

ELASTOMER PU System EHP 40A – 55D

Definition:

High performance elastomeric polyurethane system designed for production of technical parts, moulds and models requesting resistance to high mechanical and/or thermal stress.

This system, based on 2 polyols and 2 isocyanates, allows to answer the users' needs, on a very wide range of hardnesses, while keeping the same high level of properties.

Properties

- Polymerisation at room temperature (18 – 20°C)
- Good elongation resistance
- Very good tear resistance, even on notched specimens
- Good chemical, thermal and/or abrasive resistance

Average physical properties of the components

Name	Reference	Aspect - Color	LVT Brookfield viscosity at 25°C (mPa.s)	Density at 25°C
EHP 40 A Polyol	SH240000	Clear liquid Light to dark amber	350	1,04
EHP 85 A Polyol	SH285000	Clear liquid Light to dark amber	250	1,04
EHP 40-80 Isocyanate	SH000105	Clear liquid Light amber	5500	1,05
EHP 55 Isocyanate	SH000501	Clear liquid Light amber	1500	1,08

Process data according to requested hardness

Hardness (Shore)	40A	50A	62A	68A	75A	80A 28-30D	90A 35-40D	45D	50-55D
EHP 40A Polyol (g)	100	80	60	40	20				
EHP 85A Polyol (g)		5	10	15	20	25	40	60	70
EHP 40-80 Iso (g)	100	100	100	100	100	100	70	30	
EHP 55 Iso (g)							30	70	100
Brookfield LVT viscosity at 25°C (mPa.s)	2200	2200	2300	3800	4500	4500	2800	2000	1600
Pot-life 300g at 25°C (min)	64	64	62	60	64	65	29	20	17
Demoulding time at 25°C (h)	24	24	24	24	24	16	16	16	16
Demoulding time at 70°C, curing after jellification (h)	3	3	2	2	2	2	2	2	2

This document can not be, in any case, used as specification data sheet . The values mentioned on this document are based on tests and researches carried on in our laboratories in precise conditions.

*It's the responsibility of the user to check the convenience of the product in his own conditions defined and tried by himself. **Nimaco** disclaims all responsibility for any consequence occurred by the use of this product.*

Process data according to requested hardness

Hardness Sh A (1) ISO 868-2003	40	50	62	68	75	80	90		
Hardness Sh D (1) ISO 868-2003						28-30	35-40	45	50-55
Working temperature (°C)	- 40/+90	- 40/+90	- 40/+90	- 40/+90	- 40/+90	- 40/+90	- 40/+90	- 40/+90	- 40/+90
Max casting thickness (mm)	100	80	80	80	60	50	30	20	20
Elongation at break à 23°C (1) ISO 37	1300	1100	1100	800	800	800	270	180	120
Tensile strength at break (1) (Mpa) ISO 37	3,5	3,7	6,2	6,4	9	15	8,5	10	11
Tear resistance at 23°C (1) (kN.m ⁻¹) ISO 34	15	19	27	33	41	60	42	44	50
Linear shrinkage on specimen (1) 10X50X500mm	4/1000					6/1000			7/1000
Abrasion resistance (1) Taber (1000 revs/H22) (mg/100U) ISO 5470	42	15	12	13	12	15	38	28	38

(1) Average values measured on specimens after post curing 24 h at room temp (RT) + 16 h at 70°C + 48 h at RT

Safety for using :

Better wear safety clothes and accessories (gloves and glasses).
For more information, read the medical and safety data sheet of the product.

Process with mixing machine :

All parts have to be homogenous before pumping or filling tanks.

Hardness Shore A, the two polyol parts have to be mixed in the chosen ratio before filling the tank.

Hardness Shore D, the two isocyanate parts have to be mixed in the chosen ratio before filling the tank.

Check the mixing ratio at the beginning of the mixing before starting the casting. The mould (or the model) must be dry, without any trace of moisture. If needed, use a proper release agent.

Once the casting is done, let the polymerisation happen at room temperature to help the self-degassing of the product. In case of post-curing, it's better to wait until the gelation.



Process with hand mixing :

All parts have to be homogenous before weighing.

Hardness Shore A, the two polyol parts have to be mixed in the chosen ratio before mixing with the isocyanate part.

Hardness Shore D, the two isocyanate parts have to be mixed in the chosen ratio before mixing with the polyol part.

The mould (or the model) must be dry, without any trace of moisture. If needed, use a proper release agent.

After weighing both components, mix with a spatula or with a mixing engine at small speed.

Even if the product is well self-degasing, it can be useful to degas it in a vacuum chamber before the casting.

Once the casting is done, let the polymerisation happen at room temperature to help the self-degasing of the product. In case of post-curing, it's better to wait until the gelation.

Packaging :

Consult us

Storage : 12 months in original unopened containers and stored between 15 and 25 °C.
Once the packaging is opened, it must be closed back tightly, on a hermetic, moisture free way, after each use, if possible under an inert atmosphere.

NIMACO