TECHNICAL DATA SHEET

UPC 2.0

RIGID POLYURETHANE FOAM

PRODUCT DESCRIPTION

In a single application, UPC 2.0 can create a specialized engineered building envelope, which provides better thermal resistance, excellent air barrier, and a recognized vapor retarder. Universal Polymers Corporation continues to strive toward innovative, scientific advancements in high-efficiency spray foam insulation solutions, intumescent and elastomeric coatings, high-performance quality products, and superior service.

UPC 2.0 is a two-component spray-in-place closed-cell, rigid, monolithic polyurethane foam insulation. All UPC 2.0 systems contain no ozone-depleting chemicals.

USES

Closed-cell spray foam insulation is a higher-density foam than open-cell. The structure of the actual cells are more compact. It is both an air barrier, water-resistive, and vapor barrier. Closed-cell can be installed anywhere in the home.

Walls Unvented Attics Ceilings, Floors Vented Attics Piping Unvented Crawl Spaces Vented Crawl Spaces	Foundations Concrete Slabs Ducts Tanks Cold Storage Freezers, Coolers Garages, Barns, Sheds

*Fire Hazard Classifications**

SURFACE BURNING ASTM E-84/UL 723		***FLAME SPREAD CLASSIFICATION***	
Flame Spread	*25*	*NFPA CLASS*	*A*
Smoke	*450*	*UBC CLASS*	*1*

**These numerical flames spread ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions.*

Liquid Component Properties

PROPERTY	***Component A***	***Component B***
Color	*Dark Brown*	*Amber/Brown*
Viscosity 25°C (cps)	*200 +/- 100*	*600 +/- 100*
Specific Gravity 25°C	*1.24*	*1.23*
Mix ratio by volume (A/B)	*50/50*	*50/50*

Processing Characteristics

PROPERTY	***72°F (HAND MIX)***	***SPRAYED****
	Regular	*Regular*
Cream Time	*4 Sec.*	*1-2 Sec.*
Rise Time	*17 sec.*	*5-6 sec.*
Tack Free	*On Rise*	*On Rise*

- *Nominal 1" thickness sprayed through Graco Model E-30 proportioner with Fusion AP Gun: preheat set at 120°F, hose heat set to maintain 120°F at the spray gun. Reaction times are influenced by mix efficiency of the spray gun, temperature of the components, ambient conditions and thickness of the foamed mass.*

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Nominal Cured Physical Properties

PROPERTY	ASTM TEST METHOD	DENSITY[3] 2.0
Sprayed-in-place Density	D-1622	2.15
R-Value (1-inch thickness)	C-518	6.5
Compressive Strength	D-1621	28 psi
Tensile Strength	D-1623	49 psi
Closed Cell Content	D-6226	94.0%
Water Vapor Permeance	E-96	<1.98 Perm

This information is intended only as a guide for design purposes. The values shown are the average values obtained from laboratory prepared samples and results may vary with application conditions, equipment and technician.

Typical density for wall foam is 2.0 pcf. For higher density, exterior foams, see UPC 3.0 ROOF FOAM data sheet.

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Dimensional Stability Properties
ASTM D-2126

DAYS	°F	°C	%R.H.	AV
07	158	70	100%	+1.5%

SHELF LIFE

Shelf life of UPC 2.0 is 6 months from the date of manufacture when stored in original unopened containers at temperatures between 50° - 75° F. Temperatures above 75° F may decrease shelve life.

FREIGHT CLASSIFICATION

Liquid Plastic Material – NOIBN

The use of foamed plastic in interior applications on walls or ceilings may present an unreasonable fire hazard unless the foam is protected by an approved, fire-resistive thermal barrier which has a finish rating of not less than 15 minutes.

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Processing Guide

DESCRIPTION AND GENERAL USE

UPC 2.0 systems are light density spray polyurethane insulations designed to be fluid-applied to construction surfaces to effect a permanent, monolithic and dimensionally stable thermal insulation.

UPC 2.0 systems are a sophisticated plural component building product which should be applied only by trained and manufacturer-approved insulation experts familiar with the proper- ties of this material.

UPC 2.0 systems are specifically designed for construction applications where the end use ambient temperature range will be maintained between -100ºF and 225ºF. When considering any other use for this product, consult **UNIVERSAL POLYMERS CORPORATION** for specific application recommendations.

SUBSTRATE PREPARATION

For optimum results, surfaces to receive UPC 2.0 should be clean and dry, free of dirt, oil, solvent, grease, loose particles, peeling coating and other foreign matter. Untreated ferrometallic substrates should be sandblasted in accordance with SSPC-SP6. Sandblasted surfaces should be primed immediately with an approved primer.

Galvanized and stainless steel surfaces should be treated with an appropriate wash primer prior to the application of UPC 2.0.

Porous substrates such as wood and concrete may not require priming if surfaces are clean and dry with less than 10% moisture content. **FOR BEST RESULTS ON SURFACES WHERE MOISTURE CONTENT CANNOT BE DETERMINED OR CONTROLLED, PRIMING IS RECOMMENDED.** Consult **UNIVERSAL POLYMERS CORPORATION** for specific application requirements.

SUBSTRATE TEMPERATURE

UPC 2.0 systems may be applied to surfaces with temperatures as low as 40 deg. in most instances. Please consult with UNIVERSAL POLYMERS CORPORATION'S technical representatives for certain requirements.

AMBIENT AIR TEMPERATURE
Regular
40 - 90ºF

UNIVERSAL POLYMERS CORPORATION TECHNICAL SERVICE PERSONNEL SHOULD BE CONSULTED IN ALL CASES WHERE APPLICATION CONDITIONS ARE MARGINAL.

EQUIPMENT

Proportioning equipment shall be manufactured by Gusmer, Graco or Glas-Craft. Mixing ratio by volume is 50 parts "A" to 50 parts "B". Equipment shall be heated airless type, capable of maintaining 120ºF to 140ºF mixed material at the spray gun. Optimum spraying temperature will vary as a function of substrate and ambient conditions.

SPRAYING

UPC 2.0 systems should be deposited in uniform passes ranging from 1/2" to 2". Pass thicknesses will vary as a function of substrate temperature, ambient air temperature and machine output. UPC 2.0 systems bond best to themselves when the previous pass is still warm (above 70ºF). UPC 2.0 performs best when coated the same day of application, however it may be left exposed for up to 24 hours. In the event that UPC 2.0 is exposed for a period greater than 24 hours, please contact **UNIVERSAL POLYMERS CORPORATION** for recommendations.

CLIMATIC CONDITIONS: No spraying should be done when moisture is present in the form of rain, dew or relative humidity greater than 80%, or when there is wind in excess of 15 m.p.h.

PROTECTIVE COATING

UPC 2.0, when applied to exterior weathering surfaces, must be top coated with an approved elastomeric coating. All coatings shall be applied in accordance with **UNIVERSAL POLYMERS CORPORATION** or other coating manufacturer's instructions.

SPECIAL NOTE

Particular attention must be paid to coating selection in applications where a vapor drive may be present. Consult **UNIVERSAL POLYMERS CORPORATION** technical service personnel for specific system recommendations.

STORAGE

Both liquid components of UPC 2.0 systems should be stored in original unopened containers at temperatures between 50ºF and 75ºF Note: Storage for prolonged periods of time at high temperatures may alter the reactivity profile of the product. Additionally, storage of the B component at increased temperatures or in direct sunlight for prolonged periods may cause a buildup of pressure in the storage vessel. Use caution in opening containers of UPC 2.0. Containers should be opened slowly to allow the release of any pressure buildup.

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Safety, Health & Toxicity Data

A Material Safety Data Sheet (MSDS) has been prepared on the UPC 2.0 systems. All personnel who will come in contact with the product should read and understand the MSDS.

PROTECTIVE EQUIPMENT

Since the UPC 2.0 systems are atomized into a very fine particle distribution during spray application, it is essential that maximum effort is made to protect the spray mechanic and others near the workplace from undue exposure. Component "A" ULTRA- THANE systems are polymeric isocyanate and, as such, can be very sensitizing, particularly from the standpoint of **VAPOR INHALA- TION**. Some other ingredients may be sensitizing from the stand- point of **SKIN CONTACT OR EYE CONTACT**.

VAPOR INHALATION

The best form of protection against isocyanate or potentially sensitizing vapors in the workplace is a fresh air supply. Numerous manufacturers, including the 3M Company and MSA, make full face fresh air masks. For maximum protection, we recommend use of NIOSH/MSHA approved self-contained breathing apparatus with a full-face piece operated in a positive pressure mode. In well ventilated application conditions, the use of Type C organic vapor cartridge respirators may be acceptable.

SKIN CONTACT

To prevent excessive skin, contact with the sprayed product, the use of fabric overalls and fabric gloves is recommended.

EYE CONTACT

Wear a full-face mask or OSHA-compliant protective goggles.

PROTECTION OF THE WORK PLACE

Overspray from UPC 2.0 systems can carry consider-able distances and attention should be given to the following:

1. Post warning signs a minimum of 100 feet from the work area.
2. Cover all intake vents near the work area.
3. Minimize or exclude all personnel not directly involved with the spray application.
4. No welding, smoking or open flames.
5. Have CO_2 or other dry chemical fire extinguisher available at the jobsite.
6. Provide adequate ventilation.

FIRST AID CONSIDERATION

Vapor inhalation problems are characterized by coughing, shortening of breath and tightness in the chest. Anyone exhibiting these types of symptoms should be immediately removed from the workplace and administered oxygen or fresh air. If the condition is prolonged or extreme, **SUMMON EMERGENCY TRAINED MEDICAL ATTENTION IMMEDIATELY**.

Skin contact with liquid components can result in a rash or other irritation. Wash any affected skin area with clean water. Wipe residual liquid from the skin with a clean cloth, then wipe the affected area with a 30% solution of rubbing alcohol. Follow the alcohol wipe with repeated washings using soap and water. If a rash or other irritation develops, **SEE A PHYSICIAN**.

Eye contact with liquid or sprayed components can result in corneal burns or abrasions. Upon exposure, eyes should be flushed with water for an extensive period. **SUMMON EMERGENCY TRAINED MEDICAL ATTENTION IMMEDIATELY**.

The information herein is believed to be reliable, but unknown risks may be present. ***UNIVERSAL POLYMERS CORPORATION*** *warrants only that the material shall be of merchantable quality; this warranty is in lieu of all other written or unwritten, expressed or implied warranties, &* ***UNIVERSAL POLYMERS CORPORATION*** *expressly disclaims any warranty for a purpose, or freedom from patent infringement. Accordingly, Buyer assumes all risks what so-ever as to the use of these materials and Buyer's exclusive remedy as to any breach of warranty or negligence claim shall be limited*

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