PRODUCT INFORMATION

Formulated Systems

TECHNICAL DATASHEET
8/2/2013

Introduction

HYPERLAST LU 1052
Three Component
Elastomer System

HYPERLAST™ LU 1052 is an MDI based product which can be used in the production of a three component polyether based polyurethane elastomer system. HYPERLAST LU 1052 Polyol can be reacted with HYPERLAST LE 5046 Isocyanate and DIPRANE™ C Curative to produce elastomers ranging from 55 to 95 shore A hardness.

The cured elastomer offers excellent mechanical properties, abrasion and hydrolysis resistance.

Component Properties

Polyol Component

Product Reference	HYPERLAST™ LU 1052 Polyol
Appearance	Colourless liquid at 25°C
Viscosity	350 – 550 cP at 25°C
Specific Gravity	0.97 – 1.07 at 40°C

Chain Extender Component

Product Reference	DIPRANE™ C Curative
Appearance	White crystalline solid below 20°C Colourless clear liquid above 20°C
Viscosity	90 - 100 cP at 25°C
Specific Gravity	1.00 - 1.02 at 25°C

Isocyanate Component

Product Reference	HYPERLAST™ LE 5046 Isocyanate
Appearance	Amber clear liquid at 25°C
Viscosity	100 - 200 cP at 25°C
Specific Gravity	1.21 - 1.23 at 25°C

These are typical values and should not be construed as specifications.

Mixing Ratios

HYPERLAST™ LU 1052 components can be blended in the following proportions to offer a range of hardness from 55°A to 95°A

Hardness (Shore A)	**55**	**65**	**75**	**85**	**92**	**95**
HYPERLAST™ LU 1052	267	240	208	150	120	104
DIPRANE™ C Curative	15.1	16.6	17.8	20.4	21.7	22.5
HYPERLAST™ LE 5046 Isocyanate	100	100	100	100	100	100

NB: The above ratios are in parts by weight and should be measured to an accuracy of ±1%.

Cured System – Typical Properties

Hardness (Shore A)	**55**	**65**	**75**	**85**	**92**	**95**	
Tensile Strength	15.5	17	18.5	20	17	16.8	MPa
100% Modulus	3.4	2.8	3.4	6.8	9.7	12.5	MPa
Elongation at Break	700	600	550	380	350	290	%
Tear Strength (Nicked Crescent)	29	37.5	40	65	93	108	N/mm

These are typical values and should not be construed as specifications.

Processing Details

HYPERLAST™ LU1052 is designed to be processed through two or three component polyurethane dispensing equipment. The following information is given as a guide to processing this product. It is recommended that optimum conditions for a specific application are determined experimentally. Our Technical Service Department can offer more detailed advice.

Recommended Processing Temperatures

HYPERLAST™ LU1052	20 – 30°C
DIPRANE™ C Curative	20 – 30°C
HYPERLAST™ LE 5046 Isocyanate	20 – 30°C
Mould Temperature	70 – 80°C
Typical Demould Time	20 – 35 mins

These are typical values and should not be construed as specifications.

Recommended Cure Cycle

Please Note: It is essential that the polyol component is thoroughly rolled / mixed before use.
Strong turbulence and mixing with air should be kept to a minimum by adopting a careful mixing technique (e.g. drum/keg rolling) or using low air introducing mixers. It is recommended that any air introduced during mixing is subsequently removed through degassing by either machine or vacuum chamber. Agitation should be maintained on the polyol tank to ensure the Polyol is homogeneous in use. It is the responsibility of the customer to ensure that the product is mixed and degassed sufficiently for use.

HYPERLAST™ LU 1052 Product cures at ambient temperatures. Where thin sections are cast (<5mm) a post-cure for 1 hour at 70°C is recommended.

Machine Mixing

Our Technical Service Department can offer advice on suitable two or three component polyurethane dispensing equipment for processing HYPERLAST™ LU 1052 Product.

Storage and Handling

		Shelf life
Polyol Component	Store in tightly sealed containers at a temperature of 0 - 30°C. Raise to the processing temperature and mix well before use. Avoid contact with moisture. Storage at low temperatures may result in freezing of the polyol component, should this occur it should be melted out by raising to the processing temperature and mixed thoroughly before use.	12 months
Isocyanate Component	Store in tightly sealed containers at a temperature of 0 - 30°C. Avoid contact with moisture. Storage below the recommended minimum temperature may result in freezing of the Isocyanate. If the Isocyanate does not fully melt out when raised to the processing temperature it may be necessary to re-melt at a temperature of 60 - 70°C following the procedures laid down in the information sheet 'Safe Handling – Pure, Modified and Polymeric MDI' Form No. 109-01224X-1009P&M.	6 months
Chain Extender Component	Store in tightly sealed containers at a temperature of 15 – 30°C. Raise to the processing temperature and mix well before use. Avoid contact with moisture.	12 months

More detailed information on the storage and handling of polyurethane components can be obtained by contacting Dow Technical Service Department.

Packaging

Polyol Component	25 kg, 200 kg
Isocyanate Component	25 kg, 225 kg
Chain Extender Component	25 kg, 200 kg

Product Stewardship

The Dow Chemical Company and its subsidiaries ("Dow") has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our Product Stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our Product Stewardship program rests with each and every individual involved with Dow products - from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Safety Considerations

Safety Data Sheets (SDS) are available from The Dow Chemical Company (Dow). SDS are provided to help customers satisfy their own handling, safety and disposal needs, and those that may be required by locally applicable health and safety regulations. SDS sheets are updated regularly. Therefore, please request and review the most current SDS before handling or using any product. Copies of the SDS are available on request through the nearest Dow Sales office.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to help ensure that Dow products are not used in ways for which they were not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products.

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