



BUILDING TRUST



UPX 8400-1 - UPX 8400-1 EXT

VACUUM CASTING SOFT POLYURETHANE FOR TECHNICAL PARTS AND PROTOTYPES

VARIABLE HARDNESS FROM 25 to 95 A SHORE

APPLICATIONS

Using by casting under vacuum in silicone moulds to make soft prototype parts or small series of rubber like parts. Fully compatible with ESSIL 291 silicone moulds.

PROPERTIES

- 3 components for variable hardness
- Fixed mix ratio in between polyol & Isocyanate
- Easy to pigment with CP colors

Low silicone molds aggressiveness

PHYSICAL PROPERTIES					
Composition		UPX 8400-1 POLYOL	UPX 8400-1 ISOCYANATE	EXTENDER UPX 8400-1	MIXING
Mixing ratio by weight at 25°C		100	100	0 to 500	
Aspect		Liquid*	Liquid	Liquid	liquid
Colour		Transparent	Light yellow	Milky white	Off white
Viscosity at 25°C (mPa.s)	BROOKFIELD LVT	425	700	900	550**
Density of parts before mixing	ISO 1675 :1975	1	1.2	1.02	-
Density of cured mixing	ISO 2781 :1988	-	-	-	1.14
Pot life at 25°C on 100g (min.)	-				13 – 15**

* POLYOL crystallizes below 15°C. Pre-heat up to 40 – 70°C and shake it to get a homogeneous liquid before use. Let it cool down to 25 - 35°C before mixing.

If the ISOCYANATE is crystallized heat it up to 70°C for one hour. Do not go over 4 hours at 70°C.

** Depends of the mix ratio and final hardness; **SEE PAGE 3 FOR HARDNESS vs. MIX RATIO**

PROCESSING

- Warm the product to 25-35°C if stored at low temperature.
- **IMPORTANT:** Re-homogenize the Polyol and the Extender part before each weighing.
- Weigh the components according to the mixing ratio, add the extender in the polyol and pre-mix it.
- Add eventually the pigment in such Polyol (CP colors).
- Degas separately each part for 5-10 minutes.
- Add the Isocyanate in the pre-mix (extender + Polyol) and mix 2 minutes.
- Cast into the silicone mould pre-heated at 70°C, then leave to cure at 70°C.
- Demoulding after 120 minutes.

HANDLING PRECAUTIONS

Normal health and safety precautions should be observed when handling these products:

- ensure good ventilation
- wear gloves and safety glasses

For further information, please consult the product safety data sheet.

MECHANICAL PROPERTIES AT 23°C (1) RATIO: 100 - 100 - 0			
Hardness - at 23°C	ISO 868 :2003	Shore A1	95
Tensile strength	ISO 37 :2004	MPa	19.6
Tear strength <i>Unnotched angular specimens</i>	ISO 34 :2004	kN/m	61
Elongation at break in tension	ISO 37:2004	%	660

THERMAL AND SPECIFIC PROPERTIES			
Max working temperature	-	°C	70
Linear shrinkage	-	mm/m	-
Maximal casting thickness	-	mm	20
Demolding time at 70°C	-	min	120
Complete hardening time at 23°C	-	days	5

(1) : Average values obtained on standardized specimens / Hardening 1 hour at 70°C + 24 hours at 70°C

STORAGE CONDITIONS

Shelf life of polyol is 09 months; shelf life of isocyanate and extender is 06 months in a dry place and in their original unopened containers at a temperature between 20 and 30°C.

Open, Polyol is water sensitive and could absorb some moisture if leaved open for a while. Please close carefully any bottle after use. Any open container must be tightly closed under dry nitrogen blanket.

Polyol at low temperature (< 15°C) may crystallize (evidence: solid part). Please follow the processing instructions before use.

PACKAGING

ISOCYANATE + POLYOL	EXTENDER
1 x (3x1 + 3x1) kg	1x (6 x 1 kg)

GUARANTEE

The information contained in this technical data sheet result from research and tests conducted in our Laboratories under precise conditions. It is the responsibility of the user to determine the suitability of AXSON products, under their own conditions before commencing with the proposed application. AXSON guarantee the conformity of their products with their specifications but cannot guarantee the compatibility of a product with any particular application. AXSON disclaim all responsibility for damage from any incident which results from the use of these products. The responsibility of AXSON is strictly limited to reimbursement or replacement of products which do not comply with the published specifications.

HOW TO GET THE RIGHT HARDNESS:

Follow indications of the chart below to get the expected hardness.

HARDNESS A SHORE	MIX RATIO		
	POLYOL	ISOCYANATE	EXTENDER
95	100	100	0
85	100	100	50
75	100	100	75
65	100	100	150
60	100	100	200
50	100	100	250
40	100	100	350
30	100	100	450
25	100	100	500

(1) : Average values obtained on standardized specimens / Hardening 1 hour at 70°C + 24 hours at 70°C

HARDNESS A SHORE	SOME MECHANICAL PROPERTIES		
	Elongation	Tensile strength	Tear strength
	(ISO 37:2004) %	(ISO 37:2004) MPa	(ISO 34:2004) Mpa
65	680	15	29
40	690	7	10
30	690	6	9