



A CSW Industrials Company

Thread Sealants, Fluxes, PVC Cements and Primers

Jerry Myren

Agenda

- Product Overview
- Application
- Target Customers
- Key Competitors
- Competitive Positioning
- Why We Are Better
- Objections to Overcome



What are Thread Sealants called?

- Pipe Dope
- Thread Compound
- Thread Sealant Paste
- Pipe Thread Sealants



What are Thread Sealants used for?

Thread pipes - provide an ***effective seal*** for pipes transporting:

- LIQUIDS
- GASES
- STEAM
- REFRIGERANT
- HYDRAULIC fluids



Specifications for Thread Sealants

“American National Standard Pipe Thread” standards (aka, **National Pipe Thread**) are U.S. national technical standards for screw threads used on threaded pipes and threaded fittings. They include both “*tapered*” and “*straight*” threads

NPT - National Pipe **Taper**

NPS - National Pipe **Straight**



Types of Thread Sealants

Soft set

- No 5®
- No 7®
- No 21®

Flexible/firm set

- Tru-Blu™

Non-setting

- Tplus2®
- Blue+™

Hard set

- (no RectorSeal product offering)

Thread Sealant Approvals



PTFE (used to be referred to as “Teflon”) vs Non-PTFE Thread Sealants

- Added to enhance thread lubrication during assembly and break out
- Contractor preference



Thread Sealant Application Chart

Pipe Thread Sealant Application Chart



	RectorSeal® No. 50	RectorSeal® No. 70	RectorSeal® No. 21 Black Jack™	RectorSeal® No. 100® Virgin™	RectorSeal® BLUE+	RectorSeal® T Plus 20	RectorSeal® No. 50 Special	RectorSeal® No. 50 Sub-Zero	RectorSeal® Thru-Bolt™
Acids, dilute	✓	✓	✓	✓	✓	✓	✓	✓	✓
Acids, concentrated		✓							
Air, compressed	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alcohols, all		✓							
Ammonia, gaseous	✓	✓	✓	✓	✓	✓	✓	✓	✓
Ammonia, liquid	✓	✓	✓	✓	✓	✓	✓	✓	✓
Aliphatic solvents	✓	✓	✓	✓	✓	✓	✓	✓	✓
Aromatic solvents		✓							
Caustic, dilute	✓	✓	✓	✓	✓	✓	✓	✓	✓
Caustic, concentrated		✓							
Chlorinated solvents		✓							
Cutting oils (low aromatic)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Diesel fuel oil	✓	✓	✓				✓	✓	✓
Ethylene glycol (anti-freeze)		✓							
Fatty acids, liquid		✓							
Gasohol (unleaded 10% alc)	✓	✓	✓						
Gasoline	✓	✓	✓				✓	✓	✓
Glycerine		✓							
Heating oils	✓	✓	✓	✓	✓	✓	✓	✓	✓
Helium, gaseous	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hydraulic oils	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hydraulic fluids, water/glycol		✓							
Hydrogen, gaseous	✓	✓	✓	✓	✓	✓	✓	✓	✓
Inert gases	✓	✓	✓	✓	✓	✓	✓	✓	✓
Jet Fuel (JP8, 4 5)	✓	✓	✓				✓	✓	✓
Kerosene	✓	✓	✓				✓	✓	✓
Ketones		✓							
Liquefied Petroleum gases	✓	✓	✓						
Mineral oils	✓	✓	✓	✓	✓	✓	✓	✓	✓
Natural gas	✓	✓	✓	✓	✓	✓	✓	✓	✓
Nitrogen, gaseous	✓	✓	✓	✓	✓	✓	✓	✓	✓
Oxygen, gaseous									
Petroleum solvents	✓	✓	✓						✓
Refrigerants	✓	✓	✓	✓	✓	✓	✓	✓	✓
Soap, liquid	✓	✓	✓	✓	✓	✓	✓	✓	✓
Steam	✓	✓	✓				✓	✓	✓
Vegetable oils	✓	✓	✓	✓			✓	✓	✓
Water (hot or cold)	✓	✓	✓	✓	✓	✓	✓	✓	✓

RectorSeal No.5®



- Soft set/slow drying
- Color: Yellow
- Industry standard thread sealant
- Multi-purpose (water or gas)
- 12,000 psi liquid/2600 psi gas
- Pressurized **immediately** up to max 100 psi and max 2" pipe.
- Safe for metal, PVC & PEX (only) pipe
- Min 2 year shelf life



RectorSeal Tplus2®



- Non-setting/immediate pressure
- PTFE (Teflon) enriched
- Color: White
- Multi-purpose (water or gas)
- 10,000 psi liquid/2,000 psi gas
- Safe on all metal and all plastic pipe
- Min 2 year shelf life



RectorSeal **Tru-Blu™**



- Flexible set/fast drying
- High-Vibration areas such as refrigeration and industrial applications
- PTFE (Teflon) enriched
- Color: Blue
- Multi-purpose (water or gas)
- Safe on PVC/PEX and all metal pipe
- Min 2 year shelf life



RectorSeal **Blue+**™



- Non-setting/immediate pressure
- PTFE (Teflon) enriched
- Color: Blue
- Multi-purpose (water or gas)
- 10,000 psi liquid/2,000 psi gas
- -15 to 400 degrees service temp
- Safe on all metal and all plastic pipe
- Min 2 year shelf life



RectorSeal No.5® Special



- Non-setting/immediate pressurization
- Low-odor applications (gas piping)
 - Where gas detection equipment used
- Color: Gray
- Safe on all metal, PVC & PEX (only) pipe
- Min 2 year shelf life

RectorSeal No.5® Sub Zero



- Non-setting/immediate pressurization
- Color: Gray
- Low Temp applications -35 degrees F
- Colder/all-weather climates
- Safe on all metal, PVC & PEX (only) pipe
- Min 2 year shelf life



RectorSeal No. 21®



- Soft set
- Color: Black
- Multi-purpose (water or gas)
- When black thread sealant preferred like sprinkler systems
- Safe on all metal, PVC & PEX (only) pipe
- Min 2 year shelf life



RectorSeal No. 7®



- Soft set/slow dry
- Color: Black
- Specially formulated for use with corrosive or caustic chemicals, hydraulics
- **NOT FOR USE ON PLASTIC PIPES**
- Min 2 year shelf life

PTFE Tape



- 100% pure PTFE
- Resistant to most liquids/gases
- Various widths & lengths available
- When PTFE tape preferred over sealant
- Can be used along with thread sealants (contractor preference)
- Unlimited shelf life

How To Tighten Pipe and Fittings with Thread Sealant

STEP 1: Apply thread sealant on both male and female threads and insert male threads into female the fitting

STEP 2: Turn the male pipe thread in a clockwise direction. Do not cross the treads...if the fitting appears to bind or stop moving after a full rotation, unscrew the fitting and look inside for any foreign substance. Clean the treads and repeat step 1.

STEP 3: Continue to turn the fitting in a clockwise direction until you can no longer do so, which is usually two – four full revolutions depending on the pipe size. Larger fittings will turn more easily than smaller fittings.

STEP 4: Fit a pipe wrench on the fitting

STEP 5: Turn the pipe wrench two full revolutions in a clockwise direction. You should now have a tight sealed joint...providing you use RectorSeal thread sealants.

Thread Sealant Comparison Chart

	No 5	Tplus2/Blue+	Tru-Blu
Mill Rose	Blue Monster Industrial Grade	Blue Monster w/PTFE	
Hercules	Pro Dope	Megaloc/Real Tuff	Blue Block/Gripp
Oatley	Gray Pipe Joint Compound	Great White	Great Blue
Harvey	Harvey Seal 55	Harvey TFE Past	
Whitlam	T-U Type 555	Select Unyte/Blue Magic/Talon	Steel Unyte
La-Co	Piepetite	Slic-Tite	Leak-Tite Blue
IPS	All Seal/Key Tite 505	White Seal/Gold Seal	Blue Seal
Federal Process	Gasolia NT/Gasolia PLS-2	Leak Lock Gold	Gasolia High Fill
Highside Chemical			Leak Lock Blue

Thread Sealant Competition



Objections to Overcome

- VERY slow growth market
- Contractor preference of pipe use not requiring thread sealants
- Mature competitive market
- Push-fit fittings

Why RectorSeal Thread Sealants?

- Industry leader in thread sealants
- Preferred brand by contractors and handymen
- Proven performance
- Proven reliability

Agenda – Flux

- Product Overview
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Fluxes - What is Soldering?

Soldering is a process in which two or more metal items are joined together by melting a “filler metal” (**solder**) into the joint. Works because **solder** has a lower melting point than the adjoining metal.

Soldering provides reasonably permanent but reversible connections between copper pipes in plumbing systems



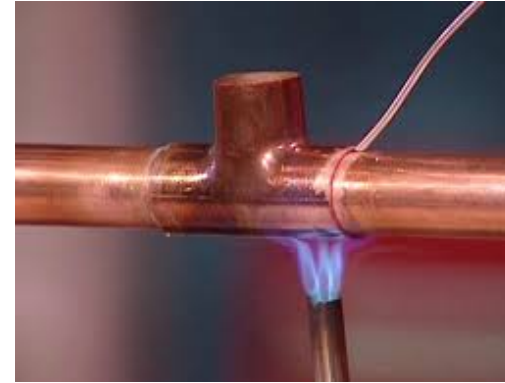
Soldering Applications

- Copper pipes for plumbing
- Electrical components, circuit boards
- Metalwork
- Roof flashing



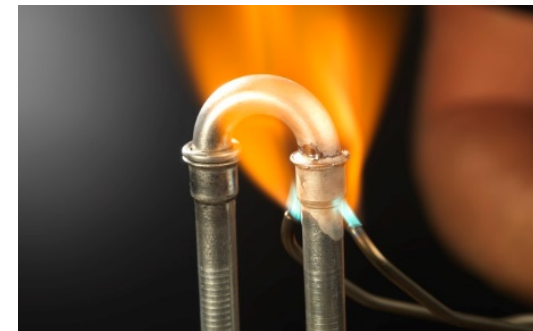
Important Difference - Soldering vs Brazing

Soldering The melting point of the solder is **lower** than 425°C (797°F).



$< 425^{\circ}\text{C}$ (797°F)

Brazing The melting point of the solder is **higher** than 425°C (797°F) but lower than that of the metal substrates.



$> 425^{\circ}\text{C}$ (797°F)

What is Flux?

flux (derived from Latin *fluxus* meaning "flow") is a chemical cleaning agent, flowing agent, or purifying agent.

Fluxes may have more than one function at a time.



Nokorode® Regular Paste



- All Purpose Paste Flux
- Lead Free
- Certified to NSF/ANSI 61 Annex G
- Cleans and fluxes in one in one operation
- Flows smoothly into even the smallest cavity
- Special oil base protects the solder joint against corrosion
- Low spattering
- Can be used with 95/5, 60/40, 50/50 and 40/60 (tin/antimony)

Nokorode® Aqua Flux



- Meets **ASTM B-813** Standards
 - flux be water “washable” and can be flushed from the piping system to prevent corrosion.
- Lead Free
- Certified to NSF/ANSI 61 Annex G
- Can be used on all types of soft solder, 95/5, 60/40, 50/50, and 40/60 (tin/antimony)
- Pre-Cleans
- Superior wetting ability- allows solder to flow easily and uniformly into joint
- Smooth and creamy consistency

Nokorode® Hot Weather Paste Flux



- Formulated to remain thick in hot weather applications up to 120° F
- Lead Free
- Cleans and fluxes the joint area all at one time
- Flows smoothly into even the smallest cavity
- Can be used on all types of solder, 95/5, 60/40, 50/50 and 40/60 (tin/antimony)

Nokorode® Cold Weather Paste Flux



- Remains soft and sticky in cold weather applications down to -20° F
- Lead free
- Flows smoothly into the smallest cavity
- Low Scorching
- Can be used on all soft solders, 95/5, 60/40, 50/50, 40/60 (tin/antimony)

Nokorode® 95/5 Pre-Tinning Flux



- Contains 95/5 tin/antimony solder powder
- Great for larger diameter fittings
- Formulated to clean, pre-tin and flux all at one time
- Low spattering
- Smooth consistency for easy brush on application

Competition



Objects to overcome

- The use of push fit fittings
- Plastic Pipe PVC, CPVC
- Growing use of PEX Pipecross-linked polyethylene pipe



Why Nokorode® Flux products?

December 16, 1920 **HARDWARE AGE** 51



www.Dunton.org

“Yes Sir! Nokorode Is the Best Flux I Know Of—I Use It Myself!”

Hundreds of Hardware dealers have *tried* NOKORODE SOLDERING PASTE—they have used it *at home* and also *on their cars*.

These merchants know just what NOKORODE will *do*—they know they can count on it to make a clean, smooth, non-corrosive joint.

Naturally when customers ask about NOKORODE, they recommend it with the positive assurance that it will “make good” and NOKORODE backs up every claim.

NOKORODE flows rapidly, acts quickly and solders permanently all metals except Aluminum.

Once a customer solders with NOKORODE he will never return to soldering with acid which always leads to corrosion and trouble.

Known for twenty years to 90 per cent of the electrical trade as “The Best Soldering Paste in the World.”

During the world war the United States Government used NOKORODE in large quantities and with great success.

For many years the manufacturers of the Cadillac, Locomobile, Studebaker, Buick, Dodge, Ford and other well-known cars have used NOKORODE either in the form of paste or salts.

It sells rapidly, satisfies continuously and repeats invariably—and the profit makes it decidedly worth handling.

Please order through your Jobber. If he cannot supply you then write for Sample and Prices to—



THE M. W. DUNTON CO.
Providence, R. I., U. S. A.

Reg. U. S. Pat. Off.



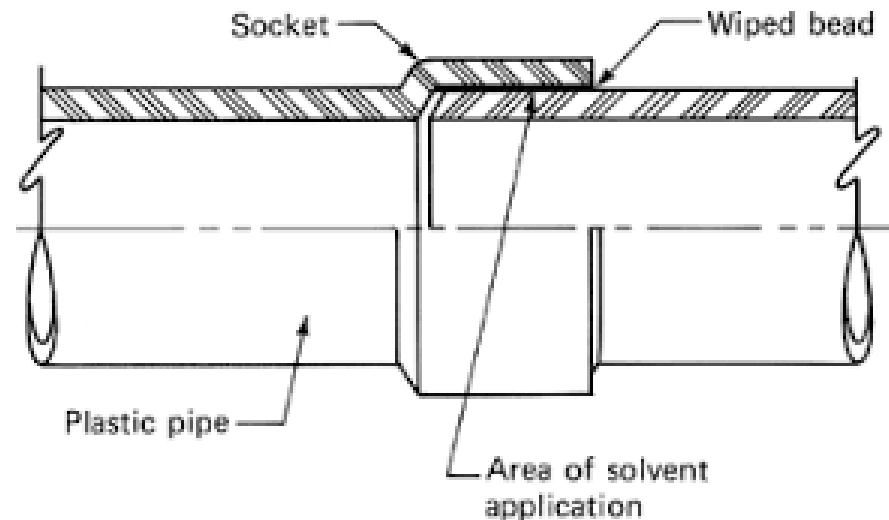
- Name Brand
- Proven Performance
- Contractor's choice for over 125 years

Agenda – PVC Solvent Cements and Primers

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Plastic **Solvent Cements** (PVC's)

Solvent cement is not just a **glue**. It **works** by dissolving the surfaces of the spigot and socket, and together with the **PVC** filler in the **cement**, forms an integral matrix of **PVC** across the interface.



Types of Plastic Pipe

- PVC - Polyvinyl Chloride



- CPVC - Chlorinated Polyvinyl Chloride



- ABS - Acrylonitrile Butadiene Styrene



How to Use Plastic Solvent Cements

STEP 1 : Cut the pipe to the proper length. Make sure the cut is straight (square and not angled).

STEP 2 : Debur edges of pipe and inside fitting

STEP 3 : Apply pipe cleaner with LOW VOC **cleaner** to both **pipe** and **fitting**

STEP 4 : Apply Hi -Etch LOW VOC purple **primer** to both **pipe** and **fitting**

STEP 5 : Apply proper solvent **cement** to both **pipe** and **fitting**

STEP 6 : Insert pipe into fitting with a twisting motion until you bottom out in the fitting

RectorSeal **Gene™ 404L**

Gene™ 404L is a polyvinyl chloride (PVC) solvent cement for joining PVC pipe and socket-type fittings. It also can be used as a transitional cement for joining ABS to PVC

- Color: Clear
- Regular Body
- Fast set
- NSF Approved for potable water systems
- Certified to performance requirements of ASTM 2564
- LEED® compliant
- For use on PVC pipe through 2" Schedule 40 pressure pipe and up to 4" Schedule 40 non-pressure (DWV) pipe
- NSF and UPC IAPMO listed



RectorSeal **Pete™ 602L**

Pete™ 602L is a polyvinyl chloride (PVC) solvent cement for use in joining PVC pipe and socket type fittings. A clear medium body cement.

- Color: Clear
- Medium Body
- NSF Approved for potable water systems
- UPC IAPMO listed
- ASTM 2564
- Fast Set
- LEED Compliant
- For use on PVC Schedule 40 up to 6" and 1-1/4" Schedule 80



RectorSeal **John™ 647L**

John™ 647L is an LOW VOC ABS cement for joining ABS pipe and socket type fittings

- Medium body formula
- ASTM D 2235
- Color: Black
- UPC (IAPMO)
- For use on DWV piping Schedule 40 & 80 < 6"



RectorSeal **Charlie™ 412L**

Regular body CPVC solvent cement for joining CPVC pipe and socket type fittings

- Color: orange
- Fast Set
- Regular Body
- For use on CPVC Schedule 40 pipe/fittings < 2"
- UPC
- IAPMO
- Meets ASTM F 493
- LEED Compliant



RectorSeal **Dura-Gold™ 627L**

Dura-Gold™ 627L is a chlorinated polyvinyl chloride solvent cement. Approved for joining Flowguard Gold pipe and fittings as a one step CPVC cement without the use of a primer (unless otherwise required by local codes)

- One step solvent cement – no primer needed
- Medium body
- Medium Set
- Color: Gold
- LEED compliant
- Meets ASTM F-493
- Approved for all CPVC uses including potable water



RectorSeal **Gold™ 844L**

Gold™ 844L is a premium polyvinyl chloride (PVC) solvent cement used for joining PVC pipe and socket-type fittings.

- Heavy body **Premium** – Excellent gap-filling characteristics
- Medium Set
- Color: Clear
- LEED compliant
- Exceeds ASTM D-2564
- UPC (IAPMO) listed
- NSF approved for potable water



RectorSeal **HOT™ 203L**

Hot™ 203L is a polyvinyl chloride solvent cement with a quick set for use in joining PVC pipe and socket type fittings

- Safe for potable water systems
- Very fast set
- Medium body
- Color: Blue
- Full line pressure after 1 hour
- LEED compliant
- Meets ASTM D 2564
- Excellent in cold weather applications
- For use in pool and spa applications
- For use on sch 40 pipe up to 6" and 1-1/4" sch 80



RectorSeal **Jim™ PR-1L** and **Clear PR-2L**

Jim™ PR-1L and **Clear™ PR-2L** are high etch primers for PVC and CPVC pipe and fittings. Both are the same product except for color. **Jim™ PR-1L** is purple in color, and **Clear™ PR-2L** is clear.

- Jim PR-1L color: purple
- Clear PR 2L color: clear
- Both NSF approved for potable water systems
- Meets ASTM F 656
- Fast-acting, Hi-Etch primer
- LEED Compliant



RectorSeal **Bill™ PR-3**

Bill™ PR-3 is a hi-etch “economical” primer for PVC and CPVC pipe and fittings. Specifically formulated as a primer for use on all PVC and CPVC pipe applications such as potable water, pressure pipe, gas, conduit, and drain, waste and vent (DWV).

- Color: clear
- Safe for potable water systems
- Fast-acting, Hi-Etch primer



RectorSeal **NEW**

NEW PVC Solvent Cement Applicator (#19073)

- 2-in-1 Applicator
- for both Regular & Wide Mouth gallon cans
- Sold separately (4 per case)

Metal top makes pouring from gallon containers much easier!



Solvent Cement, Primers and Cleaners – General Service Recommendations

	SOLVENT CEMENTS	PVC								CPVC			ABS	PVC/CPVC ABS	PRIMERS & CLEANERS	PVC CPVC	PVC CPVC	PVC CPVC	PVC/CPVC ABS	ACCREDITATIONS	
Product Name		Gene 404L	Pete 602L	Arctic 616L	Hot 203L	Electrical Conduit 633L	Electrical Conduit 633L	Gold 844L	Homer 828L		Charlie 412L	Dura-Gold 627L	Heavy Duty 811L	John 647L		Mike 425L	Jim PR-1L	Clear PR-2L	Bill PR-3		Sam CL-3L
Body		Regular	Medium					Heavy			Regular	Medium	Heavy	Medium		Regular	Hi-Etch Primer				Cleaner
Color		Clear	Clear	Clear	Blue	Clear	Gray	Clear	Gray		Orange	Gold	Orange	Black		Amber	Purple	Clear	Clear		Clear
Low VOC		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	-		✓
Max. Pipe Size Schedule 40		4 in	6 in	6 in	6 in	6 in	6 in	12 in	12 in		2 in	2 in	12 in	6 in		6 in	All	All	All		All
Max. Pipe Size Schedule 80		-	1¼ in	1¼ in	1¼ in	6 in	6 in	12 in	12 in		-	1¼ in	12 in	6 in		-	All	All	All		All
Max. Pipe Size Schedule 40 (pressure)		2 in	6 in	6 in	6 in	-	-	12 in	12 in		2 in	2 in	12 in	-		2 in	All	All	All		All
Max. Pipe Size Schedule 80 (pressure)		-	1¼ in	1¼ in	1¼ in	-	-	12 in	12 in		-	1¼ in	12 in	-		-	All	All	All		All
One Step Cement		-	-	-	-	-	-	-	-		-	✓	-	-		-	-	-	-		-
Potable Water		✓	✓	✓	✓	-	-	✓	✓		✓	✓	✓	-		-	✓	✓	-	✓	
Pressure Pipe		✓	✓	✓	✓	-	-	✓	✓		✓	✓	✓	-		✓	✓	✓	✓	✓	
Gas Lines		✓	✓	✓	✓	-	-	✓	✓		-	-	-	-		-	✓	✓	✓	✓	
Conduit		✓	✓	✓	✓	✓	✓	✓	✓		-	-	-	✓		✓	✓	✓	✓	✓	
Sewer Pipe		✓	✓	✓	✓	-	-	✓	✓		✓	-	✓	✓		-	✓	✓	-	-	
DWV Systems		✓	✓	✓	✓	-	-	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	
Irrigation lines		-	-	-	✓	-	-	-	-		-	-	-	-		-	✓	✓	✓	✓	
Pool, Spa, Flexible hose		-	-	-	✓	-	-	-	-		-	-	-	-		-	✓	✓	✓	✓	
Industrial		-	✓	-	✓	-	-	✓	✓		-	✓	✓	-		-	✓	✓	✓	✓	
Max Service Temp		140°	140°	140°	140°	140°	140°	140°	140°		180°	180°	180°	180°		180°	180°	180°	180°	180°	
Hot Water (180°)	-	-	-	-	-	-	-	-		✓	✓	✓	-	✓	✓	✓	✓	✓			
Recommended Application Temp	40°-120°F	40°-120°F	0°-120°F	40°-120°F	40°-120°F	40°-120°F	40°-120°F	40°-120°F		40°-120°F	40°-120°F	40°-120°F	40°-120°F	40°-120°F	-15°-120°F	-15°-120°F	-15°-120°F	-15°-120°F			
Cure Time	Fast	Fast	Fast	Very Fast	Fast	Fast	Medium	Medium		Fast	Medium	Medium	Medium	Fast	-	-	-	-			
LEED Compliant	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	-	✓	✓	-	-			
Product code - Qtr. Pint (24)	55901	55922	-	55988	-	-	55950	-		55956	-	-	55938	55969	55910	-	55701	55929			
Product code - Half Pint (24)	55902	55924	-	55989	55980	-	55951	55960		55957	55992	-	55940	55970	55912	-	55703	55930			
Product code - Pint (12)	55904	55926	55919	55990	55983	55995	55952	55961		-	55998	55967	55942	55973	55914	55972	55705	55932			
Product code - Quart (12)	55906	55928	55948	55993	55985	55996	55954	55963		-	-	55968	55944	55974	55918	55981	55707	55934			
Product code - Gallon (4)	55908	55916	55953	55994	55986	-	55955	55964		-	-	55971	-	-	55920	55982	55709	55936			
Shelf Life	2 year	2 year	2 year	2 year	2 year	2 year	2 year	2 year		2 year	2 year	2 year	2 year	2 year	2 year	2 year	2 year	2 year			

Competition

- OATEY
- IPS
- Christy's
- Hercules
- EZ Weld
- Harveys
- Blue Monster
- JC Whitlam
- Spears
- Arrow
- LSP
- Utility
- Gorilla
- Plumb Tite
- Carlon
- Uni-Weld

The logo for Oatey, featuring the word "Oatey" in a bold, red, sans-serif font with a registered trademark symbol. A red underline is positioned beneath the letters "atey".The logo for IPS Corporation, featuring the letters "IPS" in a large, blue, sans-serif font. Below "IPS" is the word "CORPORATION" in a smaller, blue, sans-serif font.The logo for Christy's, featuring the word "Christy's" in a white, italicized, sans-serif font with a registered trademark symbol, set against a solid blue rectangular background.The logo for E-Z Weld, featuring the text "E-Z WELD" in a bold, sans-serif font. "E-Z" is in black and "WELD" is in blue, all contained within a black rectangular border.

Additional Information

Solvent Cement Catalog



RectorSeal App



website

RectorSeal.com

Plumbing Catalog



QUESTIONS???

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