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## Erapol 1K Blocked Series

ONE COMPONENT BLOCKED POLYESTER  
ELASTOMERS

### TECHNICAL DATASHEET

**ERAPOL 1K BLOCKED SERIES** are polyester-based, one component blocked elastomers that cure with heat. The range currently consists of products from 20 Shore A to 90 Shore A. The **Erapol 1K Blocked Series** are stable at room temperature. The blocked systems contain no free isocyanate, no MOCA (MbOCA) or any solvents.

The **Erapol 1K Blocked Series** has benefits as a one component product:

- Easy and efficient processing
- Stable at room temperature
- Heat Activated for curing (no additional catalysts or additives required)
- Economical (wastage is minimized) with no additional mixing
- Isocyanate is chemically bonded
- Self-degassing through the pre-heat process

### Application

The **Erapol 1K Blocked Series** is suitable for general purpose polyurethane elastomer applications.

### Processing Procedure

The **Erapol 1K Blocked** products are solid at room temperature and must be melted at 70°C before use. Do not melt the drums at temperature above 90°C as the liquid blocked adduct will start to unblock and cure. Constant heating of the blocked adduct has a cumulative effect on the material to remain liquid and the viscosity increases with repeated heating. At this temperature the product will become a clear liquid and will be yellow to amber in colour. The **1K Blocked** products once melted can be poured into moulds preheated to 130-140°C.

The **Erapol 1K Blocked Series** size container should correspond as closely to the amount used at one time only and it is best to avoid multiple heating and cooling cycles. Do not use band heaters for the melting of the containers as this will cause a partial cure at the point of where the heat is applied and renders the material inconsistent to pour and use as a molded product. Reseal open containers and blanket with nitrogen when not in use. It is best still to avoid moisture ingress into open pails as this may affect the product from being bubble free through the curing process.



This information is of general nature and is supplied without recommendation or guarantee. It does not make claim to be free from patent infringement. Properties shown are typical and do not imply specification tolerances. Era Polymers cannot accept liability for loss or damage through use. Whilst these technical details are based on expert knowledge, practical experience and laboratory testing, successful application depends upon the nature and conditions in which the products are supplied. Users must, by comprehensive testing, evaluate this product in their own application.

Curing time will depend on the thickness of the molded part. As a general guide when curing at 135°C with a material mixed at 70°C the following cure times are suggested:

- Up to 2 cm cross sectional thickness - cure time is 6 hours
- Greater than 5 cm cross sectional thickness - cure time is 8 hours

In the case of large moldings, it may be necessary to extend the cure time to 10 - 12 hours. It is recommended that the optimum conditions for a particular application are determined experimentally by the user.

## Handling Precautions

**Erapol 1K Blocked Series** should be used in well-ventilated areas. Avoid breathing in vapours and protect skin and eyes from contact.

In case of skin contact, immediately remove excess, wash with soap and water. For eye contact, immediately flush with water for at least 15 minutes. Call a physician.

If nose, throat or lungs become irritated from breathing in vapours, remove exposed person to fresh air. Call a physician.

## Physical Properties

Properties presented below are to be used as a guide and not intended for specification purposes.

	1K201A	1K30A	1K40A	1K40A Filled	1K50A	1K60A	1K701A	1K70A Filled	1K801A	1K901A	Method
<b>Processing Temperature</b> °C (°F)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	-
<b>Mould Temperature</b> °C (°F)	135 (275)	135 (275)	135 (275)	135 (275)	135 (275)	135 (275)	135 (275)	135 (275)	135 (275)	135 (275)	-
<b>Post Cure at 135°C</b> (hrs)	6 - 8	6 - 8	6 - 8	6 - 8	6 - 8	6 - 8	6 - 8	6 - 8	6 - 8	6 - 8	-
<b>Hardness</b> (Shore A)	20 ± 3	30 ± 3	40 ± 3	40 ± 3	50 ± 3	60 ± 3	70 ± 3	70 ± 3	80 ± 3	90 ± 3	AS1683.15
<b>Tensile Strength</b> MPa (psi)	2.6 (337)	5.2 (754)	9.2 (1334)	13 (1886)	10 (1523)	14 (2030)	15 (2176)	10 (1450)	10 (1450)	10 (1450)	AS1683.11
<b>Elongation</b> (%)	500	575	680	980	690	725	550	800	470	410	AS1683.11
<b>Tear Strength, Die C</b> kN/m (pli)	2.0 (11)	15 (86)	18 (104)	19 (108)	19 (108)	32 (183)	52 (197)	44 (251)	42 (240)	48 (274)	AS1683.12
<b>DIN Resilience</b> (%)	25	34	34	43	34	29	37	42	28	29	DIN 53512
<b>Cured Density</b>	1.21	1.21	1.20	1.26	1.20	1.21	1.21	1.19	1.19	1.18	AS1683.4

## Solvent Uptake in 24 Hours

	Xylene %	Cyclohexane %	Toluene %	IPA %	Dibasic Ester %	MEK %
1K201A	11.1	-	29.2	2.1	77.1	100.1
1K30A	9.8	0.08	23.3	0.9	41.5	74.6
1K40A	8.7	0.16	20.5	0.8	39.3	57.8
1K50A	-	-	-	-	-	-
1K60A	37.1	0.88	60.5	3.0	27.3	69.4
1K701A	30.6	0.65	54.8	2.4	20.4	56.7
1K801A	21.6	0.45	36.9	1.5	15.3	40.5
1K901A	8.7	0.10	15.1	0.7	6.8	24.7