For some 30 years URETEK has led the world in developing and offering the most advanced and accurate systems of geo-polymeric injection techniques for ground engineering.

Here in Australasia we have been a part of URETEK Worldwide since 1995. We have also operated wholly owned subsidiaries in Thailand and Japan since 2001.

We have successfully treated over 4,000 sites, varying from small domestic applications to large commercial, industrial, civil and mining projects. Worldwide, URETEK has completed tens of thousands of projects.

All URETEK works are planned, supervised and executed by our own experienced personnel. Our business is not franchised and we do not sub-contract. We guarantee our products.

Philip Mack, CEO, URETEK Ground Engineering

In essence The URETEK Method is like keyhole surgery. It’s the answer to the drawbacks of traditional underpinning and pressure grouting.

URETEK offers Many Benefits:

- URETEK is fast! Most jobs take a day or two.
- No excavation. Constant structural support.
- Treated areas may be used again in minutes.
- No mess. Clean structural resin injection.
- No water or moisture. Little noise.
- Minimal disruption. Usually no need to vacate nor move furniture - or machinery & shelving.

DISCLAIMER: This publication depicts and describes results we have typically and repetitively achieved for many years. However site conditions vary. Only our written quotation will describe your particular project.

We do NOT offer our services as consulting engineers.
40 tonnes of glass remained in place and normal work continued as URETEK raised and re-supported this floor.

URETEK: ADVANCED GROUND ENGINEERING TECHNOLOGY

Technology for raising, re-leveling, re-supporting and strengthening moving and sunken construction resting on or in the ground. Applications include buildings and other structures, concrete floors and pavements, in residential, commercial, industrial and civil environments.

Uretek Slab-Lifting (USL)
Raising and re-leveling, carried out by injecting expanding geo-polymeric structural resins under the element to be raised, through holes the size of the old one cent coin.

Uretek Deep-Injection (UDI)
Improved ground bearing capacity is achieved by this patented technology that compacts and densifies foundation soils, again by similar injection through tiny holes but down to multiple depths in weak strata.

Uretek Geoplus
The patented UDI resin formulation, brings to bear controlled forces of up to 10,000 kPa.

Uretek PowerPile (UPP)
Patented and initially offered as UPP Compaction, prefabricated elements are inserted through 36 mm Ø holes and expand up to 350 mm, replacing soil whilst concentrating soil densification in a very defined volume. Structural versions of UPP’s are to provide more pile-like support with skin friction and end bearing characteristics.

Uretek Liquefaction Mitigation
In regions prone to earthquake, patented injection is available to alter the characteristics of non-cohesive foundations at depth, to limit the risk of liquefaction and resulting catastrophic collapse.

Uretek Stitch-in-Time
Patented process for restoring load transfer to jointed, cracked or otherwise damaged concrete highways, roads, taxiways & runways. This system is far superior to conventional steel dowel-bar retrofitting, in terms of cost, performance and time.

Uretek Hyper-Optics
Non-invasive inspection and analytical technology which finds and maps voids under pavements.

Uretek Polymer Pile system
This patented system involves the creation of an insitu polymer/aggregate pile that cures instantly to act like a friction pile.

Resources
Sharing the results of scientific testing and continual practical experiences worldwide, URETEK in each country provides practical remediation solutions to a wide range of problems. We encourage the involvement of our client’s engineer as consultant or works superintendent.

Environmental and Sustainable Technology
All URETEK components are completely machine pre-mixed before injection. The result is an inert material that is non-toxic, has an indefinite life span and can not leach out into the environment. There is nothing to run into drains during or after installation - and no solvents. URETEK is clean, quiet and is used in hospitals and nursing homes as well as by the food industry.

URETEK materials & processes have a low carbon footprint. Expansive resins greatly reduce material consumption compared to alternative methods, substantially cutting down on production & transportation emissions. Our efficient processes involve no demolition, excavation or heavy machinery & create no waste; repairing not replacing; restoring not rebuilding.

Bio-resins made from sustainable resources are available on request.
The unique URETEK Method used to raise concrete floors, roads and even whole buildings, we call Slab-Lifting because that was its first area of application back in 1983. It is fast and economical and causes minimal inconvenience to our clients’ normal activities.

Experienced technicians inject the appropriate URETEK resins through tiny pattern-drilled holes, immediately below the slab or footing. The components are precisely machine-mixed and chemically expand almost immediately, exerting a mould pressure that fills voids encountered, re-establishing or confirming structural support. They cure, again almost immediately, to a strong stable and long lasting material that is immediately trafficable and environmentally neutral.

Sub-grade compaction has been found to occur contemporaneously down to 500 mm in weak ground. Continued injection allows lifting to fractional tolerances. The spread of material is controlled, whilst the rate of lift is a gentle, precise operation. Movement is carefully monitored by laser and computer level. Results are immediate and permanent.

With a mould pressure of up to 400 kPa, (40 tonnes per square metre), it is usual to lift floors - and entire buildings - with shelving and machinery in place, resulting in huge savings in both time and money.

After re-supporting the slab, continued injection raises it, guided by laser level.

For over 12 years, the fast and cost-effective alternative to piling and underpinning. Patented URETEK Deep-Injection has strengthened ground bearing capacity by up to 500%.

Foundation soils are improved continuously down to considerable depths - or at just one specific depth - by injection of a controlled quantity of URETEK’s expanding UDI resin, through small diameter injection tubes that are installed to predetermined depths.

The expanding resin force first compresses the surrounding soil until it can no longer be resisted by the counter-force of the entire structure and soil mass above and the friction angle of the soil.

At the precise moment the structure begins to lift, monitored by laser, injection is halted, leaving a foundation with a considerable factor of safety. Alternatively it can be continued and the structure lifted and re-levelled as required.

The properties of URETEK Geoplus UDI resin, that offers controlled forces of up to 10,000 kPa, are essential to the procedure.

Penetrometer Testing

Investigation by the client’s geotechnical engineer can predetermine ground suitability, weak stratum and injection depths for UDI. Alternatively our advanced hand-portable penetrometers may be used to establish the weaker layers of the foundation soils down to 10 metres and afterwards to give an approximate indication of the extent of improvement.
PowerPiles are not piles in the traditional sense. They work efficiently as combination soil replacement and compaction grouting elements, aided by skin friction/cohesion and base resistance.

All materials and equipment arrive on site in one purpose-designed self-contained vehicle, with a team of three men. Installation equipment is portable and one man can safely carry several compressed 30 mm diameter, shrink-wrapped, prefabricated PowerPile elements at a time. Element lengths are currently available from 1000 to 8000 mm, and potentially longer in the future.

In essence, an installed PowerPile is a geotextile shell filled with an expanded URETEK resin that can have a compressive strength of 1,000 kPa to 10,000 kPa; and more, if required. Using geotechnical bore-hole information, resin quantities are predetermined and computer-monitored.

As the compressed element is expanded from the bottom up, adjacent weak ground is displaced and compacted. The resin hardens and there is immediate increased support. The shape of the PowerPile should be irregular, the shape being affected by the varying strength of ground resistance at the different depths. Can be installed in soft, loose sand.

PowerPiles themselves require no excavation and thus contribute no resultant spoil that needs disposal. Site conditions of course vary but 10 PowerPiles per day to 6000 mm depth is achievable.

Installation necessitates little disturbance to landscaping. PowerPiles can be inserted down to 6000 mm, even from under a normal domestic ceiling. There is minimal noise and the process is remarkably clean. Work can be done overnight.

PowerPiles would normally be installed up to the underside of footings but shorter lengths may be lowered and expanded to locally ‘bridge’ individual weak layers and lenses at depth, transferring load.

Unique and Patented Ground Engineering from URETEK

URETEK PowerPiles provide a means to easily retro-improve foundation support... like keyhole surgery.

Accomplished cleanly, without excavation or mess, through cored holes not much bigger than a 50 cent coin, these expanded polymer, compacted pillars suit strata that will yield under pressure.

**Installation of PowerPiles is convenient and precise:**
1. A 36 mm diameter hole is driven into the ground by machine.
2. A compressed 30 mm diameter, shrink-wrapped, prefabricated PowerPile element is inserted manually.
3. Its central 10 mm diameter pipe core...
4. is then connected to a computer-controlled extraction machine...
5. and URETEK resin is injected as the pipe is slowly withdrawn, expanding the element up to 350 mm in weak soil strata.
Unlike piling or masonry or concrete ‘Underpinning’, URETEK is not rigid and does not transfer the load directly to a different stratum of soil – which could cause differential movement between unequally supported sections of the building*. The row of ‘before’ and ‘after’ photos below shows typical results of URETEK Ground Engineering correction: exterior brickwork closure, architrave correction, floor level raised and wall cracking closed up.

The modern alternative to concrete underpinning

Insurance Claims
When buildings have sunk due to (say) broken pipes causing washaways, insurance company loss assessors and their engineers often turn to URETEK to provide the most cost-effective, long-term solution convenient to their client.

* Ref (Australian Standard, AS2870, warns, “Underpinning should generally be avoided where the problem is related to reactive clay,” & “Deep underpinning should only be considered as a last resort”).
URETEK raises, re-supports and re-levels sunken and moving pavements of residential, industrial and civic properties – quickly and economically, with minimal disruption.

With The URETEK Method there is no excavation, no demolition, no water and practically no mess. URETEK is generally more economical and much more convenient than cutting out, removing and replacing slabs.

URETEK work is fast! Driveways, walkways, loading docks, hardstand areas and parking areas generally only take hours per section to correct. Concrete is re-supported, surfaces are re-aligned and water ponding removed. Cars, forklifts and even the heaviest of trucks can drive over the area 30 minutes later.

Often pavement failure is manifested by dirty water pumping out from under a slab due to the passage of a vehicle. Sometimes during dry weather, past staining is evident or there is a deposit of sand along the joint line. This sand or dirty water indicates erosion of the sub-base and heralds slab failure. URETEK can fill and correct ‘pumping’ before failure occurs.

Sometimes very important is the need to preserve the existing finish/appearance of the surface. We can lift, re-align joints, remove trip hazards and correct falls through tiny holes, without the need to replace or resurface.

Factory and warehouse operations can continue whilst URETEK work is being done. And, if required URETEK work can be carried out at night or during other factory down-times.

Bumps and trip hazards removed quickly with minimal inconvenience. Vehicular traffic can resume just 30 minutes later.
Concrete Floors
The URETEK Slab-Lifting Method is capable of raising concrete flooring in every situation - industrial, warehousing, commercial and domestic, plus airports, roads and railways. No slab is too thick.

In almost every case the treatment can be applied without removing machinery or fixtures and fittings, resulting in huge savings in both time and money.

Weight is not a problem: it's an advantage! When new and heavier machinery is to be installed we generally advise that it be installed before URETEK correction or increased support is carried out. Or we ask for floors to be pre-loaded. That way, with the final weight from above, maximum pressure can be applied in the ground below. Thus the ground is compacted to the fullest extent, giving the greatest future stability.

Treated areas can return to normal use and even forklifts and trucks can run over a corrected area almost as soon as the URETEK injection is finished. There is none of the huge down-time, waiting and cost of cutting-out and replacing concrete floors.

The URETEK method causes minimal interruption to business: URETEK work can be done one area at a time, or at night, or during holiday periods.

The extreme dishing of this workshop floor was corrected while positive drainage was retained.

Buildings
Single and multi-storey buildings can be raised and re-levelled or have their foundation soils strengthened. Structural settlement of over 250 mm has been corrected - and more is possible.

Within reason, building height and mass are typically no problem for URETEK: immense, controlled pressure can be used when it is required.

As building footings are lifted, wall cracks should close up; windows and doors work properly again.

New, heavier printing machinery was installed prior to URETEK strengthening ground support.

Factory floors, walls and machinery bases can be re-supported, raised and re-levelled by The URETEK Method - very quickly, economically and with little or no interruption to your business.

We can treat one area at a time and work at night, if required. There's usually no need to move stock or machinery. Corrected areas are trafficable within 30 minutes.

Key Benefits
- Floors and walls re-supported and re-levelled.
- Shelving returned to its correct alignment.
- Forklifts run smoothly.
- Trip hazards eliminated.
- Slab movement & deterioration corrected.
- Falls can be re-established. Ponding removed.
- Machinery vibration stopped instantly.

Below: Raising slabs and footings back to level solved a number of problems in this factory. The doorway area had sunk 73 mm, so the column and the door frame were no longer supported by the floor structure. They were quickly re-connected as the floor was raised.
This feature photograph shows the re-levelling of Gimpo Airport in South Korea by an Australian URETEK crew, especially flown in with their technical equipment and materials. The project was to raise and re-level sections of the taxiway that had been ponding and thus causing potentially dangerous icy patches in winter. Previously traditional ‘mud-jacking’ had been trialled without success.

Runways, hangars and taxiways have been cleared of movement, bumps, ponding and trip hazards; 600mm thick pavement raised and re-levelled.

The URETEK Method is fast, economical and permanent. It causes absolutely minimal disruption to airport operations, because it is so fast, can be done at night and/or one section at a time and because even the heaviest traffic can run over an area just 30 minutes after the work has been completed. In an emergency the works area is in fact immediately and safely trafficable!

The photos below show URETEK night work at Perth Airport, the levelling and re-support of hangar slabs at Sydney Airport following a burst water main and the re-support of slabs at Williamstown RAAF Base. In this last case the loss of support emanated from leaking stormwater pipes sucking in fines and causing voids under the sheltered pavement where the jet fighters stand. The pipes were re-lined prior to URETEK filling voids directly under the slabs and Deep-Injection was employed to compact the sub-base along 320 metres of pipeline.

Airports have relied on URETEK since 1991.
The unique URETEK Method is widely and increasingly employed worldwide to rectify concrete and asphalt pavement problems— from raising and re-supporting suburban roads, to re-leveling long sections of major highways, correcting road anchors and raising and re-supporting bridge approach slabs. As a result, vehicles can ride smoothly again, voids are filled and joint movement and slab deterioration are arrested. On footpaths and roads, trip hazards are eliminated.

Re-supporting pavement slabs with URETEK, as on Brisbane’s Gateway Bridge toll plaza (centre above) is generally far more economical than cutting out and replacing. URETEK, as a replacement sub-base material, is a proven longer lasting solution than ‘Mud-Jacking’, since URETEK resins do not powder and break-up under dynamic loading and pavement flexing: unlike thin cement grout, they retain a small measure of elasticity. Nor do they inhibit the required action of expansion joints. The URETEK Method also gives an enormous time benefit because all traffic can flow over the area just 30 minutes later.

Increasingly heavy modern traffic imposes huge strains on pavements and sub-grades. Typical is the problem of repetitive pounding given by huge road freighters to the ground-supported ends of bridge approach slabs. In such locations the sub-grade fill has often been inadequately compacted because of the proximity of the abutment or there is embankment bulging or a drainage problem etc. The ground becomes unable to withstand the dynamic loads imposed and the approach slab increasingly settles over time, eventually to become a virtual ‘Ski Jump’. URETEK Slab-Lifting is used to raise the transition slab (and adjacent pavement) back to its correct position. Most importantly, URETEK Deep-Injection can then be used to compact and strengthen the sub-grade at the depths required.

Working with one lane at a time and, where appropriate, at night, involves the least possible inconvenience to traffic flow, both on suburban streets and major highways.

Key Benefits
- Correct pavement settlement and water ponding.
- Eliminate differential joint settlement and trip hazards.
- Fill voids to re-support and prevent water ingress/erosion.
- Limit movement of ‘pumping’ joints.
- Correct sub-grade and trench subsidence and erosion.
- Densify inadequately compacted sub-grade.
Because ports must operate around the clock, Port Facility Managers depend on URETEK to correct problems fast, with zero disruption to their operations.

All URETEK equipment and materials are contained in one truck and one confined section at a time can be corrected completely by a specialist team.

Finished areas are often back in use just minutes after the works area is vacated.

Port facility pavements - concrete, asphalt and brick - are frequently subjected to huge, almost point-loading, from straddle carriers and enormous 60 tonne forklifts carrying 40 tonne containers!

Our work at wharves has included hardstanding stabilisation and re-levelling and re-establishing surface falls towards drains. It has also included correction of subsiding warehouses and office buildings and re-levelling of crane rails, as well as replacement of sub-base eroded by leaking drains.

Patented Deep-Injection technology has been employed to increase foundation bearing capacity, whilst under a warehouse at Townsville, Queensland, voids created by 3.5 metre tides were filled to stabilise the deteriorating floor.

Dockside slab down 50mm. URETEK Slab-Lifting monitored by laser. The area is useable just 30 minutes later!
Mines, particularly in outback Australia, present challenges on a impressive scale. Logistics can demand days of driving and freighting of materials. Needs can be unusual, loads colossal, deadlines onerous and responsibilities huge! URETEK meets these challenges on a regular basis.

In The Pilbara, WA, we have corrected multiple deformations in rails carrying ‘monster’ stacker-reclaimers. In The Hunter, we have also rectified deformed stacker-reclaimer rails that prevented loading vast quantities of stockpiled coal.

In another remote Western Australian mine (below right) we strengthened the ground at 6 metres depth and lifted 1500 mm thick concrete rail index machine slabs servicing 2 kilometer long iron ore trains carrying 200 tonnes per wagon.

We have strengthened escape shafts, re-levelled massive steel towers, re-plumbed silos and treated deteriorating workshop floors that service 100 tonne dump trucks.

This counter-weight tower base, below, was re-levelled by URETEK.

URETEK raised, re-levelled and re-supported the rail of this coal stacker-reclaimer in the Hunter Valley.

Below: This iron ore stacker-reclaimer rail in The Pilbara was also re-levelled and re-supported.
Sometimes floors need to be adjusted to correct excessive slope while maintaining positive drainage, as has been done at a number of heavy vehicle wash bay facilities and some motor vehicle workshops. Another example is the fire station at Sydney’s Kingsford-Smith Airport, which required very precise ‘un-levelling’ to shed rainwater away in the fire engine garaging area, which has to remain open to the rain to allow rapid deployment.

Building height and mass are typically no problem for URETEK: immense, controlled pressure can be used when it is required. The Town Hall, at Glenelg, S.A., (at lower right) was corrected by Deep-Injecting to strengthen various weak underground strata, then Slab-Lifting along one whole side, to restore support and to re-level the building. The process also closed up the huge wall cracks that had developed over time.

The URETEK Method is not confined to correcting concrete footings, although they are often the easiest to deal with. Numerous Australian and New Zealand jobs have been successfully completed, involving a wide range of other types of footings: bluestone, sandstone and brick being the most common. Historic buildings feature heavily in the list: churches, (such as the one below with brick footings), schools, town halls and cottages. URETEK’s unique and patented process of Deep-Injection very frequently plays a major role in such heritage restoration by renewing and increasing ground support for the old structures.

Sporting facilities, for example the gymnasium in Tasmania shown below, are re-levelled with great precision by URETEK Slab-Lifting.

URETEK is sometimes used to correct alignments on sloping surfaces such as this motor car proving track in Victoria, below.

This fine old heritage homestead re-supported by URETEK Deep-Injection now serves as Goulburn’s museum.

A major section of this heritage-listed school in Darlinghurst, Sydney, was re-supported and raised by URETEK prior to effecting masonry repair and replacement.

The Post Office at Kempsey, NSW, had been founded on poor fill and subjected to protracted drainage issues, causing long term subsidence with major cracking and distortion of the brickwork across the entire rear section.

Sometimes floors need to be adjusted to correct excessive slope while maintaining positive drainage, as has been done at a number of heavy vehicle wash bay facilities and some motor vehicle workshops.

Another example is the fire station at Sydney’s Kingsford-Smith Airport, which required very precise ‘un-levelling’ to shed rainwater away in the fire engine garaging area, which has to remain open to the rain to allow rapid deployment.

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URETEK HELPING TO PRESERVE THE NATION’S HERITAGE BUILDINGS... PLUS CORRECTING SPORTING FACILITIES ETC.
The greatest possible load applied to the foundation that URETEK is to strengthen, enables the greatest possible compaction. (Refer page 7: Deep-Injection)

The live load of this stationary 129 tonne locomotive (above) enabled maximum compaction of the subgrade, as URETEK re-supported, strengthened and raised the rail bridge at Bredalbane, NSW.

We have lifted, re-supported and strengthened many types of railway structures - from railway bridges, tunnel track-slabs and level crossing areas, to weighbridges, driveways and hardstands, to platforms and station buildings.
Overview: URETEK resins are the driving force behind The URETEK Methods. It is the predictable expansion pressure of their chemical reaction, not the injection pressure, that aggressively fills voids encountered and then compacts soils, before lifting as required.

The quantity of resin to be injected at a given point depends on the mass of the structure or the resistance of the soil to be reinforced.

The density of solidified expanded resin increases according to the resistance opposing expansion.

The compressive strength and the other physical qualities of the solidified expanded URETEK resin increase according to the density of the product.

Compressive Strength and Density
Compressive strength increases proportionately to the applied density of the material. Under concrete pavements, for instance, the applied density may be about 50 to 150 kg/m³. In the case of Deep-Injection, 100 to 200 kg/m³ and density may reach 300 kg/m³ under very heavy structures or at depth. Indicative compressive strengths can be obtained from the graph on this page.

Once the soil has been densified and/or the structure lifted, the hardened URETEK material functions as soil replacement, not as concrete replacement.

URETEK Resins
URETEK uses several proprietary resin formulae, the selection depending on the method employed for the specific requirements of the particular job.

Geoplus is the most advanced geo-polymer resin on the market, providing an expansive force, under load, of up to 10,000 kPa - 20 times greater than that of preceding polymers.
URETEK MATERIALS - TEST RESULTS

Strength to Weight Ratio
A significant characteristic of URETEK materials is their strength to weight ratios. A confined cubic metre of URETEK with a mass of 50 kg would be able to support a load of some 40,000 kg. In practice however, when used for lifting (say) 40,000 kg/m³ (40 tonnes), the applied density will be in the order of 150 kg/m³, ensuring the necessary factor of safety against creep.

Service Life and Durability
Underground, URETEK materials are intended to last 100 years. “The service life of URETEK material can be relied on to exceed 30 years . . . and can confidently be expected to be considerably longer.”
In addition to low thermal conductivity, it is stable and durable.

Aging Underground
URETEK materials are exclusively used underground. Intensive testing on such materials buried for 10 years indicated no significant loss in density, compressive strength or dimension, relative to control samples aged indoors.

Environment and Ground Water
URETEK material is inert and will not leach into ground water nor affect the environment.

Moisture Resistance
Unique hydro-insensitive resin is used in wet conditions, including below water table level, to ensure structural quality material.

Fungi and Bacterial Resistance
Fungi, bacteria and mould do not decay URETEK material.

Insect Resistance
URETEK materials do not nourish insects or rodents.

Biodegradation
URETEK material will not be subject to biodegradation, even when buried underground.

Stability in Sunlight and UV
Surfaces exposed to sunlight will discolor and embrittle but are then likely to shield underlying layers. Because URETEK material is exclusively used underground, UV exposure is generally not relevant.

Stability & Chemical Resistances
URETEK materials are thermoset polymers. Thermoset polymers are those that change irreversibly during their formation reaction into a material that is infusible and insoluble. The stability of polyurethanes is well documented and a table of chemical resistances is given on Page 31.

Creep under Dynamic Stress
Long term performance is mandatory. According to highway research, “Resin layers should not exhibit any creep deformation under normal traffic loads”.

Site Management
Following URETEK treatment, attention to continuing site maintenance is recommended and falls to the responsibility of the owner/occupier. There are numerous publications to assist with this and we are pleased to supply a copy on request.

Warranty
URETEK material injected below concrete is generally warranted against any shrinkage or deterioration causing significant settlement, for a period of 10 years. (The actual warranty for each individual project is detailed in our job-specific quotation.)

Specifications
Engineering specifications for, and further explanation of, the various applications of URETEK are available upon request.

Chemical Resistance of URETEK Materials
URETEK materials are very stable and are resistant to a wide range of chemicals but have a low resistance to aggressive acids such as concentrated Nitric, Hydrochloric & Sulphuric and solvents such as Methyl Ethyl Keytone and Acetone.

The following examples of chemical resistance are from 28 day Industry standard immersion tests:-

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brine</td>
<td>Excellent</td>
</tr>
<tr>
<td>Diesel</td>
<td>Excellent</td>
</tr>
<tr>
<td>Ethanol</td>
<td>Poor</td>
</tr>
<tr>
<td>Jet A1</td>
<td>Excellent</td>
</tr>
<tr>
<td>Kerosene</td>
<td>Excellent</td>
</tr>
<tr>
<td>Methanol</td>
<td>Poor</td>
</tr>
<tr>
<td>Mineral oil</td>
<td>Excellent</td>
</tr>
<tr>
<td>Petro/Benzene</td>
<td>Excellent</td>
</tr>
<tr>
<td>Toluene</td>
<td>Excellent</td>
</tr>
<tr>
<td>Turpentine</td>
<td>Good</td>
</tr>
<tr>
<td>Water</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

Acids and Bases
Ammonium Hydroxide | Good
Hydrochloric acid (10%) | Excellent
Nitric Acid (10%) | Poor
Sodium Hydroxide | Excellent
Sulphuric Acid (10%) | Excellent

CHEMICAL RESISTANCES