Devcon®

applied
right chemistry **right people**

MINING
PRODUCT CATALOGUE

ITW

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Telephone 1800 063 511 **Website** www.itwpf.com.au

Quality Chemicals for Industry

The Applied brand was established in 1942, manufacturing and supplying quality industrial detergents. With more than 70 years industry experience, the Applied brand has developed a wide range of products for use in areas such as Workshop and maintenance, Wash bay and maintenance, Hand cleaners and dispensers and Bath house

- Commercial cleaning and hygiene
- Water effluent treatment
- Dust suppression
- Infrastructure, truck slip and asphalt cleaning
- Wheel and tyre bay

Our comprehensive product range can be used in industries such as mining, food processing, engineering, hospitality, health care, materials processing and manufacturing. The Applied products are continuously evolving through improving existing products and new product development.

As part of ITW Polymers & Fluids, one of Australia's leading manufacturer of quality consumable products, the Applied brand provides the best solution for some of your business' chemical challenges. ITW Polymers & Fluids has offices in Sydney, Perth and Rockhampton

When Things Go Wrong – Reach for Devcon

Devcon consists of an extensive range of highly effective epoxy and urethane products developed for maintenance, repair and overhaul (MRO) applications.
Over 60 years ago, Devcon USA introduced an alternative to welding and brazing with "Plastic Steel", a metal filled epoxy putty. This product still holds an enviable reputation today.

The Devcon range consists of:
- Epoxy products for general, precision and emergency repairs.
- Flexane urethanes for casting and rubber repair.
- Epoxy protective coatings that reduce damage from wear and abrasion.
- Epoxy adhesives for technically advanced applications.

All of these products are designed to be easily applied by plant maintenance staff with minimal training.

The Devcon product range was first introduced into Australia in 1980 and soon after, local manufacturing commenced.

Devcon products are readily available from leading industrial distributors throughout Australia and New Zealand.

Devcon products and applications in oil refineries, steel mills, mines as well as pulp and paper mills. In fact, they can be used anywhere an emergency repair or maintenance to equipment of an industrial nature is required.

Devcon - the solution to equipment maintenance, repair, rebuilding and bonding in both industrial and mining applications.

CONTENTS

WASH PAD DETERGENTS

The key focus of the Applied brand's wash bay and maintenance product range are heavy duty cleaning products that have been developed to be safer for both users and the environment, without sacrificing performance. These productsare effective, reduce down time and economical

BULLDOG ULTIMATE

Bulldog Ultimate is a very highly concentrated detergent highly suitable for mining industries. It is formulated to remove dirt, soils, light greases/oil and road stains from trucks, buses and all forms of on and off road transort.

BENEFITS:
- Rapid emulsion breaking characteristics enable emulsified oils and greases to be removed
- Quickly and efficiently removes all dirt and road grime
- Highly effective at removing exhaust staining
- Free rinsing, no streaks
- Reduce cost
- Non Toxic
- Biodegradable

APPLICATIONS:
- Ideal use for mining industries
- Highly concentrated to reduce costs

ITEM #	Items per case	Size
ABDULT - 1000	1	1000L
ABDULT - BULK	1	Bulk

BULLDOG PREMIUM

Developed as a truly high performing, cost-effective range of products.

- Free rinsing – No streaks
- Highly concentrated – reduces overall cost of use.
- High foaming – longer contact time.

ITEM #	Items per case	Size
ABDPRM - 1000	1	1000L
ABDPRM - 205	1	205L
ABDPRM - 15	1	15L

BULLDOG GOLD

An iconic heavy duty vehicle wash specifically formulated to remove dirt, soils, light grease/oil and road stains.

- High foaming
- Free rinsing

ITEM #	Items per case	Size
A3120 - 1000	1	1000L
A3120 - 205	1	205L
A3120 - 15	1	15L

SUNSHINE

An excelent, multipurpose product that works as a general purpose cleaner in industry

- Safe to use on practically any surface.
- Biodegradable, non-toxic, non-flammable.

ITEM #	Items per case	Size
A3220 - 1000	1	1000L
A3220 - 15	1	15L

APPLIED 3241

A multi purpose detergent designed to remove a wide range of soils

- Multi purpose
- Effective and safe on all surfaces
- Non flammable

ITEM #	Items per case	Size
A3241 - 205	1	205L

DEGREASERS

TOUGH ORANGE

TOUGH ORANGE – An extra heavy duty water based liquid cleaner and degreaser containing natural citrus solvents, which is specifically formulated as a natural replacement for hydrocarbon solvent based degreasing systems. Tough Orange safely removes heavy deposits such as grease, oil, diesel exhaust stains, dirt, gum and grime from all washable surfaces. Ideal for use as a General Purpose Detergent and Water Based Degreaser in all Heavy & Light Vehicle/Industrial Workshops; Tough Orange provides a highly effective degreasing product. Tough Orange in combination with the bulldog suite of products, provides a superior cleaning and degreasing process to most solvent hydocarbon processes.

BENEFITS:
- Cost Effective
- Fast acting
- Caustic free
- Safe to use on all metals
- Cleans effciently in all water conditions
- Environmentally friendly

APPLICATIONS:
- For use on all washable surfaces including Heavy/Light Vehicles, Workshop Floors, Heavy and Light equipment, Engines, large automotive parts, exhaust baffles, metal fixtures, vinyl and plastic surfaces.
- Can be applied via High Volume Foamers, Low Volume/Low Pressure Spray Applicators, pressure washers, steam cleaners and manual application methods.


BEFORE

AFTER

ITEM #	Items per case	Size
ATOOR - 1000	1	1000L
ATOOR - 205	1	205L
ATOOR - 15	1	15L

CITRA SCRUB

An extra heavy duty, low foaming water based cleaner/degreaser containing natural citrus solvents

- Fast acting
- Caustic free

ITEM #	Items per case	Size
ACISC - 15	1	15L

TAKE OFF

Take off is a heavy duty alkaline detergent used for cleaning oil, greases, dirt, light carbon deposits and exhaust stains

- Will not harm good paint work.
- Non Flammable.
- Excellent on animal fats.

ITEM #	Items per case	Size
A4480 - 1000	1	1000L
A4480 - 15	1	15L

CITRA LF

An extra heavy duty, low foaming water based cleaner and degreaser containing natural citrus solvents.

• Ideal for use on floors through auto scrubbing machines and in laundries as a pre-wash stain remover.

ITEM #	Items per case	Size
A8350 - 20	1	20L

APPLIED 8413

Parts wash degreaser is a neutral, emulsifiable solvent which is used as supplied for cleaning engines, plant machinery and equipment.

ITEM #	Items per case	Size
A8413 - 1000	1	1000L
A8413 - 205	1	205L
A8413 - 20	1	20L

APPLIED 8417

A ready to use "quick break" general purpose solvent degreaser.

• High flash point
• Safe on all metals

ITEM #	Items per case	Size
A8417 - 205	1	205L
A8417 - 20	1	20L

DUOSOLVE

A scientificaly formulated concentrated solvent degreaser can be diluted with water to form a degreasing gel or with kerosene to form a thin degreasing liquid.

ITEM #	Items per case	Size
A8355 - 205	1	205L
A8355 - 20	1	20L

RAPSODY

Organic ester designed to be environmentally acceptable non-hazardous replacement of diesel in cleaning and slip applications.

ITEM #	Items per case	Size
A3982 - 200	1	200L

APPLIED 8080

Applied electrical safety solvent is a highly effective liquid solvent cleaner with a high flash point

• Cleans all electrical components
• High flash point

ITEM #	Items per case	Size
A8080 - 20	1	20L

SPECIALTY PRODUCTS

POLYFLOC

A2366 is a formulation of cationic polyelectrolytes and inorganic salts used in the clarification of oil field and industrial waste waters

ITEM #	Items per case	Size
A2366 - 205	1	205L

SUPER DESCALER

A concentrated phosphoric acid cleaner for the effective removal of rust deposits from iron and steel.

ITEM #	Items per case	Size
A2670 - 15	1	15L

ANTIFOAM

A food grade silicon based defoamer.

- Fast acting
- Effective in aged or alkaline conditions
- Will suppress almost any type of foam

ITEM #	Items per case	Size
A3481 - 15	1	15L

ALKALINE CLEANERS

APPLIED 5260

A low foaming, active powder cleaner suitable for use in spray and agitated immersion cleaning equipment

- Low foaming
- Inter stage rust protection

ITEM #	Items per case	Size
A5260 - 20	1	20kg

APPLIED 4855

A general purpose spray cleaner for ferrous and non ferrous metals

- Safe for use on most common metals
- Contains no caustic
- Do not need rinsing from surface

ITEM #	Items per case	Size
A4855 - 25	1	25L

IMPROVE

Improve is a complex alkaline grade blended with surfactants, penetrants and boosters used for heavy duty cleaning

- Rinses freely
- Paint stripping

ITEM #	Items per case	Size
A5850 - 20	1	20kg

APPLIED 4413

Soak tank alkaline cleaner for general degreasing of metals by either hot soak or hot high pressure cleaning

- Safe on steel and magnesium
- Non caustic

ITEM #	Items per case	Size
A4413 - 1000	1	1000L
A4413 - 205	1	205L

HI ALK

Hi Alk is a truely effective heavy duty cleaner for all decarbonising, de-rusting and degreasing operation. Hi Alk features 3 in 1 action to save de-rusting time

ITEM #	Items per case	Size
A5710 - 205	1	205L
A5710 - 20	1	20L

APPLIED 4320

Temporary rust prevetative, prevents rust during the rinsing and drying of steel articles after they have been cleaned

- Passive condition will last upto 3 weeks

ITEM #	Items per case	Size
A4320 - 20	1	20L

TRANSPORTATION

NOVIRUSAC GEL

Novirusac Gel is a blue gel which when added to the toilet system produces a pleasantly perfumed virucidal/ bactericidal toilet treatment

• Approved for aircraft use to AMS 1476B

ITEM #	Items per case	Size
A3466B - 1000	1	1000L
A3466B - 205	1	205L
A3466B - 25	1	25L
A3466 - 96	96	Sachets

GEL PHOS

Gel Phos is a clear acidic gel formulated to remove copper and iron oxide films from the roofs of electrical tram and railway carriage sets.

ITEM #	Items per case	Size
A2634 - 1000	1	1000L

APPLIED 5007

An alkaline general purpose detergent for removal of grease, oil, dirt and brake dust from traction motors, bogeys, railway carriage cleaning as well as general floor cleaning

ITEM #	Items per case	Size
A5007 - 1000	1	1000L

TRANSCLEAN

A water based organic acid cleaner designed for removing brake dust build-up and other soils from all types of wheels and aluminium components

• Safe on aluminium, glass, steel and good quality paint work

ITEM #	Items per case	Size
A2544 - BULK	1	BULK

ACIDIFOAM

A foaming acid cleaner specifically designed for removing brake dust build up and other soils from rail stock

• Foams on to surface
• Safe on aluminium, steel, glass and good quality paint

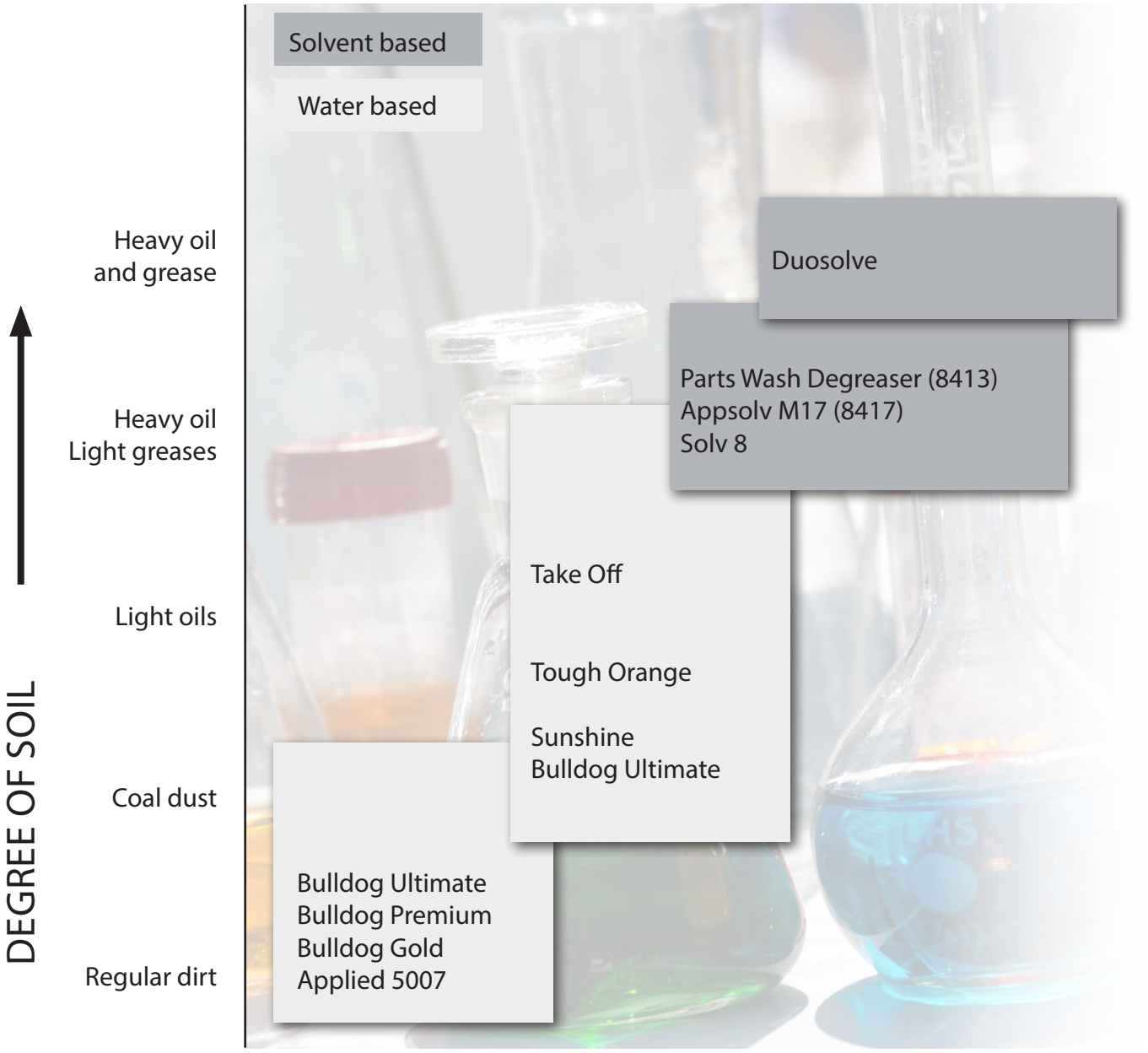
ITEM #	Items per case	Size
A2539 - 1000	1	1000L

APPLIED 4116

A4116 is a corrosion and scale inhibitor for diesel and conventional engines. Compatible with ethylene glycol based anti-freeze additives.

ITEM #	Items per case	Size
A4116 - BULK	1	BULK

SELECTOR GUIDE



TRANSPORTATION

FUNDAMENTALS OF CLEANING

Most detergents contain several different compounds. The group of chemicals used in detergent formulations are surfactants (wetting agents), acids/alkalis, sequestrants, solvents and sanitisers.

SURFACTANTS

The four types are anionic, cationic, non-ionic and amphoteric. These names arise from the electrical charge of the head group. Anionic surfactants have a negative charge on the head group, cationic surfactants have a positive charge on the head group, non-ionic surfactants have no formal charge and amphoteric surfactants have both a positive and a negative charge on the one head group.

Anionic, cationic and non-ionic are the major types used in detergents.

The charges on the different surfactant types place restrictions on blending of different surfactant types in formulations.

Anionic surfactants are the major surfactant type used in general cleaning applications. Typically, they are inexpensive and moderate to high foaming. Anionic surfactants may be blended with other anionic surfactants, non-ionic surfactants and, if correctly formulated, with amphoteric surfactants.

The most commonly encountered cationic surfactants are quaternary ammonia compounds. Typically, cationic surfactants are more expensive than anionic surfactants and have varying foam levels from moderate to low.

Non-ionic surfactants are more expensive again than cationic surfactants. They are, however, widely used in detergent formulations due to their good cleaning ability on oily soils and their controlled moderate to low foaming properties.

ALKALINITY IN CLEANING

In general, detergents are formulated to be neutral or alkaline. Many soils tend to be acidic and, hence, the alkalinity in the detergent assists in their removal by neutralising them to make soluble salts.

Functions performed by the alkalinity in the detergent include saponifying fats and oils, breaking down and solubilising proteins, neutralising acids present in the soils and removal of acidic metal oxides from the surface. Alkalinity also assists in wetting of surfaces and dispersing and suspending solid soils.

Most hard surface materials and many metals are resistant to chemical attack by alkalinity, however, some common metals that are attacked by low to moderate levels of alkalinity are aluminium, magnesium and zinc and alloys of these metals.

ACIDS IN CLEANING

Acids, in general, will attack and dissolve many metals, basic metal oxides and alkaline metal salts, as well as concrete, mortar and grout. Due to the wide range of surface types that can be affected by acids, acids find limited application in cleaning. They are used, however, in specific cleaning applications – rust and scale removal, toilet bowl cleaners and tile and grout cleaning.

SOLVENTS

When the word 'solvent' is mentioned, most people think of petroleum solvents. However, a solvent is simply a liquid that dissolves another substance. Therefore, water is the most common of solvents.

GENERAL CONSIDERATIONS

All the components in a detergent formulation need to be compatible with each other and with the surface being cleaned. The detergent formulation should be free rinsing from the surface and not leave chemical residues that might interfere with subsequent processes.

DETERGENT SELECTION

In all cleaning processes there is a need to match the chemical composition of the detergent formulation to suit the soils to be removed, the surface to be cleaned and the physical constraints of the system – method of cleaning, water temperature, water hardness etc.

SOIL TYPE

SOIL TYPE	HOW TO REMOVE
Animal and Vegetable fats & oils	surfactants, alkali, solvents
Petroleum oils & grease	surfactant, solvents
Protein	acids, alkali
Starch	acids, neutral detergent
Water soluble salts	water
Mineral deposits	acids
Metal oxides	acids

SURFACE TYPE

SURFACE	AVOID USING
Uninhibited metals	acids
Soft metals	strong alkali
Plastics	solvents
Painted surfaces	solvents
PET & Polycarbonate	alkaline detergents and water soluble solvents
Acrylic	water soluble glycol-ether solvents
Copper (and its alloys)	ammonia & amine alkalinity
Rubbers	various solvents

THE CLEANING PROCESS - TIME

All of the chemical processes and interactions of the various components of the detergent formulation require time to equilibrate.

THE CLEANING PROCESS - TEMPERATURE

For most cleaning applications, increasing the temperature increases the rate of cleaning. However, water temperatures above approx. 50C will denature protein soils causing them to become harder to remove. Higher temperature also introduces additional cost and risk.

THE CLEANING PROCESS - AGITATION

Agitation of the soil is required to aid the cleaning solution in physically dislodging the soils from the surface and to aid in breaking up and dispersing the solution. The agitation removes the "spent" solution and allows fresh cleaning solution to contact the soil to provide on-going cleaning action.

TYRE TREATMENT

RIMTREAT-X

Rimtreat® X Superior Rim Corrosion Inhibitor with Metal Brightener

- Non-Hazardous Formulation
- Prevents Corrosion/Rust
- Effective Tyre/Rim Sealant
- Improved Tyre Demounting

Rimtreat-X is an advanced formulation designed to protect tyres and rims when added to the tyre air chamber of mining vehicles.

Rimtreat-X offers the user multiple benefits including, prolonged life of tyres, rims and wheels, easier tyre removal and improved tyre to rim sealing.

In addition the new Rimtreat-X contains a metal brightening agent leaving rims and wheels cleaner and easier to inspect.

Rimtreat-X is easy to use, cost effective and provides the results required in todays harsh mining environment.

ITEM #	Items per case	Size
A3421 - 1000	1	1000L
A3421W - 1000	1	1000L

TYRETREAT

One shot product to improve tyre sealing and inhibit corrosion on Rims

ITEM #	Items per case	Size
A4111 - 1000	1	1000L

BODY SOAP

BODYLINE

A total body and hair shampoo

- Apple fragrance
- Rinses freely from the skin

ITEM #	Items per case	Size
A3926 - 1000	1	1000L

BODY KLENE

A total body and hair shampoo formulated from natural soaps, neutral surfactants and emollients

- Readily Biodegradable
- Contains lanolin

ITEM #	Items per case	Size
A3935 - 1000	1	1000L
A3935 - 4x4	4	4L

HAND CLEANER

ULTRA LEMON

A scientifically formulated handcleaner using naturally occurring citrus oils in conjunction with polymeric beads

ITEM #	Items per case	Size
A3963 - 4x4	4	4L
A3963 - 3x5	3	5L
A3963 - 15	1	15L

LAUNDRY DETERGENT

VIPER PLUS

A liquid laundry detergent suitable for use on all industrial laundry classifications

ITEM #	Items per case	Size
A4610 - 15	1	15L

HIGHWHITE EUCALYPTUS

A premium quality, low foaming high - white laundry powder with eucalyptus oil for stain removal

ITEM #	Items per case	Size
AS2748 - 20	1	20kg

This group of technically advanced epoxy systems was developed to meet industry requirements for repair materials to be used in extremely aggressive operating environments. DEVCON ABRASION RESISTANT EPOXIES offer a range of abrasion, corrosion and chemical resistance that allows the user to repair, protect and rebuild equipment in the most severe conditions.

(For further technical information refer to Technical Data section).

WEAR RESISTANT PUTTY (WR2)

A highly wear resistant low friction finish compound for use on surfaces subject to sliding or fluid wear. This non-shrinking epoxy can be used for building up and prolonging the life of shafts, pumps, valves, machine beds and for making general repairs. It is a fine ceramic filled epoxy that cures to a smooth low friction finish.

CARBIDE PUTTY

An extremely tough epoxy compound filled with silicon carbide granules. This product is capable of withstanding impact and abrasion from slurry to pulverised mineral particles of upto 2mm. Excellent chemical and temperature resistance up to 120°C allows Carbide Putty to stand up to constant wear in pipes, elbows, coal pulverisers, slurry pumps, and exhauster fans.

CERAMIC REPAIR PUTTY

This non-sag, trowelable ceramic filled epoxy compound has been tested and proven in use to be a truly high performance product. It has outstanding wear resistance, excellent chemical and corrosion resistance and can withstand temperatures up to 175°C. Used to repair and protect processing equipment such as slurry, service water, centrifugal and ash pumps in power plants, pulp and paper mills, chemical and water treatment plants.

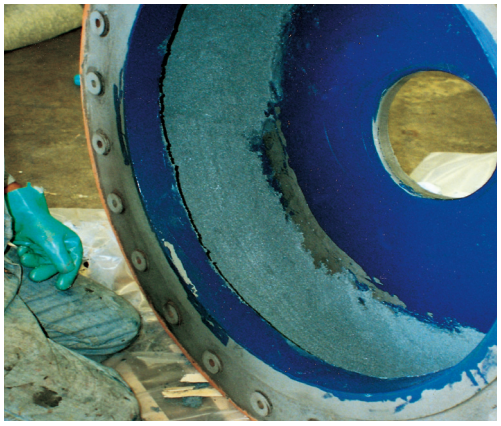
BRUSHABLE CERAMIC

This product has all the properties of Ceramic Repair Putty in a liquid form. Brushable Ceramic is a low viscosity, brushable epoxy that provides a smooth, protective barrier against wear, abrasion, corrosion, erosion and chemical attack. Use Brushable Ceramic to protect pump casings and flange faces and to rebuild and seal heat exchanger tube sheets, impeller blades, valves, water boxes, fan blades, chutes and hoppers. Brushable Ceramic is available in two colours (red, blue).
Meets AS4020 for use in contact with potable water.

SPRAYABLE CERAMIC

Sprayable Ceramic is a ceramic-reinforced composite that can be sprayed in a manner similar to high-solids paints. It is ideal for protecting pumps, pump pads, paper machines, stacks, steel frames and tanks. Sprayable Ceramic exhibits excellent chemical resistance and is available in a blue colour. Sprayable Ceramic uses standard airless equipment and is capable of being sprayed on in a thickness of between 380 and 500µm in one pass.

Ceramic Repair Putty protects equipment surfaces from damage due to wear and abrasion, extending service life and often eliminating the cost of replacement.



Wear Guard Fine Load offers an economical way to protect equipment surfaces from abrasion damage caused by particulate less than 3mm.

Brushable Ceramic provides pumps and other equipment with a smooth protective barrier against wear, abrasion, corrosion, erosion and chemical attack and it fills holes and voids in castings.

WEAR GUARD™ FINE LOAD

A high performance wear-resistant epoxy compound containing high-alumina ceramic beads for wear and abrasion protection of equipment conveying fine particles smaller then 3mm. It can withstand operating temperatures up to 150°C and exhibits an outstanding resistance to a wide range of chemicals. Wear Guard Fine Load can be trowelled to form a smooth surface and can be applied to vertical or overhead surfaces.

WEAR GUARD™ HIGH IMPACT

An extremely wear resistant, ceramic-beaded epoxy system containing urethane acrylate for superior impact abrasion. High Impact is a non-sagging putty used for protecting against impact and flex. It also provides high compressive and impact strength once cured. The product will handle temperatures up to 150˚C and is intended for high impact applications in pumps, scrubbers, screens, chutes, handling equipment and screw conveyors.

COMBO WEAR FC (FAST CURE)

Combo Wear FC is a high performance wearing compound that combines the abrasion resistance of high alumina ceramic beads with silicon carbide. This non-sag putty has excellent adhesion to metal, ceramic and concrete and will bond to a damp surface. Used to protect pipe elbows, housings, exhauster fans, repairs to coal fuel lines, bins and hoppers. It's fast cure properties enables critical equipment to be back in service in 1-1.5 hours at 24°C.

MEGAWEAR

A high density, alumina ceramic bead-filled, toughened epoxy system for protecting equipment from wear and abrasion. The non-sag formulation of Megawear ensures ease of use in shaping and mixing the epoxy and provides excellent hang-up on vertical and overhead surfaces. The fast functional cure time of Megawear also helps reduce maintance windows for site shutdowns, allowing equipment to be back in service in 3 hours. This fast and user-friendly epoxy system is now with improved flexibility modifiers for enhanced impact resistance to prolong the service life of industrial plant and equipment.

Ordering Information

Product Stock Number	Pack Size
Wear Resistant Putty (WR2)	
D11410	**500g**
Carbide Putty	
D10050	**1.5kg**
Ceramic Repair Putty	
D11705	**500g**
D11700	**1.5kg**
Brushable Ceramic	
D11760 Red	**1kg**
D11765 Blue	**1kg**
Sprayable Ceramic	
DDE108 Blue	**3.8L**
Wear Guard Fine Load	
D11405	**4kg**
D11400	**10kg**
Combo Wear FC (Fast Cure)	
D11450	**4kg**
Wear Guard High Impact	
D11464	**4kg**
D11460	**10kg**
Megawear	
D11485	**5kg**

PRODUCT APPLICATION SELECTOR GUIDE FOR ABRASION RESISTANT PRODUCTS

Application*	Product	Mix Ratio Wt/vol	Pot Life (mins)	Functional Cure Strength (hrs)	Coverage (cm^2/kg@5mm)	Operating Temp (˚C)	Colour
Sliding or Fluid Wear	Wear Resistant Putty (WR2)	9:1 / 4:1	60	16	1005	120	Dark Grey
Chemical Resistant Coating	Brushable Ceramic	5.6:1 / 3.4:1	40	24	1.55m^2/kg@0.4mm	176	Red, Blue
	Sprayable Ceramic	*14:2.5:1 / 7.1:2.1:1	40	24	10m^2/3.8L@0.4mm	176	Blue
Metal Rebuilding	Ceramic Repair Putty	7:1 / 4.3:1	25	16	1184	175	Dark Blue
Agg. Less than 2mm dia.	Carbide Putty	9:1 / 4:1	50	16	1148	120	Dark Grey
Agg. Less than 3mm dia.	Wear Guard Fine Load	2:1 / 2:1	45	16	902	150	Grey
Agg. Greater than 3mm dia.	Wear Guard High Impact	2.5:1 / 2.5:1	45	16	902	150	Dark Grey
Fast Curing	Combo Wear FC	2:1 / 2:1	7-12	1.5	902	150	Grey
Fast Cure & Sliding Abrasion	Megawear	24:1 / -	20	3	0.79m^2/kg@6mm	150	Light Grey

*Mix ratio of Resin:Hardener:Thinner

BELTING AND RUBBER REPAIRS

R-Flex® Conveyor Belt Repair Kit

A unique urethane technology system that reduces operational downtime in simple, quick & cost-effective way Back in Service in 90 minutes

- Very High adhesion
- Self-leveling liquid while applying then becomes non-sag gel in 4 minutes
- A self-contained kit for repairing holes, gouges & tears in conveyor belts
- Easy to mix and pour

D15565 **680g kit**

FLEXANE PRIMERS are required for bonding of all Flexanes: Flexane 80 Putty, Flexane 80 Liquid, Flexane 94 liquid and Flexane Brushable.

FLEXANE® METAL PRIMER - FL10

Provides excellent adhesion (4.5kg/cm) to all dry metals for all grades of Flexane. Use in conjunction with FL20 Primer on metal surfaces exposed to water immersion or requiring adhesion in excess of 9kg/cm.

FLEXANE® RUBBER PRIMER - FL20

Provides excellent adhesion to rubber, wood, fibreglass, concrete and cured Flexane.

PRIMER SELECTION

Substrate	Primer FL10	FL20
Metal, Dry (Adhesion 4.5kg/cm)	•	
Metal, Dry (Adhesion > 9kg/cm)	•	•
Metal (Water Immersion)	•	•
Concrete		•
Rubber		•
Cured Flexane		•
Wood		•
Fibreglass		•

Ordering Information

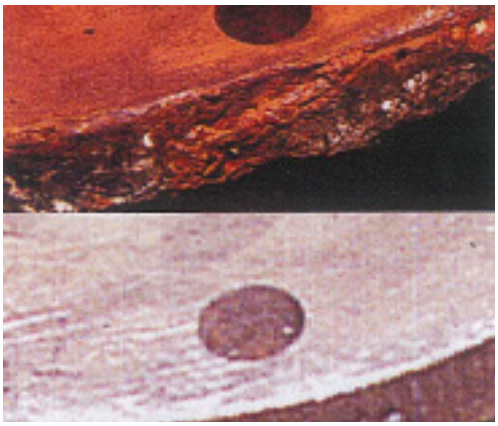
Product Stock Number	Pack Size
R-Flex®	
D15565	**680g**
Flexane 80 Putty	
D15820	**450g**
Flexane 80 Liquid	
D15800	**450g**
D15810	**4.5kg**
Flexane 94 Liquid	
D15250	**450g**
Flexane Brushable	
D15350	**450g**
Flexane Primers	
D15980 (FL10 - Metal Primer)	**120ml**
D15985 (FL20 - Rubber Primer)	**120ml**

PRODUCTION APPLICATION SELECTOR GUIDE FOR FLEXANE RUBBER REPAIR PRODUCTS

Application	Product	Mix Ratio Wt/vol	Pot Life (mins)	Functional Cure (hrs)	Coverage (cm^2/kg@5mm)	Max op. Temp (°C) (dry/wet)	Colour
Trowelable Rubber Repair	Flexane 80 Putty	72:28	20	12	1616	82/49	Black
Semi-Rigid Castable Rubber	Flexane 80 Liquid	77:23	30	16	1824	82/49	Black
Rigid Castable Rubber	Flexane 94 Liquid	69:31	10	16	1824	82/49	Black
Brushable High Performance Rubber	Flexane Brushable	80:20	45	24	1789	82/49	Black
Conveyor Belt Repair	R-Flex	88:12	10	1.5	2026	82/49	Black

SURFACE PREPARATION

The successful application of Devcon repair products and protective coatings depends on proper surface preparation. Dust, dirt, oil, grease, rust and dampness can all adversely affect the adhesion of epoxies causing the entire repair to chip, crack or break away under stress. A clean, dry, slightly roughened surface will ensure maximum adhesion of Devcon products.



GENERAL SURFACE PREPARATION GUIDELINES

In general, the following steps will help you properly prepare a surface prior to applying Devcon products:

1 - Make sure the surface is completely dry. Moisture will adversely affect the strength of the bond to the surface.
2 - Remove all surface contamination (paint, rust and grime) by abrasive blasting, sanding or other mechanical means.
3 - Degrease with Devcon Surface Cleaner.
4 - Abrade the surface to roughen it and create a surface profile.
5 - Use the appropriate Devcon primer.

For more detailed surface preparation information, refer to the appropriate substrate category below.

RUBBER

To properly prepare a rubber surface:

1 - Abrade the surface using a rubber rasp or a grinder with a wire wheel to produce a good surface profile. (Oils and contaminants imbedded in the rubber surface are typically released in this process.)
2 - Remove all oil and grease from the rubber surface with Devcon Surface Cleaner and an abrasive pad.
3 - Wipe the surface with a clean, lint-free cloth continuously until black residue is no longer picked up by the white cloth.
4 - Prime the surface as follows:
Rubber to metal: Coat all metal surfaces (including stainless steel and aluminum) with two coats of Devcon FL-10 Primer. The primer will significantly improve adhesion of Devcon Flexane products to metal. Rubber to metal (for immersion service): Coat any metal that will be immersed in an aqueous solution with Devcon FL-10 Primer and Devcon FL-20 Primer. First apply the FL-10 Primer and let dry for 60 minutes. Next, coat with the FL-20 Primer. Let dry for 30 minutes before applying the Devcon Flexane product.

Rubber to rubber: Coat all gum rubbers, neoprene, or cured urethanes with a thin coat of Devcon FL-20 Primer.
Rubber to concrete: Coat concrete with Devcon FL-20 Primer. Multiple coats may be necessary because concrete is very porous. Let the primer dry for 30 minutes between coats.
Rubber to wood or fiberglass: Coat these surfaces with Devcon FL-20 Primer. Soft woods will require a second coat due to their absorption characteristics.

If you are bonding rubber to other surfaces, contact us for a recommendation on primers and surface preparation procedures.

ITW Polymers & Fluids: 1800 063 511

SURFACE PREPARATION

METAL

To properly prepare a metal surface:

1 - If the surface is oily or greasy, degrease it with Devcon Surface Cleaner.
2 - Abrasive-blast the surface with 25-40 grit (or coarser) to produce a good surface profile. If you cannot abrasive-blast the surface, use a 60 grit or coarser sand-paper to achieve a similar result.
3 - Make repairs as soon as possible after blasting the substrate to avoid oxidation or flash rusting.
4 - Immediately coat the metal surface with Devcon FL-10 Primer if repairs can not be done quickly.

ALUMINIUM SURFACES

Oxidation on aluminium surfaces reduces epoxy adhesion. This oxidation film must be removed before repairing with Devcon Metal Repair Epoxies.
To properly prepare an aluminium surface:

1 - Remove oxidation by mechanical means such as grit-blasting or by chemical means such as acid etching.
2 - Follow the General Surface Preparation guidelines.

CONCRETE

To properly prepare a concrete surface:

1 - Degrease the surface with Devcon Surface Cleaner or any water-based emulsifying cleaner and rinse thoroughly. Multiple cleanings may be necessary. Power washers or steam cleaners are very effective and can reduce the number of passes needed to clean the surface. Let the surface dry thoroughly before proceeding.
2 - Remove any cap-curing agents that were applied to the concrete when it was poured. These agents form a dense, impenetrable finish, making it almost impossible for coatings to adhere to them.
3 - Shot blast (Blastrac) the concrete to create a porous surface profile.This will improve surface “wetting” and coating or repair product adhesion.
4 - If you cannot shot blast the concrete, use an acid etch to etch the surface. This will “open up” the pores of the concrete for improved adhesion. (This step must be performed after the floor has been degreased and does not replace degreasing.) Be sure to rinse the floor thoroughly several times to neutralize the acid in the acid etch before applying primer or topcoat.

WET SURFACES

In general, Devcon repair products and protective coatings will not adhere to wet surfaces.
To properly repair a wet surface:

1 - Review the General Surface Preparation guidelines.
2 - Thoroughly dry the surface. (If you are using Devcon Wet Surface Repair Putty (UW), refer to Underwater Surfaces section.)
3 - Stop all leaks or seepage as follows:
- Shut off the flow or pressure;
- Fit a wooden peg or a sheet metal screw into the hole; or
- Stuff wax, cork, plumber’s caulk or a cloth into the opening. If the leak is caused by corrosion, the sidewall might be weak. Open the orifice until sound metal is exposed and the wall is thick enough to be plugged.

4 - Remove surface condensation (sweating) or dampness with a heat gun or similar device.

UNDERWATER SURFACES

To properly prepare an underwater surface:

1 - Remove all dirt, barnacles, flaking paint, or algae/seaweed from the surface.
2 - Wipe the surface with a clean cloth to remove any film. Although you cannot degrease underwater, wiping and turning a clean cloth will often remove any film from the surface.
3 - Abrade the surface if possible. (Use a file or other mechanical means.)
4 - Remove oxidation by mechanical means such as high-pressure water or grit-blasting, or by chemical means such as acid etching.

HINTS FOR WORKING WITH EPOXY

"Hints for Working with Epoxy" is designed to familiarise the user with the basic principles of mixing and applying filled epoxy compounds as well as answer some specific questions that may arise in working with epoxy materials.

Devcon epoxy compounds are versatile and durable materials used for general maintenance, repair and tooling applications. Mixing and application procedures are simple and the results will be very gratifying, providing you follow directions carefully. Proper performance of the material depends upon careful adherence to directions.

The chemistry of epoxies. Devcon epoxies are two component materials that cure, or harden, by chemical reaction between the resin and hardener when they are combined. This chemical reaction generates heat. It is important to keep the following principles in mind when mixing epoxies:

- The larger the mass of epoxy, the faster the cure.
- The higher the temperature, the faster the cure.
- For proper performance, epoxy must be mixed in specified ratios.
- Typical working time for 500g of epoxy at 24°C is 45 minutes. Functional cure is achieved overnight (16 hours).
- Specially formulated epoxies are available that offer fast cure time, extended cure time, wet surface/low temperature cure, high heat resistance and exceptional tolerance to chemicals. When doing an epoxy application, be sure to specify the epoxy with the best performance characteristics for the job.

High Temperatures. When the temperature is above 24°C epoxy will cure more quickly. Epoxy should be mixed in small masses to prevent the material from curing too rapidly.

Low Temperatures. Most epoxies will not cure properly at temperatures below 15°C unless the epoxy and, if possible, the part to be repaired are heated to room temperature. To promote curing of epoxy at low temperatures, see below.

To speed up cure of epoxy, the material should be mixed, applied to the repair area and warmed with a heat lamp or other heat source. Heat lamp should be placed about 0.5m from the epoxy. Never expose epoxy to a direct flame.

To increase adhesion make sure the application surface is free from oil, dirt and moisture. Clean the surface with Cleaner Blend 300, or similar solvent and wipe thoroughly. For maximum adhesion, particularly to a rusted or painted surface, we recommend sandblasting, abrading or chemically etching the surface.

To prevent sticking of epoxy to a surface, coat the surface with Rocol Dry Film Teflon* Spray or other coating material such as Teflon*, silicone or wax.

Mixing. Add hardener to resin and mix thoroughly. The compound should be a smooth, lump-free consistency after mixing for about four minutes. To insure thorough mixing of putty-type epoxies, particularly when mixing larger quantities, resin and hardener can be turned out onto a flat disposable surface and mixed with a stiff spatula.

For low-cost, convenient dispensing of epoxy, use a clean polyethylene squeeze bottle or caulking container. This method is particularly suitable for grouting applications.
To obtain a smooth finish cover the uncured epoxy with a sheet of polyethylene or waxed paper. Remove the sheet when the epoxy is fully cured. The surface can also be smoothed by drawing a trowel moistened with water across the surface of the uncured material. Moisten the trowel with each stroke.

Cure. Most epoxy compounds will cure overnight (16 hours) at which time the material can be machined, drilled or painted. As previously described, the actual cure time of epoxy is determined by the size of the mass of epoxy and the temperature. Under some conditions the epoxy will reach full cure in less than 16 hours. For example, epoxy will be fully cured in only 4 hours when heat cured at 65°C.

Specially Formulated Epoxies

The following Devcon epoxy compounds are formulated to perform under specific operating conditions, Choose the best epoxy for your application/operating environment.

Fast cure. Plastic Steel 5-Minute Putty (cures 60 min), Combo Wear Fast Cure (cures 70 min).

Wet surface / low temperature cure.
Choose Wet Surface Repair Putty which cures at 4°C.

High Temperature Resistance. For maximum operating temperatures in excess of 120°C, choose from the following: Titanium and Ceramic Repair Putty/Brushable Ceramic - max, 175°C.

Chemical Resistance. The following have excellent resistance to mineral acids and most organic solvents:

Titanium Putty, Ceramic Repair Putty, Brushable Ceramic/Sprayable Ceramic.

Corrosion Resistance. To obtain best protection against corrosion choose from: Wear Resistant Putty, Titanium Putty, Ceramic Repair Putty, Brushable Ceramic/Sprayable Ceramic and Wet Surface Repair Putty.

Abrasion Resistance. Sliding abrasion - Wear Resistant Putty, Ceramic Repair Putty, Brushable Ceramic Titanium Putty, Wear Guard Fine Load, Combo Wear Fast Cure.
Severe Impact - Carbide Putty and Wear Guard High Impact

Machinable finish. Choose Titanium Putty for shafts, keyways and other equipment where application surfaces must be machined to conform to exacting dimensions.

Casting Epoxies
Dry Model and container completely before casting parts. This is particularly important when parts are made of porous material. For best results such parts should be sealed with two coats of lacquer.

Silicone, PTFE spray, or wax should be applied to the model in order to release the cast part from the model. For detailed reproduction, we recommend giving the model three coats of hard finish wax, buffing each coat well between applications.

To eliminate bubbles when casting liquid epoxy:

- Mix the resin and hardener slowly to avoid trapping air in the mixture.
- Brush a thin coat of epoxy on the model to be duplicated before casting the remainder of the epoxy.
- Pour the epoxy in a fine stream into one corner of the box containing the model. Do not pour back and forth.
- Position the model so the widest part is at the bottom of the box.
- Seat out any air under the model to avoid air being trapped in the epoxy while the material is curing.

Shrinkage of cast epoxy depends on the container and the amount of epoxy cast. A thick walled metal container will dissipate the heat generated by the curing epoxy and will minimise shrinkage. Sheet metal, wood and plastic containers, however, tend to hold heat and will cause shrinkage.

To avoid warpage in a large epoxy casting use a span depth ratio of 8 to 1. That is, for every 8cm of length, the ideal epoxy thickness is 1cm.

- Thinner sections can be cast if the epoxy is reinforced with angle iron, wire mesh or glass cloth.
- If a casting is thicker than 10cm, pour it in layers of 3.5cm to 5cm, allowing the epoxy to cool to room temperature before casting each layer.

An epoxy die for forming metal should have a radius equal to 3 times the thickness of the metal being formed if it is a soft metal of light gauge (22 and up). On heavier gauge metal the radius should be 5 times the thickness of the metal.

To reduce the cost of a large epoxy casting we recommend using sand, wooden blocks or other inexpensive material for the centre of the casting. Epoxy is then used for the more important wearing or working surface.

To form sharp bends in metal on an epoxy die, insert metal inserts or wear strips into the soft epoxy at the point where the greatest wear will occur.

When fabricating an epoxy punch and die we recommend using a high temperature sheet wax to allow for metal thickness.

Still have a question about working with epoxy? If we haven't answered all your questions, please call your local Devcon office (see back cover).

*Teflon is a Registered Trademark of DuPont Corporation

	Plastic Steel Putty (A)	Plastic Steel Liquid (B)	Plastic Steel 5-Min Putty	Aluminium Putty (F)	Stainless Steel Putty (ST)	Titanium Putty	Wet Surface Repair Putty	Wear Resistant Putty (WR2)	Carbide Putty	Ceramic Repair Putty	Brushable/Sprayable Ceramic	Wear Guard™ Ultra	Wear Guard™ Fine Load	Wear Guard™ Hi Impact	Combo Wear Fast Cure (FC)	Flexane® 80 Putty	Flexane® 80 & 94 Liquid	Flexane® Brushable Urethane	Megawear
Anti-vibration mounts						●									●	●			
Bearings - reseating worn/ oversized	●		●			●													
Casting repair	●	●		●	●	●		●											
Cast rubber parts																●			
Chocking/levelling		●				●													
Condensers/tube sheets								●		●	●								
Conveyor belt repairs															●				
Cyclones												●	●	●	●			●	●
Engine blocks	●			●		●													
Exhausters									●			●	●	●	●				●
Expansion joints																●			
Feeder bowls - lining															●		●		
Food processing equipment					●														
Floor repair							●								●	●			
Gaskets															●	●			
Gearboxes	●		●	●		●													
Holding fixtures		●														●			
Hoppers/bins		●							●		●	●	●	●		●	●	●	
Impellers							●		●	●							●		
Leaky pipes	●		●			●													
Lining chutes								●			●	●	●	●	●	●			●
Metal forming dies		●		●															
Mould making		●		●												●			
Noise reduction															●	●			
Pipe elbow lining							●		●	●		●	●	●	●				●
Prototypes	●	●		●	●											●			
Pulverisers/mills									●			●	●	●	●				●
Pump repairs - slurry								●		●		●	●	●	●				●
Pump repairs - water							●		●		●	●							
Rubber rollers															●	●			
Shafts/keyways	●					●		●											
Tank repairs	●				●										●	●	●		
Tank lining										●									
Tumbling barrels															●	●	●		
Valve repair						●		●		●	●								

SPECIAL FEATURES AND OPERATING CONDITIONS

Acidic conditions						●				●	●							●	●
Corrosion						●		●		●	●								
Impact									●					●					●
Low Temperature cure 4˚C			●				●												
Machinable epoxy	●	●	●	●	●	●													
Non-machinable epoxy								●	●	●	●	●	●		●				●
Operating temp. above 120˚C						●				●	●	●	●	●	●				●
Sliding abrasion								●		●	●	●	●		●				●
Wear and erosion						●		●		●	●	●	●	●	●				●
Wet surface cure							●												

CHEMICAL RESISTANCE OF DEVCON CORE LINE PRODUCTS

INTRODUCTION

The data represented here indicates the performance of five families of DEVCON® Core Line products when immersed in a wide variety of organic and inorganic liquids, solids and gases.

With a wide product range like Devcon's it is not possible to supply all the possible permutations and combinations of products and chemicals.

The data contained here represents the compilation of many years of experience, but even so this data must be treated with every care since many factors influence "Chemical Resistance". There is "NO" substitute for testing 'actual' products on 'actual substrates' under the actual chemical environmental conditions expected. Anything else can only provide guidelines.

All products are good in water, leaded petrol, mineral spirits,
ASTM#3 oil and polypropylene glycol. Only ratings of 3-5 should
be taken as any indication of suitability - testing is recommended
for any 3 rating.
5 - Excellent may be suitable for long term immersion
4 - Good, suitable for medium term or intermittent contact
3 - Fair, suitable for intermittent contact only
2 - Poor, suitable for splash contact with immediate clean-up only
1 - Not recommended

Chemical	Metal Filled Epoxy Putties & Liquids	Plastic Steel 5-Minute Putty (SF)**	Titanium Putty	Ceramic Filled Epoxies	Flexane & Urethane Casting Compounds
Acetone	2	2	3	3	1
Ammonium Hydroxide 10-20%	3	3	5	5	4
Ammonium Hydroxide 20%+	3	3	4	5	3
Apple Juice	4	4	5	5	4
Asphalt Liquid	5	5	5	5	-
Aviation Fuel*	5	5	5	5	3
Benzene	4	4	5	5	2
Benzoic Acid	3	3	5	5	-
Brake Fluid (guide)	5	5	5	5	4
Chlorine (wet)	2	2	3	3	1
Carbon Tetrachloride (wet/dry)	3	3-4	4	4	1
Corn Oil	5	5	5	5	4
Di-Ethyl Ether	3-4	3	4	4	2
Diesel Oil	5	5	5	5	3
Ethylene Glycol	4	4	5	5	3
Ferric Chloride (wet)	5	5	5	5	4
Flourine	3	3	4	4	1
Formic Acid	1	1	3	3	-
Freon	4	4	5	5	1
Lime Water	5	5	5	5	5
LPG	5	5	5	5	-
Lubricating Oil	5	5	5	5	2
Methylene Chloride	2	2	2	2	1
Molybdenum Disulphide	5	5	5	5	5
Nitric Acid 10-20%	2	2	3	3	1
Nitric Acid 20%+	1	1	2	2	1
Petrol	5	5	5	5	4
Phenol (100%)	1	1	1	1	1
Phenol (10% solution)	4	4	5	5	2
Phosphoric Acid (dilute)	2-3	2-3	3-4	3-4	2-3
Potassium Hydroxide 20%	4	4	5	5	4
Potassium Hydroxide 20%+	3	3	4	4	3
Silicone Oil	5	5	5	5	5
Sodium Chloride	5	5	5	5	5
Sodium Hypochloride	4	4	5	5	3
Tetrachlorooethylene	3	3	4	4	1
Transformer Oil (guide)	5	5	5	5	2
Urea	5	5	5	5	5
Uric Acid	5	5	5	5	5
Water (distilled, mineral, sea brine, fresh etc)	5	5	5	5	5
Xylene	4	4	5	5	2

*AVGAS see Aviation Fuel **Data for SF refers to short term (ie:days) immersion only

Typical physical properties after 7 days @ 21°C USE OF THE CHEMICAL RESISTANCE TABLES

The data supplied has been generated over the years by observing the behaviour of Devcon products in use, laboratory testing and interpolation of our own testing and results contained in the literature. They are based on total immersion of the product in the specified chemical at ambient temperature. As such they can only act as guidelines for actual applications since factors such as surface preparation, temperature, concentration and chemical combinations etc may significantly affect performance. Note that data for an emergency repair product, SF, refers to short term immersion only.

There is NO substitute for realistic testing.

There is NO substitute for talking to us - we may have information on a similar application indicating what products can and cannot be used.

Lastly, it often makes sense to test an application on a small scale by, for instance, coating only one pump in twenty or repairing an area of conveyor belt rather than the whole belt. If we are unsure of any application, in either a positive or negative way, we will always advise you to either test on a small scale or err on the side of caution.

<u>The data is shown as a comparative resistance to attack</u>

5) Excellent May be suitable for long term immersion.
4) Good Suitable for medium term or intermittent contact.
3) Fair Suitable for intermittent contact only.
2) Poor Suitable for splash contact with Immediate clean up only.
1) Not recommended.

All products are good in water, leaded petrol, mineral spirits, ASTM #3 oil and propylene glycol.
Only ratings of 3-5 should be taken as any indication of suitability - testing is recommended for any 3 rating.

Product Name	Colour	Mix Ratio by Wt. Resin:Hardener	by Vol. Resin:Hardener	Mixed Viscosity @ 24°C (<PS)	Specific Volume cm^3/kg	Coverage cm^2/kg @ 5mm
Plastic Steel Putty	Dark Grey	9:1	2.5:1	Putty	430	860
Plastic Steel Liquid	Dark Grey	9:1	3:1	15-25,000	473	932
Plastic Steel 5-Min. Putty	Dark Grey	1.7:1	1;1	Putty	440	878
Aluminium Putty	Aluminium	9:1	4:1	Putty	632	1264
HVAC Repair (fasmetal 10)	Aluminium	0:5:1	1:1	Paste	592	1260
Stainless Steel Putty	Dark Grey	11:1	3.7:1	Putty	448	896
Titanium Putty	Grey	4.3:1	3:1	Putty	422	843
Wet Surface Repair Putty	Grey	1.4:1	1;1	Putty	625	1250
Wear Resistant Putty	Dark Grey	9:1	4:1	Putty	501	1005
Carbide Putty	Grey	5:1	4:1	Putty	574	1148
Ceramic Repair Putty	Dark Blue	7:1	4.3:1	Putty	592	1184
Brushable Ceramic	Red, Blue	5.6:1	3.4:1	32,000	596	$1.55m^2/kg$ @ 0.4mm
Wear Guard Fine Load	Grey	2:1	2:1	Putty	447	894
Sprayable Ceramic*	Blue	*14:2.5:1	*7.1:2.1:1	33,600	505	$10m^2/3.8L$ @ 400µm
Combo Wear Fast Cure	Grey	2:1	2:1	Putty	465	902
Wear Guard High Impact	Dark Grey	2.5:1	2.5:1	Putty	448	902
Megawear	Light Grey	24:1	-	Putty	-	$0.79m^2/kg$ @ 6mm

* Mix ratio of Resin:Hardener:Thinner

Product Name	Kerosene	Methanol	Toulene/Xylene	MEK	Chlorinated Solvents
Plastic Steel Putty	4	3	4	2	3
Plastic Steel Liquid	4	3	4	2	3
Plastic Steel 5-Min. Putty	4	3	4	2	1
Aluminium Putty	4	3	4	2	3
Fasmetal 10	4	3	4	2	3
Stainless Steel Putty	4	3	4	2	3
Titanium Putty	5	5	5	4	4
Wet Surface Repair Putty	4	3	4	2	3
Wear Resistant Putty	4	3	4	2	3
Carbide Putty	4	3	4	2	3
Ceramic Repair Putty	5	5	5	4	4
Brushable Ceramic	5	5	5	1	3
Wear Guard Fine Load	4	3	3	2	3
Sprayable Ceramic	5	5	5	1	3
Combo Wear Fast Cure	4	3	3	2	3
Wear Guard High Impact	4	2	4	2	3

Pot life minutes @ 24°C	Maximum Operating Temperature °C	Hardness Shore D 2240	Cure Shrinkage cm/cm A	Cured Density 792g/cm³	Adhesive Tensile Shear MPa	Compressive Strength	Tensile Strength	Flexural Strength MPa	Coefficient of Thermal x10⁻⁶°C⁻¹ Expansion	Thermal Conductivity cal-cm/sec/cm²-°C x 10 -3	Dielectric Strength Volts/mm
45	120	85	0.0006	2.33	19.3	57	22.2	38.6	86	1.37	1181
45	120	85	0.0006	2.11	19.3	70.3	22.2	38.6	68	1.39	1181
5	93	85	0.0006	1.56	16.0	71.8	22.2	38.6	61	2.65	1181
60	120	85	0.0008	1.58	17.9	58.1	22.2	46.6	51	1.73	3937
60	120	85	0.0008	1.72	17.2	58	22.2	42.2	51	1.73	3937
45	120	85	0.001	2.23	16.4	58	23	36	61	1.23	1181
21	177	87	0.001	2.36	13.8	129.8	27.5	53.1	40	1.95	2205
45	120	82	0.002	1.6	18.5	38.8	19.0	34.4	104	1.41	5900
60	120	85	0.0005	1.8	15.2	67.6	29.6	44.8	58	1.44	15748
50	120	85	0.0009	1.75	9.3	56	18.2	37.8	95	1.65	7874
25	175	90	0.0022	1.69	13.8	87.6	16.4	44.6	32	1.88	14567
40	176	50	0.0022	1.53	13.8	105	26	55.1	35	1.92	15000
45	150	87	0.0006	2.2	9.48	75.8	29.6	49.6	62	1.81	13385
40	176	87	0.002	1.68	13.8	104.8	26.2	55	72	1.92	15039
7	150	87	0.0006	2.2	5.48	75.8	29.6	49	59	1.75	13385
45	150	85	0.0006	2.2	17.7	50.0	29.1	42.4	62	1.81	13385
20	150	-	-	-	-	102.6	-	-	-	-	-

Hydrochloric Acid 0-10%	Hydrochloric Acid 10-20%	Hydrochloric Acid 20%+	Sulphuric Acid 0-10%	Sulphuric Acid 10-20%	Sulphuric Acid 20%+	Acetic Acid Dilute	Glacial Acetic Acid	Sodium Hydroxide 0-10%	Sodium Hydroxide 10-20%	Sodium Hydroxide 20%+	Ammonia
3	2	2	3	2	1	2	1	4	4	3	4
3	2	2	3	2	1	2	1	4	4	3	4
3	3	2	3	2	1	2	1	4	4	3	4
3	2	2	3	2	1	2	1	1	1	2	4
3	2	2	3	2	1	2	1	2	2	2	4
3	2	2	3	2	1	2	1	4	4	3	4
4	3	2	5	4	3	5	1	5	5	4	5
3	2	2	3	3	3	1	1	4	4	3	4
3	2	2	4	2	1	2	1	4	4	3	4
3	2	2	3	2	1	2	1	4	4	3	4
4	3	2	5	4	4	5	1	5	5	4	5
5	4	3	5	4	4	5	1	5	5	4	5
3	3	2	3	2	2	3	1	4	4	3	4
5	4	3	5	4	3	5	1	5	5	4	5
3	3	2	3	2	2	3	1	4	4	3	4
5	4	3	5	4	4	5	1	5	5	4	5

CAUTION: Epoxies are generally not recommended for long term exposures to concentrated acids and organic solvents. The information contained in these Chemical Resistance Charts is given in good faith and is believed to be reliable. We cannot assume responsibility for extrapolation of this data into situations which are different from the actual test conditions. It is the user's responsibility to determine the suitability of any of the products for actual use, in consultation with ITW Polymers and Fluids.

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