

◆ Raw Material for Polyurethane

URIC is raw material for polyurethane we developed mainly from the natural source, castor oil as the starting material. The characteristics of castor oil such as low viscosity, pigment dispersibility, low foamability, water resistance, impact resistance and electrical insulation are approved in the industry of anti-corrosive coating, adhesive, floor paint, elastomer and foam.

Polyol

General Grade

URIC H. POLYCASTOR

Reactive Diluent

URIC Y

Aromatic Structure Grade

URIC AC

Low Modulus Grade

URIC PH

Polyester Polyol

URIC SE

Floor Coating Grade

URIC F

- **URIC H series** is high quality castor oil based polyol suitable for various applications of polyurethane. This series has wide range of functionality and viscosity which are designed for many purposes. Polyurethane elastomer made from URIC H series differs from normal polyester or polyether polyurethane in its great thermostability, hydrolysis resistance, acid tolerance and solvent resistance. Its flexibility and electrical insulation can also resist even mechanical properties such as abrasion or impact.
- **POLYCASTOR series** is C-C bonded castor oil based polymer developed with our own technique and light colored viscous liquid having almost the same specification (hydroxyl value, saponification value and iodine value) as castor oil.

Product Name	Hydroxyl Value mgKOH/g	Acid Value mgKOH/g	Moisture %	Viscosity mPa·s/25°C	Functionality	Hardness ^{※1} shore A/D	Package
URIC H-30	155~165	Max 1.0	Max 0.03	660~720	2.7	74/23	16kgCN, 180kgDM
URIC H-31	157~170	Max 3.0	Max 0.03	Max 40	1	-	16kgCN, 180kgDM
URIC H-52	195~205	Max 3.0	Max 0.15	580~680	3	91/38	16kgCN, 180kgDM
URIC H-57	85~115	Max 4.0	Max 0.03	430~490	3	44/9	16kgCN, 180kgDM
URIC H-62	245~275	Max 4.0	Max 0.03	240~290	2	92/55	16kgCN, 180kgDM
URIC H-73X	260~280	Max 4.0	Max 0.03	800~1200	3	70D	16kgCN, 180kgDM
URIC H-81	330~350	Max 4.0	Max 0.03	1000~1400	3	68D	16kgCN, 180kgDM
URIC H-102	300~340	Max 1.0	Max 0.03	900~1300	5	73D	16kgCN, 180kgDM
URIC H-420	300~340	Max 2.0	Max 0.10	400~1400	3	80D	16kgCN, 180kgDM
URIC H-854	205~225	Max 2.0	Max 0.05	700~900	3	60D	16kgCN, 180kgDM
URIC H-870	264~276	Max 2.7	Max 0.05	800~1300	3	73D	16kgCN, 180kgDM
URIC H-1823	140~155	Max 5.0	Max 0.05	700~1600	2.6	65A ^{※2}	16kgCN, 180kgDM
URIC H-1824	55~77	Max 5.0	Max 0.05	700~1600	2.3	36A ^{※2}	16kgCN, 180kgDM
URIC HF-1300	75~105	Max 4.0	Max 0.03	170~250	2	30/5	16kgCN, 180kgDM
POLYCASTOR #10	155~165	Max 4.0	Max 0.05	1700~3500	5~6	88/39	16kgCN, 180kgDM
POLYCASTOR #30	150~160	Max 4.0	Max 0.05	3500~6000	5~6	96/49	16kgCN, 180kgDM

※1 Hardener: Crude MDI(TOSOH Millionate MR-200) NCO INDEX=1.05

※2 Hardener: Liquid MDI(TOSOH Millionate MTL) NCO INDEX=1.05

- **URIC Y series** is special polyol derived from castor oil and other fatty acids functionality of which is 2 or 2.2. This series is recommended to use in solvent free 2KPU systems as reactive diluent. The excellent compatibility and the lower viscosity make it possible to be compatible with hydrocarbon based polyols, such as poly-butadiene polyol, which is incompatible with most polyols. URIC Y Series improves mechanical properties, such as tensile strength and elongation, which prevent finished products from bleeding or shrinkage from heat after molding unlike typical non-reactive diluents.

Product Name	Hydroxyl Value mgKOH/g	Acid Value mgKOH/g	Moisture %	Viscosity mPa·s/25°C	Functionality	Hardness ^{※1} shore A	Package
URIC Y-403	150~170	Max 2.0	Max 0.03	200~240	2	33	16kgCN, 180kgDM
URIC Y-406	155~175	Max 3.0	Max 0.03	230~270	2.2	59	16kgCN, 180kgDM

※1 Hardener: Crude MDI(TOSOH Millionate MR-200) NCO INDEX=1.05

Aromatic Structure Grade

URIC AC Series

- **URIC AC series** is castor oil modified polyol which has aromatic structure in the molecule. When combined with MDI, this series can be solvent free polyurethane system. URIC AC series cured with polyisocyanate such as MDI is strong enough to resist impact, water, chemicals and has great adhesion to metal.

Product Name	Hydroxyl Value mgKOH/g	Acid Value mgKOH/g	Moisture %	Viscosity mPa·s/25°C	Functionality	Hardness ^{※1} shore D	Package
URIC AC-005	194~214	Max 4.0	Max 0.03	1000~1500	2	73	16kgCN, 180kgDM
URIC AC-006	168~187	Max 5.0	Max 0.10	3000~5000	2	78	16kgCN, 180kgDM
URIC AC-009	215~235	Max 3.0	Max 0.03	1200~1900	2.5	69	16kgCN, 180kgDM
URIC H-368	185~205	Max 2.0	Max 0.03	1000~1600	2.5	68	16kgCN, 180kgDM

※1 Hardener: Crude MDI(TOSOH Millionate MR-200) NCO INDEX=1.05

Low Modulus Grade

URIC PH Series

- **URIC PH series** is castor oil based polyol which can be stretchable and flexible polyurethane elastomer by curing with isocyanate. It shows better stability against heat deterioration and hydrolysis than general PPG or polyester based polyurethane.

Product Name	Hydroxyl Value mgKOH/g	Acid Value mgKOH/g	Viscosity mPa·s/25°C	Functionality	Hardness ^{※1} shore C	Elongation %	The Other	Package
URIC PH-319	19	0.2	850	—	0	—	Wet Heat Resistant	16kgCN
URIC PH-5001	45	2.4	5400	2	18	670	—	16kgCN
URIC HF-2009	44	2.2	1500	2	25	650	—	16kgCN, 180kgDM

※2 Hardener: Liquid MDI(TOSOH Millionate MTL) NCO INDEX=1.05

Polyester Polyol

URIC SE Series

- **URIC SE series** is sebacic acid based polyester polyol. Sebacic acid is diprotic acid having 10 carbons in the molecule, which means that the longer alkyl chains than adipic acid perform well for improving water resistance. This series shows excellent properties for the application of hot melt adhesive.

Product Name	Appearance	Hydroxyl Value mgKOH/g	Acid Value mgKOH/g	Color G-H	Composition	Average MW	Melting Point °C	Hardness ^{※1} shore	Package
URIC SE-2003	White Solid	56	0.3	1	SA/PDO	2000	54	94A	17kgCN, 200kgDM
URIC SE-2606	White Solid	43	0.1	1-	SA/HD	2600	66	49D	17kgCN, 200kgDM

※ Hardener: Pure MDI(NCO%=33, TOSOH Millionate MT) NCO INDEX=1.05

SA: Sebacic Acid PDO: 1,3-Propanediol HD: 1,6-Hexanediol

Floor Coating Grade

URIC F Series

- **URIC F series** is polyol to develop hard floor coating material intended to use with crude MDI as hardener. This series give hardness and elongation required for floor coating, and also enables to stand in hot and humid conditions.

Product Name	Hydroxyl Value mgKOH/g	Acid Value mgKOH/g	Viscosity mPa·s/25°C	Hardness ^{※1} shore D	Elongation %	Tensile Strength MPa	Tear Strength N/mm	Package
URIC F-15	167	1.5	3000	67	122	26	58	16kgCN, 180kgDM
URIC F-25	188	0.6	2600	70	96	28	86	16kgCN, 180kgDM
URIC F-40	236	1.5	3900	80	85	43	170	16kgCN, 180kgDM
URIC F-400	215	0.5	1300	73	65	28	110	16kgCN, 180kgDM
URIC F-135	160	0.8	1600	25 ^{※2}	220 ^{※2}	19 ^{※2}	30 ^{※2}	16kgCN, 180kgDM

※1 Hardener: Crude MDI(TOSOH Millionate MR-200) NCO INDEX=1.05

※2 Hardener: Modified MDI(NCO%=26.5, BASF INOAC Polyurethanes Ltd. Lupranate MB-301) NCO INDEX=1.05 (F-135)