



# **NOMISMA<sup>®</sup>**

## **Healthcare Pvt. Ltd.**

### **PRODUCT CATALOG**



Manufacturer & Supplier of Polymers  
**PLGA (*Poly Lactide co Glycolide*)**  
**PLA (*Poly Lactide*)**  
For Medical & Complex Drug Delivery Application

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## *Polymers for parenteral controlled release drug delivery & medical devices*

Nomisma Healthcare is one of the world's leading specialty polymer companies, serving customers in a variety of consumer and industrial markets. We are passionate and hardworking, committed to providing practical, innovative, and elegant solutions to customers in more than 100 countries/regions to meet the complex requirement of various grades of polymers.



## *Bioresorbable Polymers*

Nomisma offers bioresorbable polymers for parenteral controlled-release drug delivery systems and medical devices. For drug delivery, Nomisma offers amorphous homopolymers and copolymers, including:

- Poly (D, L-Lactide) (PDLLA)
- Poly (D, L-Lactide-co-Glycolide) (PLGA)
- Poly (D, L-Lactide-co-Glycolide-co-PEG), (PLGA-PEG-PLGA)

For Medical Devices, Nomisma offers semi-crystalline and amorphous homopolymers and copolymers including:

- Poly (L-Lactide) (PLLA)
- Poly ( $\epsilon$ -Caprolactone) (PCL)
- Poly (L-Lactide-co- $\epsilon$ -Caprolactone) (PLCL)
- Poly (Glycolide) (PGA)

**All bioresorbable polymers can be custom produced with defined Chemical Structures, Molar Masses (Molecular Weight or Inherent Viscosity) with selective terminal End Group.**

## ***Raise Quality Standards***

We are enthusiastic to learn and implement the growing technology to enhance the process potentials of our customers by providing the choice of product/s of important requirement, without affecting the natural resources which in turn maintains the quality life of human beings. Through the knowledge and applicability – our people, products, and services to the customers across the globe – Nomisma continues to expand its services with renewable and sustainable solutions.

A key feature of Nomisma's bioresorbable polymers is that they contain no detectable residual solvents, reducing concern over potential effects due to solvent/s. Additionally, all bioresorbable polymers meet typical drug and device regulatory thresholds for tin metal level established by health authorities with significantly lower tin metal level than regulatory requirements.

***Our Bioresorbable Polymers are utilized in Medical Applications throughout a numerous platforms of controlled release Parenteral Drug Delivery and Medical Devices majorly in the following sectors:***

- Cardiovascular
- Orthopedic
- Dental
- Ophthalmic
- Neurologic regeneration
- Wound care management
- Advanced tissue engineering

Bioresorbable Polymers give a better platform to the formulation scientists, and the possibility to design better drug delivery systems, which could lead to advanced efficacy, fewer side effects, and better compliance, leading to getting improved outcomes in patients.

## ***Processing bioresorbable polymers***

Our bioresorbable polymers are compatible with melt and solvent-based processing technologies. Through the knowledge skills and assistance of Nomisma's scientists, in various fields like extrusion, injection molding, 3D printing, emulsion formulation, spray coating, and laser cutting, may help to smoothen/speed up your development process.

# Bioresorbable Polymers

## ***Manufacturing facility***

Our bioresorbable polymers are produced in ISO 9001 certified facility to meet medical device standards and to comply with USP/NF General Chapter <1078> Good Manufacturing Practices for Bulk Pharmaceutical Excipients and The Joint IPEC-PQG Good Manufacturing Practices Guide for Pharmaceutical Excipients, 2017 as published under the auspices of the International Pharmaceutical Excipients Council for controlled-release drug delivery applications.

## ***Packaging, storage and stability***

Our bioresorbable polymers are supplied in the form of powder in a packing of 50g, 100g, 250g, 500g & 1 kilogram consisting of an HDPE bottle & a secondary packing of an aluminum bag containing silica gel. When stored in its prescribed packaging conditions, our bioresorbable polymers will meet the defined stability for the respective polymer.

# Applications

## **Controlled Release Drug Delivery Formulations**

Formulation developers are using self-absorbable polymers to create drug delivery systems that improve the patient's health. Flexibility, convenience, and better compliance to meet patient needs can all be incorporated into the system design process involving the use of proteins, vaccines, and other biological molecules. Scientists can use our polymer to develop & manufacture strategies of controlled-release injectable depots, micro/nanoparticles and solid implants. API together with polymer and solvent is mixed to form a gel which is injected to the patient so that the drug can release as per the necessity. Prefabricated implants containing drugs can be made by melt extrusion of drugs and polymers and implanted into the body by surgery or if small enough, they can be inserted through a well-known techniques.

## **Medical Devices**

Bioresorbable Polymers are valuable additives with inside the design and manufacture of Medical Devices such as:

- Screws
- Plates and Bone regeneration scaffolds
- Staples and Sutures
- Neural conduits
- Hernia meshes
- Stents
- Device coatings
- Dental and Ophthalmic treatments

Utilized for their structural characteristics, bioresorbable polymers are resorbed through the body, doing away with the need for surgical elimination once the healing process is complete.

# Product Range

## Poly (D, L-lactide-co-glycolide) (PLGA)

Identification	Polymer	Molar Ratio (LA : GA)	End Group	Inherent Viscosity	Manufacturing Process
DLG 50 - 2 A	PLGA	50:50	COOH	0.16 - 0.24	PolyCondensation
DLG 50 - 2 E	PLGA	50:50	ESTER	0.16 - 0.24	PolyCondensation
DLG 50 - 3 A	PLGA	50:50	COOH	0.32 - 0.44	Ring-Opening
DLG 50 - 3 E	PLGA	50:50	ESTER	0.32 - 0.44	Ring-Opening
DLG-50 - 4 A	PLGA	50:50	COOH	0.45 - 0.60	Ring-Opening
DLG-50 - 4 E	PLGA	50:50	ESTER	0.45 - 0.60	Ring-Opening
DLG 50 - 5 E	PLGA	50:50	ESTER	0.61 - 0.74	Ring-Opening
DLG 65 - 3 A	PLGA	65:35	COOH	0.32 - 0.44	Ring-Opening
DLG 75 - 2 A	PLGA	75:25	COOH	0.14 - 0.22	PolyCondensation
DLG 75 - 2 E	PLGA	75:25	ESTER	0.16 - 0.24	PolyCondensation
DLG 75 - 3 A	PLGA	75:25	COOH	0.32 - 0.44	Ring-Opening
DLG 75 - 3 E	PLGA	75:25	ESTER	0.32 - 0.44	Ring-Opening
DLG 75 - 5 E	PLGA	75:25	ESTER	0.5 - 0.7	Ring-Opening
DLG 75 - 6 A	PLGA	75:25	COOH	0.7 - 1.0	Ring-Opening
DLG 75 - 6 E	PLGA	75:25	ESTER	0.7 - 1.0	Ring-Opening
DLG 75 - 10 E	PLGA	75:25	ESTER	0.80 - 1.20	Ring-Opening
DLG 85 - 14 E	PLGA	85:15	ESTER	1.30 - 1.70	Ring-Opening
DLG 55 - 4 GLU	PLGA	55:45	GLUCOSE	0.45 - 0.60	Ring-Opening

## Poly Lactide (PLA)

Identification	Polymer	Molar Ratio (LA : GA)	End Group	Inherent Viscosity	Manufacturing Process
DL 100 - 2 A	DLPLA	100:0	COOH	0.16 - 0.24	PolyCondensation
DL 100 - 2 E	DLPLA	100:0	ESTER	0.16 - 0.24	PolyCondensation
DL 100 - 3 A	DLPLA	100:0	COOH	0.25 - 0.35	Ring-Opening
DL 100 - 3 E	DLPLA	100:0	ESTER	0.25 - 0.35	Ring-Opening
DL 100 - 5 E	DLPLA	100:0	ESTER	0.55 - 0.75	Ring-Opening
DL 100 - 14 E	DLPLA	100:0	ESTER	1.30 - 1.70	Ring-Opening
L100 - 12 E	LPLA	100:0	ESTER	0.80 - 1.20	Ring-Opening
L100 - 14 E	LPLA	100:0	ESTER	1.50 - 2.00	Ring-Opening

## Monomer

Identification	CAS No.	Purity
DL-Lactide	95-96-5	≥ 99%
L-Lactide	4511-42-6	≥ 99%
Glycolide	502-97-6	≥ 99%

## Other Polymers

Identification	Polymer	Mw (kDa)	Inherent Viscosity	Manufacturing Process
Poly(caprolactone) - 12 E	PLCL	-	0.8 - 1.2	Ring-Opening

L= L-Lactide, D = D-Lactide, DL = DL-Lactide, G = Glycolide, A = Acid End group, E = Ester End group

### **Custom Development**

*LET US HELP YOU GET WHAT YOU NEED, FROM SMALL-SCALE TO BULK QUANTITIES*

We, at Nomisma, with a commitment to increasing value for our clients, provide the novel, scientific with techno-skill approach for biodegradable polymers & its relevant services requirement.

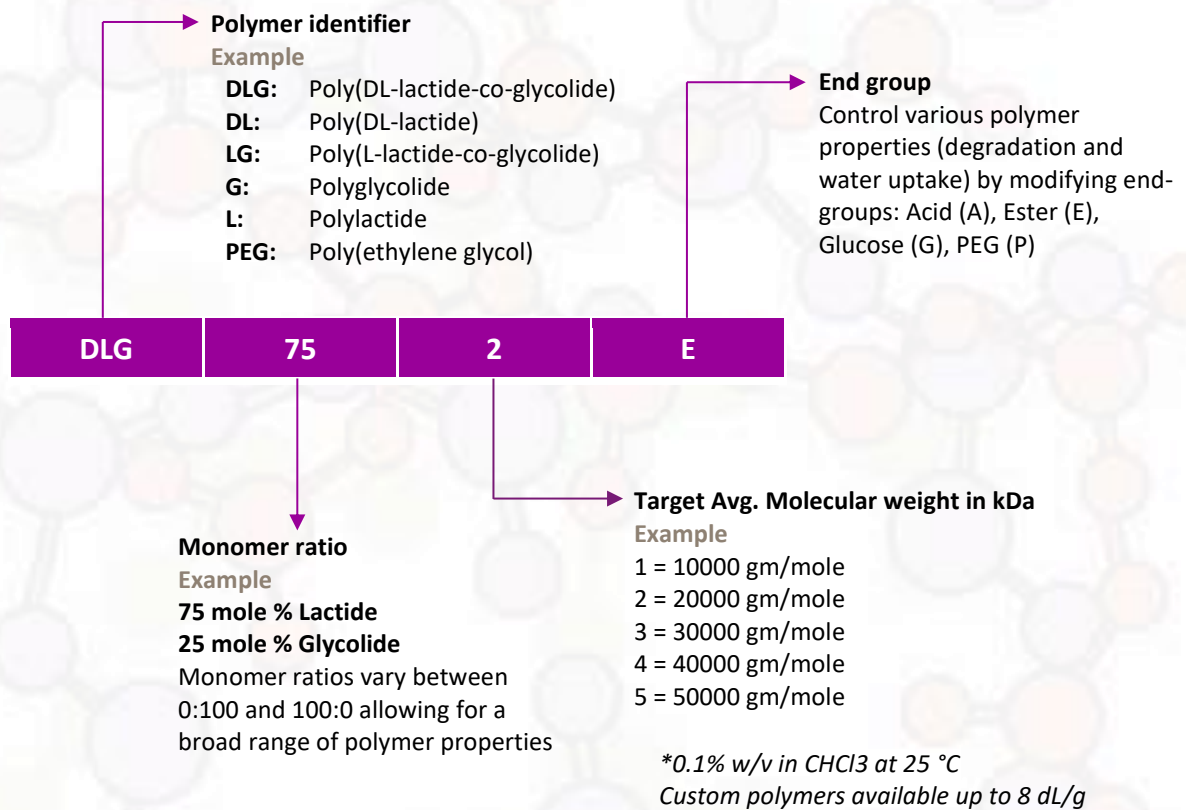
In addition to providing excellent customer services, our staff is highly dedicated to cater the biopolymer quantity with time bound accountability and reliability together with cost effective approach till its delivery.

Our portfolio includes many customized polymer ratio like PLGA 50:50, PLGA 55:45, PLGA 90:10, PLGA 85:15, PLGA 65:35, PLGA-PEG-PLGA Triblock polymer or the case as per end user requirements.

*Products are available in non-GMP sample form; contact us for a quote on GMP manufacturing.*



# Product Naming



# Our Clients



**Appreciate technical Questions by mail to support the fulfilment for the choice of polymer.**



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