

# MONOTHANE™

MONOTHANE™ - The Single Component Elastomer  
for Engineering Castings



## MONOTHANE™ - The Single Component Elastomer

### An established solution that's simple to use

Dow Formulated Systems, a global business unit of The Dow Chemical Company (Dow), is an industry leader in the development and formulation of fully-formulated polyurethane and epoxy systems, focused on providing its customers worldwide with innovative, tailor-made solutions through a global network of systems houses.

Dow Formulated Systems offers application development and processing support to help customers grow their business, with a range of innovative solutions for some of the most demanding industrial engineering applications.

Dow has designed engineering casting resins for more than 40 years, and the easy-to-use MONOTHANE™ single component elastomer has been used globally by processors of rubber and polyurethane for over 35 years. MONOTHANE allows the complexity of polyurethane to be used simply to manufacture a broad range of engineering components from printing rollers to isostatic press bags.



## MONOTHANE™ - The Single Component Elastomer

The simplicity of MONOTHANE™ single component elastomer can allow moulders to engineer a casting through a simple, 3 step process: **heat - pour - cure**. No weighing, mixing, vacuum degassing or dispensing equipment is required. Only an efficient air-circulating oven is needed for meltdown and curing.

### MONOTHANE™ Processing

**HEAT**  
Material to 70°C



**POUR**  
Material into  
a pre-heated mould

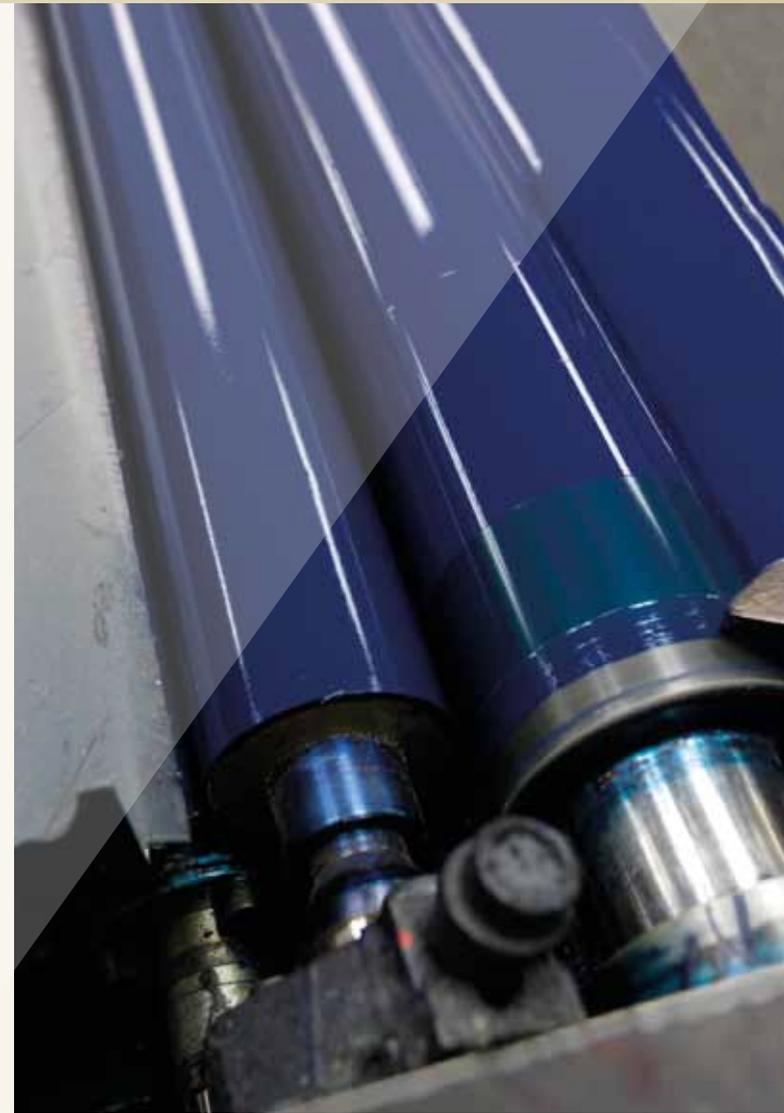


**CURE**  
Product at 135°C

As MONOTHANE™ elastomer is cured, it goes through a thinning stage which naturally degasses the product providing customers with a bubble-free casting with uniform physical properties. Once cured, the material can be ground and polished

to address end-use needs. Color additives can also be introduced by the end user to enhance the visual appearance or address customer requirements. Please see the Material Safety Data Sheet for Environmental Health and Safety information.

The single component MONOTHANE™ system is based on formulated polyurethane elastomer available in the hardness range of 20 -90 Shore A.



## MONOTHANE – The Single Component Elastomer

TYPICAL PROPERTIES	MONOTHANE™							
PRODUCTS	SA20	SA30	SA40	SA50	SA60	SA70	SA80	SA90
Hardness	20°A	30°A	40°A	50°A	60°A	70°A	80°A	90°A
Tensile Strength, Mpa	5.77	7.73	11.2	6.53	9.5	15.2	19.3	19.9
Tensile Strength, kg/cm <sup>2</sup>	58.82	78.80	114.17	66.56	96.84	154.94	196.74	202.85
Tensile Strength, psi	836.65	1120.85	1624	946.85	1377.5	2204	2798.5	2885.5
Elongation, %	658	594	611	578	535	558	608	475
Modulus at 100% Extension, MPa	0.42	0.68	1.28	1.27	2.24	2.87	3.68	5.82
Modulus at 100% Extension, kg/cm <sup>2</sup>	4.28	6.93	13.05	12.95	22.83	29.26	37.51	59.33
Modulus at 100% Extension, psi	60.9	98.6	185.6	184.15	324.8	416.15	533.6	843.9
Modulus at 300% Extension, MPa	0.88	1.36	2.37	2.42	3.99	3.68	4.81	9.28
Modulus at 300% Extension, kg/cm <sup>2</sup>	8.97	13.86	24.16	24.67	40.67	37.55	49.08	94.69
Modulus at 300% Extension, psi	127.6	197.2	343.65	350.9	578.55	533.6	697.45	1345.6
Viscosity CPS, Brookfield at 70°C	6200	8000	11200	11400	17600	23600	25800	10400
Tear ( die C), N/mm	11.1	15.3	21.5	25.8	25.8	44.2	54.9	58.1
Tear ( die C), kg/cm	11.31	15.59	21.91	26.29	26.29	45.04	55.94	59.20
Tear ( die C), pli	63.38	87.37	122.77	147.32	147.32	252.39	313.49	331.76
Resilience, %	30	41	37	35	38	37	36	28
Water Absorption, % 24-hour soak 22+/- 1°	0.59	0.65	0.64	0.58	0.45	0.45	0.47	0.86
Water Absorption, % 24-hour soak 100°	-1.57	-1.96	-2.78	-3.3	-4.35	-4.29	-4.81	-10.25
Compression Set, % (22hrs. at 70C)	1.9	2.85	14.37	18.18	19.21	22.23	23.6	31.39
Compression Set, % (72 hrs. at 23C)	0.19	2.13	3.91	5.93	6.96	9.85	10.93	20.09

Closed Mould Used. These are typical values but should not be construed as specifications.

## MONOTHANE – The Single Component Elastomer

SOLVENT RESISTANCE	MONOTHANE™			
	SA20	SA50	SA80	SA90
Products				
Toluene	67.0%	70.0%	48.0%	27.0%
Gasoline Petrol	18.2%	16.6%	12.8%	7.6%
Methyl Ethyl Ketone	185.0%	129.0%	67.0%	43.0%
Methylene Chloride	902.0%	647.0%	336.0%	190.0%

Figures shown are % of mass change after 48 hour immersion at room temperature. These are typical values but should not be construed as specifications.

Some end-use applications in which MONOTHANE™ single component elastomer is used include:

- Printing rollers
- Anti-vibration mountings
- Steel mill rollers
- Gaskets
- Isostatic press bags
- Seals
- Paper rollers
- O Rings
- Conveyor rollers
- Paint application rollers





## Reliable support and experience

At Dow Formulated Systems it's all about you – the customer. We aim to be your material technology provider of choice, offering application development and processing support to help customers grow their business, streamline operations and increase efficiency. Through our vast portfolio of polyurethane and epoxy technology, we can create innovative solutions for some of the most demanding industrial engineering applications. We offer over 40 years of experience, reliable service, and creative polymer design, as well as the vast resources of one of the world's most respected chemical companies.

## Providing you with global reach, local support

As one of our customers, you can benefit from our global experience and local technical support provided

through a network of systems houses around the world. Our customers don't work with us just for the high-performance products we provide, they work with us because of the excellent service and support we deliver to them at a local level. From the early stages of conducting trials and sampling through full-scale production and commercialization, we work hand in hand with our customers in their locations to help ensure optimum performance.

## Supply and quality you may count on

At Dow Formulated Systems, we offer a reliable supply of products and strive to deliver on time and in full to help meet your deadlines and keep your projects on track. Our global supply and logistics capabilities are used to address your needs, regardless of location.



## DOW FORMULATED SYSTEMS LOCATIONS



Global reach, local support



E: [help@dowhyperlast.com](mailto:help@dowhyperlast.com)

W: [www.dowhyperlast.com](http://www.dowhyperlast.com)

United States or Canada: Toll Free Call  
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Mexico: Toll Free +1 800 441 4369

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or: +31 11567 2626

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+800 7776 7776\*\* or +60 3 7965 5392

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*\*\* Toll-free from all Pacific countries except Indonesia and Vietnam*

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