

# COMPARISON AND COMPATIBILITY CHART

	DeoxIT® D100L	DeoxIT® GOLD, G100L	DeoxIT® GOLD, GX100L	DeoxIT® SHIELD S100L	Cramolin R100L, Kontak	Cramolin B100L	Polyphenyl Ether OS-138 (E)	Stabillant 22, Tweek	Silicone Based Lubricant	Mineral Oil Lubricant	WD-40
1. TEMPERATURE RANGE (°C) - MAXIMUM (B)	200	240	310	210	100	100	110	210	200	250	150
MINIMUM (B)	-34	-45	-45	-34	-10	-10	10	-50	-50	-20	-40
2. DEOXIDIZING PROPERTIES	yes	yes	yes	no	yes	no	no	no	no	no	no
3. IMPROVES CONDUCTIVITY / REDUCES RESISTANCE	5	5	5	1(G)	4	1(G)	2	3	1(G)	1(G)	1(G)
4. ANTI-TARNISHING PROPERTIES	4	5	5	4	3	3	4	2	2	1	3
5. PENETRATES PLATED SURFACES & CONDITIONS BASE METALS	no	yes	yes	no	no	no	no	no	no	no	no
6. LUBRICATES SURFACES (C)	4	5	5	5	4	5	4	4	4	4	4
7. PRESERVES SURFACES (C)	4	4.5	5	5	3	5	4	4	4	3	3
8. EFFECTIVE ON SIMILAR & DISSIMILAR METALS	4	5	5	4	4	4	3	2	3	3	3
9. EFFECTIVE ON MOVING AND STATIONARY SURFACES	5	5	5	5	5	5	1	1	4	3	3
10. REDUCES R.F. INTERFERENCE (RFI)	4	5	5	4	3	3	n/a	4	n/a	1	1
11. LONGEVITY OF THE PROTECTED SURFACES (D)	4	5	5	4	4	4	4	4	3	2	2
12. PLASTICS COMPATIBILITY	4	4	4	4	3	4	4	3	1(A)	4	4
13. WEAR RESISTANCE (OF METAL SURFACES)	4	4	5	4	4	4	4	4	4	3	3
14. UV TRACEABLE DYE	yes	yes	yes	yes	no	no	some products	no	no	no	no
15. AVAILABLE IN MANY NON-AEROSOL APPLICATORS (F)	yes	yes	yes	yes	no	no	no	no	n/a	n/a	n/a
16. AVAILABLE IN INDIVIDUAL WIPE APPLICATORS	yes	yes	yes	yes	no	no	yes	no	n/a	n/a	no
17. AVAILABLE IN PEN APPLICATORS	yes	yes	yes	yes	no	no	no	no	n/a	n/a	no
18. AVAILABLE IN PRECISION NEEDLE DISPENSER	yes	yes	yes	yes	no	no	no	yes	n/a	n/a	no
19. AVAILABLE IN ENVIRONMENTALLY-SAFE AEROSOL	yes	yes	yes	no	no	no	no	no	n/a	n/a	no
20. AVAILABLE IN PRECISION PUMP SPRAYER WITH MIST EXTENSION TUBE	yes	yes	yes	soon	no	no	no	no	n/a	n/a	no
21. NORMALLY A ONE-STEP TREATMENT (CLEANS, DEOXIDIZES, LUBRICATES & PRESERVES)	yes	yes	yes	no	no	no	no	no	no	no	no
22. FLAMMABLE	no	no	no	no	no	no	no	Stabillant = no Tweek = yes	no	no	yes
23. COST PER OUNCE (30ML), 100% LIQUID (PRICES APPROXIMATE)	\$10	\$25	\$26	\$10	\$20	\$22	\$35	\$70	\$3	\$2	\$0.50

### PLASTICS COMPATIBILITY:

- 1 - **VERY POOR** Very limited compatibility on sensitive thermoplastics (polystyrene, polycarbonates, polyethylene)  
 2 - **POOR** Acceptable on some thermoplastics, limited use.  
 3 - **FAIR** Acceptable on most thermoplastics  
 4 - **GOOD** Generally very good plastics compatibility  
 5 - **EXCELLENT** Excellent plastics compatibility

### ANTI-TARNISH, LUBRICATE/PRESERVE, REDUCE RFI, DISSIMILAR METALS, LONGEVITY, WEAR RESISTANCE:

- 1 - **VERY POOR**  
 2 - **POOR**  
 3 - **FAIR**  
 4 - **GOOD**  
 5 - **EXCELLENT**

**NOTES:** Plastics compatibility is dependent on many factors and testing is recommended prior to use.

**n/a** = Information not available or not applicable.

(A) Silicone based lubricants are not recommended when used near plastics. See reverse side of this bulletin for additional information.

(B) At elevated temperatures, thin films have high vapor pressures. This results in shorter film life. Temperature range is based on the max. & min. limits for short periods of time. Actual temperature ranges will depend on contact pressure, current, atmospheric conditions, etc. Testing recommended when operating at extreme temperatures.

(C) Lubricating and preserving surfaces is determined by many variables. Performance is based on its ability to work on moving and stationary surfaces and to be used with many materials. DeoxIT, DeoxIT GOLD and DeoxIT SHIELD have the unique ability to reseal (lubricate & preserve) the surfaces when the contact/connector moves (either by mechanical action or through electrical vibration).

(D) Longevity is based on evaporation rate (caused by high vapor pressures of thin films), wear, resistance to contamination and other adverse conditions. NOTE: Since Polyphenyl Ether and Stabillant 22 (Tweek) are recommended for only stationary connections, both connector surfaces must be treated and if the surfaces are separated in any way they must be re-treated.

(E) Polyphenyl Ether is a Monsanto product packaged by many suppliers: Chemtronics (Gold Guard), Texwipe (Gold Wipes), Miller-Stephenson (Connector Plus), etc.

(F) New Pump-Sprayer, Pens, Wipes, Needle & Syringe dispensers and bulk containers.

(G) Not formulated to improve conductivity / reduce resistance on metal surfaces.

## SPECIFICATIONS

	DeoxIT® (D100L)	DeoxIT® GOLD (G100L)	DeoxIT® GOLD (GX100L)	DeoxIT® SHIELD (S100L)	DeoxIT® Greases
Flow Point, min. ....	- 13°C	- 18°C	- 28°C	-18°C	-20°C
Viscosity SUS @ 38°C (100°F) .....	60-70	62-72	58-68	60-70	
Viscosity SUS @ 99°C (210°F) .....	34-38	36-40	34-38	36-38	
Viscosity @ 100°C .....					1.784° E
Specific Gravity (one liter equals) .....	0.83 kilo	0.85 kilo	0.81 kilo	0.83 kilo	
Dripping Point .....					100°C
Flash Point .....	240°C	260°C	340°C	250°C	300°C
<sup>1</sup> Lowest/Best Operating Temperature (general) .....	-20°C	-25°C	-34°C	-34°C	-30°C
<sup>1</sup> Highest Operating Temperature (continuous duty) .....	200°C	240°C	310°C	210°C	260°C
Acid & Neutralization No. (mg KOH/g) .....					1.15
Saponification No. (mg KOH/g) .....					2.79
Electrical Conductivity (27°C) (10 <sup>-12</sup> ohm <sup>-1</sup> cm <sup>-1</sup> ) .....	.17	.15	.15	.11	.15
<sup>2</sup> Dielectric Constant E <sub>r</sub> .....	2.314	2.314	2.301	2.376	3.236
(Tan δ(10 <sup>-4</sup> ) .....	70	70	69	65	
<sup>2</sup> Dielectric Strength E <sub>d</sub> .....	70.5	70.5	71.2	62.5	45.9
<sup>2</sup> Specific Insulation Resistance D (10 <sup>12</sup> ohm-cm) .....	5.4	5.6	5.9	7.8	6.1
	+30/-02	+30/-02	+30/-02	+30/-02	+50/-03

<sup>1</sup> Temperatures are conservative values for reference only.

<sup>2</sup> NOTE: All values are relative to an ambient temperature of 26 to 28°C (approx. 80°F). Dielectric strength value is a statistical average taken from 10 measurements. Voltage measurement taken with 0.5% accuracy.

## CAUTIONS

### Contamination from Silicone-Based Lubricants:

Silicone-based cleaners/lubricants should not be used where electrical contacts and other electrical components are used. Silicone will react with plastics and atmospheric contamination to form insulating films and silicone carbide compounds. Over time, silicone will react with plastics, softening them, thereby breaking down the integrity of the component (switch, relay, etc.). Silicone-based lubricants may also have been used as a mold release agent or as a general cleaner for housings. Since silicone can migrate great distances, it is recommended to clean the silicone off the surfaces. DeoxIT®, DeoxIT® GOLD and DeoxIT® SHIELD will displace the silicone; however, cleaning (CaiKleen 41 or CaiKleen IPA) prior to applying the final coat of DeoxIT®, DeoxIT® GOLD or DeoxIT® SHIELD is recommended.

### Do Not Use Pencil Erasers:

Do not use an eraser - ANY TYPE OF ERASER - to clean contacts. Erasers are highly abrasive and will remove the precious metal plating. Further, the glue in erasers leaves behind a film that is extremely difficult to remove and can later cause intermittents. Rubbing an eraser back and forth across the contacts can be a potential static generator.

## Caution When Using Solvents:

Because of environmental concerns, all chemical manufacturers have reformulated most of their aerosols and cleaning fluids. In the past, Freon TF solvent was the standard agent for cleaning, and also served as the carrier solvent for many contact cleaners as well as other cleaners and lubricants. Freon TF is an ideal solvent because it is not flammable and is compatible with plastics. As with any new solvent, it is suggested that you test all new cleaners before using them on any electronic hardware.

When using DeoxIT® D5L, DeoxIT® GOLD G5L and DeoxIT® S5L (diluted with petroleum naphtha) it is recommended to test for compatibility. While petroleum naphtha is a non-aggressive solvent, compatible with most plastics, slight swelling of rubber and elastomers may occur.

When diluting DeoxIT®, DeoxIT® GOLD and DeoxIT® SHIELD (100%) with solvents other than petroleum naphtha, it is extremely important that testing be performed. Care must be taken when using isopropyl-99 (99% pure) alcohol, due to its water content. Alcohol is a polar solvent, making it conductive and a potential problem in some applications (trapped between the contact surfaces of a normally open switch, it may cause a short between the contacts.).

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