

ACF 50[®]

ANTI CORROSION FORMULA

AVIATION • MOTORCYCLES • FIREARMS



**RIDE
THE
WIND**
WITHOUT WORRY!



CORROSION BLOCK[®]

MARINE • MINING • INDUSTRIAL



**PLAY
HARD**
LEAVE THE MAINTENANCE TO US!

simon@dennes.co.za



About Corrosion Block



Corrosion Block entered the commercial consumer market globally in 1990, making its emergence in the marine industry for the protection of outboard motors, electrical equipment, metal structures, and fittings.

Since then, Corrosion Block products have grown in popularity and have spread to the mining and industrial sectors, where it is used in a multitude of applications with great success.

Corrosion Block offers users the power to purchase a truly multipurpose product that is extremely effective and outperforms almost all of the alternative products. In most cases, it reduces the need to purchase several other products (each focused on a specific application), therefore saving you time and money.

More on Corrosion Block

- Corrosion Block is rated to protect electrical components and installations to over 36 kV. It is therefore ideal to protect just about any electronic component you may have, including remote-controlled equipment, transformers, switchgear, household or commercial components, refrigeration and air-conditioning systems, etc.
- The Corrosion Block range consists of liquid for general use, XD Gel for use in harsh operating conditions on vehicles and machinery, and grease for all greasing applications (high temperature, high load, etc.).
- Corrosion Block is available in pump cans (90ml), aerosol cans (300ml) and liquid (250ml, 500ml, 5L, 25L and 210L). The liquid can be fogged into panels and structures using a compressor kit at 5 bar pressure; this type of application is the most effective and most economical.
- Corrosion Block XD Gel is available in 5L, 25L and 210L.
- Corrosion Block Grease is available in 57g, 396g, 500g, 5kg, 16kg, 60kg and 180kg.



"Corrosion Block leaves no gummy residue because it does not contain wax, resin, tar, asphalt, silicone or Teflon."



Simon@dennes.co.za



is a unique product that has the ability to both prevent and stop corrosion in more places on power sports equipment than any other product of its type. Corrosion Block is a clean, clear, ultra-thin fluid which leaves a non-greasy atmospheric barrier to protect all metal surfaces. Corrosion Block leaves no gummy residue because it does not contain wax, resin, tar, asphalt, silicone or Teflon. It can be sprayed, brushed or wiped on.

Prevention is better than replacement

On electrical systems, Corrosion Block works both as a preventative and a cure. With just one application Corrosion Block’s ability to remove moisture, combined with its excellent penetrating and strong dielectric properties (36 kV), have brought electronics “back from the dead”. By removing moisture from the corrosion by-product and isolating it from contacting the metal surface, continuity can be restored to electrical circuits. Corrosion Block can be used on many different electrical and electronic applications without fear of damaging the conformal coatings used, and it does not harm plastics or painted surfaces.



Applying Corrosion Block is easy ...

- Remove accumulation of dirt and grease and apply directly to areas already corroded to kill the corrosion process.
- Apply sparingly on all exposed metal and track components for corrosion protection.
- Spray directly into electrical connectors to waterproof and prevent corrosion caused by moisture.
- Apply Corrosion Block after painting or remove it with a degreaser before painting, as Corrosion Block is oil based so paint won’t stick to the coating.

**DON'T FORGET TO
SPRAY YOUR VEHICLES**



Product features

- Non-toxic, non-flammable, dielectric waterproof (fresh and salt water), biodegradable, ecofriendly and recyclable.
- Kills existing corrosion and prevents future corrosion formation.
- Remains active against corrosion formation for up to 12 months.



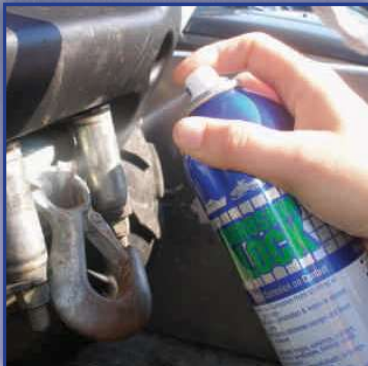
**STOPS MUD
FROM STICKING**



Battery Terminals



Connectors



Winch Cables



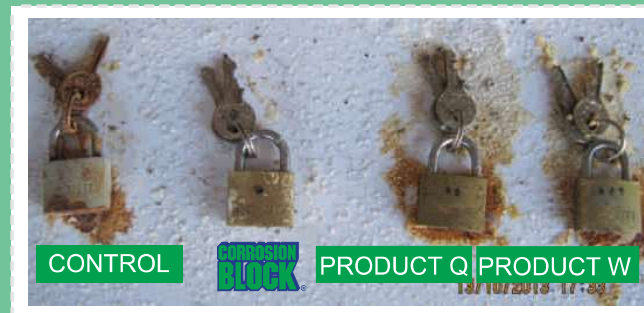
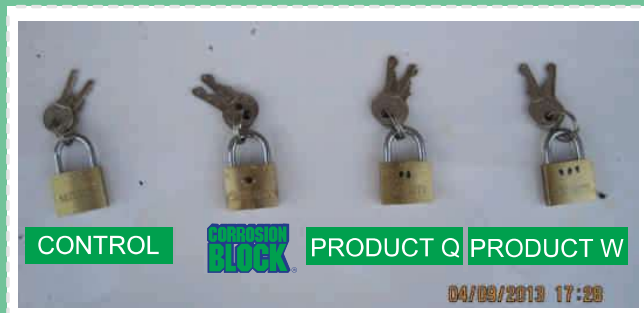
Skid Frames/Suspension



- Improved reliability
- Reduced repair
- Reduced labour costs

Simply spray Corrosion Block on the area or connection that needs protection until shiny. If the area is heavily corroded, saturate the entire surface. Corrosion Block has a powerful capillary or creeping action that delivers its powerful synthetic corrosion inhibitors into the smallest crevices. Once there, it lubricates and protects against moisture attack with an ultra-thin fluid film.

Case study



Padlocks exposed to daily salt water sprays (5 tablespoons salt in 120 ml water) for the first 30 days from 4 September 2013 to 13 October 2013, therefore 39 days in total from start to finish for the test.

“Corrosion prevention is key to prolonging the useful life of components and drastically reduces replacement cost and downtime.”

Simon@dennes.co.za



International product certification



**LINEMAN'S TESTING LABORATORIES
OF CANADA LIMITED**

100 RIVALDA ROAD, WESTON, ONTARIO M9M 2M8

Tel.: (416) 742-6911-2 Fax: (416) 748-0290

April 15, 1994

Lear Chemical
P.O. Box 1040, Station B
Mississauga, Ontario
L4Y 3W3

Attention: L. W. McCleery

Dear Sir:

We have performed dielectric strength tests on one (1) sample of corrosion block fluid in accordance with ASTM Designation D877.

The average dielectric strength on six (6) tests was 36 KV.

We wish to thank you for your patronage and to advise that if further information is required, please do not hesitate to contact me.

Sincerely,

LINEMAN'S TESTING LABORATORIES

A handwritten signature in blue ink, appearing to read "G. M. Lovett", written over a horizontal line.

G. M. Lovett
Petroleum Products

GML:dlh

AN ELECTRICAL EQUIPMENT TESTING COMPANY

Safety Product Sales • Substation Maintenance • Transformer Oil Analysis • Safety Equipment Testing
Meter Repairs & Sales • Acoustic Emission, Dielectric & Structural Aerial Device Testing



MAXIMUM PROTECTION

WATERPROOF GREASE



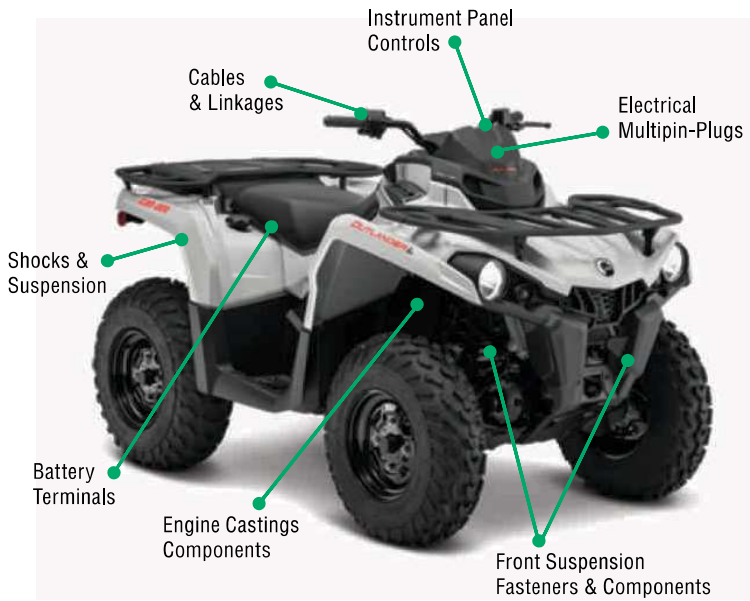
Cape Town Product Test: Corrosion Block Grease
Wheel bearings exposed to daily sea water sprays for the first 30 days from 4 Sep 2013 - 17 Nov 2013, therefore 74 days in total from start to finish.



Simon@dennes.co.za

“Corrosion prevention is key to prolonging the useful life of components and drastically reduces replacement cost and downtime.”

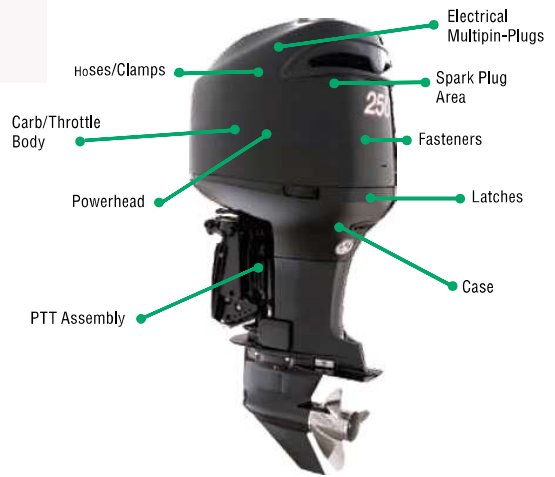
Corrosion Block Applications



Being "Pro Active" about corrosion control is important to protect valuable equipment.



Corrosion Block Improves Reliability, Reduces Repair and Labour Costs



PROTECTS • PENETRATES • LUBRICATES ALL METALS & ELECTRONICS





KILLS CORROSION ON CONTACT...

PREVENTS NEW CORROSION FROM FORMING



- **CLEAN, CLEAR ULTRA THIN FLUID**
- **NON-GREASY ATMOSPHERIC BARRIER**
- **SPRAY DIRECTLY INTO ELECTRICAL CONNECTIONS**
- **PREVENTS CORROSION INDUCED FAILURES**
- **EXTENDS COMPONENT LIFE**

All subterranean mining enterprises operate in harsh conditions where both humidity and naturally corrosive elements in the soil lead to a severe corrosion problem. This type of environment costs the Industry billions in repair, replacement and maintenance.

All forms of corrosion are found here and affect unprotected steel and aluminium surfaces, as well as "all" electrical systems and components. Pitting corrosion, galvanic, cracking, surface, inter granular, de-alloying, fretting and high temperature corrosion are present.

A maintenance solution to the ravages of corrosion is the Corrosion Block line of anti-corrosion fluids and greases. Corrosion Block uses polar bonding to attach its molecules to ferrous or non-ferrous metals, a microscopic thin film (less than .0004 of an inch) layer is established that is totally hydrophobic and will not conduct electricity (dielectric to 40kV).



PROTECTS • PENETRATES • LUBRICATES ALL METALS & ELECTRONICS



CORROSION BLOCK'S THIN FILM ACTS LIKE AN "OFF SWITCH" FOR CORROSION... REMAINING EFFECTIVE FOR UP TO 12 MONTHS

Corrosion Block does not leave a sticky residue as it contains no solids. It is also very low in VOC's contributing to a healthier air quality. Being hydrophobic and dielectric Corrosion Block can be used directly on electronics an electrical contacts. Areas that benefit from these features are the ground based installations like high voltage electrical panels, switch gear, and transformers.

Maintenance engineers from global mining operations agree there several areas that are especially vulnerable to corrosion and which can greatly benefit by a regular corrosion maintenance schedule.

The electrical systems of any mining operation represent the nerve centres which act as the command and control for the entire operation. Critical among them are the internal/external and subterranean lighting, CCTV and communications systems. All of these are susceptible to moisture induced corrosion.

BEING PROACTIVE IS THE BEST WAY TO PROTECT YOUR INVESTMENTS

Electronics
Switches
Relays
Junction Box
Fuse Panels
Connectors and Pins
Motor Operated Valves
Terminal Strips
Electric Motors
Solenoids

Starters
Battery Terminals
Engine
Circuit Breakers
Security Systems
Locks
Generators
Alternators
Control Panels
Valves

PCB's
Thread Connections
Circuit Boards
Battery Terminals
Bolts, Screws and Hardware
Engines
Mining Equipment
Joints and Welds
Electrical Systems



CHOOSE THE BEST PRODUCT FOR YOUR APPLICATION

Corrosion Block in aerosol or bulk liquid for quick and easy corrosion protection.



Corrosion Block XD Thixotropic Gel for heavy duty use in the harshest conditions.

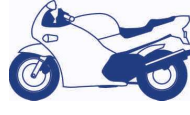


Corrosion Block Waterproof Grease out performs lithium and most synthetic greases, and meets requirements for NLGI GC-LB.



- Prevents Corrosion Caused by Condensation
- Approved use on Ferrous and Non-Ferrous Metals
- Protects Electrical Systems and Components
- Contains No Wax, Silicon, or Other Solids
- 'Active' for up to 12 Months
- Excellent Lubricant and Penetrant
- Easy Application

KILLS CORROSION ON CONTACT



CORROSION BLOCK®

High Performance
Multi Purpose **GREASE**
Won't Soften, Breakdown or Wash Out

APPLICATIONS

MARINE:

Winches, Pulleys, Battery terminals, Trailer hitch, bearings, rollers & casters, Trim tabs, Inboard/ Outboard drives, Turnbuckles, Sea cocks, Y valves, Windlasses, Canvas snaps & zippers, Auto pilot mechanisms, Locks, Davits, Prop shafts, Fishing reels & guides, Hinges, Light sockets, Steering mechanisms, Electric motors & connectors, Throttle linkages & shift controls, Roller furling gear, Sail track, Gear box's, Blocks & cam cleats.

AUTOMOTIVE:

All purpose chassis lube, Disk brake & caliper assembly grease, Parts lubricant, Bearing grease, Battery terminals, Gear regulators and tracks, Linkages, Hinges and locks, Hubs, Axles, Springs, Wiring harnesses, CV joints, Antilock braking systems, Fifth wheel hitch.

RECREATIONAL:

Bicycles, Trailers, Hitches, Running Lights, Fitness equipment, Mopeds, Running machines, In-line skate bearings, skateboards, Ski bindings, ATV's, Jet ski, Motorcycles, Snow Mobile (Chassis points), Hunting gear & guns, Fishing equipment.

INDUSTRIAL:

Plain and anti-friction bearings, Deep drawing application, Ball and roller bearings, Electronic equipment, Fans, Wheel bearings, Farm equipment, Food processing equipment, Ovens, Chassis points, Cables, Gaming machines, Mining equipment, Electric motor bearings, Satellite antenna motor drive & assembly, Switch assemblies, Freezers, Conveyer assemblies, Valves, Blowers, Cams, Slides, Chains, Water pumps & valves, Paving Equipment, Snow removal equipment, Open gears, Vending machines & Parking meters.

CORROSION BLOCK GREASE PERFORMANCE DATA

Properties	Test Method	Found
4-Ball Wear Test - Scar Diameter	ASTM D-2266	0.40mm
4-Ball EP - Load Wear Index	ASTM D-2596	100
4- Ball EP - Weld Point	ASTM D-2596	500kg
Rust Protection	ASTM D-1743	PASS
Wheel Bearing Life	ASTM D-3527	276hrs
Water Washout @ 175°F	ASTM D-1264	2.0wt%
Mobility @ 0°F	USS	12g/min.
Low Temperature Torque @ -40° C	ASTM D-4693	6.7 Nm
Color and Appearance	Visual	Smooth, Aqua
N.L.G.I. Grade	ASTM D-217	2
Dropping Point	ASTM D-2265	520°F/271°C
Base Oil Viscosity, @104°F / 40 °C	ASTM D-445	126 cSt
Base Oil Viscosity, @ 212°F / 100°C	ASTM D-445	11.7 cSt
Penetration @25°C - Unworked	ASTM D-217	278
Penetration @25°C - 60 Strokes	ASTM D-217	280
Penetration @25°C - 100,000 Strokes	ASTM D-217	293
Timken OK Load	ASTM D-2509	60 lbs

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LEAR CHEMICAL RESEARCH CORPORATION

P.O. Box 1040 Station B, Mississauga, ON L4Y 3W
1-800-BLOCK-IT (256-2548) / Inter.(905)564-0018
FAX: (905) 564-7077

Internet: <http://www.learchem.com> Email: sales@learchem.com



Reduced maintenance costs



- ACF-50 carries 29 aviation OEM-ratings, including Airbus, Boeing, Learjet as well as US Mil-Spec ratings and many others.
- ACF-50 is used extensively in the refurbishment of military and civilian aircrafts, after natural events such as flooding in North America, causing electrical failures and corrosion formation on components and structures.
- Due to ACF-50's popularity in the aviation industry, people started using it on their motorcycles and firearms with great results. This is due to the effectiveness of the product to prevent corrosion, its ultra-thin and non-tacky finish, as well as its ability to prevent electrical problems.
- ACF-50 is available in pump cans (90ml), aerosol cans (300ml) and liquid (250ml, 500ml, 5L, 25L and 210L). The liquid can be fogged into panels and structures using a compressor spray kit at 5 bar air pressure; this type of application is the most effective and most economical.

Case study

Corrosion abatement procedure performed by Scientific Material International on ACF-50 as requested by Bombardier Aerospace/Learjet Inc. Test coupons consisted of AMS 4037 Aluminum (2024-T3). All coupons were fogged in a sulfurous acid/salt fog for 192 hours,



Panels pre-treated with ACF-50 showed an average weight loss of only 1.9 mg

Conclusion

ACF-50 prevents the formation of new corrosion cells



Untreated panels showed an average weight loss of 150.1 mg

Conclusion

Untreated Panels corrode rapidly



Untreated panels exposed for 96 hours, treated with ACF-50 and then exposed for an additional 96 hours, showed an average weight loss of only 69.8 mg

Conclusion

ACF-50 stops the corrosion process



Simon@dennes.co.za

AEROSPACE PROTECTION

- *Reduced maintenance costs*
- *Improved reliability*
- *Commercial, civilian and military aircraft*



An ACF-50 treatment every 12-24 months on airframes will keep corrosion in a permanent holding pattern.

ACF-50 can be used on

- **Leading edges**
- **Inlet rings**
- **Actuators**
- **Landing gear mechanisms**
- **Galley/lavatory structures**
- **Seat tracks**
- **Door sills**
- **Electrical contacts**



50000 Aviation Spray System

**PROVEN PROTECTION
FOR OVER 30 YEARS**

Simon@dennes.co.za



“Successfully prevents corrosion from starting and spreading during active riding or storage periods with a superior moisture barrier.”

Having the right tools always makes the job easier. Our professional Hand-Held Spray System coupled with ACF-50's Ultra-Thin Fluid Film (UTFF) technology, actively drives out moisture from the smallest crevices, providing superior protection.

ACF-50's hydrophobic water-proofing film formers and polar bonding inhibitors resist all wet conditions, providing long-term corrosion protection.

ACF-50 locks moisture out and protects all electrical connectors, battery terminals, plugs and components. Computerized ignitions and fuel control units with their multi-pin plugs will benefit from a light treatment. Switches, controls and levers will all be lubricated and protected from corrosion.

If corrosion is present, ACF-50 will help inhibit further progress by insulating and electrically “switching off” the corrosion cell. ACF-50 will make maintenance easier and save you money. It will make the bike easier to clean, look better, help prevent surface, structural and electrical corrosion-related failure, thereby increasing reliability and the bike's value.



50017 Hand-Held Spray System
Includes Bullet Tip & 3 Fogging Wands

“133 ml of ACF-50 professionally fogged will protect a large Touring Cruiser from corrosion for up to 12 months.”

Adding ACF-50 to your maintenance schedule is your first step towards combating the corrosion process and stopping it in its tracks.

Protect your ride with ACF-50

- *Preventative maintenance*
- *Detailing service*
- *Vintage restorations*
- *Off-season riding*
- *Mud and winter racing*
- *Seasonal storage*



Test on bare steel left outside for 14 weeks
Tested in Swakopmund, Namibia



PRODUCT Y

PRODUCT W

Capillary (creeping) function of
Corrosion Block over 4 weeks

Bare steel exposed
to the elements for
10 weeks. Then
Corrosion Block
was applied to 50%
of the area.



YAMAHA



DUNE
WORKS



Product Lab Performance

TEST REQUIREMENTS FOR MIL-C-81309E Type III and Amd 3 Type II

CHARACTERISTICS	REQUIREMENTS	TEST PARA...	FOUND
• Minimum Flash Point	60°C (140°F)	4.7.1	Conforms (175°)
• Synthetic Sea Water (Sulfurous Acid Spray)	Type II: No visible corrosion of carbon steel after 2 cycles	4.7.2	Conforms
• Synthetic Sea Water Displacement	No visible corrosion	4.7.3	Conforms
• Removability	Not more than 3 cycles to remove	4.7.4	Conforms
• Abrasives	None present	4.7.5	Conforms
• Maximum Film Thickness	Type II: 0.0005 inches	4.7.6	Conforms
• Sprayability	Sprayable	4.7.7	Conforms
• Corrosivity	No visible pitting, etching or dark discoloration, No weight change (milligram/cm ²) greater than 0.5 for magnesium, cadmium and zinc, nor greater than 0.2 for aluminum, copper and brass	4.7.8	Conforms
• Staining	No visible evidence of staining or other deleterious effects	4.7.9	Conforms
• Minimum dielectric breakdown	25,000 volts	4.7.10	Conforms 38,000 volts
• Mixability of compounds	No evidence of separation	4.7.11	Conforms
• Lubricity of compounds	Less than 0.20	4.7.12	Conforms
• Effect on electric components	No significant change in capacitance, dissipation factor and conductance of coil forms and capacitors in the Q and amount of capacitance to resonate the coil. No significant change in the resistance of resistors. A change greater than ½ the allowed tolerance of the component shall be considered as significant	4.7.13	Conforms
• Effect on electric connectors	No significant increase in resistance between connected pins or decrease in resistance between adjacent pins	4.7.14	Conforms

ACF-50 has endorsements or approvals from 29 airframe OEM's and meets these industry anti-corrosion performance requirements.

ADDITIONAL AEROSPACE TEST DATA

TEST IDENTITY	TEST METHOD	RESULTS
Douglas Aircraft CSD #1		
• Painted Surfaces	ASTM F 502	Conforms
• Residue Surfaces	ASTM F 485	Conforms
• Sandwich Corrosion Test		Conforms
• Stress Cracking Acrylic Plastics	ASTM F 484	Conforms
• Immersion Corrosion Test	ASTM F 483	Conforms
• Cadmium Removal Test	ASTM F 1111	Conforms
Douglas Aircraft DMS 2150		
• Film Characteristic		Conforms
• Product Composition		Conforms
• Appearance		Conforms
• Toxicity		Conforms
• Flash Point	ASTM D 56	Conforms
• Nonvolatile Content	ASTM D 1644A	Conforms
• Viscosity	ASTM D 445	Conforms
• Salt Fog Exposure	ASTM B 117	Conforms
• Water Displacement		Conforms
• Removability		Conforms
• Storage Stability		Conforms
BMS 3-23E		
Table I		
• Flash Point	ASTM D 93	Pass
• Sprayability	MIL-C-1617D	Pass
• Low-Temperature Adhesion	MIL-C-1617D	Pass
• Nonvolatile Content	ASTM D 1644	Pass
• Detectability		Pass
• Removability		Pass
• Storage Stability		Pass
• Drying Time		Pass
• Compatibility with Cadmium		Pass
Table II		
• Water Displacement Ability	MIL-C-1617 D	Pass
• Viscosity		
• Corrosion Inhibiting Characteristics	FED-STD 791 (ASTM G 34)	Pass
• Functional Penetration Test		Pass
Volatile Organic Content		
• California Air Quality Compliant	ASTM 2369	>166.9g/L
Misc.		
• Humidity Resistance	AMS 3066B	Conforms
• Hydrogen Embrittlement	ASTM F 519	Conforms
• Polyimide Insulated Wire	MIL-C-87937 B	Conforms
Airbus Industrie TN A 007.10138		
• Elsan / Racasan Toilet Fluid		Conforms
• Turco 5854-2L		Conforms
• Orange Juice		Conforms
• Coke		Conforms
• Coffee		Conforms
• De-icing Fluid NATO S.745		
• 3:4		Conforms
• 1:2		Conforms
• 1:4		Conforms
• 5% Sodium Hydroxide (NaOH)		Light Oxidation
• 5% Hydrochloric Acid (HCl)		Conforms
• 5% Nitric Acid (HNO ₃)		Conforms
• 10% Acetic Acid (CH ₃ COOH)		Conforms
• 45% Ethanol		Conforms



LEAR CHEMICAL RESEARCH CORPORATION
P.O. Box 1040 Station "B" Mississauga, Ontario L4Y 3W3
PHONE: (905) 564-0018 FAX: (905) 564-2548 1-800-256-2548