



## Adhesives & Sealants



**Institutional Sales Division**

**PRODUCT CATALOGUE**



## Pidilite : At a Glance

Pidilite Industries Ltd has been a pioneer and market leader in the field of consumer and speciality chemicals in India since its inception in 1959. The company has an annual turnover exceeding Rs 1,000 crores and a strong base in both the consumer and industrial segments.

Pidilite, today, takes pride in its diverse product range, large number of established brands and distribution network of dealers, retail outlets, offices and sales representatives spread across the country and the world to ensure customer satisfaction.

### Our Distribution Network

We have a sales and distribution network that covers the whole of India with:

Sales offices in over 8 major metros.

Resident representatives in over 33 cities and towns.

The Sales and Marketing Division of Pidilite Industries Ltd caters to the requirements of –

- 4,000 industrial customers
- 40,000 dealers and distributors
- 400,000+ retail outlets

Our extensive reach and prompt service makes our products the first choice of millions of consumers in India and the Rest of the World.

### Our Overseas Operations

Pidilite's pigment business has a strong export base, with customers in all parts of the world. Our Adhesives and Art Materials business, too, has found good acceptance in a number of countries including Europe, the Middle East, Africa, SAARC Countries, Australia and Other Asian Continents.

We have developed an extensive range of adhesives and sealants to meet all the requirements of OEMs as well as Maintenance Customers. With our advanced technologies and commitment to innovation, quality and safety, we continue to develop products that meet the challenges of tomorrow. We offer Anaerobics, Cyanoacrylates, Epoxies, Silicones and Rubber, Polyurethane, Insulation Products, Maintenance Products and Cold Welding Compounds for a variety of industrial applications.

*~ Building Bonds ~*

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# ANAEROBICS

Fevicol ANR anaerobic adhesives and sealant are ideally developed for various needs and requirements of both production and maintenance applications. The products can be used as raw material in OEMs like Automobile, Engineering, and for the purpose of maintenance in industries like textile, sugar, fertilizers, refineries, chemical, power stations and steel plants etc.

## THREAD LOCKERS

High strength anaerobic formulation specially designed for sealing and locking of nuts, bolts and small screws.

Available in five variants i.e. Fevicol ANR 124, Fevicol ANR 134, Fevicol ANR 136, Fevicol ANR 138 & Fevicol ANR 146.

### Salient Features

- Withstands heavy vibration.
- Prevent corrosion and replace Nyloc nuts.
- Can be used for high strength applications.
- Can be dismantled with mechanical tools.
- Superior to conventional locking devices.



## RETAINERS

This is a specially formulated anaerobic retaining compound designed to provide holding and retaining power for round and cylindrical parts such as bearing by providing a 100% solid contact. Available in two variants i.e. Fevicol ANR 122 & Fevicol ANR 126



### Salient Features

- Heavy duty retainer.
- Prevent fretting corrosion.
- Allows uniform load distribution.
- Eliminates interference fits.
- Dampens vibration, shock & impact loads.

## PIPE SEALANTS

This is PTFE based anaerobic pipe sealant which is designed for pipe joints, pneumatic fittings and some hydraulic line applications. It tolerates realignment and adjustment of fitting during installation.

### Salient Features

- Seals hydraulic & pneumatic threaded fittings.
- Immune to fuels, oil, solvents & most chemicals.
- Eliminates Teflon tapes.
- Used for high pressure threaded joints.
- Ensure an extremely durable chemicals resistant seal.



## LIQUID GASKETS

This is a specially formulated anaerobic FIP Liquid Gasket to fill the gaps, cracks, hills, micro porosities by matting a 100% solid content. It forms a high strength seal between flanges and replaces conventional die cut and preformed Gaskets.



### Salient Features

- Ensure more reliable seal than conventional pre-cut gasket.
- Resistant to fuels & most chemicals.
- Suitable for machined and flange surfaces.
- Superior to conventional pre-cut gaskets.
- Reduces inventory of pre-cut gasket.



**Typical Properties**

Product	Type	Colour	Viscosity CPS/30°C	Static Shear Strength Kg/cm2	Breakaway Torque Kg. cm	Prevailing Torque Kg. cm	Gap Filling mm (max)	Setting Time (min)	Temperature Resistance °C	Specific Use
<b>THREAD LOCKERS</b>										
Stud Locker	ANR 124	Red	800-1000	150-250	150-300	100-250	0.25	05-20	-60 to +150	High strength. Securely anchors loose studs, eliminate need for blind holes.
High Temp./ Strength Stud Locker	ANR 138	Green	2300-2700	250-300	250-450	150-300	0.25	05-20	-60 to +180	For locking of piston rod assembly in shock absorber
Nut Locker	ANR 136	Brown	250-325	50-100	60-250	50-200	0.10	10-30	-60 to +150	Medium Strength Grade. Lock & Seal, Threaded Joints, Nuts, Bolts, Screws
Nut Locker	ANR 134	Blue	800-100	80-140	80-200	50-200	0.25	05-20	-60 to +150	Medium Strength, high viscosity grade Lock & Seals Threaded Joints, nuts/bolts, Screws
Wicking Type	ANR 146	Green	15-20	80-120	80-200	100-250	0.10	03-20	-60 to +150	Lock and seal assembled fasteners, seals sintered metal parts, welding, hair line cracks.
<b>RETAINERS</b>										
Retainer I	ANR 122	Green	150-275	170-220	150-300	100-250	0.10	05-20	-60 to +150	For retaining bearing, bushes strengthens slip & press fitted parts. Fills diametrical gap upto 0.1 mm
Retainer II	ANR 126	Green	1000-1500	150-200	150-300	100-250	0.25	05-20	-60 to +150	For heavy duty retaining, fills diametrical gap upto 0.25mm
<b>PIPE SEALANTS</b>										
Hydraulic	ANR 142	Brown	800-1000	100-140	100-200	50-200	0.20	05-20	-60 to +150	Seals pipe threads, pneumatic, hydraulic, instrumentation fitting, Seals upto 400Kg/cm2 pressure
<b>PASTE</b>										
POISE/30°C										
Pipe Sealants	ANR 171	White	300-500	30-50	40-140 (Brass) 40-140 (M.S.)	40-140 (Brass) 40-140 (M.S.)	0.50	0.5-10 (Brass) 10-45 (M.S.)	-60 to +150	Seals pipe joints and fitting against water, steam, fuel vacuum, chemicals etc. Seals pressure upto 400 kg/cm2 pressure.
Master Gasket	ANR 181	Redish	450-550	40-80	100-250	25-100	0.50	5-30	-60 to +150	Replaces gaskets. Easy disassembly of flanges. Seals upto 400 Kg/cm2 pressure.
Flange Gasket	ANR 191	Red	350-450	50-100	100-300	50-200	0.50	10-20	-60 to +180	Replace gaskets in air compressors, pumps, gear boxes, pipe flanges, Seals upto 400 Kg/cm2 pressure.
Flange Gasket	ANR 151	Red	6500-7500	85	100-200	60-150	0.50	5-30	-60 to +150	Replace gaskets in air compressors, pumps, gear boxes, pipe flanges, Seals upto 400 Kg/cm2 pressure.

Note: The above mentioned typical data should not be construed as specification.

Note: Torque value determined on mild steel nut and bolt, Size of bolt used for testing M10 x 25 mm. The above torques are considering 50Kg. cm. install torque. Tensile strength determined on mild steel strip having size. 100x25x1.6mm - overlapping area 3.25 sq. cm. Static Shear strength determined on mild steel pin and collar. Pin Size - length 50mm, diameter 12.65 mm. Collar size - ID - 12.65 mm. Collar Size - ID - 12.67 to 12.69, ht - 11 mm

**Directions for use :**

- For best results ensure that surface is free from rust, dust, moisture, oil, grease etc.
- Allow to cure.

# CYANOACRYLATES

Fevikwik is unique in its speed and bond strength. It can be applied in a wide range of industrial applications. It bonds almost anything to anything quickly and surely, because it is based on cyanoacrylate monomer and polymerizes very quickly in the presence of minute quantity of moisture on the surfaces of the material to be bonded.

## Fevi kwik®

FEVIKWIK 203 • FEVIKWIK 205 • FEVIKWIK 803

FEVIKWIK 701 • FEVIKWIK 702 • FEVIKWIK PD99 • KWIK KWIK

### Salient Features

- Fast setting - therefore faster production on assembly line.
- Excellent bond for a variety of surfaces.
- Ready to use product, no mixing required.
- Excellent chemical resistance.



- Small area is sufficient to get strong bond.
- Solventless adhesive.
- Bonds Plastics, metals and rubbers, glass, china and dissimilar substrates.

### Typical Applications

- Making rubber "O" rings of various sizes from a length of rubber cord, joining broken cassette tapes, repairing broken plastic parts of two-in-one, transistor, radios, T.V., VCR, etc.
- In Automobile repairs it is used for bonding rubber beadings, handle grips, decorative parts, rubber gaskets on metal, plastics knobs and lever etc.
- Ideal for fixing precious and semi precious stones in jewellery. Useful for repairs of domestic electrical appliances like mixture, grinders irons etc.
- It can be widely used in flex of vinyl sheets to metal frames in flex banners and hoardings etc.
- It can be used in manufacturing of acrylic gift items, POP materials and table top display items.



**Typical Properties**

	FEVIKWIK 203	FEVIKWIK 701	FEVIKWIK 702
Appearance	Clear transparent liquid	Clear transparent liquid	Clear transparent liquid
Viscosity @ 25°C	Approx. 1-5 Centi Poise	1-5 Centi Poise	80-120 Centi Poise
Gap Fill	0.05mm Approx.	0.05mm	0.15mm
Flash Point	>85°C	>85°C	>85°C
Shelf Life under dry conditions	9 months	9 months	9 months
Specific Gravity	1.06	1.06	1.06
Operating Temp.	-40°C to 80°C	-40°C to 80°C	-40°C to 80°C
Cure Speed:			
Metal - Metal*	<15 seconds	<25 seconds	<25 seconds
Plastic - Plastic**	< 5 seconds	<10 seconds	<10 seconds
Rubber - Rubber***	< 4 seconds	<15 seconds	<20 seconds
Shear Strength M.S. - M.S.	80Kg/sq.cm.	85-90 Kg/sq.cm.	100 Kg/sq.cm.
Full cure time at ambient	24 Hours	24 Hours	24 Hours

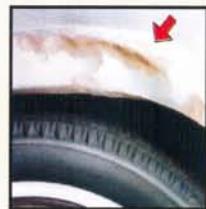
	FEVIKWIK 803	FEVIKWIK PD99	KWIK KWIK
Appearance	Clear transparent liquid	Clear transparent liquid	Clear transparent liquid
Viscosity @ 25°C	Approx. 80-100 Centi Poise	Approx. 1-5 Centi Poise	Approx. 1-5 Centi Poise
Gap Fill	0.15mm Approx.	0.05mm Approx.	0.05mm Approx.
Flash Point	>85°C	>80°C	>85°C
Shelf Life under dry conditions	9 months	9 months	9 months
Specific Gravity	1.06	1.05	1.06
Operating Temp.	-40°C to 80°C	-40°C to 80°C	-40°C to 80°C
Cure Speed:			
Metal - Metal*	< 25 seconds	<25 seconds	<10 seconds
Plastic - Plastic**	<10 seconds	<10 seconds	< 4 seconds
Rubber - Rubber***	< 5 seconds	<10 seconds	< 4 seconds
Shear Strength M.S. - M.S.	120 Kg/sq.cm.	90 Kg/sq.cm.	70 Kg/sq.cm.
Full cure time at ambient	24 Hours	24 Hours	24 Hours

Note: The above mentioned typical data should not be construed as specification.



## Salient Features

- It is mouldable.
- Ease of mixing.
- Cures to a hard mass.
- Can be shaped, drilled, filed, sanded, painted upon.



M-Seal is a two component epoxy putty having excellent adhesive properties and resistance to chemicals, etc. Useful for sealing, repairing, joining & for insulating ferrous and non ferrous metals, glass, asbestos, concrete, ceramic, marble etc.



## Typical Applications

- Making up uneven surfaces in ferrous & non ferrous casting.
- Filling blow holes & even giving smooth radii to joints / corners of wooden or metal patterns / masters.
- Repairing dents & also mending silencer pipes.
- Repairing damaged insulators, sealing leaking transformers, moisture proofing & preventing loose terminal connections.
- Sealing leaks in ships & boats.
- Sealing leakages in the radiator & petrol/ diesel tanks.

Typical Properties	UNIT	VALUE		
		IG	PHATHAPHAT	FEVISEAL
Mixing Proportion by volume or weight	---	1 : 1	1 : 1	1 : 1
Processing Time (Pot Life) @ 30°C for 100g mixture	Minutes	15 Approx	8-10	12 Approx
Setting Time (Hardening Time) @ 30°C	Minutes	60 Approx	20-30	50 Approx
Tensile Strength	Kg/cm <sup>2</sup>	200 Minimum	200 Minimum	200 Minimum
Compressive Strength	Kg/cm <sup>2</sup>	400 Minimum	400 Minimum	400 Minimum
Flexural Strength	Kg/cm <sup>2</sup>	380 Minimum	380 Minimum	380 Minimum
Impact Strength	Kg.cm/cm <sup>2</sup>	3.0 Minimum	3.0 Minimum	3.0 Minimum
Marten's Heat Distortion Temperature	°C	40 Approx	40 Approx	40 Approx
Hardness (By Shore D Durometer)	---	75 Minimum	75 Minimum	75 Minimum
Adhesive Shear Strength (M.S. to M.S.)	Kg/cm <sup>2</sup>	70 Minimum	70 Minimum	70 Minimum
Di-Electric Strength @ R.T.	kV/mm	10 Minimum	10 Minimum	10 Minimum
Water Absorption	%	0.5 Maximum	0.5 Maximum	0.5 Maximum
Density	g/cm <sup>3</sup>	2.50 ± 0.5	2.50 ± 0.5	2.50 ± 0.5
Service Temp.	°C	120°C	120°C	120°C

Note: The above mentioned typical data should not be construed as specification.

## Directions for use :

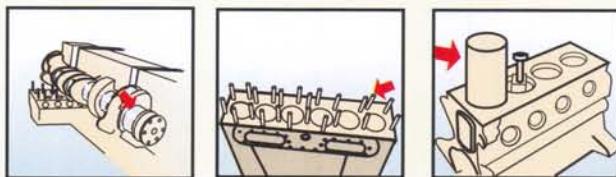
- Mix resin & hardener thoroughly till homogeneous.
- For best results ensure that surface is free from rust, dust, moisture, oil, grease etc.



Super Strength Epoxy Adhesive

**Salient Features**

- Good adhesion to a wide range of substrates, bonds virtually anything to anything like metal, China ceramic, marble granite some plastics, ivory, asbestos, glass, wood, leather, etc.
- High cohesive strength.
- Excellent solvent & chemical resistance.

**Typical Applications**

- Night lamps, Badminton Rackets, Speakers, Shuttles, Hand tools, brushes, Pens, Handicrafts, Bangles etc.
- Fixing crack in manifold casing.
- Fixing bolts on engine parts.
- Fixing cylinder sleeves.
- Bonding impeller vane.

**Typical Properties**

Fevitite is a two component thermosetting epoxy adhesive, comprising of resin & hardener. On mixing the resin & hardener Fevitite solidifies by polymerisation. Fevitite provides strong joints & its excellent low creep properties make it ideal for structural bonding applications. Fevitite has very good adhesive properties and bonds easily to almost all engineering material barring a few plastics.



- Enormous versatility to meet desired performance characteristics.
- No loss of volatile component during cure.
- Excellent dimensional stability, negligible shrinkage.
- Long lasting bond.



	FEVITITE SS		FEVITITE A1		FEVITITE A1 BULB GRADE	
	RESIN	HARDENER	RESIN	HARDENER	RESIN	HARDENER
<b>Base</b>	Epoxy	Modified Polyamide	Epoxy	Modified Polyamide	Epoxy	Modified Polyamide
<b>Mixing Ratio (Wt./Volume)</b>	10/10	8/10	10/10	8/10	10/10	8/10
<b>Colour</b>	Off White	Light Brown	Grey	Off White	Grey	Off White
<b>Appearance</b>	Opaque	Brownish	Opaque	Opaque	Opaque	Opaque
<b>Viscosity - Ps (Brookfield Rvt model)</b>	460 @ 25° C	350 @ 25° C	170 @ 30° C	110 @ 30° C	200 @ 30° C	110 @ 30° C
<b>Toxicity</b>	Non Toxic					
<b>Shelf life</b>	12 months					
<b>Tensile shear strength (After 24hrs ambient temp.) (MS : MS)</b>	160 kg/cm <sup>2</sup>	160 kg/cm <sup>2</sup>	150 kg/cm <sup>2</sup>	150 kg/cm <sup>2</sup>	100 kg/cm <sup>2</sup>	100 kg/cm <sup>2</sup>

Note: The above mentioned typical data should not be construed as specification.

**Directions for use :**

- Mix resin & hardener thoroughly till homogeneous.
- For best results ensure that surface is free from rust, dust, moisture, oil, grease etc.



## SINGLE PART EPOXY ADHESIVE

### Salient Features

- Solventless.
- Ease of application.
- Versatile.
- High adhesive strength.
- Excellent dimensional stability.
- Negligible shrinkage.
- Excellent solvent & oil resistance.



### Typical Applications

- Magnet bonding in magneto assembly in 2 wheelers.
- Magnet bonding in viper motors in 4 wheelers.
- Besides these applications Fevitite SC 101 is suitable for many more adhesive applications in various industries & other areas where faster rate of production is required.

### Typical Properties

<b>Appearance</b>	Light Green Colour, smooth paste.
<b>Solid Contents</b>	Minimum 99%
<b>Viscosity @ 25°C</b> By Brookfield Viscometer RVT / Spindle # 7/10RPM	1400 -1700 Poise
<b>Specific Gravity At Ambient</b>	1.10 - 1.25
<b>Tensile Shear Strength - SS to SS at 30°C (After curing at 150 ± 2°C) for 30 minutes</b>	Minimum 200 kg/cm <sup>2</sup>

Note: The above mentioned typical data should not be construed as specification.

### Directions for use :

- **SURFACE PREPARATION :** Surfaces to be bonded must be free from rust, dust, moisture, oil, grease etc. Mechanical roughening using emery paper, wire brush etc is recommended for good bond strength.
- **ENSURE HOMOGENEITY :** Ensure homogeneity of the material prior to use. If required, material should be slowly stirred to get homogeneity.
- **APPLICATION PROCESS :** The material should be applied by using spatula or brush either on one or both surfaces, which are to be bonded. Apply the material uniformly, sufficiently and align the two components firmly with a good contact pressure. Keep the components at 150°C ± 2°C in horizontal condition. Full curing is achieved after 30 minutes.
- **CLEANING :** Hands & tools can be cleaned with warm soap water immediately prior to start of curing process.
- **HANDLING PRECAUTIONS :** Avoid contact with skin, eyes etc. In case of eye contact & skin contact rinse with warm water thoroughly for several times & get medical attention. Please refer MSDS for Fevitite SC 101.
- **STORAGE :** Fevitite SC 101 when stored in original sealed containers, away from direct sunlight, rains & moisture will have a shelf life of 6 months at 5°C and 3 months at 30°C or below at ambient from the month of manufacture.

Fevitite SC 101 is a single component, specially formulated thermosetting epoxy adhesive having excellent adhesive strength. Since it is a single component adhesive, there is an ease of application and troublesome procedures such as measuring, mixing, stirring are not required. It allows faster rate of production by saving labour cost.

Pidiseal is a single component elastomeric silicone sealant which cures by absorbing moisture in air. It has very good adhesion to most of engineering material such as metals, plastics, ceramics, glass, fibre glass, etc.

## RTV SILICONE SEALANT

PIDISEAL N30 • PIDISEAL N40 • PIDISEAL 3P

### Salient Features

- Single Component, Ease of application.
- Fast curing at ambient.
- Excellent resistance to weathering, vibration, moisture. etc.
- Good Electrical Insulation.
- Can be applied on vertical and overhead joints.



### Typical Applications

- Form gasket of desired shape.
- Seals windshield in automobile.
- Seals refrigerator door beading.
- Seals gaps between bath tubes, wash basin and concrete.
- Sealing of cracks around window, ducts, fixture, etc.
- Sealing of leaks in gutters, ducts & piping etc.
- Formation of gasket for gear boxes, machine cover gauges & thermostat housing to prevent oil and water leaks.
- Protection of glass meter covers from vibration.
- Electrical & electronic appliances.

### Directions for use :

- Apply adhesive from the caulking gun.
- Loosely adhering material should be removed before application.
- For best results ensure that surface is free from rust, dust, moisture, oil, grease etc.

### Typical Properties

	PIDISEAL N-30	PIDISEAL 3P
Colour	Translucent	Translucent/Black
Flow/Sag at ambient	Nil	Nil
Density at ambient 30°C	1.04 gm/cm <sup>3</sup>	1.03 gm/cm <sup>3</sup>
Skin formation time at ambient (30°C)	7 minutes	8 minutes
Hardness Shore A after 7 days cure at ambient	22	22
% Elongation at break at ambient (30°C)	340	390
Dielectric strength as per ASTM D 149	17 KV/mm	19.7 KV/mm
After 7 days cure at ambient		
Paintability	Not paintable	Not paintable
Temperature resistance	-60 to +204° C	-40 to +180° C

Note: The above mentioned typical data should not be construed as specification.

## BRUSHABLE FORM

FEVIBOND • FEVICOL SR 998 FW • FEVICOL SRNL FW

- FEVICOL SR-724 S

This is a synthetic rubber based polychloroprene solvent containing contact adhesives. It exhibits immediate bond strength. The adhesive dries to a tough, flexible film with good resistance to water and aging. This adhesive can be applied by brush or a roller-coater.



### Salient Features

- This is used to bond flexible as well as rigid substrates.
- It exhibits outstanding bond to painted metal, mild steel, glass, galvanized steel, chip board, polyurethane sheet, porous substrates like leather, leather board, cementitious flooring, GRP, Rigid PVC board, etc which are encountered in Automotive, Railway, Vehicle building, Construction / electrical areas of ship-building and many other industries.

### Directions for use :

- For best results ensure that surface is free from rust, dust, moisture, oil, grease etc.
- Stir well the contents till homogenous .
- Close the lid firmly of the container after use to prevent solvent loss.
- Apply uniform contact pressure.

### Typical Applications

- Gasket fixing on oil cooler cover.
- Rubber bead to vehicle door.
- Repairing leather goods.
- Joining rubber to metal in helmet.
- Bonding rexine to foam in seal cover.

### Typical Properties

	FEVIBOND	FEVICOL SR 998FW	FEVICOL SRNLFW	FEVICOL SR-724 S
<b>Appearance</b>	Brown Liquid	Dark Brown Liquid	Dark Brown Liquid	Yellowish Opaque Paste
<b>Solid Content</b>	Approx. 20 %	Approx. 23 %	Approx. 20 %	Approx. 42 %
<b>Viscosity @30°C</b> By Brookfield Viscometer RVT / Spindle # 3/20RPM	16 - 20 Poise	20 - 25 Poise	18 - 22 Poise	225 Poise
<b>Coverage per Sq.meter</b>		Approx 250-350g per Sq. meter	Approx 250-350g per Sq. meter	-----
<b>Weight per liter</b>		0.9+0.05Kg	0.9+0.05Kg	-----
<b>Operating Temperature</b> (Short exposure up to 15 minutes to 100°C)	-20°C to 80°C	-20°C to 80°C	-20°C to 80°C	-20°C to 80°C
<b>Tensile Shear Strength on MS:PP</b> after 24 hrs. curing at ambient (Kg / cm <sup>2</sup> )	-----	-----	-----	1.00
<b>Peel Strength</b>				
a) Leather : Leather (Kg / inch) after 24 hrs. curing at ambient	9.00	13.50	10.00	-----
b) Leather : MCR Rubber (Kg / inch) after 24 hrs. curing at ambient	2.00	3.00	2.60	-----

Note: The above mentioned typical data should not be construed as specification.

## SPRAYABLE FORM

FEVICOL SP-4 • FEVICOL SP-5 • FEVICOL SP-6

This is a synthetic rubber (Polychloroprene) based solvent based contact adhesives. The adhesive dries to a tough flexible film with good resistance to heat and aging. This is suitable for spray application. It develops initial strength faster and good contact capability.



### Typical Applications

This is multipurpose adhesive and suitable for the automotive industry as a high performance trim adhesive. It forms a strong permanent contact bond between the following material - painted steel, mild steel, aluminum, plywood, chipboard, polyurethane foam, muslin, foam rubber, felt supported PVC, fabric, leather etc.

### Directions for use :

- For best results ensure that surface is free from rust, dust, moisture, oil, grease etc.
- Stir well the contents till homogenous .
- Close the lid firmly of the container after use to prevent solvent loss.
- Apply uniform contact pressure.

### Typical Properties

	FEVICOL SP-4	FEVICOL SP-5	FEVICOL SP-6
<b>Appearance</b>	Light Yellowish Liquid	Light Brown Liquid	Dark Brown Liquid
<b>Solid Content</b>	19 ± 0.5%	20 ± 2%	Approx. 20%
<b>Viscosity @30°C, CPs</b> By Brookfield Viscometer RVT / Spindle # 1/20RPM	100 - 300	140 ± 20	200 ± 50
<b>Drying-Time, Minutes</b>	1-2	2-3	2-3
<b>Tack Retention time at ambient, Minutes</b>	Approx. 10-15	Approx. 10-15	Approx. 10-15
<b>Softening Temperature, °C</b> ( JISK with 500g load / 24 hr.)	75	90	120
<b>Peel Strength* Kg/inch.</b> ( Measured @ R.T. on MS : Foam Cloth )			
i) Initial	0.9	1.2	1.5
ii) After 24 Hrs. @ R.T.	1.0	1.5	1.8
iii) After 24 Hrs @ R.T. + 24 Hrs @ 80°C	1.2	1.8	2.0
<b>Approx. Coverage, M<sup>2</sup></b>	7-8	7-8	7-8

Note: The above mentioned typical data should not be construed as specification.

\* Substrates used for softening temperature, Peel Strength test are - painted M.S. & both side cloth lined PU foam.

## FEVICOL PL-10 & PL-101

Fevicol PL Grade is a solvent based polyurethane contact adhesive. It exhibits immediate bond strength. The adhesive dries to a tough, flexible and transparent colourless film with good resistance to water and aging. Generally about 5 % Hardener ( Fevicol Hardener C ) is added for better results viz. Improved bond strength & heat resistance.



### Typical Applications

It is used to bond various flexible as well as rigid substrates. It exhibits outstanding bond to painted metal, mild steel, galvanized steel, chip board, flexible PVC, polyurethane rigid foam, thermoplastic rubber like SBS, ABS & polystyrene sheet, PVC leather cloth, PU foam, porous substrates like leather, leather board etc.

### Typical Properties

	<b>FEVICOL PL - 10</b>	<b>FEVICOL PL - 101</b>
Appearance	Colourless Transparent Liquid	Colourless Transparent to Slightly Hazy Liquid
Solid Content	15 %	14 %
Viscosity @ 30°C By Brookfield Viscometer RVT / Spindle # 2/20RPM	8 -12 Poise	5 -10 Poise
Peel Strength PVC : PVC after 24 hrs kg / inch	20	21

Note: The above mentioned typical data should not be construed as specification.

### Directions for use :

- Clean the substrates to be bonded. Surfaces must be dry and free from dust, dirt, oil, grease, mould-release-agent and other contaminants.
- Mix Fevicol PL-10 with appropriate quantity of Hardener C (3-5% by weight). Stir well to get a uniform mixture.
- Using a painting brush or air supported spray gun, apply the adhesive uniformly on both the substrates to be bonded. Porous substrates may require a second coat, which can be applied after 5-10 minutes of first coat.
- Allow to dry for 20-30 minutes at room temperature.
- HEAT ACTIVATION : Using an oven or hot air blower raise the temperature of the dried adhesive film to about 80°C for specific applications in automobiles. Align both the substrates and firmly press them together.
- Remove the excess adhesive carefully within one hour of bonding, using crepe rubber roll or any other soft tool.
- Allow to cure for 24 Hrs.

**Shelf Life :** Minimum 12 months from month of manufacture in the original sealed container at ambient.

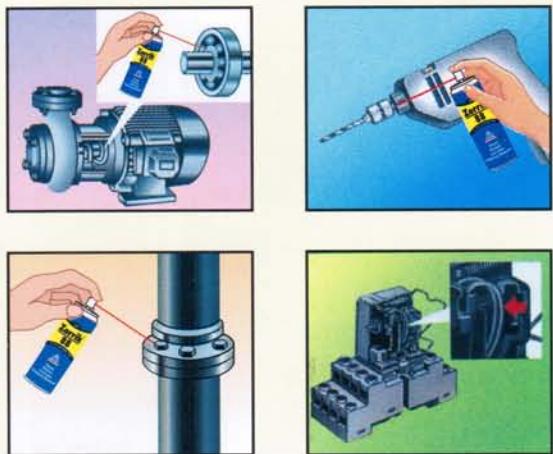
**Safety Precautions :** Keep the adhesive container closed when not in use. The adhesive is highly flammable hence smoking or naked-flame must be avoided in the working area. Store the adhesive in a cool (<25°C) area. Proper ventilation must be provided on the shop-floor. A detailed MSDS shall be available on request.

# Zorrik<sup>TM</sup>

## 88

### THE QUICK MAINTENANCE SPRAY

Zorrik 88 is quick maintenance spray / fluid, specially formulated to perform multiple maintenance tasks. It is easy to use and non messy. It is non staining and leaves no gummy residue. It has 88 uses & more.



### Typical Properties

Appearance	Transparent Pale Yellow solution
Viscosity at 300C (by B.F. RTV, SPL-1, RPM-20)	100 Cps. Max
Odour	Slight Characteristic
Specific Gravity	0.78 to 0.82
Flash point	43.3°C
PH Value	5.5 to 7.5

Note: The above mentioned typical data should not be construed as specification.

### Typical Applications

- **Cleans:** Zorrik 88 loosens and cleans surfaces from dirt, rust, grime, caked grease and oil. It dissolves most adhesives enabling easy removal of labels / stickers.
- **Lubricants:** Zorrik 88 is an effective lubricant. It penetrates easily and rapidly into the minor gaps of tenaciously held moving parts. It helps to reduce friction and enables easy movements of metal parts.
- **Penetrates:** Zorrik 88 penetrates into rusted mating metal parts and dissolves the rust, thereby loosens the assemblies like bolts, nuts, shafts and bearings etc.
- **Displaces moisture:** Zorrik 88 penetrates and goes under surface moisture and forms a protective film between moisture induced short circuits in electrical contacts.

### Salient Features

- Can perform multiple function tasks.
- Easy to use (D.I.Y. Product).
- It is non staining and leaves no gummy residue.



## m-seal<sup>®</sup> PLUMBER

### Liquid Pipe Sealant

Ideal for joining and leakage plugging G.I./ C.I. pipe joints

### Salient Features

- Easy stain removal.
- Flexible setting.
- Sets in 10 minutes.
- Available in Black and White variant.



### Benefits

- Stains of sealant on hands can be easily removed.
- Pipe joint can be dismantled if required.
- Pipe can be put to use fast.
- Suitable for open and concealed fitting.



**Self Adhesive PVC Electrical Insulation Tape**  
Conforming to IS : 7809, Part 3, Section 1.

### Salient Features

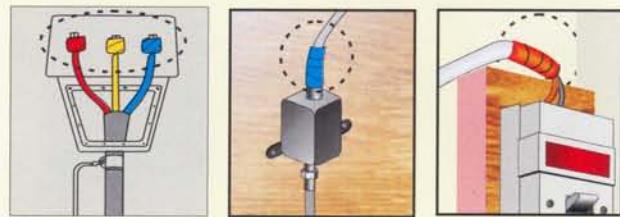
- India's first insulation tape with an ISI mark.
- Self-extinguishing, does not allow source of fire to spread.
- Waterproof, weatherproof and non-ageing.
- Provides long lasting insulation.
- Offers firm grip and protects electrical conductors from the effect of acids, alkalies and oils.
- Maintains insulation in different usage and temperature conditions.



### Typical Properties

S. No.	PARAMETERS	OBSERVED VALUES
1.	Thickness of tape in mm	0.10 - 0.15
2.	Adhesion to steel N/10 mm width	1.6 / 10 mm width minimum
3.	Adhesion to Backing N/10 mm width	1.3 / 10 mm width minimum
4.	Tensile Strength N/10mm width per mm thickness minimum	150 N/10 mm width per mm thickness, minimum
5.	Electric strength at room temp. (KV/mm)	40 KV/mm minimum
6.	Electric Strength after humid conditioning or water immersion for 24 HRs. at 27 + 20 C & 93 + 2 % RH	35 KV/mm minimum
7.	Flammability	Self Extinguishing
8.	Electrolytic Corrosion	No Corrosion of Cu wire
9.	Stability to Accelerated Aging at 65 + 10C & 80% Relative Humidity for 96 Hr. N/10 mm width	No deterioration of change in properties of the backing Minimum 1.3N/10mm width
10.	Insulation Resistance in Ohms	1.0 x 10 <sup>9</sup> ohms minimum.

Note: The above mentioned typical data should not be construed as specification.

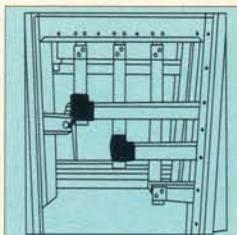


### Typical Applications

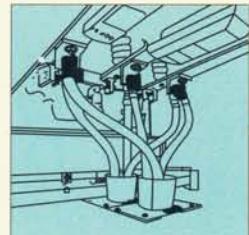
- Insulation of electrical wire joints
- Colour Coding (3 Phase wiring).
- Insulating cable lugs in meter panels.
- Insulating cable joints in submersible pump.
- House hold electrical appliances.

# monoplast

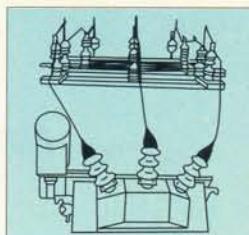
M-Seal Monoplast, available in tape & lump form, is a single component, permanently elastic non corrosive sealing compound with high Insulating properties. Monoplast, in tape form can be very easily applied with minimum skill & wastage.



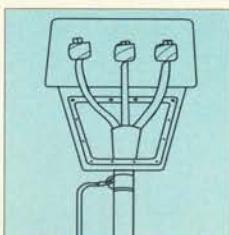
BUS BAR JOINTS



INDOOR TERMINATION  
BOX



JUMPER CONNECTIONS



MOTOR TERMINAL BOX

It is mouldable and adheres to most clean dry surfaces including PVC, XLPE and Rubber cable insulation Aluminum, Copper, Steel, Lead & Porcelain. It can also easily be retained in place with the application of PVC non-adhesive tape, which is normally used for colour coding.



## Typical Applications

- When HV/XIPE cables are used in bitumen type transformer/switch gear boxes, the terminals & cable lugs can be insulated easily with M-Seal Monoplast.
- It can also be used for, insulating bus bar joints, as well as, rounding off sharp edges on bar joints and bolted connections, to prevent corona discharge.
- Insulating and sealing connections between the terminals of transformer bushing and jumper wires to prevent oxidation and corrosion. Can also be used for insulating HV motor terminals.
- Insulating exposed electrical connections, as a safety precaution.
- Sealing cable entry portions of switch gear and motors. To prevent entry of vermin and rodents.

## Directions for use :

- For best results ensure that surface is free from rust, dust, moisture, oil, grease etc.
- Apply gently around the joints.

## Typical Properties (of Tape form & Lump form):

<b>Colour</b>	Dark Grey - Black
<b>Consistency</b>	Soft & tacky lump/tape
<b>Penetration at 27°C as per IP 49158</b>	100 - 130
<b>Softening Point</b>	150°C
<b>Water absorption after 24 hours at 25°C : t 2°C</b>	0.2% (Max) at room temperature.
<b>Solubility</b>	Insoluble in water, mineral acids and alkalies, but affected by organic solvents and mineral oils
<b>Dielectric Strength</b>	9 KV/mm

Note: The above mentioned typical data should not be construed as specification.

## 1 ZORRIK-H.P.

Specially formulated product having high compressive strength along with high temperature and corrosion resistance. Recommended for repairing worn-out pump housings, wear rings, bearing housings, strengthening of pipes, tubes, sections etc. Ideal base layer for various Zorrik Specialities.



## 2 ZORRIK-CERA MICRO

Micro-Ceramic beaded formulation offers excellent resistance to abrasion and erosion. Recommended for cyclones, dust collector, slurry pumps and such components exposed to severe environment.



## 3 ZORRIK-CERA MACRO

Macro-Ceramic filled formulation. Offers excellent resistance to abrasion and erosion. Recommended for cyclones, dust collector, slurry pumps and such components exposed to severe environment.



## 4 ZORRIK-WEAR RESISTANT

Ceramic filled epoxy putty for repairing components subject to wear, cavitation as well as corrosion. Recommended for repair of worn-out fan blades, pump shafts, flights of screw conveyor, bearing areas, feed water pump casings, valve linings etc.



## 5 ZORRIK-RAPID

A unique formulation which cures within 5 minutes & is easily machinable. Suitable for arresting on-line leakage in transformers, capacitors, process vessels, condensers, oil sumps, fuel tanks, hydraulic lines etc.



## 6 ZORRIK-STEEL

A speciality formulation, cures to a strong and solid metallic mass which can be easily machined. Suitable for filling up pitting & voids in engine blocks, blow holes, cracks in castings, strengthening of thinned section & plugging on-line leakage. Ideal base layer for various Zorrik specialities.



## 7 ZORRIK-CERA BRUSH

Ceramic filled formulation, provides protection against bi-metallic corrosion as well as erosion. Easy in matching profiles of various process equipment, facilities increase in operating efficiency. Recommended for pump impellers & casing, end shields of heat exchangers, ceramic insulators etc.



## 8 ZORRIK-WET

A non-rusting formulation, very effective for carrying out repairs in wet condition viz. Pipes, valves, pumps etc. Also recommended for fixing ceramic tiles in swimming pools without draining out water.



## 9 ZORRIK-F

A fast curing solvent free epoxy based mortar having excellent adhesion to old and new concrete surfaces. It is ideal for quick and durable repairs of Flor and Concrete structures. Zorrik F has excellent mechanical strength and chemical resistance. The system consist of ready to use kit, consisting of specially formulated resin, hardener and aggregates which are to mixed thoroughly in a specified ratio. It can resist erosion, abrasion, compression and it is four times stronger than concrete. Zorrik F can be applied to metallic surfaces also.



## HOW TO APPLY ANAEROBIC ADHESIVES & SEALANTS

### STEPS TO ENSURE FEVICOL ANR ADHESIVE SEALANTS WORK EVERY TIME.

1. Clean metal surfaces with shop cloth or solvent to remove oil, grease and dirt.
2. Apply Fevicol ANR to threads, cylindrical surfaces or flanges.
3. Assemble so that adhesive is inside the metal to metal joints.
4. Locking and sealing typically occur within 1/2 hour to 1 hour, building up full strength within 24 hours.

**CURING :** There are many factors that effect the speed at which anaerobic adhesive sealants cure. The rate depends on the type of metal, size of the gap, the degree of cleanliness of the metal surface and the temperature. Excess material applied remains liquid on exposed metal surface.

**Type of surface :** Copper and brass surface provide fast cures. Iron and steel are fast. Pure aluminum is slow. Some plated surface like zinc, cadmium and passivated metal parts are slow cure.

**Size of gap :** Thin bond lines (0.13mm) cure faster than thick bond lines (0.25mm).

**Cleanliness :** Curing is faster on clean surfaces. Oil, grease and dirt slow the process of curing.

**Temperature :** The higher the temperature the faster the cure.

**RESISTANCE TO TEMPERATURE :** Some machinery and piping is used at higher temperatures than room temperature. In general Fevicol ANR anaerobic agents are completely stable upto 150°C constant temperature and its performances is not effected. It can withstand even occasional spells of high temperatures as high 200°C.

**RESISTANCE TO SOLVENTS :** Anaerobic adhesive sealants on complete curing harden into tough and highly stable solid materials. They are resistant to water, oils, fuels, organic solvents, refrigerants, LPG, mild acids and alkalies.

**VACUUM AND PRESSURE SEALING :** Anaerobic sealants are suited for sealing threaded joints of various types of fluid piping including pipe joints for water and gas, as well as air, vacuum and oil pressure pipe joints. There is no shrinkage or cracking during hardening since it does not contain solvent and they have excellent resistance to vibration and loosening. Tests have shown that pipes sealed with pipe sealant can seal pressures as high as 400 kg/cm<sup>2</sup>.

**CORROSION PREVENTION :** Use of anaerobic adhesives is close fitting joints can inhibit corrosion between the joint at the bonded interface. (Because of this advantage one could avoid seizing & the problems of removal at a later time.)

### DISASSEMBLY OF ADHESIVE BONDS :

Parts assembled using FEVICOL ANR can be brought apart simply by using ordinary tools. Stronger bonds can be heated upto 250°C before using mechanical methods.

### HANDLING :

- FEVICOL ANR adhesive sealants are non-toxic. A soap and water wash, after handling FEVICOL ANR is sufficient.
- Tools, brushes etc, if used for the application of FEVICOL ANR should be cleaned with acetone or other solvents, while the adhesive is still in a liquid form.
- Never pour any surplus adhesive back into the bottle.
- Take precautions to prevent any metal contamination in the bottle.

**STORAGE :** Store FEVICOL ANR away from heat and sunlight in a cool, dark place. Refrigeration is not recommended. The shelf life at room temperature is 12 months from the date of manufacturing.

### PACKING :

LIQUIDS - 50 ml, 250 ml Plastic bottles,  
PASTES - 100 gms Tube and  
250 gms Cartridge.

Criteria of Selection (Typical Information for Guidance)

	COLOUR CODE	POOR	FAIR	GOOD	EXCELLENT				
No.	Details	Epoxies	Cyanoacrylates	PU Adhesives Polyurethanes	Rubber Based Adhesives	Structural Adhesives	Silicones	Water Based Glues	Anaerobic Adhesives
1.	Weathering Resistance UV Resistance	FAIR	FAIR	EXCELLENT	POOR	POOR	EXCELLENT	POOR	FAIR
2.	Water Resistance	EXCELLENT	POOR	GOOD	FAIR	GOOD	FAIR	POOR	GOOD
3.	Oil Resistance	EXCELLENT	FAIR	EXCELLENT	POOR	GOOD	EXCELLENT	FAIR	GOOD
4.	Temp Resistance	GOOD	POOR	GOOD	POOR	GOOD	EXCELLENT	POOR	GOOD
5.	Flexibility	POOR	POOR	EXCELLENT	GOOD	FAIR	EXCELLENT	POOR	POOR
6.	Mechanical Properties	EXCELLENT	POOR	FAIR	POOR	GOOD	POOR	FAIR	GOOD
7.	Instant Bonding	POOR	EXCELLENT	POOR	FAIR	EXCELLENT	POOR	POOR	POOR
8.	Wood - Wood Bonding	EXCELLENT	FAIR	FAIR	GOOD	GOOD	POOR	EXCELLENT	POOR
9.	Metal - Metal Bonding	EXCELLENT	GOOD	GOOD	FAIR	EXCELLENT	GOOD	POOR	EXCELLENT
10.	Thermocol	POOR	POOR	POOR	POOR	POOR	POOR	GOOD	POOR
11.	Teflon	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR
12.	Hard Board - Rexin	FAIR	GOOD	FAIR	EXCELLENT	EXCELLENT	FAIR	FAIR	POOR
13.	PVC - PVC	FAIR	EXCELLENT	FAIR	GOOD	EXCELLENT	FAIR	POOR	POOR
14.	Dis Similar Substrates	GOOD	EXCELLENT	FAIR	FAIR	EXCELLENT	FAIR	POOR	POOR
15.	ABS - Foam	POOR	GOOD	EXCELLENT	EXCELLENT	FAIR	FAIR	POOR	POOR
16.	Nylon - Nylon	POOR	GOOD	POOR	FAIR	GOOD	POOR	POOR	POOR
17.	Polycarbonates	POOR	FAIR	FAIR	POOR	GOOD	POOR	POOR	POOR
18.	Polyethylene	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR
19.	Polystyrene	GOOD	GOOD	GOOD	FAIR	GOOD	GOOD	POOR	POOR
20.	Concrete	EXCELLENT	FAIR	GOOD	FAIR	GOOD	FAIR	POOR	POOR
21.	Ceramic	EXCELLENT	GOOD	FAIR	POOR	GOOD	FAIR	POOR	POOR
22.	Polypropylene	GOOD	GOOD	GOOD	FAIR	GOOD	FAIR	POOR	POOR
23.	Alkali Resistance	EXCELLENT	POOR	FAIR	POOR	FAIR	FAIR	POOR	FAIR
24.	Acid Resistance	GOOD	FAIR	FAIR	FAIR	FAIR	POOR	POOR	FAIR
25.	General Chemical Resistance	GOOD	FAIR	FAIR	FAIR	FAIR	FAIR	POOR	FAIR

### TECHNICAL DATA

1.	1 kg	= 9.81 N
2.	1 gallon (US)	= 3.785 litre
3.	1 N/mm <sup>2</sup>	= 10.2 kg/cm <sup>2</sup>
		= 145 PSI
4.	1 kg/cm <sup>2</sup>	= PSI
		14.2
5.	1 N.m	= 0.102 kg.m
		= 0.738 lb.ft
6.	1 Pa	= 1 N/m <sup>2</sup>
	1 bar	= 10 <sup>5</sup> Pa
		= 10 N/cm <sup>2</sup>
		= 1 kg/cm <sup>2</sup>
7.	F	= °C X 1.8 + 32
8.	1 cP (centipoise)	= 1 mPa.S

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**Institutional Sales Division**

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*Typical values should not be construed as specifications.*