

Masterbatches

When Quality is Critical
**Specialty Formulated Compounds and Masterbatches
for the Medical Industry**



Exactly your chemistry.



High Specification Manufacturing Practices (HSMP) are standard at our dedicated medical compounding plant in Lewiston, Maine, focusing on traceability of materials, industrial hygiene and housekeeping.



Performance Answers for Demanding Medical Applications

Second best is unacceptable in the critically demanding arena of medical devices, disposables and packaging. To meet exacting performance and regulatory standards with confidence, designers and manufacturers turn to Clariant for innovative technology and dedicated technical support.

A recognized innovator in custom compounds as well as color and performance additives for plastics, Clariant brings strong credentials to the table: proven medical market knowledge, best-in-class formulation expertise, a global network of more than fifty ISO 9000 production facilities, plus exclusive product development resources.

To meet diverse application needs, Clariant offers a broad choice of standard and custom medical products. Our raw materials are selected to comply with ISO 10993-1/USP Class VI and meet sterilization requirements minimizing color testing and development efforts.

From single-use disposables to reusable medical devices, your products are the best they can be when you partner with Clariant.

Clariant compounds and masterbatches are compatible with the full range of thermoplastic processes utilized by the medical industry.





Clariant Technology Mirrors Your Requirements

Whatever your specific application requirements, Clariant can meet them exactly with a spectrum of compounds and color and additive masterbatches specially formulated for the medical industry.

Custom compounds for both extrusion and injection molding can be developed and supplied in virtually every thermoplastic polymer, ranging from engineering resins and elastomers to commodity plastics and TPEs. In addition, almost unlimited blends, alloys and nano-composites can be developed to meet your needs.

Clariant's broad range of RENOL-ro compounds using radiopaque fillers meet the special demands of thin-wall extrusions in catheters and marker bands. Radiopaque fillers used to make compounds visible during x-ray visualization include barium sulfate, bismuth subcarbonate, bismuth oxychloride, bismuth trioxide and tungsten powder.

Clariant custom compounds combine selection with purity and rapid availability in the quantities you need.

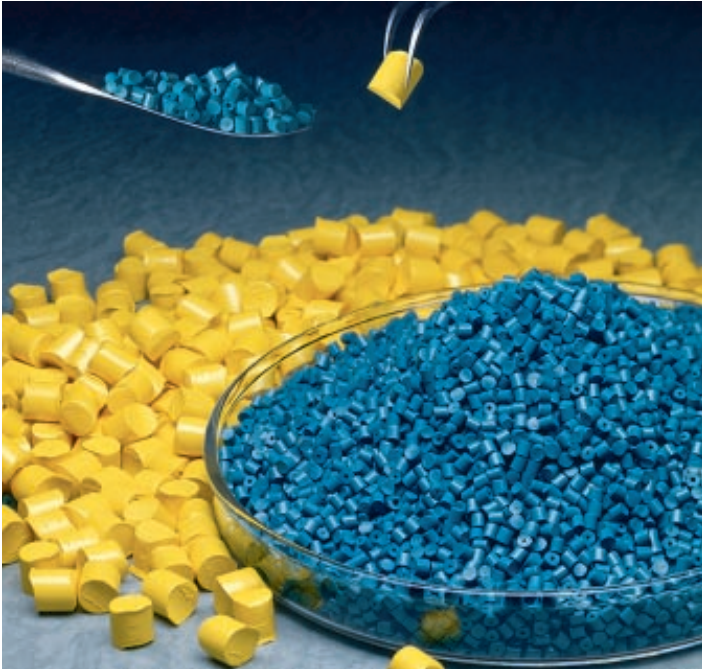
Compounds are delivered production-ready, with integral appearance and performance

From five-pound lab batches to 20,000-pound production runs, Clariant is known for quick response and fast turnaround.

additives. Pellets are sized for stable extrusion results. Melt flow is controlled for optimal processability. Reinforcing fillers or impact modifiers can also be incorporated to achieve optimal stiffness and toughness.



Wherever your products are made or marketed, Clariant can meet local regulatory requirements.



Pre-Colored Resins

Incorporating Clariant color and additives are ideal for smaller molded parts and precision profile extrusions. They also provide optimal

process consistency and yield for overmolding and micro-molding. Appearance choices include tints, metallics, pastels, pearlescents, opaques and special effects. Most major resin suppliers offer pre-colored resins based on Clariant technology.

Clariant color and additive masterbatches for medical applications include the following:

RENOL® color masterbatches are used with engineering resins and elastomers. They are compatible with the full range of non-olefin polymers including polycarbonate and polycarbonate blends, ABS/SAN, PBT and PEI, among many others. Appearance options include luster, metallics, sparkle and other special effects.

REMAFIN® color masterbatches are used to mold or extrude polypropylene- and polyethylene-based plastics and thermoplastic elastomers. Available in both standard and custom colors and effects, the entire line of REMAFIN-rx products meets USP Class VI biocompatibility standards.

CESA® additive masterbatches include UV and gamma stabilizers, antioxidants, antimicrobials, and process aids, among many others.

Coloring natural resin using Clariant masterbatches optimizes coloring costs and production flexibility. This method is ideal for large volume parts and longer extrusion runs:

- Injection molding
- Multilayer blow molding
- Extrusion
- Spin-dyeing
- Film extrusion
- Melt blown
- Blow molding
- Foaming
- Injection blow molding

A Medical Specialty

Whatever the application, wherever in the world it is manufactured, Clariant brings added value to your medical products. We offer market-tailored technology and market-driven support resources that help you respond quickly to rapidly changing preferences and demands.

No company understands the special needs of the medical industry better than Clariant. And none is better positioned to combine performance properties and your creative visual concepts into efficient production realities.

Typical Applications



EXTRUSION APPLICATIONS

- **Catheters**
 - Coronary
 - Renal
 - Infusion
 - Angiography
 - Atherectomy
 - Urological
 - Pacing
 - Ablation
- **Catheter balloons**
- **Catheter introducers and sheaths**
- **Endoscopes**
- **IV sets**
- **Cable jacketing**
- **Film and sheet**
 - Packaging
 - Fabric coatings
- **Tubing**
- **Fibers**
- **Coatings**

MOLDING APPLICATIONS

- **Antimicrobial surfaces**
- **Blow molding**
 - Bottles and containers
- **Connectors**
- **EMI shielding**
- **Equipment cases**
- **Fittings**
- **Luer hubs**
- **Monitoring**
- **Soft-touch over-molds**
- **Static dissipative surfaces**
- **Syringes**
- **Valves**



Added-Value ColorWorks® Solutions

ColorWorks Design & Technology Centers, strategically located around the world, offer specialized services for the design, performance and production of a wide variety of polymer-based medical products. A dedicated ColorWorks team can provide total project roll-out and color management support, including assistance with production and R&D trials.

Accelerated development guidance from ColorWorks helps get your products to market faster, while optimizing design reliability and minimizing your development costs.

Material Solutions for Medical Applications

Clariant's broad polymer experience and deep market knowledge combine to deliver the optimal technology for demanding medical applications. We offer proven results with a broad range of materials including the following:

Acrylics

PMMA
Multipolymers

Styrenics

ABS
SAN
SBS
PS

Olefins

HDPE
LDPE
LLDPE
Polypropylene – PP

Thermoplastic Elastomers – TPEs

Copolyamide – COPA
Copolyester – COPE
Thermoplastic Rubber – TPR
Polyurethane – TPU
Polyolefin Elastomers – TPO
Metallocene Olefins – POP
Ethylene Vinyl Acetate – EVA
Thermoplastic Vulcanizate – TPV

Engineering Resins – ETPs

Acetal – POM
Polycarbonate – PC
Nylon – PA
High Temp Nylon – HTN
Amodel* – PP
Liquid Crystal Polymer
Nitrile – NBR
Modified PPO*
Polysulfone – PSU
Polyether Sulfone – PESU
Polyphenyl Sulfone – PPSU
Polyetheretherketone – PEEK
Polyetherimide – PEI
Rigid Thermoplastic
Polyurethane – RTPU
Cyclic Olefin Copolymer – COC



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