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TECHNICAL DATA SHEET

ISSUE:	REVISED	REV No	DOCUMENT OWNER
03/11/2014			NATIONAL URETHANE INDUSTRIES
TECHNICAL DATA:		UltraSpray® 400P065	

PRODUCT DESCRIPTION

ULTRASPRAY® 400P065 is part of a two component, solvent free, medium performance, polyurethane spray system for use in expansion joints. The second component is **ULTRATHANE 500-115**. The combination of these two components through a suitable dispensing machine produces a urethane elastomer with good physical properties, abrasion, and hydrolysis resistance.

COMPONENT DESCRIPTION	UltraSpray® 400P065	Ultrathane 500-115
VISCOSITY cps 25°C	700 - 1 400	700 - 1 700
DENSITY 25°C	1.04 (± 0.02)	1.11 (± 0.02)
APPEARANCE	Black pigmented liquid	Clear to very slightly cloudy yellow liquid

NOTE: Both components are liquid above 5°C.

PROCESSING

Even though both components are liquid at room temperature, it is recommended that, if ambient temperatures are below 20°C, the components be warmed to 25°C before spraying. Lower ambient temperatures would result in higher viscosity of the components, as well as poor compatibility. Higher spray temperatures would result in better compatibility between the two components, giving improved mixing and superior end properties. Both components should be well agitated immediately before decanting and processing. The spray machine holding tanks should be equipped with agitators. It is important that, before decanting, the **ULTRASPRAY® 400P065** must be well mixed for at least 5 minutes using a mechanical stirrer, as some of the components may separate, causing the sprayed product to be off ratio. Dry air or nitrogen should be used to pressurise the holding tanks.

MIX RATIO	UltraSpray® 400P065	Ultrathane 500-115
VOLUME	1	1
MASS	100	106.7

The components are ideally combined in a 1 to 1 volumetric mix ratio through one of the following spray units:

- Unipre
- 2 KM
- Binks
- Graco
- Any suitable 1 : 1 gear pump spray machine

Intimate mixing is essential to produce a satisfactory elastomer. High application pressures and elevated temperatures will assist in this regard.



When sprayed with both components at 25°C, the product will gel within \pm 30 seconds. Colder temperatures will slow down the gel time. Longer gel times can be due to:

1. a thin coat of material sprayed onto a cold metal surface, or
2. colder material temperatures and / or ambient spray temperatures e.g., 15 - 20°C.

Elastomeric properties will develop after 15 - 50 minutes (depending on ambient temperatures). The elastomer should, however, be left for a minimum of 24 hours before being placed under load.

The coating thickness will depend on the end application. Typically, 3 - 6 mm is adequate for most applications and this can be achieved in one continuous build-up. Physical properties and adhesion are normally strong enough after a 24-hour cure for light duty applications, but for heavy-duty applications we recommend a 7 - 14 days cure.

As there are many variables such as type of substrate, strength of substrate, ambient conditions, primers used, etc., customers are strongly advised to carry out their own tests to establish suitability of the system for the intended application.

PIGMENTATION

Usually, **ULTRASPRAY® 400P065** is supplied pre-pigmented black. If needed, an extra 1 % non-reactive pigment paste concentrate may be incorporated into **ULTRASPRAY® 400P065**. It is advised that not more than 1 % additional pigment is added, as this can lead to product being off ratio when sprayed.

OVERCOATING

It is advised that, if material is over-coated, it be done within 10 - 20 minutes of the initial material being sprayed. If this time period is exceeded, it is recommended that the cured material be treated as follows before over-coating:

1. Dry abrade the surface thoroughly with sandpaper to provide a mechanical key and wash down with MEK or Methylene Chloride immediately before applying the subsequent material.
2. Wet abrade the surface with MEK or Methylene Chloride and waterpaper immediately before applying the subsequent material. Do not use water.

It is also recommended that a suitable primer be used to ensure good bonding between the layers of material. NUI technicians can be contacted to assist in this regard.

NOTE: Elbow length GLOVES and GOGGLES must be worn when working with the above solvents.

ELASTOMER PROPERTIES

Entrapment of air will tend to vary the density of the elastomer. This, as well as the degree of mixing obtained, will in turn affect the physical properties.

TYPICAL TEST RESULTS	
SPECIFIC GRAVITY (Cure + 24 h @ 70°C)	\pm 1.08 (Spray density may be lower)
SHORE A HARDNESS (Cast)	60 - 70
SHORE A HARDNESS (Sprayed)	50 - 80
TENSILE STRENGTH MPa	6 - 7
ELONGATION %	260 - 300
TEAR RESISTANCE N/mm (DIN 53515)	\pm 16

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STORAGE AND STABILITY

ULTRASPRAY® 400P065 is hygroscopic and must be stored with seals intact. Partially used containers must be tightly resealed and used before opening fresh containers. Any material decanted for processing should be used immediately and not be allowed to stand open and exposed to air. Foaming, when mixed with **ULTRATHANE 500-115**, is an effective indicator that moisture has been absorbed. **The storage life of ULTRASPRAY® 400P065 is 6 months from date of delivery in unopened containers when stored at normal in-door ambient temperatures (20 - 25°C).** The material should be thoroughly mixed before decanting. Protective clothing should be worn and contact with the eyes and skin avoided.

ULTRATHANE 500-115 is a diphenylmethane diisocyanate prepolymer and will react with moisture generating carbon dioxide. The containers should be stored with the seals intact and opened containers used first. The reaction with moisture/water can lead to dangerous build-up of pressure in the drums. Therefore, partially used containers must be tightly re-sealed after use to prevent ingress of moisture. It is recommended that these drums be purged with dry air or nitrogen. Empty drums should not be closed and for safety reasons a hole should be made in the container. **ULTRATHANE 500-115 has a storage life of 6 months from date of delivery in unopened containers when stored at normal in-door ambient temperatures (20 - 25°C).**

SAFETY AND HANDLING

Although **ULTRASPRAY® 400P065** is considered practically non-toxic, the usual precautions should be exercised when handling this family of chemicals. Protective clothing should be worn and contact with the body avoided.

ULTRATHANE 500-115 should be treated as diisocyanate and the usual precautions should be exercised when handling this family of chemicals. Protective clothing should be worn and contact with the body avoided. Inhalation of fumes must be strictly avoided and a protective mask, preferably with a remote clean air supply, should be worn while spraying.

HEALTH AND SAFETY INFORMATION

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. If inhaled move to fresh air. Consult a physician after significant exposure. If swallowed, clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. In case of skin contact, take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician when in contact with existing open wounds.

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent **Material Safety Data Sheet** containing physical, ecological, toxicological, and other safety-related data.

The Material Safety Data applicable to the handling of urethane raw materials should be read, understood, and rigidly adhered to. These are available on request from **NATIONAL URETHANE INDUSTRIES (Pty) Ltd.**

In accordance with ISO 9001:2015 and the Occupational Health and Safety Act (Act 85 of 1993), herewith Product and Safety Data Sheet.

We hereby confirm that we have received a Product and Safety Data Sheet for **UltraSpray® 400P065** system and are returning the obsolete copies.

COMPANY NAME:

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SIGNATURE:	
NAME:	
DATE:	

CAUTION

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