

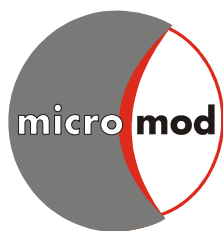


Products 2018
Colored Particles

Product overview

| | 10 nm | 100 nm | 1 µm | 10 µm | 100 µm | Product matrix |
|--------------------------------|-----------------|-----------------|----------------|----------------|---------------|-------------------------------|
| Magnetic particles | 20 nm - 500 nm | | | | | dextran |
| | | 80 nm - 100 nm | | | | bionized nanoferrite |
| | | | 2 - 12 µm | | | polystyrene |
| | | | | 30 µm - 100 µm | | poly(lactic acid) |
| | | 350 nm - 6 µm | | | | silica |
| | | 150 nm | | | | poly(ethylene imine) |
| | | 150 nm | | | | chitosan |
| | | 50 - 250 nm | | | | iron oxide |
| Fluorescent particles | 10 nm - 20 µm | | | | | silica |
| | 25 nm - 6 µm | | | | | polystyrene, polymethacrylate |
| | | 250 nm - 100 µm | | | | poly(lactic acid) |
| | | 250 nm | | | | albumin |
| Fluorescent magnetic particles | | 100 nm - 300 nm | | | | dextran |
| | | 100 nm | | | | bionized nanoferrite |
| | | | 30 µm - 100 µm | | | poly(lactic acid) |
| White particles | 10 nm - 20 µm | | | | | silica |
| | 25 nm - 100 µm | | | | | polystyrene, polymethacrylate |
| | | 250 nm - 100 µm | | | | poly(lactic acid) |
| | | 300 nm | | | | latex |
| | | 250 nm | | | | albumin |
| Colored particles | 100 nm - 100 µm | | | | | silica |
| | | | 1 µm - 12 µm | | | polystyrene |
| | | 250 nm - 100 µm | | | | poly(lactic acid) |
| | 10 nm | 100 nm | 1 µm | 10 µm | 100 µm | |

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Modern particle applications require high levels of functionality and quality with regard to substrate fixation, separation and detection. Micromod's customers are predominantly producers of diagnostic kits and high-throughput equipment, biotechnology companies, and various research institutions.

Chemical surface-functionalized and/or magnetizable polymer particles for predominantly biochemical applications take center stage in the portfolio and the development activities. The synthetic strategies designed within the company enable particle production from milliliter to bulk scale quantities depending on application. The broad range of micro- and nanoparticle products is reflected in our comprehensive catalog, which contains about 1000 items.

The major line of products are nanomag® (magnetic polysaccharide particles), micromer® (polystyrene copolymer particles) and sicastar® (silica particles). These particle types are complemented with a variety of biodegradable particles and additional highly specialized particles such as magnetic BNF-particles (Bionized NanoFerrite), which are thermally blocked at room temperature or IDA-latex particles, which possess a very high binding capacity for trace elements. Dextran based magnetic particles of the perimag® and synomag® series feature excellent properties in MRI, MPI and hyperthermia applications. For the separation of nucleic acids, nanomag®-particles are available that combine unique surface properties with a high magneto-mobility. Fluorescent sicastar® and micromer® particles are of particular interest for applications in Life Sciences due to their high fluorescence intensity and variable surface chemistry. The offered particle types are available in a broad range of particle diameters and functionalizations. Selected products can be supplied according to the cGMP requirements in coordination with the customer.

Most recent scientific findings in the area of particle technology are constantly embedded into the ongoing operations to develop customized solutions as a partner in cooperative projects with renowned domestic and foreign research institutions.

A modern quality management according to EN ISO 13485 in combination with a sophisticated particle analysis system allows the micromod Partikeltechnologie GmbH to ensure customers a high quality standard in all product categories.



Special services

- **Development and production of customized particles types**
- **Customized filling of products**
- **Surface design of custom particles**
- **Particle production under controlled hygienic conditions**
- **Coupling of antibodies, peptides, oligonucleotides and other molecules**
- **Size determination of particles**
- **Zeta potential measurement of particles**
- **Determination of AC susceptibility of magnetic particles**
- **Drying of particles on request**
- **Research samples and prototypes on request**

Colored particles

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Coloured silica particles are produced by hydrolysis of orthosilicates and related compounds. They are available with black, red or blue colour.

Coloured silica particles

- have a hydrophilic surface with terminal Si-OH-bonds,
- are available with a plain surface (Si-OH) or with NH₂ groups on the particle surface for the covalent binding of proteins, antibodies, oligonucleotides, enzymes or other molecules.
- are provided in the size range of 100 nm to 1 µm as monodisperse and nonporous particles with a density of 2.0 g/cm³,
- have broader size distributions in the area of the porous silica particles with adjusted diameters between 3 and 20 microns and a density of 1.8 g/cm³,
- are applied for membrane checks, flow investigations or the quality of antibody coupling procedures on surfaces.

sicastar®-black

Black silica particles (sicastar®-black) have a coating of black ink, that is stable in aqueous media, but not in organic solvents. They are available in the size range of 1 µm to 100 µm as powder.

| Product code | Product name | Surface | Diameter | Solid content | Quantity |
|--------------|-----------------|---------|----------|---------------|----------|
| 75-00-103 | sicastar®-black | plain | 1 µm | - | 0,5 g |
| 75-00-303 | sicastar®-black | plain | 3 µm | - | 0,5 g |
| 75-00-503 | sicastar®-black | plain | 5 µm | - | 0,5 g |
| 75-00-104 | sicastar®-black | plain | 10 µm | - | 0,5 g |
| 75-00-204 | sicastar®-black | plain | 20 µm | - | 0,5 g |
| 75-00-105 | sicastar®-black | plain | 100 µm | - | 0,5 g |

sicastar®-blue and sicastar®-red

sicastar®-red particles and sicastar®-blue particles contain a high amount of covalently bound dye in the silica matrix.

Plain red and blue silica particles (sicastar®-red and sicastar®-blue) have a hydrophilic surface with terminal Si-OH-bonds. They are monodisperse and nonporous in the size range of 100 nm to 1 μ m.



sicastar®-red and sicastar®-blue,
suspension in water, particle size 1 μ m, plain

Red and blue silica particles (sicastar®-red and -blue) are available with amino groups (NH₂) on the surface for the covalent binding of proteins, antibodies, oligonucleotides, enzymes or other biomolecules. The particles have broader size distributions with adjusted diameters between 3 and 20 microns. They are porous and have a density of 1.8 g/cm³.

The particles are supplied in water without any surfactants. sicastar®-blue and sicastar®-red particles are extremely stable in organic solvents and buffers.

| Product code | Product name | Surface | Diameter | Solid content | Quantity |
|--------------|----------------|-----------------|------------|---------------|----------|
| 73-00-102 | sicastar®-blue | plain | 100 nm | 25 mg/ml | 10 ml |
| 73-00-103 | sicastar®-blue | plain | 1 μ m | 50 mg/ml | 10 ml |
| 73-01-303 | sicastar®-blue | NH ₂ | 3 μ m | 50 mg/ml | 10 ml |
| 73-01-503 | sicastar®-blue | NH ₂ | 5 μ m | 50 mg/ml | 10 ml |
| 73-01-104 | sicastar®-blue | NH ₂ | 10 μ m | 50 mg/ml | 10 ml |
| 73-01-154 | sicastar®-blue | NH ₂ | 15 μ m | 50 mg/ml | 10 ml |
| 73-01-204 | sicastar®-blue | NH ₂ | 20 μ m | 50 mg/ml | 10 ml |
| 74-00-102 | sicastar®-red | plain | 100 nm | 25 mg/ml | 10 ml |
| 74-00-103 | sicastar®-red | plain | 1 μ m | 50 mg/ml | 10 ml |
| 74-01-303 | sicastar®-red | NH ₂ | 3 μ m | 50 mg/ml | 10 ml |
| 74-01-503 | sicastar®-red | NH ₂ | 5 μ m | 50 mg/ml | 10 ml |
| 74-01-104 | sicastar®-red | NH ₂ | 10 μ m | 50 mg/ml | 10 ml |
| 74-01-154 | sicastar®-red | NH ₂ | 15 μ m | 50 mg/ml | 10 ml |
| 74-01-204 | sicastar®-red | NH ₂ | 20 μ m | 50 mg/ml | 10 ml |

micromer®-color

micromer®-blue particles are monodisperse particles from polystyrene-co-polymers with carboxylic acid groups on the particle surface. They are available in the size range of 1 to 12 microns with blue colour. The particles are stable in aqueous suspensions, but not in the presence of any organic solvents.

| Product code | Product name | Surface | Diameter | Solid content | Quantity |
|--------------|----------------|---------|----------|---------------|----------|
| 60-02-103 | micromer®-blue | COOH | 1 µm | 25 mg/ml | 10 ml |
| 60-02-203 | micromer®-blue | COOH | 2 µm | 25 mg/ml | 10 ml |
| 60-02-303 | micromer®-blue | COOH | 3 µm | 25 mg/ml | 10 ml |
| 60-02-403 | micromer®-blue | COOH | 4 µm | 25 mg/ml | 10 ml |
| 60-02-503 | micromer®-blue | COOH | 5 µm | 25 mg/ml | 10 ml |
| 60-02-603 | micromer®-blue | COOH | 6 µm | 25 mg/ml | 10 ml |
| 60-02-703 | micromer®-blue | COOH | 7 µm | 25 mg/ml | 10 ml |
| 60-02-803 | micromer®-blue | COOH | 8 µm | 25 mg/ml | 10 ml |
| 60-02-104 | micromer®-blue | COOH | 10 µm | 25 mg/ml | 10 ml |
| 60-02-124 | micromer®-blue | COOH | 12 µm | 25 mg/ml | 10 ml |

PLA-color particles

Blue poly(lactic acid) particles consist of poly(D,L-lactic acid) with a molecular weight of 17.000 Da. The blue dye is encapsulated in the particles matrix of the biocompatible and biodegradable particles, that are supplied in water. They are available with diameters of 250 nm and 500 nm in small size distributions and with mean diameters of 2 μm , 30 μm and 100 μm in broader size distributions. PLA-blue particles are provided with a plain surface or with NH_2 or COOH for conjugation of biomolecules. Blue poly(lactic acid) particles can be loaded with drugs on request.

| Product code | Product name | Surface | Diameter | Solid content | Quantity |
|--------------|--------------|---------------|-------------------|---------------|----------|
| 54-00-252 | PLA-blue | plain | 250 nm | 10 mg/ml | 10 ml |
| 54-00-502 | PLA-blue | plain | 500 nm | 10 mg/ml | 10 ml |
| 54-00-203 | PLA-blue | plain | 2 μm | 10 mg/ml | 10 ml |
| 54-00-304 | PLA-blue | plain | 30 μm | 10 mg/ml | 10 ml |
| 54-00-105 | PLA-blue | plain | 100 μm | 10 mg/ml | 10 ml |
| 54-01-252 | PLA-blue | NH_2 | 250 nm | 10 mg/ml | 10 ml |
| 54-01-502 | PLA-blue | NH_2 | 500 nm | 10 mg/ml | 10 ml |
| 54-01-203 | PLA-blue | NH_2 | 2 μm | 10 mg/ml | 10 ml |
| 54-01-304 | PLA-blue | NH_2 | 30 μm | 10 mg/ml | 10 ml |
| 54-01-105 | PLA-blue | NH_2 | 100 μm | 10 mg/ml | 10 ml |
| 54-02-252 | PLA-blue | COOH | 250 nm | 10 mg/ml | 10 ml |
| 54-02-502 | PLA-blue | COOH | 500 nm | 10 mg/ml | 10 ml |
| 54-02-203 | PLA-blue | COOH | 2 μm | 10 mg/ml | 10 ml |
| 54-02-304 | PLA-blue | COOH | 30 μm | 10 mg/ml | 10 ml |
| 54-02-105 | PLA-blue | COOH | 100 μm | 10 mg/ml | 10 ml |

Order conditions

Shipping Charges

All prices listed in catalogue are FCA (Free Carrier) due to INCOTERMS 2010, these are applicable for customers using an own courier account for delivery. We normally employ courier services like UPS and +DHL for worldwide shipments under DAP conditions (Delivered At Place). Some countries imposes Entry customs clearance / Entry Taxation fees for import, these are not included.

We will add a shipment flat rate to invoice:

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We recommend storage of products according to TDS (Technical Data Sheet) and Delivery Note. Please do not freeze the products! Use slow circular shake movements to re-disperse particles. Avoid any processes that result in a foam-formation! Any liability for damages arising from an inappropriate storage is hereby disclaimed.

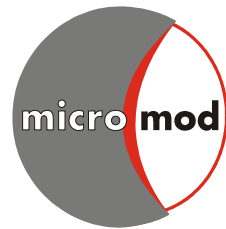
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