

ENGINEERING DATA SHEET

<i>Oil Filled Stators</i>		
Date	Supersedes	No.
04/01/99	06/15/81	12E

The windings on all pumps are hermetically sealed between the end bells and stator band by the welded stator liner. This space normally is filled with a heat conductive oil such as silicone oil. The use of oil in the stator cavity allows the motor winding to operate at a lower temperature, thereby increasing the horsepower and life of the motor. Oil filling also eliminates any "hot spots" on the motor winding.

Note: The NC Series pumps have secondary containment even when oil filled. Oil expansion chambers are available on all "G" Series pumps if secondary containment of the process fluid is required.

Oil-filled stators are used frequently when pumping liquids of low boiling points which might flash in the rotor chamber and cause vapor binding in the circulating circuit thus causing the bearings to run dry. Oil filling also eliminates the possibility of shorting which could result from condensation in the stator chamber.

Shown below is a chart depicting the comparative properties of the standard dielectric coolants used for oil filling Chempump stator cavities.

When some heat transfer is still desirable but oil cannot be used for reasons such as:

- a) Concern about liner failure and heat transfer oil contaminating the system.
- b) Danger of reaction with the oil and pumped fluid.
- c) Concern about release of product through the relief valve if the stator liner fails (Secondary Containment).

The alternative is filling the stator winding cavity with a solid heat transfer medium. This is termed "solid fill" and consists of an UL approved potting compound which completely encloses the windings. This modification is used when:

- a) Oil cannot be used for previously mentioned reasons.
- b) The characteristics of the pumped fluid dictates that little, or no fluid, contact the hot motor windings in the event of a stator liner failure.

Type of Oil	Flash Point	Pour Point	Temp. Limits	Chemical Resistance
<u>Silicone</u> G.E. SF-50-100 Dow Corning 510	600° F	-70° F	- 100° F +450° F	Fair Will Nitrate
<u>Fluorocarbon</u> FC-70 FC-43	(Boiling Pts.) <u>380° F</u> 340° F	<u>-150° F</u> - 58° F	- 300° F <u>+150° F</u> 100° F +300° F	Excellent Non- nitrating

GESF9750

GE SILICONES MATERIAL SAFETY DATA SHEET

FORMAT: USA COPYRIGHT GENERAL ELECTRIC CO.

Product: Dimethylpolysiloxanes

1. Chemical Product and Company Identification

Manufactured By: GE Silicones	260 Hudson River Road Waterford, NY 12188
Supplied By: GE Silicones	260 Hudson River Road Waterford, NY 12188
Emergency Phone (24 HRS)	(518) 237-3330

Revised: 02/06/96
Preparer: CE HANNIGAN

Chemical Family/Use: Silicone Fluid
Formula: Polysiloxane

2. Composition / Information on Ingredients

Composition / Cas Reg No.	Approx. WGT. %	ACGIH TWA	TLV STEL	OSHA TWA	PEL STEL	Units
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A. Hazardous:
None Found

B. Non-Hazardous: Dimethylpolysiloxanes

631248-62-9	80-99	NA	NE	NA	NE	NA
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See Section 15 for description of any WFFAIS Trade Secret(s).

3. Hazards Identification

Emergency Overview: This section not in use.

Potential Health Effects:

Ingestion: None known

Skin Contact: None known,

Inhalation: None Known.

Eye Contact: May cause mild eye irritation.

Medical Conditions Aggravated: None known.

Subchronic (Target Organs) Effects: None known.

Chronic Effects/Carcinogenicity: This product or one of its ingredients present 0.1% or more is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, or OSHA.

Products/Ingredients: This space reserved for special use.

Principle Routes of Exposure: None known.

Other: Attention - Not for injection into humans. This product contains Methylpolysiloxanes which can generate Formaldehyde at approximately 300 degrees Fahrenheit (150 C) and above, in atmospheres which contain oxygen. Formaldehyde is a skin and respiratory sensitizer, eye and throat irritant, acute toxicant, and potential cancer hazard. An MSDS for Formaldehyde is available from GE Silicones.

4. First Aid Measures

Ingestion: None known.

Skin: Wash with soap and water.

Inhalation: None known.

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Note to Physician: None Known.

5. Firefighting Measures

Flashpoint: >300°C and 572°F

Method: COC

Ignition Temp: UNK°C and UNK°F

Flammable Limits in Air - Lower (%): NA

Flammable Limits in Air - Upper (%): NA

Sensitivity to Mechanical Impact (Y/N): No

Sensitivity to Static Discharge: Sensitivity to static discharge is not expected.

Extinguishing Media: All standard firefighting media.

Special Firefighting Procedures: None Known.

6. Accidental Release Measures

Action to be Taken if Material is Released or Spilled: Wipe, scrape or soak up in an inert material and put in a container for disposal. Wash walking surfaces with detergent and water to reduce slipping hazard.

7. Handling and Storage

Precautions to be Taken in Handling and Storage: None Known.

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8. Exposure Controls

Personal Protection Engineering Controls: None Known.

Respirator Protection: None Known.

Protective Gloves: None Known.

Eye and Face Protection: Safety Glasses.

Other Protective Equipment: None Known.

Ventilation: None Known.

9. Physical and Chemical Properties

Product Information:

Boiling Point: >204°C and >400°F

Vapor Pressure: 20°C

(MM FIG): Neg Vapor Density

(AIR=1) Neg

Freezing Point: NA°C and NA°F

Melting Point: NA°C and NA°F

Physical State: Liquid

Odor: Odorless

Color: Clear

Odor Threshold (PPM): UNK

% Volatile by Volume: <1

Evap. Rate (Butylacetate = 1): UNK

Specific Gravity (Water = 1): .963

Density (KG/M3): 958.6

Acid/Alkalinity (MEG/G): <5 PPM

PFi: NA

VOC (EPA METH.24) (G/L): <5

Solubility in Water (20°C): Insoluble

Solubility in Organic Solvent (State Solvent): Soluble in Toluene

10. Stability and Reactivity

Stability: Stable

Hazardous Polymerization: Will Not Occur

Hazardous Thermal Decomposition/Combustion Products: Carbon Monoxide, Carbon Dioxide, Formaldehyde.

Incompatibility (Materials to Avoid): None Known.

Conditions to Avoid: None Known.

11. Toxicological Information

Product Information:

Acute Oral LD50 (MG/KG): 40,000 (RAT)

Acute Dermal LD50 (MG/KG): None Found

Acute Inhalation LC50 (MG/L): >535 MG/L (RAT)\

Other: Non-irritating to skin (rft).

Ames Test: Unknown

12. Ecological Information

Ecotoxicological Information: No Data at This Time

Chemical Fate Information: No Data at This Time.

13. Disposal Considerations

Disposal Method: Disposal should be made in accordance with federal, state and local regulations.

Incineration recommended in approved incinerator according to federal, state, and local regulations.

14. Transport Information

DOT Shipping Name: None

DOT Hazard Class: None

DOT Label(s): None

UN/NA Number: None

Placards: None

IATA:

Fire Point = 340°C Minimum by Cleveland Open Cup

IMO IMDG-Code: None

European Class:

RID (OCTI): None

ADR (ECE): None

RAR (IATA): None

15. Regulatory Information

SARA Section 302: None Found

SARA (311, 312) Hazard Class: Acute Health Hazard

SARA (313) Chemicals: None

CPSC Classification: None

WHMIS Hazard Class: Non-Controlled

WHMIS Trade Secret: None

Export: Schedule B/HTSUS: 3910.00 Silicones in Primary Form

ECCN: IC96G

Hazard Rating Systems:

HMIS - Flammability: 0

Reactivity: 0

Health: 0

NFPA - Flammability: 0

Reactivity: 0

Health: 0

California Proposition 65: None

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16. Other Information

This product or its components are on the European Inventory of existing commercial chemical (EINECS). This data is offered in good faith as typical values and not as product specification. No warranty, either expressed or implied, is made. The recommended handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific content of the intended use.

C	=	Ceiling Limit	NEGL	=	Negligible
ES	=	Estimated	NF	=	None Found
NA	=	Not Applicable	UNKN	=	Unknown
NE	=	None Established	REC	=	Recommended
ND	=	None Determined	v	=	Recommended By Vendor
By-Product	=	Reaction-By	SKIN	=	Skin
Product, TSCA Inventory			TS	=	Trade Secret
Status Not Required Under			R	=	Recommended
40 CFR Part 720.30 (H-2)			MST	=	Mist
STEL = Short Limit Exposure Limit			NT	=	Not Tested

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