

SEQENS

CDMO

DRUG DELIVERY

Over 18 years leading in PLA & PLGA manufacturing



Biodegradable Polymers

EXPANSORB® portfolio: PLA/PLGA copolymers are ideal functional excipients for controlled release applications

- Excellent biocompatibility, controllable biodegradability

- Several drugs using PLA/PLGA in the market

- Currently approved by the FDA as an excipient in drug delivery systems (implants, parenterals) of injectable APIs, i.e peptides...

- EXPANSORB® Catalog polymers are now available from SEQENS' exclusive distributor: Merck KGaA Millipore Sigma (Life Science division)

Custom cGMP polymers on request

Vitamin E TPGS

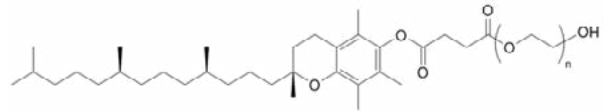
CAS : 9002-96-4

Water soluble derivative of Vitamin E

- Multirole Excipient

- Solubilizer of poorly soluble drug substance

Manufactured under GMP - FDA site approved



Improving Drug Bioavailability

- Surfactant, enhance solubilization of poorly water soluble drug
- Stabilization of amorphous drug
- Enhances drug permeability by P-glycoprotein efflux inhibition.

Emulsion vehicle

- Functional Ingredient in self-emulsifying formulations
- Thermal binder in melt granulation/extrusion processing
- Reducing drug sensitivity on skin or tissues
- Carrier for wound care and treatment

MEDICAL MATERIAL

Polymers for Biomedical applications

cGMP

Resorbable polymers

Purification media for therapeutics proteins

Chemicals for diabetes monitoring

Medical Grade

PEEK a thermoplastic poly-Ether-Ketone-ketone Polymer for durable medical use: dental, permanent implants, 3D printing... (catalog on demand)

Capabilities & services

Excellence in organic and polymers chemistry since 1962

Dedicated polymers workshop unit

From kgs to tons cGMP scale

Standard and Ultrapure PLGA/PLA polymers (Low monomers content)

Active US DMF type IV (Excipients)

EXPANSORB® polymers: catalog and bulk specifications

Ratio L/DL Lactide	Glycolide	L- Lactide or PEG	End Group	Inherent viscosity (dl/g)	Molecular Weight Spec (Mw, kDa)	Expansorb® reference
Poly (D/L - Lactide) or PLA						Expansorb®
100	0	0	COOH	0.05-0.20	04-20	10P006
100	0	0	COOH	0.15-0.30	10-25	10P005
100	0	0	COOH	0.40-0.60	40-75	10P018
100	0	0	COOH	0.60-0.80	65-110	10P036
100	0	0	ESTER	0.15-0.30	10-25	10P014
10	0	L-Lactide: 90	COOH	1.30-1.70	200-250	10P039
Poly (D/L - Lactide-co-Glycolide) or PLGA						
L/G	DL-lactide	Glycolide	End Group	IV (dl/g)	MW (KDa)	Expansorb®
95/5	95	5	COOH	0.15-0.25	05-20	10P023
95/5	95	5	COOH	0.25-0.50	25-60	10P025
90/10	90	10	COOH	0.35-0.55	30-70	10P007
90/10	90	10	COOH	0.60-0.70	60-95	10P029
85/15	85	15	COOH	0.15-0.25	10-20	10P020
85/15	85	15	COOH	0.25-0.35	14-26	10P038
85/15	85	15	COOH	0.55-0.75	65-95	10P008
85/15 E	85	15	ESTER	0.55-0.75	65-95	10P009
85/15 E	85	15	ESTER	0.25-0.35	14-26	10P044
85/15 E	85	15	ESTER	1.00-1.30	150-220	10P043
75/25	75	25	COOH	0.08-0.21	05-20	10P015
75/25	75	25	COOH	0.38-0.48	40-55	10P042
75/25	75	25	COOH	0.38-0.64	39-80	10P002
75/25	75	25	COOH	0.60-0.90	70-130	10P003
75/25	75	25	COOH	0.80-1.10	100-166	10P004
75/25	75	25	COOH	0.60-0.70	65-85	10P021
75/25 E	75	25	ESTER	0.66-0.80	80-115	10P011
75/25 E	75	25	ESTER	0.75-1.00	100-150	10P027
75/25 E	75	25	ESTER	0.15-0.30	10-25	10P033
75/25 E	75	25	ESTER	0.30-0.50	25-60	10P035
65/35	65	35	COOH	0.25-0.35	15-40	10P030
65/35	65	35	COOH	0.50-0.65	45-85	10P013
65/35 E	65	35	ESTER	0.50-0.65	45-85	10P010
55/45	55	45	COOH	0.40-0.50	42-65	10P031
50/50	50	50	COOH	0.15-0.25	05-20	10P019
50/50	50	50	COOH	0.25-0.40	15-40	10P017
50/50	50	50	COOH	0.40-0.55	42-65	10P001
50/50	50	50	COOH	0.55-0.65	60-85	10P034
50/50	50	50	COOH	0.65-0.90	80-130	10P012
50/50 E	50	50	ESTER	0.60-0.70	70-100	10P016
50/50 E	50	50	ESTER	0.50-0.65	60-85	10P022
50/50 E	50	50	ESTER	0.15-0.25	05-20	10P024
45/55	45	55	COOH	n/a	15-30	10P032
PLA-PEG or PLGA-PEG						
L/G	DL-lactide	Glycolide	End Group	IV (dl/g)	MW (KDa)	Expansorb®
100	100	0	PEG	0.33-0.58	30-60	10P045
100	100	0	PEG	0.59-0.84	55-115	10P047
75/25	75	25	PEG	0.50-0.70	45-80	10P046
75/25	75	25	PEG	0.70-0.90	80-125	10P048
50/50	50	50	PEG	0.55-0.70	36-77	10P037
50/50	50	50	PEG	0.71-0.86	77-118	10P026

Additional specs : Bacterial Endotoxins (<5IU/g) ; TAMC (≤ 100 CFU/g); TYMC (≤ 50 CFU/g)

DMF: Drug Master File type IV available IV: Inherent Viscosity MW: Molecular Weight (kDa) E: Ester COOH: acid PEG: polyethylene glycol PLA: poly (D/L, L) lactide PLGA: poly (D/L-lactide-co-glycolide)

MILLIPORE SIGMA
Expansorb® line:
Catalog & bulk, please contact
Merck MilliporeSigma

PEKK*
(C, CE, SP)

*(catalog on demand)

Vitamin E
TPGS

Custom polymers services

- Specific developments under CDA
- Full development capacity in house: from kilolab to industrial scale
- Analytical resources and manufacturing units operate according to ICHQ7 and cGMP guidelines

- Large scale capacity (FDA inspected sites)
- Full regulatory support: IMPD, DMF filling
- Long term storage (Expansorb®) : below -15°C, under dry inert atmosphere

Project management

- Project leader and regular reporting
- Confidentiality and strict respect of customer's IP

SEQENS

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