



Polyurethane Prepolymer

Alternative for C.O.I.M, COVESTRO, LANXESS.

CPU

青岛吉盛邦进出口贸易有限公司
QINGDAO GISONB IMPORT AND EXPORT
TRADING CO.,LTD

Professional Polyurethane Solution Provider



1. Who we are?

- Leading urethane chemicals supplier in China since 2013.
- PU material solution provider.

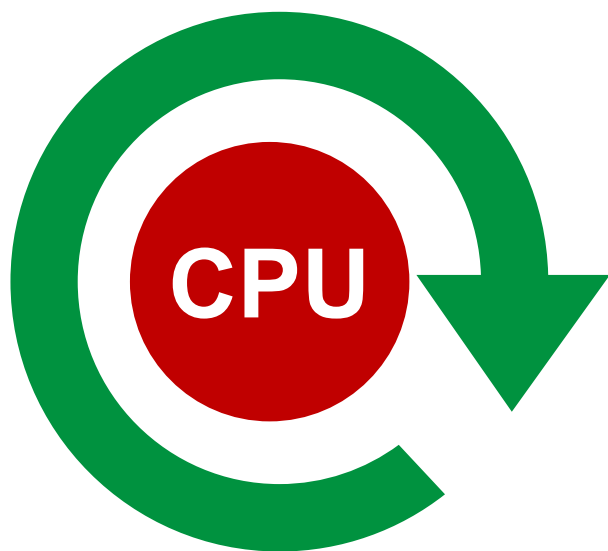
2. What we do?

- Providing cost-effective solutions for polyurethane demand.

3. Why choose us?

- World brand quality.
- 15~20% competitive price.

Polyurethane System



POLYESTER/TDI

POLYESTER/MDI

POLYETHER/TDI

POLYETHER/MDI

PTMEG/TDI

PTMEG/MDI

Cold Castable Polyurethane

Polyurethane Types

Polyethers

- High resilience .
- High resistance to water attack.

Polyester based urethanes

- Super cut, tear, abrasion, oil and solvent resistance.

MDI based products

- Lower isocyanate odour.
- Superior hydrolysis resistance
- High resilience.

TDI based products

- Less sensitive to moisture.
- Shorter demould time.
- More user friendly.

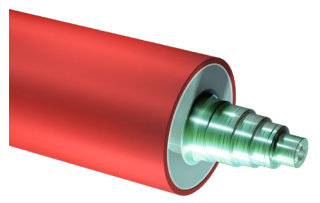
Polycaprolactone

- Good cut, tear, load bearing and abrasion resistance.
- Better hydrolysis resistance compared to polyesters.

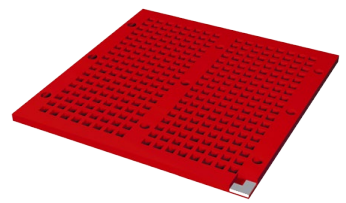
Industry	Applications
Automotive	Grommets, bearings, bushes, flexible couplings.
Building and Construction	Moulds for concrete, gate seals, concrete pump parts, waterproofing.
Coated fabrics	Conveyor belts, fuel storage tanks, power transmission belts.
Electrical	Encapsulation, insulation, potting, cable joining.
Engineered Components	Gears, sprockets, wire guides, rail draft gear, stripper plates, press brake pads, textile yarn guides, cutting boards, business machine belts, couplings.
Food	Chute lining, grain buckets.
Mining	Bucket liners, conveyor rollers, scraper blades, floatation cell impellers, pump linings, grading screens, lined pipes, cross-over pads.
Oil, Chemical and Marine	Bushings, bearings, hydrocyclones, buoys, pipeline pigs and scrapers, fenders, valve seats.
Rollers	Board rollers, nip rollers, metal forming, printing, conveyor, can coating, paper mill.
Seals and Gaskets	Pneumatic and oil seals, diaphragms.
Footwear	Shoe soles, bottom moulding diaphragms, wear plates, energy absorbing insoles.
Wheel and Tyres	Fork-lift tyres, heavy duty castor wheels, escalator wheels, roller skate wheels, roller blade wheels.



Applications Show



PU ROLLER



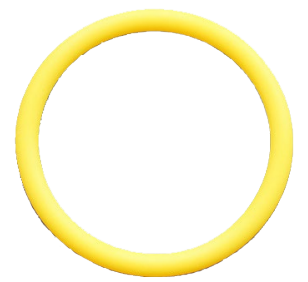
PU SCREEN



PU SHEET



PU WHEEL



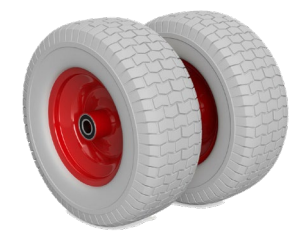
PU RING



PU RODS



PU MOLD

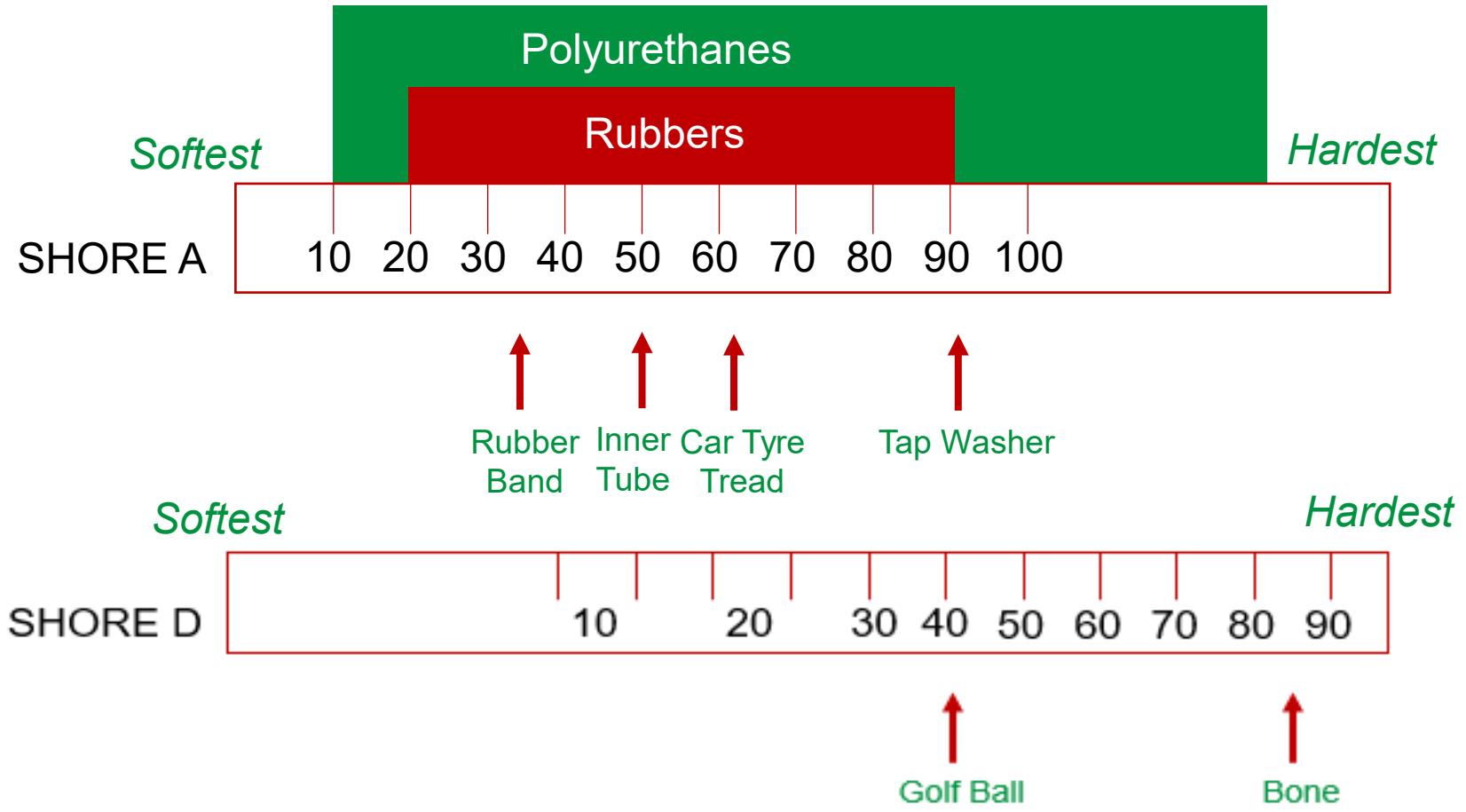


PU RAD



Polyurethane-Hardness

Hardness- The most common method of classifying polyurethanes.



Product Selector-1.Polyester TDI PU prepolymer

Item	E1272	E1696	E1380	E1490	E1492	E1594	E1762
NCO %	2.1±0.1	6.0±0.2	3.0±0.1	4.0±0.2	4.3±0.2	5.0±0.2	7.0±0.2
Appearance at 20°C	White solid	White solid	White solid	White solid	White solid	White solid	White solid
MOCA/g (100g prepolymer)	6	17.2	8.6	11.7	12.5	14.5	20.0
Viscosity(85°C)/mPa·s	3800	900	2200	280	400	400	500
Mixing temperature/°C (prepolymer/MOCA)	90/120	75/120	85/120	80/120	80/120	80/120	80/120
Gel time/min	9	5	12	8	8	6	4.5
Hardness(shore A)	72±2	96±2	80±2	90±1	92±1	94±1	62D
Post cure(100°C)/h	10	10	10	10	10	10	10
100% Moduls/MPa	2.8	12.2	3.8	5.3	6.3	8.6	18.0
Tensile strength/Mpa	39	58	46	50	50	53	55
Elongation at break/%	770	530	680	660	630	600	410
Tear strength(without nick)/KN/m	56	132	70	84	105	112	152
Abrasion loss/mm ³	38	55	42	39	48	51	56

Product Selector-2.Polyester MDI PU prepolymer

Item	E1685	E1790	E1995
NCO %	6.5±0.2	7.5±0.2	9.0±0.2
Appearance at 20°C	White solid	White solid	White solid
BDO/g (100g prepolymer)	6.8	7.8	9.3
Viscosity(85°C)/mPa·s	1400	1200	1000
Mixing temperature/°C (prepolymer/MOCA)	80/40	80/40	80/40
Gel time/min	10	8	7
Hardness(shore A)	85±1	90±1	95±1
Post cure(110°C)/h	48	48	48
100% Moduls/MPa	5	8.6	12.3
Tensile strength/MPa	50	46	55
Elongation at break/ %	540	580	530
Tear strength(without nick)/(KN/m)	82	117	132
Rebound/%	43	35	39
Abrasion loss/mm ³	32	35	38

Product Selector-3.Polyether TDI PU prepolymer

Item	E2589	E2692	E2370	E2590	E2694
NCO %	5.5±0.2	6.0±0.2	3.0±0.1	5.0±0.2	6.2±0.2
Appearance at 20°C	Colorless liquid	Colorless liquid	Colorless liquid	Colorless liquid	Colorless liquid
MOCA/g (100g prepolymer)	16.0	17.5	8.6	14.5	18
Viscosity(85°C)/mPa·s	250	250	250	250	450
Mixing temperature/°C (prepolymer/MOCA)	80/120	80/120	80/120	80/120	75/110
Gel time/min	9	6	9	3.5	3
Hardness(shore A)	89±2	92±2	70±2	90±2	94±2
Post cure(100°C)/h	10	10	10	10	10
100% Modulus (MPa)	5.5	6.2	2.1	8.9	9.2
Tensile strength (MPa)	32	35	7	31	32
Elongation at break(%)	400	350	600	460	450
Tear strength(without nick)/KN/m	76	78	34	73	78
Rebound(%)	24	33	50	30	31
Abrasion loss(mm ³)	109	141	163	135	117

Product Selector-4.Polyether(PTMEG) TDI PU prepolymer

Item	E3382	E3385	E3490	E3695	E3797	E3865D	E3975D
NCO %	3.0±0.1	3.5±0.1	4.2±0.2	6.2±0.2	7.0±0.2	8.6±0.2	9.6±0.2
Appearance at 20°C	White solid	White solid	White solid	White solid	White solid	White solid	White solid
MOCA/g (100g prepolymer)	8.8	10	12.1	18	20.5	25	27
Viscosity(85°C)/mPa·s	1200	1200	750			1200	350
Mixing temperature/°C (prepolymer/MOCA)	90/120	85/120	85/120	85/120	85/120	80/120	80/120
Gel time/min	12	11	10	6	4	4	2
Hardness(shore A)	82±2	85±2	90±1	95±1	97±1	65D	75D
Post cure(100°C)/h	10	10	10	10	10	10	10
100% Modulus (MPa)	5.5	6.2	2.1	12.8	18.5	26.9	32.6
Tensile strength/MPa	24	27	33	48	49	44	54
Elongation at break(%)	610	550	500	350	320	250	220
Tear strength/KN/m	55	65	78	95	111	185	160
Abrasion loss(mm ³)	50	39	39	38	52	72	70

Product Selector-5.Polyether(PTMEG) MDI PU prepolymer

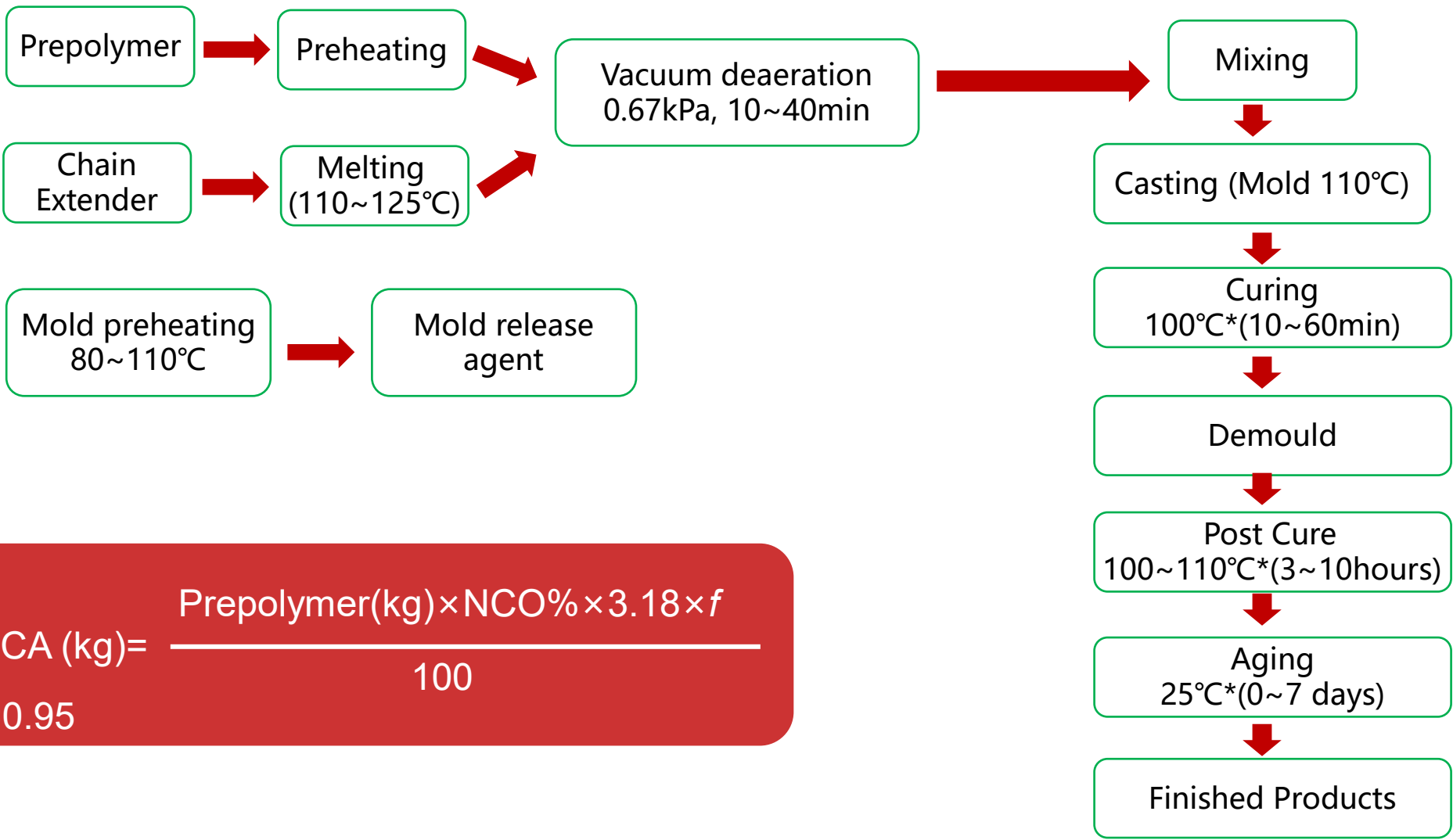
Item	E3687	E3790	E3995
NCO %	6.0±0.2	7.5±0.2	9.0±0.2
Appearance at 20°C	White solid	White solid	White solid
BDO/g (100g prepolymer)	6.1	7.8	9.3
Viscosity(85°C)/mPa·s	1400	1000	750
Mixing temperature/°C (prepolymer/MOCA)	80/40	80/40	80/40
Gel time/min	10	8	7
Hardness(shore A)	87±2	90±2	95±2
Post cure(100°C)/h	48	48	48
100% Modulus/MPa	6	9.2	12.6
Tensile strength/MPa	44	43	45
Elongation at break/%	472	683	500
Tear strength(without nick)/(KN/m)	75	110	130
Rebound/%	61	64	55
Abrasion loss/mm ³	36	44	44

Product Selector-6.Cold Castable PU Mould Glue

Part A	Item	EM460-A	EM470-B	EM480-A	EM490-A	EM450-A	EM440-A
	Appearance	Light yellow liquid					
	Viscosity(30°C) mPa·s	1700±200	1700±200	1700±200	3600±200	1300±200	1300±200
Part B	Item	EM400-B	EM400-B	EM400-B	EM400-B	EM410-B	EM420-B
	Appearance	Colorless or light yellow transparent liquid					
	Viscosity(30°C) mPa·s	670±150	670±150	670±150	670±150	1050±150	1050±150
Mix Ratio by Weigth (A/B)		1.4:1	1.2:1	1:1	0.7:1	1:1	1:0.6
Processing Temperature(°C)		25-40	25-40	25-40	25-40	25-40	25-40
Get Time(30°C)/min		13-14	13-14	6-8	6-7	15-16	16-17
Hardness(Shore A)		60±3	70±2	80±2	90±2	50±3	40±3



One-Step Processing Information



$$\text{MOCA (kg)} = \frac{\text{Prepolymer(kg)} \times \text{NCO\%} \times 3.18 \times f}{100}$$

$f=0.95$

Polyurethane Curatives-MOCA

Item	MOCA(HR,HR(N))
Molecular formula	$C_{13}H_{12}Cl_2N_2$
Molecular weight	267.2
CAS NO.	101-14-4
Melting point(°C)	≥98
Purity(%)	≥86
Liquid density(107°C)g/ml	1.26
Solid density(24°C)	1.44
Free anilin (%)	1.44
Packing	25kg/paper bag; 50kg/paperboard drum

Polyurethane Curatives-DETDA & DMTDA

Item	DETDA	DMTDA
Trade name	Ethacure 100, DETDA 80	Ethacure 300
Molecular formula	$C_{11}H_{18}N_2$	$C_{19}H_{14}N_2S_2$
Molecular weight	178.28	214.36
CAS NO.	68479-98-1	106264-79-3
Appearance	Light yellowish liquid	Light yellowish liquid
Boiling point(°C)	308	353
Density(g/cm ³)at 20°C	1.02	1.2
Pour point(°C)	-9	4
Flash point(°C)	>135	176
Viscosity (cps at 20°C)	280	690
Equivalent weight with isocyanates	89.5	107
Equivalent weight with epoxy resins	44.3	53.5
Packing	200kg/drum	200kg/drum

Chain extender impacts on CPU elastomer

The chain extender impact on CPU elastomer							
Properties	Chain extender						
	1,4-BD	HQEE	HER	TMP	MOCA	ETHACURE E-300	MCDEA
Dynamic property	B	A	A	E	C	C	B
Heat resistance	D	C	C	B	B	A	A
Compression set	D	D	E	B	D	D	D
Tear strength	B	A		E	B	B	A
Tensile strength	C	C		D	A	B	B
Pot life	C	E	B	E	D	D	F
Abrasion performance	B	A		D	B	B	B
Rebound resilience	B	A	A	E	C	C	C
Water resistance	D	C	C	C	E	E	E

Packing



- Packing: 20kg/drum
- Size: Diameter=30cm, Height=38cm
- Loading quantity: 16mt/20ft



- Packing: 200kg/drum
- Size: Diameter=60cm, Height=92cm
- Loading quantity: 16mt/20ft



QINGDAO GISONB IMPORT AND EXPORT TRADING CO.,LTD



Email: sales@exceedchemical.com



Address: No.166,Zhengyang Middle Road, Chengyang District, Qingdao, China. 266000



Tel: +86-532-82693198



Fax: +86-532-82693196



Web: www.gisonb.com

Professional Polyurethane Solution Provider