

## Product Description

Lockwell TG 929 is a plural component system composed of a proprietary polymeric binder, providing excellent performance in highly corrosive, chemical and abrasive environments, at ambient or elevated temperatures. This product is designed for industrial use at elevated temperatures and will maintain its physical properties under continued exposure at high constant temperature both in exposed as well as immersion conditions.

Lockwell TG 929 is resistant to many solvents, hydrocarbons, steam, chemicals including high levels of Hydrochloric Acid, Sulphuric Acid, Alkalis, Mineral Spirits, Cutting oil, Sulphur fumes, Seawater, in ambient or elevated temperatures. This Product has good bond to rubber, metals as well as concrete and also suitable in cryogenic applications.

Lockwell TG 929 is excellent for lining vessels in direct constant contact with Hydrochloric acid at elevated temperature and acid fumes.

## Application Area

- Internal / External coating for flow lines and transmission lines
- Petroleum and chemical tanks
- Petroleum and chemical process equipment
- Petroleum and chemical bulk carriers
- Offshore rigs and platforms
- Sour gas pipelines and process equipment
- Patching pipes, fill castings, repair, bond broken parts

## Features

- 00% solids, No VOC content
- Fast curing trowel grade
- Back to service in 24 hours
- Excellent chemical resistance to wide range of chemicals
- Suitable for HCL at elevated temperature
- Good bond to rubber
- High temperature resistance- up to 200°C
- Inflammable without carbonization
- Good abrasion and impact resistance
- Lockwell TG 929 maintains strong adhesive strength and can be used for pitted steel
- Lockwell TG 929 is machine able and can be used as a repair or rebuilding compound

## Technical Data

Mixing Ratio	5.7 A : 1B
Pot Life	15 – 20 min (500ml Volume)
Tack Free time	35 – 40 minutes
Maximum recommended recoat window	45 -50 minutes
Return to Service time	4 – 6 hours

## Performance Data

Solids by volume	100%
Volatile Organic Compounds	0 gm/ lit
Theoretical coverage	1m <sup>2</sup> / lit @ 1mm
Specific Gravity (kg/ liter)	A-1.7, B-1.08
Viscosity at 25°C in cps)	A:Thick pourable consistency, B-4000
Tensile strength ( ASTM D 638 )	30 to 35 MPa
Adhesive shear strength (ASTM D 1002)	12 - 14 MPa
Flexural strength (ASTM D 790)	50 - 60 MPa
Elongation (ASTM D 638)	3 - 5%
Hardness (ASTM D 2240)	90 Shore D
Water Vapour Permeability (ASTM E 96)	< 0.5 perm-in
Water Absorption -24 hours (ASTM D 471)	< 0.5%
Thermal Fatigue ( -35°C to 120 °C, 20 cycles)	Pass
Pinhole Pressure Test @ 100 Kg/cm <sup>2</sup>	Pass
Impact Resistance Izod D 256	5 - 7
Fire Rating UBC	Class 1
Flash point Pensky Martin	NA
Service temperature	175°C constant, Spike-200°C Immersion-150°C
Abrasion Resistance (ASTM D 4060)	< 45 mg loss Taber CS 10 wheel 1Kg/1000 rev

## Application

Lockwell TG 929 is a trowel applied product and do not attempt to dilute and use any alternate method of application. Use under controlled conditions which will completely avoid material loss due to exothermic heat, faster gelling and pot life. Stripe coat details such as brackets, edges, corners, welds and work well into the substrate with a good quality stiff brush. Apply using a spatula with lift coats of 600-700 microns each to recommended thickness of Lockwell TG 929. Finish the last build coat with a hard rubber roller for a smooth finish. Standard abrasive blast with angular abrasives is the preferred method of preparing surfaces prior to application of the product and mandatory in dynamic applications. Preparation can also be accompanied by use of proper hand tools to remove all oxidation or other loose particulates.

Follow any surface preparation with proper solvent (MEK, Acetone) wipe to remove residues and e prior to application of the products. Surfaces must be sound, dry, clean, free of oil, grease, dirt, mildew, and other foreign substances. Abrasive blast cleans the substrates to Sa 2½ BS 7079: Part A1: 1989 (ISO 8501-1: 1988). The average surface profile to be in the range 60-75 µm. Manually prepared surfaces should be to a minimum standard of St 3 BS 7079: Part A1: 1989 at the time of coating.

**Mixing Instruction**

Mixing ratio for Lockwell TG 929 is 5.7:1 by volume. Add 5.7 parts of Base (A) to 1 part of Hardener (B) to a wide mouthed mixing container. Mix gently the Side A (base) using a heavy duty slow speed drill fitted with a mixing paddle or commercially available paint mixers. Add side B (hardener) to side A and mix it thoroughly until a streak free homogeneous colour is obtained.

Lockwell TG 929 is ready to be applied. Mix only the quantity that can be used during the pot life. Discard material when the mixed material start gelling and do not try to re-use by adding thinner. Mixing this product manually by hand is not recommended. When environment temperature is 10°C or lower, the product can be indirectly heated to 20-25°C. This will make mixing easier and accelerate the curing and may have effect on Pot life. The mixed material will develop high exothermic heat and it is advisable to use small quantity to prevent wastage and mix it in a wide mouth container keeping the mixing vessel in cold/ice water where possible.

**Storage and Handling Precautions**

Twelve to eighteen months in factory delivered, unopened drums. Keep away from extreme heat, freezing, and moisture. The use of drum heaters is encouraged to reduce material viscosity at low temperatures.

Do not open until ready to use, and store in a sealed container after opening. Do not leave it on open sun. Not good for applications below 7°C.

**Packing**

Lockwell TG 929 is available in 13.40 liters (21.60 kg) and 6.70 Liters kits (10.8 kg) shipped in metal/Plastic pails of 11.4 liters (19.44 kg) of Part A and 2 liters (2.16 kg) of part B or 5.7 liters (9.72 kg) of part A and 1 liter (1.08 kg) Of Part B.

**Chemical Resistance**

Each Lockwell product formulation has varying levels of resistance to specific chemicals. Please review the chemical immersion test data included in the Lockwell Test Book for general resistance to specific chemicals at specific concentration levels. Chemical concentrations are complex and when combined with temperatures above ambient levels this complexity increases exponentially. Contact Lockwell Technical Personnel for specific recommendations for chemical resistance prior to specifying these products in this application type. Consult with Lockwell for more details on product and chemical resistance. A minimum of 24 hours curing required for full physical properties. Lockwell TG 929 may be force cured at 80°C for 6 hours for faster curing. The following chart is the results of Lockwell TG 929 immersed in chemicals and tested as per ASTM D 3912.

Chemicals	Resistance
Hydrochloric acid up to 33% at elevated temperature	R
Sulphuric Acid 70%	R
Sulphuric Acid 50% at elevated temperature	R
Nitric Acid 15%	R
Acetic Acid 10%	R
Ammonium Hydroxide 50%	R
Crude Oil, JetFuel,	R
Gasoline, Kerosene, Diesel	R
Motor Oil, Lubricants	R
Methanol, Ethanol	R
Xylene, Toluene	R
Acetone, MEK	R
Hydrogen Peroxide 30%	R
Refined Petroleum products	R
Sewage, Waste water	R
Most Industrial effluents	R
Sea water	R
Water @ 150 °C	R

**Additional Information – Disclaimer**

The information provided herein, especially recommendations for the usage and the application of our products, is based upon our knowledge and experience. Due to different materials and equipment used, as well as varying working conditions and environments beyond our control we strictly recommend carrying out intensive trials to test the suitability of our products with regard to the required processes and applications. This data sheet is provided free of charge and we do not accept any liability with regard to the above information or with regard to any verbal recommendation, except for cases where we are liable of gross negligence or false intention.