



**Manufacturer & Applicator
of**

Poly-Pro

(Polyurea Spray Elastomer Systems)



POLY PRO POLYUREA

Product Data Sheet

Description: Poly Pro is a state of the art, high performance, sprayed on plural component polyurea elastomer membrane system. The system is based on amine-terminated polyester resins, amine chain extenders and isocyanates. The application of Poly Pro requires heat to 175°F and pressure to a minimum of 2000 psi. The application process poses no threat to continuing operations within a building during the application process because when reacted it's environmentally friendly. After application, Poly Pro is a seamless membrane that can be handled and walked on within 40 seconds.

Unlike polyurethanes and epoxies, Poly Pro is hydrophobic and therefore only slightly affected by damp or cold surfaces. Due to its almost instantaneous gel time, Poly Pro can be built up to any required thickness in one application, including vertical and overhead surfaces.

Poly Pro is 100% solids. It contains no solvents, V.O.C.'s or catalysts. It has high temperature stability with a working temperature of up to 200°F and down to 30°F. It is applied at a 1:1 volume ratio.

Poly Pro is manufactured as a translucent material. With factory added tints, pigment and dyes, virtually any color can be achieved.

Poly Pro is the workhorse of our product line. It's the best waterproofing product on the market and most of our applications include Poly Pro Polyurea.

History of Polyurea: The original formula developed for Polyurea was considered very innovative and offered many possible applications. In the late 80's polyurea was introduced to the automotive industry and is used in fixed place impingement molding facilities. Bumpers, dashboards, side panels and other parts of the automotive industry are routinely made from polyurea.

The original formula has a rough texture and low elongation value due to fast reaction times. Chemist Tom Leaverton has researched and developed polyurea for the last fifteen years and formulations are now developed that are slower reacting, with a high elongation value, a smoother texture, greater tensile strength and tear strength.

Pro Set has also developed and refined application methods for polyurea over the past twelve years. Utilizing premium high-pressure proportioning units, coupled with either spray or pour guns has opened up many new application opportunities for polyurea. The development of refined methods of application plus formulation based on analyzing *your specific needs* makes Pro Set the premium turnkey supplier in the polyurea industry.

Today Pro Set's full line of polyurea products have potential for limitless degrees of application and versatility. The advantages of both the aromatic and aliphatic Poly-Pro formulations are widely revolutionizing in the lining and coating industry. The molecular nature of Poly-Pro as compared to polyurethane, allows for increased tensile and tear strength plus greater elongation.

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Product Data Sheet Cont'd

Many Uses & Applications: It can be applied over concrete, wood, brick, metal, polyurethane foam, and built up roofs. Poly Pro Polyurea has incredible chemical resistency to many, many chemicals.

There is seemingly no end to the potential uses and applications of our product. These include pipe coatings, coatings to reduce abrasion, pond liners, liners for containers of hot asphalt, cement mixers, the floor of any storage area susceptible to chemical infiltration, or where the need for easy clean-up is desired. Our applied linings improve hydraulics in ditches and troughs, and water-proof roofs and decks as well as most all types of flooring.

Poly-Pro can be employed for soil stabilization, construction coatings, the encapsulation of asbestos, and undercoating of various machineries for cleanability and sound-proofing.

A partial list of current and potential uses of Poly-Pro:

OIL RELATED:

- Oil Rigs and Pipework
- Sump Pit Lining
- Hydrocracker and Crude Unit Seal Boxes
- Tar Tank Liners
- Crude Oil Storage Tank Lining
- Coating Containment Boxes for Drilling Mud
- Diesel Fuel Station Coating
- Secondary Containment
- Pipe Coating to Prevent Corrosion
- Airport Fuel Pits
- Production and Waterproofing of Pipe Insulation Fittings

VEHICLES AND TANKS:

- Lining of Cement Mixers and Ready Mix Trucks
- Abrasion Resistant Coating in Dump Trucks
- Hot Asphalt Dump Trucks
- Exterior Coating for Cement Trucks
- Blender or Mixer Tank Linings
- To Line Rail Cars for Protection of Product and to Prevent Sticking during Off Loading
- Repair Rail Car Hatches
- Water Tanks
- Bedliners for Pick Ups
- Protecting High Voltage Boom Trucks From Electrical Conductivity
- Prevent Rust Contamination in Plastic Pellet Rail Cars
- Ambulance Interiors

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VEHICLES AND TANKS:

Sand and Snow Dump Trucks
Coat Down or Dump Chute to Prevent Sticking
Automobile Undercoating / Second Proofing
Automobile Gravel Protection Coatings
To Eliminate Electrical Conductivity on Exploding Carriers
Coat Metal Salt Spreaders
Boat and Ship Hulls, Decks - Saltwater Resistant

HIGHWAY:

Highway Striping
Securing Highway Reflectors
Rust Encapsulation on Barges and Tanks
Highway and Bridge Overlays
Abrasion Resistance for Street Sweepers

ROOF, FLOOR AND ENCAPSULATION:

Roof and Deck Coatings With A 15 Year Warranty
Flooring
Freezer and Dryer Compartments (-40°F & 350°F)
Roof Coating for Metal Decks and Over Shingles
Grouting for Concrete Floors
Roof or Ceiling Coating for Sound Deadening and/or Cushioning
Hail Protection For Roofs
Seals Seams and Lock Screws on Metal Building Roofs
Temporary Building Repair
Floors in Hydroconil Hot Houses
Floor Cushioning
Floors and Walls of Food Processing Plants for Easy Cleanup
Flooring for Animal Kennels to Protect Concrete from Deterioration
Urine Resistance for Floors / Walls of Jail Cells
Encapsulation of Hazardous Materials
Containers for Burial
Encapsulate Archeological Digs
Asbestos, Lead, and Potting Encapsulation
USDA Approved For Food Processing Plants
Restroom Waterproofing
Parking Deck Waterproofing
Tunnels
Encapsulation of Landfills
Stadium Waterproofing

POLY PRO POLYUREA

Product Data Sheet Cont'd

WOOD INDUSTRY:

Coat Utility Poles to Prevent Termite Damage
Seal Lumber Kiln Dryer Door to Prevent Corrosion
Seal Log Pits to Prevent Seepage of Caustic Solution
Coat Glue Hoods

HOLDING TANKS, ETC:

Coatings for Swimming Pools and Accessories
Holding-Pond Liners
Aquaculture and Horticulture Ponds
Irrigation Ditches and Troughs
Soil Stabilization
Preserving Sand Bags and Embankments to Prevent Washouts
Sealing Manhole Walls From Water Infiltration
Custom Water Fountains
Concrete Sanitation Process Stations
Dike and Dam Repair
Sealing Ship or Barge Holds
Irrigation Ditches, Troughs and Flumes
Shower Repairs
Floating Dock Coatings
To Restore Pilings Above and Below the Water Line
Protect Salt Water Ballast Tanks on Ships
Fire Water Tankers Protection of Rust and Stress Cracks
Seal Bottom of Boat Houses
Coat Vessels to Improve Their Efficiency and Reduce Fuel Consumption
Spray-Molded Parts
Coat Vessels to Reduce Drag
Developing Formula that will not Support the Growth of Barnacles
Secondary Containment Coating Impervious To Many Chemicals
Rubber Slurry Pits
Tunnel Walls

Advantages: Poly Pro Polyurea has superior waterproofing properties. It dries to the touch in 40 seconds. The quick reaction time offers many advantages, such as high build millage, can be sprayed on sloped, vertical or overhead surfaces and offers no sagging, no solvents or VOC's and UV stable.

Poly Pro Polyurea is resistant to many chemicals including most petroleum. It's fire ant resistant, and we can incorporate an anti-microbial to reduce barnacle, and micro-organism growth.

It's highly abrasion resistant, bullet proof, and has 650% elongation, with over 2700 psi tensile strength. It's USDA approved for incidental contact and can be formulated to color requirements. Poly Pro Polyurea has high thermal stability at temperatures ranging from -40°F to 350°F.

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Product Data Sheet Cont'd

Physical Properties of Poly-Pro:

	DRY FORM <u>POLY-PRO III</u> (Actual Results)	DRY FORM <u>POLY-PRO 17</u> (Workhorse Formula)	<u>POLY PRO</u> <u>ALIPHATIC</u>	<u>ASTM TEST</u> <u>METHOD</u>
Ave sample thickness, in	0.025	0.025	0.025	
Tensile strength, psi	2050	2840	2025	D-638
Elongation %	250	650	60	D-638
Tear Resistance	360 pli	510 pli	185 pli	D-624
With Geotextile Fabric	500 pli	700 pli	----	D-624
Shore D Hardness	50	47	54	D-2240
Gel Time	3-5 Seconds	30-45 Seconds	50-120 Seconds	
100% modulus psi	1200	1055	----	D-1737
300% modulus psi	2000	1545	----	D-1737
Abrasion resistance (1 kg/1000 wt loss mg) rev. H-18 wheels)	450	300	480	D-4060
24 hr immersion) % wt. gain	0.2%	0.2%	0.2%	D-570
Adhesion of steel				
Sweep blast	250-300	360-450	----	
Near white blast	500-600	850-1000	----	
Near white blast/with Primer	600-850	700-1100	----	
Solids	100%	100%	100%	
VOC's	0	0	0	

POLY PRO POLYUREA

Product Data Sheet Cont'd

Chemical Resistant Spot Testing:

(BY HUNTSMAN CORPORATION, AUSTIN, TEXAS)

Chemical	Elastomer Type			
	Aromatic Poly-Pro (17 or III)	Aliphatic Poly-Pro	Polyurethane	Polyurethane/Urea
Acetone	A	A	C	A
Acrylonitrile	A	A	C	A
Brake Fluid	B	B	C	C
Chlorine, 10% or Greater	NR ²	A	NR ²	NR ²
Gasoline Unleaded	A	A	A	A
Hexane	A	A	A	A
Hot Tub Water ³	B	A	B	B
Hydraulic Oil	A	B	A	A
Hydrochloric Acid NR VR	NR	NR	NR	NR
Methanol	C	C	A	A
Gasoline	A	C	B	B
Motor Oil	B	B	B	B
Nitric Acid	NR	NR	NR	NR
Propylene Carbonate	C	C	C	C
Sodium Hydroxide, 50%	A	B	B	A
10%	A	A	A	A
5%	A	A	A	A
Styrene	C	A	C	A
Sulfuric Acid, conc.*	NR	NR	NR	NR
Sulfuric Acid 50%	B	NR	NR	NR
10%	B	B	B	B
5%	A	A	A	A
Vinegar (5% acetic acid)	A	B	C	B
Water	A	A	A	A

Code describing chemical's effect on elastomer:

- A - No visible damage
- B - Little visible damage
- C - Some effect-swelling, discoloration, cracking
- NR - Not recommended

*Less than 24-hr exposure

1 Trademark of Proctor & Gamble

2 All sample darkened

3 Brominated water

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Product Data Sheet Cont'd

Features and Benefits:

- 70% reflectivity (Initial color is white then changes to an almond color after exposed to UV)
- Monolithic
- Outstanding exterior durability
- Excellent elongation at 0°F and elevated temperature
- Excellent ease in crack bridging and good resistance to sound transmission
- Easily cleaned by power washing
- Quick drying
- Virtually no odor or harmful volatile organic compounds (No VOC's)
- Non polluting and safe
- Quick turnaround
- Excellent adhesion and strength
- Excellent adhesion to petroleum roofing products
- Great hiding properties

Surface Preparation: The preparation varies according to the application and can be modified in similar situations because of mitigated circumstances. The procedures below are our standard operating outline for rooftops and parking decks, etc.

Coverage and Application: The specified coverage may vary according to application. Some examples of applications are below.

- Metal Roof Our specification requires an application rate of 22 sq. ft. per gallon or 80 mls covering the bolts, horizontal and vertical laps, around all penetrations. More detailed information and the method of application is supplied upon request.
- Flat Roof Applied over high density polyurethane roofing foam, at an application rate of 30 sq. ft. per gallon or 60 mls is our specification for applying our Poly Pro Polyurea. More detailed information is supplied upon request.
- Parking Decks Stadium decks, secondary containment, and ponds or fountains (without anti-slip aggregate). Our standard specifications are 22 sq. ft. per gallon or 80 mls of our Poly Pro Polyurea with a broadcasted anti-slip aggregate (except ponds or fountains) is applied into the final 15 mls of our Polyurea. This application is preceded by a 2 mls application of a 2 part epoxy primer. More detailed information and the method of application is supplied upon request.

All other applications will be specified by Pro Set, Inc. The above application could change depending on specific circumstances.

Shelf Life: Unopened Part A containers stored at ambient temperatures will remain stable for one year. Unopened Part B containers stored at ambient temperatures will remain stable for two years. It is standard procedure to mix Part B for 30 minutes with a mechanical mixer before using regardless of how long product is stored.

Packaging: Standard packaging of Poly Pro Polyurea is in 55 gallon drums. The mix of Part A and Part B is always at 1:1 by volume.

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Equipment: Graco 20 - 35 Pro Machine or Gusmer 3500 with a Gap or fushion gun is our preferred equipment.

Safety: Pro Set is proud of its safety record. We take every precaution and follow every regulation for safety. Pro Set has much experience in meeting security, safety and protocol considerations in some of the most demanding plants and industrial settings in the nation. From top to bottom our materials, machinery and personnel pass the strictest of performance and background checks.

We supply and require our employees to wear OSHA approved PE equipment such as safety glasses, respirators, ear plugs, and gloves during application.

Material Safety Data Sheets: Included on following pages.

MATERIAL SAFETY DATA SHEET

1. PRECAUTIONARY STATEMENT

NFPA Code: Health 2 Flammability 1 Reactivity 1
HMIS Code: Health 2 Flammability 1 Reactivity 1

2. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRO SET, INC. EMERGENCY CONTACT
P.O. Box 2393 318-324-1929 Tom Leaverton
Monroe, Louisiana 71207

URL: /ARL 9308-19/
PRODUCT NAME: Poly Pro Part A
CHEMICAL NAME/CLASS: /Aromatic Isocyanate/MD/

3. TRANSPORTATION AND OTHER REGULATORY INFORMATION

D.O.T. Proper Shipping Name: Not Regulated
Hazard Class: None
Identification #: None
Emergency Guide Response #: None

O.S.H.A.

Component Hazardous Characteristic(s) CAS# RANGE
Diphenylmethane diisocyanate Cause lung irritation/possible lung 026447-40-5 50-60
if over exposed; ACGIH TWA 0.005 ppm

Polypropylene glycol None Known 025322-69-4 40-50
No exposure limit established

T.S.C.A.

Status: Commercial

ARL CODE: /ARL 9308-19/
PRODUCT NAME: POLY PRO PART A

4. FIRST AID MEASURES

Eye Contact
Flush eyes with plenty of water for at least 15 minutes: [X]
Get medical attention: [X]

Skin Contact
Wash skin with soap and water: [X]
Get medical attention: [X]

5. EXPOSURE CONTROLS/PERSONAL PROTECTION

The following personal protection is recommended:

Safety Glasses	[X]	Protective Apron	[X]
Chemical Goggles	[X]	Coveralls	[X]
Face Shield	[X]	Respirator/Hood	[X]
Gloves, Chemical Resistant	[X]	Supplied Air Mask (for large spills or confined spaces)	[X]

6. PHYSICAL AND CHEMICAL PROPERTIES

Color: Light Volatility: Low (<100) Water Solubility: Negligible (<1%)
Odor: Other Physical State: Viscous Liquid (>100)

pH, 1% Solution: 7 Boiling Point, °F: N.D. Flash Point-Closed Cup, °F: >200
Density, g/ml: Melting Point, °F: N.D.

7. STABILITY AND REACTIVITY

This material Reacts Violently with: (If others is checked below, see comments for details)

Air	[]	Heat	[]	Others	[X]
Water	[X]	Strong Oxidizer	[]	None of these	[]

Comments:

This material reacts violently with /Water and Amines/

Hazardous polymerizations: Do Occur

8. Contain spill. Avoid personal contact. Wipe up or absorb on suitable material for disposal. Dispose of unused material in a suitable manner.

R.C.R.A. Classification: REACTIVE: D003

PRO SET, INC.

P.O. Box 2393, Monroe, Louisiana 71207 (318)387-3872

MATERIAL SAFETY DATA SHEET

NOTE: This MSDS is valid for six months from the date of issue. Use, dispose of material or request new MSDS when six months has expired.

1. PRECAUTIONARY STATEMENT

NFPA Code:	Health 3	Flammability 1	Reactivity 0	Special
HMS Code:	Health 3	Flammability 1	Reactivity 0	Protection

2. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRO SET, INC.
P.O. Box 2393
Monroe, Louisiana 71207

EMERGENCY CONTACT
318-324-1929 Tom Leaverton

ARL: /ARL 9408-13/

PRODUCT NAME: Poly Pro Part B

CHEMICAL NAME/CLASS: Polyetheramine-aromatic amine blend

3. TRANSPORTATION AND OTHER REGULATORY INFORMATION

D.O.T. Proper Shipping Name: CORROSIVE LIQUID, N.O.S.
Hazard Class: 8 (Corrosive Material), PG III
Identification #: UN 1760
Emergency Guide Response #: 60

ARL CODE: /ARL 9408-13/
PRODUCT NAME: POLY PRO SPRAY B-COMPONENT 7065-87-1

4. FIRST AID MEASURES

Eye Contact
Flush eyes with plenty of water for at least 15 minutes: [X]
Get medical attention: [X]

Skin Contact
Wash skin with soap and water: [X]
Get medical attention: [X]

5. EXPOSURE CONTROLS/PERSONAL PROTECTION

The following personal protection is recommended:

Safety Glasses	[X]	Protective Apron	[X]
Chemical Goggles	[X]	Coveralls	[X]
Face Shield	[X]	Respirator/Hood	[]
Gloves, Chemical Resistant	[X]	Supplied Air Mask (for large spills or confined spaces	[]

6. PHYSICAL AND CHEMICAL PROPERTIES

Color: Dark Volatility: Low (<100) Water Solubility: Appreciable (>10%)
Odor: Amine Physical State: Mobile Liquid (<100)

pH, 1% Solution: 8 Boiling Point, °F: > 95 Flash Point-Closed Cup, °F: >250
Density, g/ml: 1.01 Melting Point, °F: N.D.

7. STABILITY AND REACTIVITY

This material Reacts Violently with: (If others is checked below, see comments for details)

Air	<input type="checkbox"/>	Heat	<input type="checkbox"/>	Others	<input checked="" type="checkbox"/>
Water	<input type="checkbox"/>	Stong Oxidizer	<input type="checkbox"/>	None of these	<input type="checkbox"/>

Comments:

This material reacts violently with [Reacts with acids, oxidizers]

Hazardous Polymerizations: Do Not Occur

8. DISPOSAL CONSIDERATIONS

Contain spill. Avoid personal contact. Wipe up or absorb on suitable material for disposal. Dispose of unused material in a suitable manner.

R.C.R.A. Classification: Not Regulated

O.S.H.A.

<u>Component</u>	<u>Hazardous Characteristic(s)</u>	<u>CAS#</u>	<u>RANGE</u>
Glycerine, propoxylated aminated (MW>=5000)	Irritating to eyes no exposure limit established	064852-22-8	8-12
Tripropyleneglycoldiamine (MW<=2000)	Toxic orally; Extremely irritating to eyes; Corrosive to skin; No exposure limit established	-09046-10-0	55-65
Diethyltoluenediamine	Irritating to eyes, Oral/Dermal LD50 485/700 mg/kg; No exposure limit established	068479-98-1	27-43
Carbon black	None known ACGIH TLV 3.5 mg/m3	001333-86-4	1.5-2.5
Silane, trimethoxy (3-oxiranymethoxy)propyl)	Irritating to skin and eyes; Toxic orally; no exposure limit established	002530-83-8	0.3-1.5
Water	None known	007732-18-5	0.5-1.2

T.S.C.A

Status: Commercial

POLY-PRO

WIDE FORMULATIONS FLEXIBILITIES

AROMATIC POLY-PRO

To hard soft elastomers
Texture variations, Color variations
Anti barnacle, Growth inhibitor for microorganisms,
Fire ant resistant

ALIPHATIC POLY PRO

Has long term color retention
UV stability - Pigmentation can be added for color variations

POLYASPARTICS

Hand mixed Aliphatic Polyurea that can be brushed, rolled or sprayed

EXPANSION JOINT FORMULA

Water insensitive and flexible

Poly-Pro can be formulated to meet your specific needs.

POLY-PRO ADVANTAGES

FAST CURE TIME

Can be sprayed on sloped, vertical, or overhead surfaces without forming drips or runs. Can be sprayed on horizontal surfaces and walked upon within two minutes.

ONE HUNDRED PERCENT SOLIDS

No solvents or V.O.C.'s. The two components, one-coat systems is sprayed at a 1:1 volume ratio. Eliminates the need for multi-coat system.

PHYSICAL PROPERTIES

Will remain securely adhered and chemically unchanged for at least 15 years

650% elongation regardless of weather conditions

Abrasion resistant

High tensile strength

High thermal stability at temperatures ranging from -40°F to +350°F

Resistant to a wide range of chemicals including gasoline and some petroleum based chemicals

UV stability

Can be formulated to color requirements

USDA approved / Classified within the Standard Industrial Code #1799 - Contractors - Coating of concrete structures with plastics

Wide formulation flexibilities - products ranging from soft elastomers to hard elastoplastics to aliphatic systems

SAFETY - SECURITY - DEPENDABILITY

Pro Set remains proud of a perfect safety record. We take every precaution and follow every regulation for safety. It is our number one priority.

Pro Set has depth of experience in meeting security, safety and protocol considerations in some of the most demanding plants and industrial settings in the nation. From top to bottom our materials, machinery and personnel pass the strictest of performance and background checks.

POLY-PRO APPLICATIONS

Secondary containment to prevent hazardous chemicals from penetrating concrete

Landfill containment and sealant with fire ant resistant formulation

Roofs remain watertight for 15 years guaranteed

Manhole restoration

Tunnels coated with a Poly-Pro that illuminates, waterproofs and can be easily cleaned with biodegradable soap.

Public restrooms with a Poly-Pro seals off old odors and has as a growth inhibitor for micro-organisms

Boat hulls, decks and cabins with saltwater resistance, anti-barnacle and Zebra Muscle resistant formulations

Floors, walls and machinery of food processing plants - USDA approved

Coat water tanks and other rust susceptible surfaces

Road systems to fill and seal cracks

Expansion joints, not water sensitive at application like silicon

Freezer storage units, Poly-Pro will permanently bond and have 650% elongation at -40° F to 350°F

Stadiums and arenas for waterproofing and restoration