



**FLUIDS  
RESINS  
SPECIALTIES**



# SILICONES PRODUCT DATA

## G 641 Silicone Thermal Conducting Compound

product features	potential benefits
<ul style="list-style-type: none"> <li>● High thermal conductivity</li> <li>● Withstands high and low temperatures</li> <li>● Dielectric strength</li> <li>● Water resistant</li> <li>● Good adherence</li> <li>● Chemically inactive</li> <li>● Low toxicity</li> <li>● Non-corrosive</li> <li>● Hydrolytically stable</li> </ul>	<ul style="list-style-type: none"> <li>● Good and durable performance in heat transfer applications</li> <li>● Electrically non-conductive</li> <li>● Stable in appropriate applications</li> </ul>

### product description

General Electric G 641 is a metal oxide filled dielectric thermal conducting silicone-based compound. G 641 has been used as a heat transfer medium in the electrical and electronic industry for facilitating heat dissipation by filling voids and gaps between mating surfaces. The operating temperature for G 641 is -70F to 400F (-57C to 204C).

### applications

- Thermocouple Wells
- Thermometer Wells
- Mounting Power Diodes & Transistors
- Shock & Heat Dissipation in Transistors
- Mounting Semi-Conductor Devices
- Heat Transfer Medium on Ballasts
- Thermal Joints

### typical product data

PROPERTY	VALUE
Appearance	White - Opaque
Temperature Range	-70F to 400F (-57C to 204C)
Penetration <sup>1</sup>	240-320
Bleed <sup>2</sup>	2% max.
Evaporation <sup>2</sup>	2% max.
Specific Gravity <sup>3</sup>	2.6 min.
Thermal Conductivity <sup>4</sup>	a) 0.42 BTU/ft <sup>2</sup> /hr/°F/ft b) $1.5 \times 10^{-3}$ g-cal/cm <sup>2</sup> /sec/°C/cm
<b>Electrical Properties</b>	
Dielectric Strength <sup>5</sup>	
50 mil	300 v/mil
100 mils	500 v/mil
Volume Resistivity <sup>6</sup>	$1 \times 10^{14}$ ohm-cm-min
Dielectric Constant	
25C @ 1000 Hz	4.4
Dissipation Factor	
25C @ 1000 Hz	.005

#### FOOTNOTES

- <sup>1</sup> Penetration after working 60X ASTM D-217  
<sup>2</sup> Beaker and cone method 200C — 24 hrs.  
<sup>3</sup> Specific gravity column  
<sup>4</sup> Hot wire method  
<sup>5</sup> ASTM D-149  
<sup>6</sup> ASTM D-257

### specifications

Properties shown in the Typical Product Data section should not be considered or used in preparing specifications. Assistance and recommendations are available by contacting General Electric Company, Silicone Products Division.

### application techniques

Silicone compounds, as received, may be wiped on or applied using appropriate dispensing equipment. When dispersed in non-polar solvents, these compounds may be applied by brushing, spraying, or by dip coating.

### solvent\* dilution

Silicone compounds may be diluted with non-polar solvents\* for easy application. However, caution is required in regard to the specific use. For example, chlorinated solvents\* may promote corrosion.

### cleanup

Cleanup of silicone compounds can be easily accomplished using non-polar solvents\* such as mineral spirits or 1,1,1-trichloroethane. Care must be taken to remove all traces of silicone compound before painting.

# reinhard oil

Reinhard Oil A/S - Helleruplund Allé 8  
DK - 2900 Hellerup - Danmark  
Tlf. (01) 624033 - Giro 3 02 56 67



## G 641 SILICONE THERMAL CONDUCTING COMPOUND

### \*SOLVENT HANDLING

When solvents are used, proper safety precautions must be observed. All solvents must be considered toxic and should be used only in well-ventilated areas. Prolonged exposure to solvent vapors must be avoided. If flammable solvents are used, storage, mixing and use must be in areas away from open flames or other sources of ignition. The selection of any solvent, particularly chlorinated hydrocarbon solvents, will require consideration of applicable OSHA, EPA, and other federal, state and local regulations.

### caution

General Electric silicone general purpose and dielectric compounds should not be used as lubricants for the reduction of sliding friction of two metallic surfaces; e.g., ball bearings, bronze sleeve bearings, etc.

### bulk dispensing

All General Electric compounds are available in various bulk containers. Conventional handling equipment may be used to transfer and apply the material from bulk containers. The higher viscosity, higher density compounds may require heavier duty pumping equipment. However, no other dispensing difficulties have been reported. Of course, care should be taken to have all equipment clean and dry to avoid the possibility of contamination.

### toxicity

Silicone compounds have not been known to produce any harmful effects, either internally or externally.

Contact with the eyes may cause transitory irritation. However, this will usually disappear within 24 hours. Flushing the eyes with water for several minutes can reduce discomfort.

### safety precautions

Material Safety Data Sheets defining the known hazards and describing appropriate safety precautions with respect to the product are available upon request from General Electric Company, Silicone Products Division. Similar information sheets for solvents and other chemicals used with the product may be obtained from the supplier.

### storage

All silicone compounds have a shelf life in excess of one year when stored in unopened containers at temperatures below 122F (50C). Although some oil separation may occur in storage, this is normal for all compounds. Storage in closed containers is recommended to prevent contamination by foreign materials and to maintain dielectric properties.

### ordering instructions

General Electric silicone general purpose and dielectric compounds are available from General Electric Company or from authorized GE Silicone Products distributors. For the name of your nearest distributor or for more information on these products, contact General Electric Company, Silicone Products Division, Rubber and Fluid Products Department, Waterford, New York 12188, or the Silicone Sales Department office nearest you.

As General Electric Company has no control over the use to which others may put the material, it does not claim or warrant that in your particular circumstances, the results you will obtain from the use of the product will be the same as those described in this communication, or that you will find the information or recommendations complete, accurate, or useful. The Company accepts no liability, in negligence or otherwise, for any damage resulting from your reliance on the information or recommendations in this communication. You should test the material to determine if the material is suitable and/or our claims valid, in your particular circumstances. None of the possible or suggested uses of the materials in this communication are a license under any General Electric patent covering such use or a recommendation for use of such materials in the infringement of any patent.

## reinhard oil as

smøremiddel specialisten

Besøg hjemmesiden: [www.reinhardoil.dk](http://www.reinhardoil.dk)

Alt i smøremidler og silikone

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Rev. 1

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