ethanol	Lipase	TIBC
Amikacin	C4	Ferritin	Lithium	Tobramycin
Amylase, pancreas	Calcium	Gentamycine	Magnesium	Transferrin
Amylase, total	Carbamazepine	GGT	Methotrexate	Triglycerides
Apolipoprotein A1	Ceruloplasmin	Glucose	Osmolality	UIBC
Apolipoprotein B	Chloride	Haptoglobin	Paracetamol	Urea
ASAT	Cholesterol, HDL	IgA	Phenobarbitone	Uric Acid
	Cholesterol, LDL	IgG	Phenytoin	Valproic Acid
	Cholesterol, total	IgM	Phosphorus	Vancomycin
	Cholinesterase	Iron	Potassium	Zinc
	CK	Kappa Light	Prealbumin	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

The “all-in-one” clinical chemistry control

Shelf life of 2,5 years

Based on 100% human serum; no preservatives or stabilizers added

Liquid control material

Available in three clinically relevant levels

Independent QC material

## Benefits

Limits the number of different controls needed in your lab, reduces cost, saves time and space. Provides analytical data for more than 60 analytes.

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.

No need for reconstitution. Eliminates potential handling errors. Ready-to-use right after thawing.

Ensures patient safety with a broader quality control range.

Provides an objective assessment of the entire analytical system.

## Stability

Shelf life	Open vial stability	
≤ -20 °C	≤ -20 °C	2-8 °C
2,5 years Δ	1 month Δ*	14 days Δ

Δ With a few exceptions

\* When refrozen within 30 minutes

## Order Information:

Art. no	Product	Size
201915	Autonorm™ Clin Chem Liq L-1	6 x 5 mL
202115	Autonorm™ Clin Chem Liq L-2	12 x 5 mL
202215	Autonorm™ Clin Chem Liq L-3	12 x 5 mL

# Seronorm™ Paediatric

Specially made for the newborn

## Analytes:

ALP	Magnesium
Bilirubin, direct	Phosphorus
Bilirubin, indirect	Potassium
Bilirubin, total	Sodium
Calcium	
Chloride	
Glucose	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

Quality control specially made for newborns

Based on 100% human serum; no preservatives or stabilizers added

Lyophilized material with a shelf life of 4 years

Comprehensive product documentation from independent laboratories

Independent QC material

## Benefits

Makes it possible to control analytes at clinically relevant levels for paediatric samples.

Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

Provides analytical data for 11 analytes.

Provides an objective assessment of the entire analytical system.

## Stability

Lyophilized

Shelf life	Open vial stability	
2-8 °C	≤ -20 °C	2-8 °C
4 years	1 month *	7 days

\* When reconstituted and frozen within 30 minutes

## Order Information:

Art. no	Product	Size
208005	Seronorm™ Paediatric*	6 x 3 mL

\* Not available in the US

# Seronorm™ Urine

## Analytes:

Albumin/Creatinine quota	Glucose	Pregnancy
Amylase	Magnesium	Protein, total
Calcium	Microalbumin	Sodium
Chloride	Osmolality	Specific gravity
Cortisol, free	pH	Urea
Creatinine	Phosphorus	Uric Acid
	Potassium	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

### Based on 100% human urine

## Benefits

Behaves similar to a patient sample, allowing highly trustworthy results including stable creatinine, especially during reagent lot changes.

### Liquid material stable at 2-8°C

Straight from the fridge to the instrument. Ready to use; no thawing or reconstitution needed. Eliminates potential handling errors.

### Long stability in opened vials: 31 days at 2-8°C

Reduces unnecessary waste for small-volume users.

### Independent QC material

Provides an objective assessment of the entire analytical system.

## Stability

Liquid

Shelf life	Open vial stability
2-8 °C	2-8 °C
2 years	31 days $\Delta$

## Order Information:

Art. no	Product	Size
208505	Seronorm™ Urine L-1	10 x 8 mL
208605	Seronorm™ Urine L-2	10 x 8 mL

$\Delta$  With a few exceptions

# Seronorm™ HbA1c Liquid

## Analytes:

HbA1c

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

Product documentation from independent laboratories

Based on 100% human whole blood; no stabilizers added

Liquid material with a shelf life of 3 years.

Produced through in vitro glycation of human blood

Independent QC material

## Benefits

Provides analytical data for both immunological and point-of-care methods.

Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.

No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.

Highly ethical product without any use of blood from diabetic patients.

Provides an objective assessment of the entire analytical system.

## Stability

Shelf life	Open vial stability
≤ -20 °C	2-8 °C
3 years	31 days

## Order Information:

Art. no	Product	Size
209005	Seronorm™ HbA1c Liquid L-1*	3 x 1 mL
209105	Seronorm™ HbA1c Liquid L-2*	3 x 1 mL

\* Not available in the US

# Seronorm™ Trace Elements Serum

## The clinically most relevant elements:

Aluminium	Iron	Phosphorus
Calcium	Lithium	Potassium
Chromium	Magnesium	Selenium
Cobalt	Manganese	Sodium
Copper	Mercury	Zinc
Fluoride	Nickel	

Refer to analyte index (page 30) for a total of more than 60 elements.

Refer to the lot specific product documentation of currently available lots for specific elements and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

**Multicomponent including more than 60 elements**

**Based on 100% human serum; no preservatives or stabilizers added**

**Available in two clinically relevant levels**

**Lyophilized material with a shelf life of 7 years**

**Comprehensive product documentation from independent laboratories with analytical values traceable to international reference materials**

**Independent QC material**

## Benefits

Could be used in a wide variety of applications such as nutrition, occupational health, environmental health, toxicology, food safety, veterinary and biological studies.

Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.

Ensures patient safety with a broader quality control range.

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

Provides analytical data for more than 60 elements.

Provides an objective assessment of the entire analytical system.

## Stability

Lyophilized	Shelf life	Open vial stability	
	2-8 °C	≤ -20 °C	2-8 °C
	7 years	1 month *	7 days

\* When reconstituted and frozen within 30 minutes

## Order Information:

Art. no	Product	Size
201405	Seronorm™ Trace Elements Serum L-1	6 x 3 mL
203105	Seronorm™ Trace Elements Serum L-2	6 x 3 mL
201413	Seronorm™ Trace Elements Serum L-1 RUO*	6 x 3 mL
203113	Seronorm™ Trace Elements Serum L-2 RUO*	6 x 3 mL

\* The Trace Elements RUO products (Research Use Only) are not intended for use for medical in vitro diagnostic purposes. For questions related to this, please contact your distributor or SERO.

# Seronorm™ Trace Elements Whole Blood

## The clinically most relevant elements:

Aluminium	Calcium	Lead	Molybdenum	Tin
Antimony	Chromium	Lithium	Nickel	Vanadium
Arsenic	Cobalt	Magnesium	Selenium	Zinc
Beryllium	Copper	Manganese	Silver	
Bismuth	Fluoride*	Mercury	Strontium	
Cadmium	Iodine	Methylmercury	Thallium	

Refer to analyte index (page 30) for a total of more than 60 elements.

Refer to the lot specific product documentation of currently available lots for specific elements and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

\* Only present in L-2 and L-3



## Main features

**Multicomponent including more than 60 elements**

**Based on 100% human blood; no preservatives or stabilizers added**

**Available in three clinically relevant levels**

**Lyophilized material with a shelf life of 5 years**

**Comprehensive product documentation from independent laboratories with analytical values traceable to international reference materials**

**Independent QC material**

## Benefits

Could be used in a wide variety of applications such as nutrition, occupational health, environmental health, toxicology, food safety, veterinary and biological studies.

Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.

Ensures patient safety with a broader quality control range.

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

Provides analytical data for more than 60 elements.

Provides an objective assessment of the entire analytical system.

## Stability

Lyophilized

Shelf life	Open vial stability	
2-8 °C	≤ -20 °C	2-8 °C
5 years	1 month *	7 days

\* When reconstituted and frozen within 30 minutes

## Order Information:

Art. no	Product	Size
210105	Seronorm™ Trace Elements Whole Blood L-1	10 x 3 mL
210205	Seronorm™ Trace Elements Whole Blood L-2	10 x 3 mL
210305	Seronorm™ Trace Elements Whole Blood L-3	10 x 3 mL
210113	Seronorm™ Trace Elements Whole Blood L-1 RUO*	10 x 3 mL
210213	Seronorm™ Trace Elements Whole Blood L-2 RUO*	10 x 3 mL
210313	Seronorm™ Trace Elements Whole Blood L-3 RUO*	10 x 3 mL

\* The Trace Elements RUO products (Research Use Only) are not intended for use for medical in vitro diagnostic purposes. For questions related to this, please contact your distributor or SERO.



# Seronorm™ Trace Elements Urine

## The clinically most relevant elements:

Aluminium	Chromium	Lead	Selenium
Antimony	Cobalt	Magnesium	Tellurium
Arsenic	Copper	Manganese	Thallium
Beryllium	Fluoride*	Mercury	Tin
Bismuth	Iodine	Molybdenum	Vanadium
Cadmium	Iron	Nickel	Zinc

Refer to analyte index (page 30) for a total of more than 60 elements.

Refer to the lot specific product documentation of currently available lots for specific elements and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU).

The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.

\*Only in L-2



## Main features

**Multicomponent including more than 60 elements**

**Based on 100% human urine; no preservatives or stabilizers added**

**Available in two clinically relevant levels**

**Lyophilized material with a shelf life of 7 years**

**Comprehensive product documentation from independent laboratories with analytical values traceable to international reference materials**

**Independent QC material**

## Benefits

Could be used in a wide variety of applications such as nutrition, occupational health, environmental health, toxicology, food safety, veterinary and biological studies.

Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.

Ensures patient safety with a broader quality control range.

Longer shelf life that makes it possible to reduce the frequency of lot change: resource and time-related consequences.

Provides analytical data for more than 60 elements.

Provides an objective assessment of the entire analytical system.

## Stability

Lyophilized	Shelf life	Open vial stability	
	2-8 °C	≤ -20 °C	2-8 °C
	7 years	1 month *	7 days

\* When reconstituted and frozen within 30 minutes

## Order Information:

Art. no	Product	Size
210605	Seronorm™ Trace Elements Urine L-1	10 x 5 mL
210705	Seronorm™ Trace Elements Urine L-2	10 x 5 mL
210613	Seronorm™ Trace Elements Urine L-1 RUO*	10 x 5 mL
210713	Seronorm™ Trace Elements Urine L-2 RUO*	10 x 5 mL

\* The Trace Elements RUO products (Research Use Only) are not intended for use for medical in vitro diagnostic purposes. For questions related to this, please contact your distributor or SERO.

# Autonorm™ Pharmaca Liq

“A pharmacy in a bottle...”

## Pharmaceuticals:

Amikacin	Gentamycine	Paracetamol	Topiramate
Carbamazepine	Haloperidol	Phenobarbitone	Valproic acid
Clonazepam	Lamotrigine	Phenytoin	Vancomycin
Cyclosporine	Levetiracetam	Teicoplanin	Zonisamide
Diazepam	Lithium	Theophylline	
Digoxin	Methotrexate	Tobramycin	

Refer to the lot specific product documentation of currently available lots for specific analyte and stability claims. For details concerning intended use, please refer to the Instructions for Use (IFU). The documents are available on our website [www.sero.no](http://www.sero.no) or upon request.



## Main features

Based on 100% human serum; no preservatives or stabilizers added

Two clinically relevant levels. Contains more than 20 therapeutic drugs

Liquid control material

Independent QC material

## Benefits

Behaves similar to a patient sample, allowing highly trustworthy results, especially during reagent lot changes.

Ensures patient safety with a broader quality control range.

No need for reconstitution. Eliminates potential handling errors. Ready to use right after thawing.

Provides an objective assessment of the entire analytical system.

## Stability

Shelf life	Open vial stability	
≤ -20 °C	≤ -20 °C	2-8 °C
3 years Δ	1 month *	7 days

Δ With a few exceptions

\* When refrozen within 30 minutes

## Order Information:

Art. no	Product	Size
211705	Autonorm™ Pharmaca Liq L-1	12 x 3 mL
211805	Autonorm™ Pharmaca Liq L-2	12 x 3 mL



## Our mission

SERO's mission is to improve patient care by contributing to analyses that produce reliable and comparable results from one day to another and between laboratories.





# Analyte index

## A – B

See page number	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
	12	14	15	16	17	18	19	20	21	22	23	24	25	26
17-α-OH-Progesterone	○	○												
25(OH) Vitamin D	○	○												
α1-acid-glycoprotein				○			○							
α1-antitrypsin				○			○							
α2-macroglobulin				○			○							
AFP	○													
ALAT						○	○							
Albumin				○		○	○							
Albumin/Creatinine quota									○					
Aldosterone	○	○												
ALP						○	○	○						
Aluminium Al											○	○	○	
AMH	○													
Amikacin							○							○
Amylase, pancreas						○	○							
Amylase, total						○	○		○					
Androstenedione	○	○												
Anti-CCP				○										
Antimony Sb											○	○	○	
Anti-Tg	○													
Anti-TPO	○													
Apolipoprotein A1				○		○	○							
Apolipoprotein B						○	○							
Arsenic As											○	○	○	
ASAT						○	○							
ASL/ASO				○			○							
β2-microglobulin	○			○										
β-hCG, total	○		○											
Barium Ba											○	○	○	
Beryllium Be											○	○	○	
Bicarbonate							○							
Bile Acid						○								
Bilirubin, direct						○	○	○						
Bilirubin, indirect								○						
Bilirubin, total						○	○	○						
Bismuth Bi											○	○	○	
BNP			○											
Bromine Br											○	○	○	

○ Analyte present   ■ Present in L-1   ▲ Present in L-2

The above index is updated as of November 2022

# Analyte index C - D

	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
See page number	12	14	15	16	17	18	19	20	21	22	23	24	25	26
C3c				○			○							
C4				○			○							
CA 125	○													
CA 15-3	○													
CA 19-9	○													
Cadmium Cd											○	○	○	
Calcium Ca						○	○	○	○		○	○	○	
Carbamazepine							○							○
CEA	○													
Cerium Ce											○	○	○	
Ceruloplasmin				○			○							
Cesium Cs											○	○	○	
Chloride						○	○	○	○					
Cholesterol, HDL						○	○							
Cholesterol, LDL						○	○							
Cholesterol, total						○	○							
Cholinesterase						○	○							
Chromium Cr											○	○	○	
CK			○			○	○							
CK-MB	○		○			○	○							
Clonazepam														○
Cobalt Co											○	○	○	
Copper Cu						○	○				○	○	○	
Cortisol	○	○												
Cortisol, free									○					
C-peptide	○													
Creatinine						○	○		○					
CRP			○	○	○	○	○							
Cyclosporine														○
Cystatin C				○										
DHEA-Sulfate	○													
Diazepam														○
D-dimer			○											
Digitoxin				○										
Digoxin	○		○			○	○							○
Dysprosium Dy											○	○	○	

○ Analyte present   ■ Present in L-1   ▲ Present in L-2

The above index is updated as of November 2022

# Analyte index E - I

	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
See page number	12	14	15	16	17	18	19	20	21	22	23	24	25	26
Electrophoresis				■										
EPO	○													
Erbium Er											○	○	○	
Estradiol	○													
Ethanol							○							
Europium Eu											○	○	○	
Ferritin	○	○		○			○							
Fluoride F											○	●	▲	
Folate	○													
FSH	○													
Gadolinium Gd											▲	○	○	
Gallium Ga											○	○	○	
Gentamycine							○							○
GGT						○	○							
GLDH						○								
Glucose						○	○	○	○					
Gold Au											○	○	○	
Hafnium Hf											○	○	○	
Haloperidol														○
HbA1c										○				
HBDH						○								
hCG, total	○		○											
HE4	○													
hGH	○													
Holmium Ho											○	○	○	
Homocysteine	○		○											
IgA				○		○	○							
IgE	○	○		○										
IGFBP-3	○													
IGF1	○													
IgG				○		○	○							
IgM				○		○	○							
Insulin	○													
Iodine I											○	○	○	
Iridium Ir											○	○	○	
Iron Fe						○	○				○	○	○	

○ Analyte present   ■ Present in L-1   ▲ Present in L-2   ● Present in L-2 and L-3   *The above index is updated as of November 2022*



# Analyte index

## L - Prea

	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
See page number	12	14	15	16	17	18	19	20	21	22	23	24	25	26
Kappa Light Chain							○							
Lactate						○	○							
Lambda Light Chain							○							
Lamotrigine														○
Lanthanum La											○	○	○	
LDH						○	○							
Lead Pb											○	○	○	
Levetiracetam														○
LH	○													
Lipase						○	○							
Lithium Li						○	○				○	○	○	○
Lutetium Lu											○	○	○	
Magnesium Mg						○	○	○	○		○	○	○	
Manganese Mn											○	○	○	
Methylmercury												○		
Mercury Hg											○	○	○	
Methotrexate							○							○
Methylmalonic acid	○													
Microalbumin									○					
Molybdenum Mo											○	○	○	
Myoglobin	○		○	○										
NEFA						○								
Neodymium Nd											○	○	○	
Nickel Ni											○	○	○	
Niobium Nb											○	○	○	
NT-proBNP	○		○											
Osmolality						○	○		○					
Ostase	○													
Paracetamol							○							○
pH									○					
Phenobarbitone							○							○
Phenytoin							○							○
Phosphorus P						○	○	○	○		○	○	○	
Platinum Pt											○	○	○	
Potassium K						○	○	○	○		○	○	○	
Praseodymium Pr											○	○	○	
Prealbumin				○			○							

○ Analyte present   ■ Present in L-1   ▲ Present in L-2

The above index is updated as of November 2022

## Analyte index Preg - Te

See page number	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
	12	14	15	16	17	18	19	20	21	22	23	24	25	26
Pregnancy									o					
Progesterone	o													
Procalcitonin			o											
Prolactin	o													
Prostatic acid phosphatase	o													
Protein, total				o		o	o		o					
PSA, complexed	o													
PSA, free	o													
PSA, total	o	o												
PTH, intact	o													
RF				o										
Rhenium											o	o	o	
Rubidium Rb											o	o	o	
S-100β			o											
Samarium Sm											o	o	o	
Selenium Se											o	o	o	
SHBG	o													
Silver Ag											o	o	o	
Sodium Na						o	o	o	o		o	o	o	
Specific gravity									o					
Strontium Sr											o	o	o	
Sulfur S											o	o	o	
T3, free	o													
T3, total	o													
T4, free	o	o												
T4, total	o	o												
Tantalum Ta											o	o	o	
TBG	o													
Teicoplanin														o
Tellurium Te											o	o	o	
Terbium Tb											o	o	o	
Testosterone	o	o												

o Analyte present   ■ Present in L-1   ▲ Present in L-2

The above index is updated as of November 2022

# Analyte index

## Th - Z

	Seronorm™ Immunoassay	Seronorm™ Immunoassay Liq low	Seronorm™ Cardiac Acute Liq	Seronorm™ Immunoprotein	Seronorm™ CRP Liquid	Seronorm™ Human	Autonorm™ Clin Chem Liq	Seronorm™ Paediatric	Seronorm™ Urine	Seronorm™ HbA1c Liquid	Seronorm™ Trace Elements Serum	Seronorm™ Trace Elements Whole Blood	Seronorm™ Trace Elements Urine	Autonorm™ Pharmaca Liq
See page number	12	14	15	16	17	18	19	20	21	22	23	24	25	26
Thallium Tl											o	o	o	
Theophylline	o					o	o							o
Thorium Th											o	o	o	
Thulium Tm											o	o	o	
Thyreoglobulin	o													
TIBC							o							
Tin Sn											o	o	o	
Tobramycin							o							o
Topiramate														o
Transferrin				o		o	o							
Triglycerides						o	o							
Troponin I	o		o											
Troponin T	o		o											
TSH	o	o												
UIBC						o	o							
Uranium U											o	o	o	
Urea						o	o		o					
Uric Acid						o	o		o					
Valproic Acid							o							o
Vanadium V											o	o	o	
Vancomycin							o							o
Vitamin B12	o	o												
Ytterbium Yb											o	o	o	
Yttrium Y											o	o	o	
Zinc Zn						o	o				o	o	o	
Zirconium Zr											o	o	o	
Zonisamide														o

o Analyte present   ■ Present in L-1   ▲ Present in L-2

The above index is updated as of November 2022

SERO's mission is to improve patient care by contributing to analyses that produce reliable and comparable results from one day to another, and between laboratories.

## Our core values:

### **We are ethical**

Our ethical values are reflected in everything we do, from the purchase of raw materials to how we maintain customer relations.

### **We are dedicated**

We are proud to be a knowledge-driven company with highly competent staff dedicated to producing controls of the highest quality.

### **We are flexible**

We have short decision lines that give us flexibility and allow us to focus on our customers' needs.

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SERO's products are available in more than 50 countries through an international network of specialized distributors. For additional product details, please contact your local distributor (please see our website for contact information). No local distributor? Please contact us directly:

+47 66 85 89 00 or  
seronorm@sero.no

Interested in distributing SERO's products in your country? We would be happy to receive your application. Learn more about SERO at [www.sero.no](http://www.sero.no)



### **SERO AS**

Stasjonsveien 44  
NO-1396 Billingstad  
Norway  
Tel: +47 66 85 89 00  
Fax: +47 66 98 22 01  
[www.sero.no](http://www.sero.no)

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2022 Edition

Our products are under continuous development. Updated information can be found on our website.