DeoxIT®

PRODUCT Info

DIRECTIONS FOR USE

When and How to use DeoxIT® D-Series, DeoxIT® Gold G-Series and DeoxIT® Shield S-Series Products.

1. Quick Description:

DeoxIT® D-Series.
General purpose cleaner, for all metal surfaces with severe oxidation and corrosion. If there is a discoloration of the metal (visual signs of oxidation/corrosion) - it is considered severe. Use DeoxIT® D-Series to dissolve contamination, improve the connection as well as lubricate and protect the surface.
For reference, DeoxIT® has approximately 20% cleaning action.

DeoxIT® Gold G-Series.
For plated surfaces (gold and other precious metals). Recommended for critical applications where only slight cleaning action is necessary. If the surface looks clean, applying DeoxIT® first is usually not necessary. If small amounts of oxidation are present on the surface, DeoxIT® Gold will dissolve them. Apply DeoxIT® Gold after DeoxIT® D-Series on plated metal surfaces, except where noted with DeoxIT® Shield below. The more critical the connection/part, especially low current applications, DeoxIT® Gold should be the final step.
For reference, DeoxIT® Gold has 0.5% cleaning action for removing minor amounts of oxidation.

DeoxIT® Shield S-Series.
Suitable for all metal surfaces to seal, lubricate and protect. Recommended after DeoxIT® for best protection or on NEW metal surfaces (usually in the manufacturing process). Also ideal where high degrees of pollution (sulfur, salts, acids, etc.) are present. DeoxIT® Shield should be applied to clean surfaces - after applying DeoxIT®, using an ultrasonics or other cleaning method.
For reference, DeoxIT® Shield has 0% cleaning action. Use only on clean surfaces.

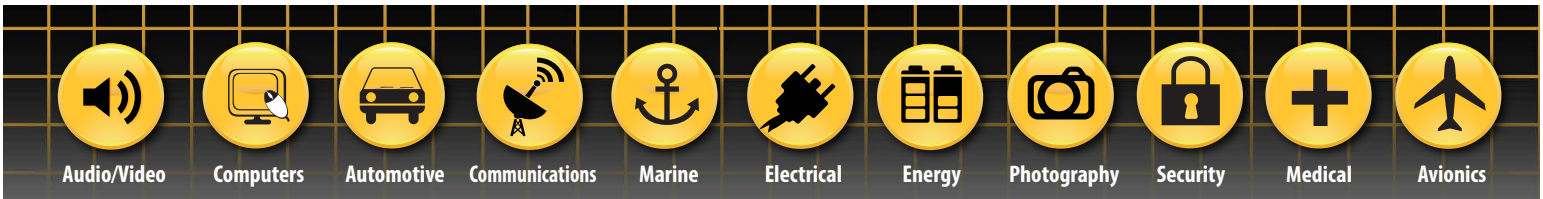
DeoxIT® Fader F-Series.
DeoxIT® Fader F-Series is a precision lubricant specifically formulated to improve conductivity and lubricate conductive plastic and carbon compound faders, switches and other similar components. Additional information and instructions for use on DATA Sheets.

DeoxIT® Grease M260 & L260.
DeoxIT® manufactured in semi-solid form for use as a combination cleaning, deoxidizing, protecting and lubricating preparation. Greases protect against oxidation (galvanic corrosion) and are free of mineral acids, sulphurs, alkalis and other noxious components aggressive to metals. DeoxIT® Greases improve performance of electrical contacts and mechanical components that require precise lubrication. DeoxIT® Greases are available with a variety of conductive and non-conductive particles or with no particles. Additional information and instructions for use at www.caig.com.

2. SELECT Which Product, THEN Concentrate (100%, 5% or custom), THEN Applicator.

2a. SELECT Product:

DeoxIT® D-Series: As the previous paragraphs mention, if you can see oxidation or corrosion on the surface, it is severe, use DeoxIT® D-Series first. If the use is non-critical and for general purpose, DeoxIT® D-Series should be all that is required.



DeoxIT® Gold G-Series: For critical applications (low voltage/amperage), gold surfaces, plated surfaces, and surfaces that have copper as a base metal, use DeoxIT® Gold as the final step. Select G-Series, Gx-Series, Gx2-Series and Gx3-Series depending on temperature ranges and industry.
Additional info: http://store.caig.com/s.nl/sc.2/.f

Use DeoxIT® D-Series prior to applying DeoxIT® Gold, if oxidation or corrosion is visually noticed on the surface. (Remember, DeoxIT® Gold only has a small amount of cleaning ability). Since DeoxIT® Gold has the ability to penetrate the surface metal and seal and protect the base metal (dendrite/fretting corrosion), it is ideal to use it especially when the base metal is copper.

DeoxIT® Shield S-Series: For severe environments. High degrees or humidity, salts, corrosive materials and pollution. Apply to *new/clean metal surfaces. Pre-clean with DeoxIT® D-Series.

*** Clean Surface:** Our defintion of a clean surface is a surface completely free of oxidation. Example, if a manufacture makes "new" parts, and they sit in storage for months (without protection), we do not consider them "newly clean". If they clean them just before assembly, we DO then consider them clean.

2b. SELECT Concentrate (5% or 100%):

***DeoxIT®* Products are available in two standard percentages, 5% and 100%.**
CAIG offers these formulations in a variety of applicators; sprays (standard and non-flammable), pens, oilers, wipes, squeeze tubes, etc.
See next section for selection process.

IMPORTANT: Generally, it is always recommended to apply a **THIN** layer of DeoxIT® to the metal surface.
When you select the 5% concentrate, one does not normally need to wipe off excess after application. After the solvent evaporates, a thin layer will remain. If you select the 100% concentrate, we recommend to wipe off excess, if possible. Wiping off excess is sometimes not possible, especially if sprayed into a semi-sealed part. If this happens, just spray/apply a small amount into the part.

2c. SELECT Applicator:

Choosing an Applicator usually depends on **WHERE** one wants to apply the product and then **HOW** the product will be applied.

WHERE:
Where refers to deciding how critical and easy it will be to apply DeoxIT® to a particular part or device. DeoxIT® is safe on most materials, however, you always want to take care (and reduce waste) to reduce any possibility of harm to the equipment or part. Below, I will give you both extremes for an idea of a simple use and a critical use.

WHERE and HOW:
A) If you want to apply DeoxIT® to a cable end of an HDMI cable or the metal of a light bulb and socket, you could use the standard spray (Part No. G5S-6 or D5S-6). Just hold the end away from any equipment and spray one short burst on metal area, and your done (the solvent will evaporate and leave a thin layer.

B) If you want to apply DeoxIT® to specific metal connections and connectors on sensitive circuit boards (one where you are not positive if any product should be applied to questionable components on the board). In this case you want to select an applicator that will allow for precision application on DeoxIT®. Selecting one will depend on the type of connection/connector. For example; an edge connector on the circuit board would be best applied with the Cotton Wipes (Part Nos. G50W, D50W and S50W). With a socket, the best applicator maybe one of the pens (Part Nos. G100P, D100P and S100P).

CAIG LABORATORIES, INC.
CAIG Laboratories, Inc.
12200 Thatcher Court, Poway, CA 92064 U.S.A.
P: 858/486-8388 | **E:** info@caig.com
WEB: www.caig.com | www.deoxit.com

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APPLICATOR Method:
Select one of our existing applicators (pen, wipes, oilers, brush, etc.) and apply directly to the needed metal part. Remember to apply only small amounts and wipe off excess if required.

SELECTING Sprays and Liquids:

SELECTING a DeoxIT® SPRAY:
(See Chart on last page: "DeoxIT® - Spray Selection Guide - Figure 1)

A) Standard Spray: Provides flushing action

Products:
DeoxIT® D5 D-Series Spray (D5S-6)
DeoxIT® Gold G-Series G5 Spray (G5S-6)
DeoxIT® Shield S-Series S5 Spray (S5S-6)

Formulation: 5% DeoxIT® (active ingredient), 75% odorless mineral spirits (carrier solvent), 20% propellant.

Formulation contains petroleum naphtha (odorless mineral spirits) solvent, and is briefly flammable (until solvent evaporates within 2-3 minutes). It's slower to evaporate, providing flushing action to remove surfaces dirt, grease and other contaminants. Is ideal for connectors and components removed from equipment or those that are easily accessible. It is safe on plastics. When in doubt, always test for compatibility, especially vintage equipment with aging ABS plastic(s).

B) Non drip - Quick Dry Spray: Nonflammable, fast evaporating carrier solvent formula

Products:
DeoxIT® DN5 D-Series Spray (DN5S-6N)
DeoxIT® DN5 D-Series Mini-Spray (DN5MS-15)
DeoxIT® Gold G-Series GN5 Spray (GN5S-6N)
DeoxIT® Gold G-Series GN5 Mini-Spray (GN5MS-15)
DeoxIT® Gold G-Series GX5 Spray (GX5S-6N)
DeoxIT® Shield S-Series SN5 Spray (SN5S-6N)
DeoxIT® Shield S-Series SN5 Mini-Spray (SN5MS-15)

Formulation: 5% DeoxIT® (active ingredient), 75% 1,1,1,3,3-PENTAFLUOROPROPANE (carrier solvent), 1-5% isopropyl alcohol, 20% propellant

May be used where fast evaporation and/or non-flammability is required, and no dripping is preferred. It is also safe on plastics.

C) 100% Spray: No solvents, metered one-shot valve

Products:
DeoxIT® D100 D-Series Spray (D100S-2)
DeoxIT® Gold G100 G-Series Spray (G100S-2)

Formulation: 20% DeoxIT® (active ingredient), 80% propellant

Used where maximum lubrication is needed, but solvents are not desired. For example, where cleaning and lubrication is required or over-spray might adversely affect sensitive plastics. DeoxIT® utilizes a metered valve which sprays short bursts of 100% liquid.

SELECTING a DeoxIT® 100% LIQUID:

Applicators:

a) Squeeze Tube: Used by OEMs for maintenance kits. Provides small drop to surface.

b) Pen - felt tip: Precision application, slight abrasive action. Provides liquid through felt tips. Replacement tips available.

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12200 Thatcher Court, Poway, CA 92064 U.S.A.
P: 858/486-8388 | **E:** info@caig.com
WEB: www.caig.com | www.deoxit.com

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c) Oiler Pen: Very precise application of fluid. Provides pin-point application of liquid. Ideal for hard to reach applications.

d) Oiler Squeeze Bottle: Similar to Oiler Pen, except in squeeze bottle.

e) Wipes: Individual packaged wipes (thin paper material). For connections easily accessible and surfaces, i.e. audio/video connections, batteries, etc.

f) Wipes: Jar with 50 wipes (thick cotton material). For connections easily accessible accessible and smooth and irregular surfaces, i.e. edge connectors, industrial connections.

g) Brush: Small 7.4 mL bottle with brush applicator. General purpose for applying liquid with a nylon brush. Ideal for applying to outer and inner surface with wiping action. Care should be taken to keep brush clean.

h) Bulk Bottles: For production applications. Contact CAIG for information.

Which DeoxIT® 5% LIQUID Applicator do I Use?

Using the 5% concentrate applies the correct amount of DeoxIT® to the metal surface. Usually used for production applications. Can be swabbed, dipped or sprayed onto the surface. Available in several size containers.

a) Oiler Squeeze Bottle: Similar to Oiler Pen, except in squeeze bottle.

b) Bulk Bottles: For production applications. Contact CAIG for additional information.

3. HOW, for Large Scale & Production Application.

There are many ways to apply DeoxIT® in large scale applications. You can use any number of our applicators (spray, pens, wipes, brushes, etc.).
You need to decide which applicator should be used to provide a best coverage, with the least waste and least amount of labor.

Below are just a few examples.
(Contact us if you have a specific requirement and we will help you select the best method).

BATH Method:
If you have many sockets, connectors or metal parts that are going to be installed into equipment, you can place the parts into a bath or ultrasonic cleaner with our 5% solution of DeoxIT® (Part Nos. D5L, G5L and S5L).

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CAIG Laboratories, Inc.
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P: 858/486-8388 | **E:** info@caig.com
WEB: www.caig.com | www.deoxit.com

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SPRAY Method:
This can be accomplished in several ways. If the circuit board or device has been checked for compatibility you can incorporate it into your existing production line and use a cleaning section (with 5% solution) to apply the DeoxIT® to the parts. If applying DeoxIT® cannot be applied by this type of automation, you can use one of our standard spray cans (Part Nos. D5S-6, DN5S-6N, G5S-6, GN5S-6N, S5S-6, SN5S-6N). Use a masking template to section off areas of the board that you do not need DeoxIT® and then spray.

4. IMPORTANT NOTES.

Just always keep in mind, only a small amount of DeoxIT® should to be applied to the metal surface. More is NOT better. You do not need to make sure DeoxIT® gets onto the entire metal surface. If you missed a little, DeoxIT® will migrate and coat the metal surfaces that were not treated. Also, even if you were only able to treat the connector and not the socket, DeoxIT®, once part is connected, will migrate over to the socket and treat the exposed metal. This is one of the best attributes of DeoxIT®. Becomes very important on moving connections or ones subject to vibration.

5. TESTING FOR COMPATIBILITY.

We always recommend testing for compatibility on parts and equipment that you do not have previous knowledge or experience. For material compatibility, refer to individual DATA Sheets (see link in next section).

Compatibility testing can usually be done by applying DeoxIT® to one of the parts or areas, then allowing the DeoxIT® to remain on the surface for a few days or up to a week. If no deformation, change in the visual appearance and electrical/mechanical performance is determined, then compatibility should be OK. Obviously, additional testing should be done for production and very critical applications.

LINKS for Additional Information:

1. **Bulletin CEG-2014**
   "NEW CAIG Essentials Guide - Brief Description of the Entire CAIG Product Line, 2014"
   Link: http://store.caig.com/s.nl/it.I/id.73/.f

2. **Bulletin C-WD14**
   "Why DeoxIT® Products are Different?"
   "Which Product Do I Use?"
   Link: http://store.caig.com/s.nl/it.I/id.22/.f

3. **Product Information**
   Link: http://store.caig.com/s.nl/sc.18/category.236/.f
   Information includes; Sales information and descriptions for many CAIG products.

4. **Technical Information**
   Link: http://store.caig.com/s.nl/sc.18/category.238/.f
   Information includes; Technical information for many CAIG products, including; When and How to use, Tech Sheets, Specs, Reference to old products, Shelf Life, NSN numbers, Tests, etc..

5. **Product DATA Sheets**
   Link: http://store.caig.com/s.nl/sc.18/category.5631/.f
   Information includes; Features/benefits, formulation, direction for use for applicator, product selection guide, spray selection guide, plastics compatibility, shipping information, etc.

6. **MSDS Sheets (Material Safety Data Sheets)**
   Link: http://store.caig.com/s.nl/sc.18/category.233/.f

7. **DeoxIT® Specs, Compatibility and Technical Information.**
   Link: http://store.caig.com/s.nl/sc.18/category.238/.f
   (Select Part No.: SB-D-ISCT.pdf)

   DeoxIT® D-Series, DeoxIT® Gold (G-Series, Gx Series, Gx2 and Gx3), DeoxIT® Shield and DeoxIT® Grease (formerly CaiLube Grease).

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12200 Thatcher Court, Poway, CA 92064 U.S.A.
P: 858/486-8388 | **E:** info@caig.com
WEB: www.caig.com | www.deoxit.com

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Specifications include; Temperature ranges, material compatibility, flow points, viscosities, specific gravity, conductivity, dielectric strength, specific insulation resistance and more.

8. **DeoxIT® Specifications & Comparisons to Other Products.**
   Link: http://store.caig.com/s.nl/sc.18/category.238/.f
   (Select Part No.: SB-SPEC)
   Information includes; DeoxIT® specifications, technical and comparisons to Polyphenyl Ether (OS-138), Stabilant 22, Silicone - based lubricants, Mineral oil - based lubricants, WD-40.

MANUFACTURER DISCLAIMER:

To the best of our knowledge, the information contained herein is accurate. However, neither CAIG Laboratories, Inc., or any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. In particular, improper use of our products and their inappropriate combination with other products and substances may produce harmful results which cannot be anticipated. Final determination of the suitability of any material is the sole responsibility of the user. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that may exist. All service performed on internal parts and equipment should be provided by qualifed technicians.

Feedback and Suggestions: If you have additional information you would like to see in this bulletin, please submit it at: **http://store.caig.com/s.nl/it.l/id.7/.f**

FIGURE 1.

DeoxIT® - Product Selection Guide

	DeoxIT®	DeoxIT® GOLD	DeoxIT® GOLD GxL	DeoxIT® GOLD Gx2	DeoxIT® SHIELD	DeoxIT® FaderLube
New Surfaces		✔	✔	✔	✔	✔
* In Service / Used	✔					✔
Gold surfaces		✔	✔	✔		
Oxidation / corrosion visible	✔					
Conductive plastics						✔
** Outdoor / Severe environments	✔					✔
Deoxidizing / cleaning properties	20%	0.1%	0.1%	0.0%	0.0%	0.0%
Metal / Plastic surfaces	Yes	Yes	Yes	Yes	Yes	
Plastics compatibility	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Temperature range (°C)	-34/200	-45/240	-45/310	-45/500	-34/210	-26/150
Stationary & moving surfaces	Yes	Yes	Yes	Yes	Yes	Yes
Seals & protects base metals	Good	Excellent	Excellent	Excellent	Good	No

✔ All products are Nonflammable and RoHs Compliant
* In Service: Clean with DeoxIT®. For added protection, follow with DeoxIT® GOLD (indoors), DeoxIT® SHIELD (outdoors) or DeoxIT® Grease (additional barrier).
** Severe environments: Pre-clean with DeoxIT®. Follow with DeoxIT® SHIELD or DeoxIT® Grease.

DeoxIT® - Spray Selection Guide

Product Series	FP	QD	NF	PC	VOC
Standard - 5% solution D5S-6, D5MS-15, G5S-6, G5MS-15, S5S-6, S5MS-15, F5S-6, F5MS-15	✔			✔	75
N Series - 5% solution DN5S-6N, DN5MS-15, GN5S-6N, GN5MS-15, SN5S-6, SN5MS-15		✔	✔	✔	20
X Series - 5% solution GX5S-6N		✔	✔	✔	20
100 Series - 100% solution D100S-2, G100S-2, F100S-2			✔	✔	0

FP = Flushing properties QD = Quick dry / non drip NF = Nonflammable
PC = Plastics compatibility VOC = VOC (%)

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