



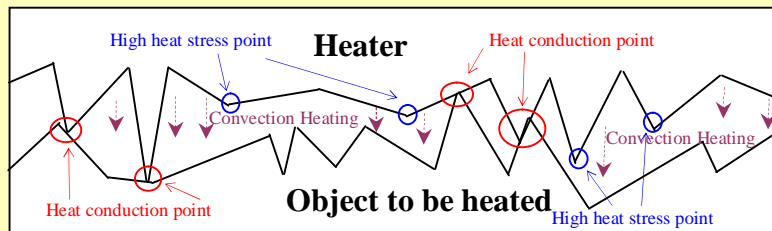
Heat Transfer Fluid for Heaters

One of the most frequent issues which extruder (twin screw and single screw) users face are :-

- a) Frequent breakdown / seizing of heaters
- b) High electricity usage for heating

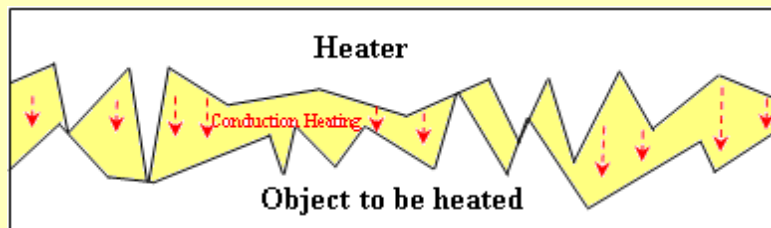
We have identified this issue and have come out with a solution suitable for our customers

From a physics point of view, all heaters and the surface they are heating are not smooth (although they look smooth) due to the nature of fabrication of heaters from milling and cutting.



- Heat Conduction Point :** Actual contact heating by heater (high efficiency)
- Convection Heating :** Non contact heating by heater (low efficiency)
- High heat Stress Point :** Non contact high ampere points causing premature failure

With the New Heat Transfer Fluid / Paste with Anti Seizing Function, the surface situation becomes



- There will only **Heat Conduction** via Heat Transfer Fluid and **Conduction Point**.
- Convection Heating :** None at surface to be heated, hence improving efficiency
- High heat Stress Point :** None, hence reducing failure rate

2 Types of Applicator available as below (MAX TEMPERATURE : 850 °C):-

BNS Anti-Seize Cartridge Heater Coating

This high temperature, electrically insulating and thermally conductive coating will minimize oxidation and improve heat transfer from heater to the object being heated.

Brush a thin layer of paste or spray lightly over the cartridge heater prior to inserting the heater into a hole.



Do not apply over lead wires or other bare current carrying conductors, since the water in the paste and spray can cause an electrical short circuit.



13 oz.
Aerosol spray can
Part Number:
CML00010

- * Temperature Range 1562°F (850°C)
- * High Heat Transfer



4 oz.
Paste w/brush applicator top
Part Number: CML00020

- * Temperature Range 1562°F (850°C)
- * High Heat Transfer



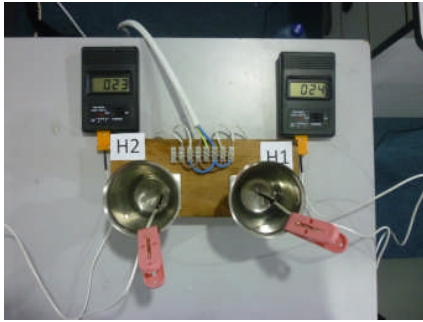
Note: Formulated to assist in the removal of cartridge heaters.

All Items Available from Stock

Advantages of using Heat Transfer Fluid with Anti Seize

- 1) Increasing efficiency of heat transfer (thus reducing electricity bills)
- 2) Protecting heaters from over-heating due to uneven surface
- 3) Prolonging heater life
- 4) Anti-seizing function for heaters

We did a test trial to examine the efficiency of the Heat Transfer Fluid and the results are as below :-



Heater Test Kit

Plate heater rated 240V 50 W
S/S 303 cups with 150ml water
Water is heated for about 3 minutes and the temperature is recorded

Test 1 : Without Heat Transfer Fluid (Control Test)

	H2	H1
Temp. before heating/°C	23	24
Temp. after heating/°C	60	60
ΔT	37	36



Test 1

Test 2 : With Heat Transfer Fluid (paste) on H2 for 3 minutes

	H2	H1
Temp. before heating/°C	28	27
Temp. after heating/°C	49	43
ΔT	21	16

% increase in heat transfer : $(21-16) / 16 = 24\%$

Test 3 : With Heat Transfer Fluid (paste) on H1 for 4 minutes

	H2	H1
Temp. before heating/°C	27	28
Temp. after heating/°C	51	59
ΔT	24	31

% increase in heat transfer : $(31-24) / 24 = 29\%$

Test 4 : With Heat Transfer Fluid (aerosol spray) on H1 for 3 minutes

	H2	H1
Temp. before heating/°C	23	24
Temp. after heating/°C	44	49
ΔT	21	25

% increase in heat transfer : $(25-21) / 21 = 19\%$

Note : These test are done as a quick trial to test the effectiveness of such fluid and in no means represent actual results using different type of heaters, power and temperature.